The Significance of Choice in the Late Dorset Technology of Domestic Architecture

Karen Ryan
Doctor of Philosophy
Department of Anthropology, University of Toronto (2009)

ABSTRACT

This dissertation investigates the domestic architecture produced by the Late Dorset, an Arctic-adapted hunter-gatherer society which occupied much of the Eastern North American Arctic between circa 1500 B.P. and 500 B.P.

Architecture, like any artefact class, is a dynamic and socially constructed technology that is produced, maintained, and transmitted by its practitioners. It is replicated via series of learned actions or techniques; patterns accordingly result from adherence to cultural standards while differences represent instances of technological divergence. Such departures are typically ignored or suppressed in closed systems, although they can be tolerated or even widely adopted in more flexible ones.

In order to identify and explore patterning, a methodological strategy using the chaîne opératoire is adopted. This approach is invaluable because, when properly implemented, it links the static archaeological record with the dynamic architect-agents whose meaning-laden technical acts are visible archaeologically.

Viewed through the lens of chaîne opératoire, I examine domestic architecture as a conduit for informing on Late Dorset structure and social organisation. As part of this investigation, a multi-scalar research design was implemented. The first analytical scale examined architecture across the Eastern Arctic to determine regional patterns of behavioural variability. Large-scale behavioural trends were recognised and demonstrated the range of behaviours enacted by Dorset architects as they designed, reproduced, and altered dwellings.
The second stage of analysis focused on the micro-scale analysis of dwellings from three locations, each presented as fully contextualised case studies. Analysis at this level allowed for the investigation of how idiosyncratic behaviours and localised knowledge (reflecting an agent’s awareness of local conditions) was manifested and ‘fit’ within the overall technology.

This strategy, which combined structure-specific analysis with purposefully broad regional patterning, suggests that Late Dorset architectural technology was comparatively open and flexible and that architects could adapt technological practise to suit local conditions and housing needs. This flexibility contrasts with other aspects of Late Dorset culture that appear more constrained and standardised.
ACKNOWLEDGEMENTS

Dissertations are often as much about perseverance as they are about the analysis underpinning the whole effort. This is certainly the case with the present study, which could never have been completed without the many people who gave their unfailing support (academically, socially, and financially) through the eight years needed to finish.

A great deal of gratitude must be directed to my supervisor, Dr. T. Max Friesen, whose guidance and faith ensured that he would (eventually) be rid of me as a student. Max patiently overlooked my many self-imposed and usually missed deadlines with good humour while providing thought-provoking comments on the chapters (getting each back to me much sooner than I generally wanted to see them!). Under Max’s tutelage, and following his example, I have hopefully learned to be a better researcher and to think critically, but not overly so, about things.

Thanks are also extended to my dissertation committee – the ‘core’ of Drs. Michael Chazan and Gary Coupland, as well as Drs. Heather M.-L. Miller (internal-external) and Susan Rowley (external, University of British Columbia) – for their willingness to read and provide feedback on my research. Dr. Andrew Clement (Faculty of Information) sat through two hours of archaeology on a sunny Friday afternoon as my defense chair. Dr. Patricia Sutherland (Canadian Museum of Civilization) was a firm believer that Dorset architecture deserved a closer look and my research benefitted from her support. I appreciate the contributions of all!

Excavations on Victoria and Baffin Islands – and anywhere in the North – could not be possible without the logistical support of the Polar Continental Shelf Project. Financial support for the fieldwork came from the Social Science and Humanities Research Council (Friesen), Canadian Museum of Civilization (Sutherland), and the Northern Scientific Training Program. Additional funding derived from Ontario Graduate Scholarships, University of Toronto Open Fellowships, and the William E. Taylor Research Award.

My time on and off campus was made much more enjoyable thanks to a merry band of friends, particularly Andrew Deane, Sue Lofthouse, Carla Parslow, Kate Reedy-Maschner, and Alex Sumner. Julie Ross was my office mate for 4 years and while we periodically commiserated about research and writing, we also got to celebrate each other’s achievements. Mariam Nargolwalla was a wonderful and much appreciated source of all sorts of non-academic fun.

My parents were enthusiastic cheerleaders and financiers throughout my university career. My mom read all of my undergrad papers and helped make me a better writer, while my dad provided much needed care packages full of the treats and surprises that kept me going. Special thanks to Chester and Fergus for their company during those long days and nights in front of the computer, and for knowing that throwing a bear sometimes is the best option!

This dissertation may not have been finished without the unwavering support of Matthew Betts, who never for a moment thought that I wouldn’t get it done. His constant encouragement (even when progress forced him to resort to bribery), faith, and love make everything possible.

This dissertation is dedicated to my dad, who would have been so proud.
Table of Contents

ABSTRACT ii
ACKNOWLEDGEMENTS iv
TABLE OF CONTENTS v
LIST OF FIGURES xiii
LIST OF TABLES xviii

CHAPTER 1: INTRODUCTION TO THE RESEARCH
1.1 Introduction 1
1.2 Alternate Strategies for Exploring Architectural Remains 2
   1.2.1 Structuralism, Habitus, and Structuration 3
   1.2.2 Proxemic 5
   1.2.3 Dramaturgical 5
   1.2.4 Grammatical 6
   1.2.5 Ergonomic 7
   1.2.6 Behavioural Archaeology 7
   1.2.7 Summary of Alternate Frameworks for Architectural Analysis 10
1.3 Framework of Research 11
1.4 Research Goals and Data Sources 13
1.5 Organisation of the Dissertation 15

CHAPTER 2: AN ANALYTICAL AND METHODOLOGICAL APPROACH FOR EXPLORING ARCHITECTURAL TECHNOLOGY
2.1 Introduction to the Analytical Perspective 18
   2.1.1 The Technological Approaches to the Archaeological Record 20
   2.1.2 The Chaîne Opératoire 23
   2.1.3 The Chaîne Opératoire and the Style Versus Function Debate 25
   2.1.4 The Chaîne Opératoire - A Non-Binary Approach 30
   2.1.5 The Chaîne Opératoire as an Analytical Strategy: Summary 32
2.2 Outlining the Analytical Framework 33
   2.2.1 Implementing the Chaîne Opératoire 33
   2.2.2 Applying the Chaîne Opératoire to Architectural Remains 35
   2.2.3 Macro and Micro Scales: tracing technological behaviours through connaissance and savoir-faire knowledge 38
2.2.4 The Influence of Anticipated Mobility, Seasonality, and Sedentism
on the Interpretation of Architectural Remains 40

2.3 Chaîne Opératoire as a Structuring Framework for Analysis: Summary 43

CHAPTER 3: THE ARCTIC ENVIRONMENT AND ITS INFLUENCE ON
ARCHITECTURE

3.1 Introduction 46

3.2 Characterising the Arctic Environment 47
  3.2.1 Temperature and Architecture 49
  3.2.2 Wind and Architecture 51
  3.2.3 Precipitation and Architecture 53
  3.2.4 Relative Humidity and Architecture 55
  3.2.5 The Sea Ice Environment 56

3.3 Resources Available for Architectural Use 60
  3.3.1 Snow 60
  3.3.2 Wood 62
  3.3.3 Whale Bone 65
  3.3.4 Sod 66
  3.3.5 Antler 68
  3.3.6 Ivory 69
  3.3.7 Stone and Gravel 70
  3.3.8 Skin 71
  3.3.9 Discussion 71

3.4 The Arctic Environment in the Period 1500 B.P. and 500 B.P. 72

3.5 Summary 77

CHAPTER 4: THE CULTURAL SETTING – LATE DORSET PREDECESSORS

4.1 Introduction 79

4.2 The Western Origins of the Eastern Arctic Palaeoeskimo 80

4.3 Pioneers: The Earliest Eastern Palaeoeskimos 83
  4.3.1 Independence I (circa 4500 B.P. – 4000 B.P.) 84
  4.3.2 Saqqaq (circa 4500 – 2000 B.P.) 86
  4.3.3 Pre-Dorset (circa 4200 B.P. – 2800 B.P.) 89
  4.3.4 Early Palaeoeskimo Summary 90

4.4 The Transition: Early to Late Palaeoeskimo, Continuity or Population
  Replacement? 92
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.4.1 Independence II (circa 3000 B.P. – 2600 B.P.)</td>
<td>94</td>
</tr>
<tr>
<td>4.4.2 Groswater (circa 2800 – 2100 /1900 B.P.)</td>
<td>96</td>
</tr>
<tr>
<td>4.4.3 Lagoon (circa 2800 B.P. – 2300 B.P.)</td>
<td>98</td>
</tr>
<tr>
<td>4.4.4 Transitional Period Summary</td>
<td>99</td>
</tr>
<tr>
<td>4.5 Late Palaeoeskimos: The Dorset</td>
<td>100</td>
</tr>
<tr>
<td>4.5.1 Early Dorset (circa 2500 B.P. – 2000 B.P.)</td>
<td>102</td>
</tr>
<tr>
<td>4.5.2 Middle Dorset (circa 2000 B.P. – 1500 B.P.)</td>
<td>105</td>
</tr>
<tr>
<td>4.5.3 Late Palaeoeskimo Summary: Early and Middle Dorset</td>
<td>108</td>
</tr>
<tr>
<td>4.6 Discussion</td>
<td>110</td>
</tr>
<tr>
<td><strong>CHAPTER 5: THE LATE DORSET</strong></td>
<td></td>
</tr>
<tr>
<td>5.1 Introduction</td>
<td>113</td>
</tr>
<tr>
<td>5.2 Late Dorset Chronology</td>
<td>113</td>
</tr>
<tr>
<td>5.3 Characterising Late Dorset</td>
<td>117</td>
</tr>
<tr>
<td>5.3.1 Identifying Late Dorset Origins and Spread</td>
<td>117</td>
</tr>
<tr>
<td>5.3.2 The Late Dorset Toolkit</td>
<td>120</td>
</tr>
<tr>
<td>5.3.3 Subsistence and Settlement Patterns</td>
<td>122</td>
</tr>
<tr>
<td>5.3.4 Ideological and Social Life</td>
<td>126</td>
</tr>
<tr>
<td>5.4 Late Dorset and the Question of Contact</td>
<td>130</td>
</tr>
<tr>
<td>5.4.1 Inuit tales of the Tunit</td>
<td>131</td>
</tr>
<tr>
<td>5.4.2 Genetic and Osteological Investigations</td>
<td>132</td>
</tr>
<tr>
<td>5.4.3 The Sadlermiut and Ammassalimmiut</td>
<td>134</td>
</tr>
<tr>
<td>5.4.4 The Brooman Point and Qeqertaaraq Sites</td>
<td>136</td>
</tr>
<tr>
<td>5.4.5 Technological Transfers?</td>
<td>137</td>
</tr>
<tr>
<td>5.4.6 Dating the Thule Inuit Migration into the Eastern Arctic</td>
<td>141</td>
</tr>
<tr>
<td>5.4.7 The Dorset and Norse</td>
<td>144</td>
</tr>
<tr>
<td>5.4.8 Summarising the Question of Contact</td>
<td>148</td>
</tr>
<tr>
<td>5.5 Summary</td>
<td>149</td>
</tr>
<tr>
<td><strong>CHAPTER 6: LATE DORSET DOMESTIC STRUCTURES</strong></td>
<td></td>
</tr>
<tr>
<td>6.1 Introduction</td>
<td>151</td>
</tr>
<tr>
<td>6.2 Constraints of the Analysis</td>
<td>151</td>
</tr>
<tr>
<td>6.3 Architectural Terminology</td>
<td>152</td>
</tr>
<tr>
<td>6.3.1 Semi-Subterranean and Surface Structures</td>
<td>153</td>
</tr>
<tr>
<td>6.3.2 Axial and Central Features</td>
<td>153</td>
</tr>
<tr>
<td>6.3.3 Box Hearths, Hearths, and Hearth Areas</td>
<td>157</td>
</tr>
</tbody>
</table>
6.3.4 Pot Supports and Platforms 159
6.3.5 Entrance Passages and Cold-Traps 159
6.3.6 Qarmat 162
6.3.7 Snow Structures 164

6.4 Late Dorset Architectural Remains from the Low Arctic 165
   6.4.1 Tikilik / Arnaquaaksaa, Foxe Basin (NiHf-4) 165
   6.4.2 NiHi-45, Foxe Basin 166
   6.4.3 Newell Sound-4, Frobisher Bay (KgDl-4) 167
   6.4.4 Cordeau / DIA.1, Diana Bay (JfEl-1) 168
   6.4.5 Tuvaaluk, Diana Bay (JfEl-4) 168
   6.4.6 Gulf Hazard-1, Richmond Gulf (HaGd-4) 169
   6.4.7 Gulf Hazard-8, Richmond Gulf (HaGd-11) 169
   6.4.8 Summary 171

6.5 Late Dorset Architectural Remains from the High Arctic 171
   6.5.1 Franklin Pierce, Franklin Pierce Bay, Ellesmere Island (SiFi-4) 171
   6.5.2 Longhouse, Knud Peninsula, Ellesmere Island (SgFm-3) 173
   6.5.3 Oldsquaw, Little Skraeling Island, Ellesmere Island (SgFk-18) 173
   6.5.4 Piper, Johan Peninsula, Ellesmere Island (SfFk-39) 174
   6.5.5 Snowdrift Village, Dundas Island (RaJu-1) 175
   6.5.6 RaJu-2, Dundas Island 177
   6.5.7 Maze Village, Dundas Island (RaJu-3) 177
   6.5.8 RaJu-4, Dundas Island 178
   6.5.9 McCormick Inlet, Melville Island (QkPa-1) 178
   6.5.10 Tote Road, North Devon Lowlands, Devon Island (QkHn-37) 179
   6.5.11 Arvik, Little Cornwallis Island (QjJx-1) 179
   6.5.12 Tasiarulik, Little Cornwallis Island (QiLf-25) 181
   6.5.13 Brooman Point, Bathurst Island (QiLd-1) 182
   6.5.14 Summary 183

6.6 Late Dorset Architectural Remains from Greenland 183
   6.6.1 Qeqertaaraq, Inglefield Land 184
   6.6.2 Snowdrift, Inglefield Land 186
   6.6.3 Qallunatalik / Polaris, Inglefield Land 187
   6.6.4 Summary 189

6.7 Late Dorset Architectural Remains from Labrador 190
   6.7.1 Avayalik-1 (JaDb-10) 190
   6.7.2 Peabody Point (IiCw-1) 192
   6.7.3 Big Head 6 (IiCw-8) 192
   6.7.4 Beacon Island 5 (IiCv-6) 192
   6.7.5 Shuldham Island 9 (IdCq-22) 193
   6.7.6 Okak 3 (HjCl-3) 195
   6.7.7 Summary 196
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.8 Discussion</td>
<td>197</td>
</tr>
<tr>
<td>6.8.1 Chronological Developments?</td>
<td>197</td>
</tr>
<tr>
<td>6.8.2 Regional Patterns and Anomalies?</td>
<td>205</td>
</tr>
<tr>
<td>6.9 Setting the Stage for the Case Studies</td>
<td>212</td>
</tr>
<tr>
<td><strong>CHAPTER 7: CASE STUDY 1 – HOUSE 6, BELL SITE (NiNg-2), SOUTH-EASTERN VICTORIA ISLAND</strong></td>
<td></td>
</tr>
<tr>
<td>7.1 Introduction</td>
<td>215</td>
</tr>
<tr>
<td>7.2 The Physical Environment of South-eastern Victoria Island</td>
<td>215</td>
</tr>
<tr>
<td>7.3 Potential Range of Resources at Iqalukturruq</td>
<td>217</td>
</tr>
<tr>
<td>7.3.1 Terrestrial Resources</td>
<td>220</td>
</tr>
<tr>
<td>7.3.2 Avian Resources</td>
<td>223</td>
</tr>
<tr>
<td>7.3.3 Lacustrine and Riverine Resources</td>
<td>223</td>
</tr>
<tr>
<td>7.3.4 Marine Resources</td>
<td>226</td>
</tr>
<tr>
<td>7.3.5 Organic and Inorganic Materials Suitable for Architectural Purposes</td>
<td>227</td>
</tr>
<tr>
<td>7.3.6 Summary and Discussion of Available Resources</td>
<td>230</td>
</tr>
<tr>
<td>7.4 The Bell Site (NiNg-2)</td>
<td>231</td>
</tr>
<tr>
<td>7.4.1 Physical Setting</td>
<td>232</td>
</tr>
<tr>
<td>7.4.2 Cultural Setting</td>
<td>237</td>
</tr>
<tr>
<td>7.5 Excavation of House 6</td>
<td>239</td>
</tr>
<tr>
<td>7.5.1 Late Dorset Architectural Forms Present at the Site</td>
<td>241</td>
</tr>
<tr>
<td>7.5.2 Selecting the Structure</td>
<td>241</td>
</tr>
<tr>
<td>7.5.3 Appearance of the Structure Prior to Excavation</td>
<td>242</td>
</tr>
<tr>
<td>7.5.4 Excavation Strategy and Methodology</td>
<td>242</td>
</tr>
<tr>
<td>7.5.5 Feature Stratigraphy</td>
<td>243</td>
</tr>
<tr>
<td>7.5.6 Previous Archaeological Activity at House 6</td>
<td>247</td>
</tr>
<tr>
<td>7.5.7 Defining the Peripheral Boundaries of House 6</td>
<td>248</td>
</tr>
<tr>
<td>7.5.8 Northwest Corner and Rear Wall Construction</td>
<td>250</td>
</tr>
<tr>
<td>7.5.9 The Entrance</td>
<td>252</td>
</tr>
<tr>
<td>7.5.10 Identifying the Living Surface and Activity Areas Inside the Structure</td>
<td>255</td>
</tr>
<tr>
<td>7.5.11 House 6 Superstructure</td>
<td>256</td>
</tr>
<tr>
<td>7.5.12 The Abandonment and Post-Occupation Life of House 6</td>
<td>257</td>
</tr>
<tr>
<td>7.5.13 Discussion</td>
<td>260</td>
</tr>
<tr>
<td>7.6 Making Sense of House 6</td>
<td>261</td>
</tr>
<tr>
<td>7.6.1 The House 6 Faunal Sample</td>
<td>261</td>
</tr>
<tr>
<td>7.6.2 The House 6 Artefact Assemblage</td>
<td>262</td>
</tr>
<tr>
<td>7.6.3 Suggested Season of Occupation</td>
<td>265</td>
</tr>
<tr>
<td>7.6.4 Suggested Length of Occupation</td>
<td>268</td>
</tr>
</tbody>
</table>
CHAPTER 9: CASE STUDY 3 – KdDq-7-4, TANFIELD VALLEY, NORTH BAY, SOUTH-EASTERN BAFFIN ISLAND

9.1 Introduction

9.2 The Physical Environment of South-eastern Baffin Island

9.3 Potential Range of Resources in North Bay
   9.3.1 Terrestrial Resources
   9.3.2 Avian Resources
   9.3.3 Lacustrine and Riverine Resources
   9.3.4 Marine Resources
   9.3.5 Organic and Inorganic Materials Suitable for Architectural Purposes
   9.3.6 Summary and Discussion

9.4 The Tanfield Valley and KdDq-7-4
   9.4.1 Physical Setting
   9.4.2 Cultural Setting
   9.4.3 Dorset Architectural Forms Identified or Inferred in the Tanfield Valley
   9.4.4 Something Different: “Anomalous” Finds in the Valley

9.5 Excavation Activities at KdDq-7-4
   9.5.1 Identification and Context of KdDq-7-4
   9.5.2 Excavation Strategy and Methodology
   9.5.3 Under the Surface
   9.5.4 Stratigraphy Identified During the Excavation
   9.5.5 Summary

9.6 Interpreting KdDq-7-4
   9.6.1 The Faunal Sample
   9.6.2 The Artefact Assemblage
      9.6.2.1 The Level 5 Occupation
      9.6.2.2 The Level 3 Occupation
   9.6.3 Understanding the Architecture with the Aid of Stratigraphy and Artefacts
   9.6.4 Who is Responsible for KdDq-7-4?
   9.6.5 Suggested Season and Length of Occupation for Level 3

9.7 Summary
CHAPTER 10: IDENTIFYING AND UNDERSTANDING THE LATE DORSET TECHNOLOGY OF ARCHITECTURE

10.1 Introduction 415

10.2 Searching for Technological Traditions Using a Macro-Scale Approach 417
   10.2.1 The Architectural Attributes 418

10.3 Recognising Late Dorset Architectural Traditions: technology at the macro-scale 442
   10.3.1 Patterns of Behaviour and Technical Connaissance Knowledge 443
   10.3.2 Organisation of Late Dorset Domestic Architecture: a macro-scale view 449

10.4 Investigating Architectural Technology Using a Micro-scale Approach 450
   10.4.1 Insights from House 6, Bell Site, Victoria Island 450
   10.4.2 Insights from N72, Nunguvik, North Baffin Island 456
   10.4.3 Insights from KdDq-7-4, Tanfield Valley, Southern Baffin Island 459

10.5 Discussion: architecture and agency; micro-scale behaviours and macro-scale technologies 461

CHAPTER 11: CONCLUSIONS

11.1 Introduction 465

11.2 Late Dorset Architectural Technology and Social Organisation 466

11.3 Directions for Future Work 468

11.4 Final Thoughts 471

REFERENCES CITED 473

APPENDIX: PALAEOESKIMO DOMESTIC ARCHITECTURE REMAINS, CIRCA 4500 B.P. – 1500 B.P. 557
LIST OF FIGURES

Figure 1.1 – Geographic range of Late Dorset culture. 14

Figure 3.1 – Various ways in which the “Arctic” has been defined. The 10°C Celsius July isotherm is used in this dissertation. 48

Figure 3.2 – Location of major polynyas and leads in the Eastern Arctic. 54

Figure 3.3 – Tidal variations near Kimmirut, southern Baffin Island. 59

Figure 6.1 – Illustration of an 18th century Saami dwelling (from Leem 1767). Compare this midline axial feature containing a central hearth and storage compartments with the Palaeoeskimo example shown in Figure 6.2a. 155

Figure 6.2 – Axial features and central feature. A) 'Classic' box hearth axial feature with a double row of uprights defining the hearth area (Knuth 1967: Plate 7a), B) Paved central feature (Schledermann 1990: Figure 71), C) 'Negative' midline consisting of pit features (Harp 1976: Figure 8a). 156

Figure 6.3 – Variants of the defined hearth. A) Freestanding 3-sided box hearth (adapted from Badgley 1980: Figure 4), B) Box hearth with boiling stones (Grønnow and Jensen 2003: Figure 5.65), C) Boulder-defined hearth (Renouf 1994: Figure 12). 158

Figure 6.4 – Pot supports and lamp platforms. A) Stand-alone pot support inside dwelling (photo by author), B) Pot support inside axial feature, note left upright support’s notched top (Rowley and Rowley 1997: Figure 4), C) Lamp platform with pecked base (Hinnerson Berglund 2003: Figure 6). 160

Figure 6.5 – Plan of the Late Dorset structure at NiHf-45 (Murray 1996: Figure 4.9). Note entrance passage to right and rear wall expansion to left. 161

Figure 6.6 – Reconstructed Thule Inuit house at the M-1 site (QeJu-1) showing the cold-trap entrance. 162

Figure 6.7 – Low Arctic Late Dorset sites discussed in the text. 166

Figure 6.8 – House 1 from Gulf Hazard-8 (HaGd-11) (Harp 1976: Figure 8b). Harp (1976:132) referred to this structure as “a thing of beauty”. 170

Figure 6.9 – High Arctic and Greenland Late Dorset sites discussed in the text. 172

Figure 6.10 – Feature 1 from the Oldsquaw site (SgFk-18) (Schledermann 1990: Figure 103). A possible unstructured hearth area was identified in the
structure’s north-western corner.

**Figure 6.11** – D-shaped Structure 1 from the Snowdrift Village site (RaJu-1) (McGhee 1981a: Figure 24). Note the large terminus or end stone placed immediately north of the axial feature.

**Figure 6.12** – Structure 1 from the Qallunatalik / Polaris site, Greenland (Grønnnow 1999: Figure 44). Note the concentric burnt blubber mark on the lamp platform which indicates the size and shape of the vessel.

**Figure 6.13** - Labrador Late Dorset sites discussed in the text.

**Figure 6.14** – Shuldham Island 9 (IdCq-22) House 2 (Thomson 1988: Figure 11).

**Figure 6.15** – Semi-subterranean structure with heavily built axial feature at Okak 3 (HjCl-3). Note paving stones bordering the axial feature’s outer edge.

**Figure 6.16** – Calibrated (CALIB 5.0.1) radiocarbon dated Late Dorset structures by region.

**Figure 7.1** – Victoria Island and area, showing locations mentioned in the text.

**Figure 7.2** – Iqaluktuuq sites mentioned in the text.

**Figure 7.3** – Looking from the rear of House 6 toward Ferguson Lake.

**Figure 7.4** – View of House 6 looking north. Only the high ground north of the Ekalluk River (right background) is visible from this area of the site.

**Figure 7.5** – Aerial view of the Bell site showing House 6 under excavation (left foreground). Four Thule Inuit semi-subterranean structures (recognisable by their stone architecture) are visible along the terrace edge toward the river.

**Figure 7.6** – Map of the Bell site indicating the position of House 6.

**Figure 7.7** – Plan drawing of House 6.

**Figure 7.8** – Stratigraphic profiles of House 6.

**Figure 7.9** – Detail of the north-western corner and rear (western) wall of House 6.

**Figure 7.10a** – Cribbing stones in unit N54W56 added to reinforce the rear wall and prevent slumpage.

**Figure 7.10b** – Another view of the cribbing stones lining part of the rear alcove area in units N54W56 (foreground) and N55W56 (rear).
Figure 7.11 – Section of the rear wall that was built up using layers of sod and small stones (the foreground floor area has already been taken to sterile subsoil).

Figure 8.1 – Map of Baffin Island showing locations mentioned in the text.

Figure 8.2 – Location of the May floe edge along eastern Lancaster Sound and northern Baffin Island.

Figure 8.3 – Mountainous north Baffin Island terrain.

Figure 8.4 – Broad inland plain stretching westward away from the coast and the Nunguvik site.

Figure 8.5 – Typical Thule Inuit semi-subterranean structure at Nunguvik (note bowhead whale crania inside the house and outside the wall berms).

Figure 8.6 – Modern stones caches along Nunguvik (PgHb-1) shoreline near N72.

Figure 8.7 – Nunguvik site map (based on Mary-Rousselière 1976: Figure 3).

Figure 8.8 – N46 and N71 (adapted from Mary-Rousselière 1976: Figures 4 and 7).

Figure 8.9 – View of N72 under excavation looking southwest (open N71 excavations visible at top of picture, N73 excavations in right forefront). White line indicates raised outer edge of perimeter wall berm, inner wall slope visible in unit in the centre of the picture.

Figure 8.10 – Field sketch of N72 and N73 compiled from illustrations made after the 1984 and 1987 field seasons at Nunguvik (Mary-Rousselière n.d.a and n.d.d).

Figure 8.11 – Surface appearance of N72 in 2000 (based on sketch by Martin Appelt). Mary-Rousselière’s excavations in N72 and N73 are shown. Inset picture (Mary-Rousselière 2002: Figure 4) with N72 (approximate centre of photo) in relation to N73 and N71.

Figure 8.12 – South to north cross-section of N72 (using west facing walls) showing naturally defined stratigraphic levels.

Figure 8.13 – East to west cross-section of N72 (using south facing walls) showing naturally defined stratigraphic levels.

Figure 8.14 – Unit D2 (east-facing wall) and unit F5 (north facing wall) showing cultural deposits at different depths.
Figure 8.15 – Schematic representation of occupations and presumed hiatuses at N72 (not to scale).

Figure 8.16 – Plan of N72 architecture.

Figure 8.17 – Detail of N72 interior showing central feature and associated items of material culture.

Figure 9.1 – Map of Baffin Island showing locations mentioned in the text.

Figure 9.2 – Map of the North Bay region showing locations mentioned in the text, as well as the approximate location of the winter floe edge.

Figure 9.3 – Map of the ‘Tanfield Valley’ showing the identified sites (note contour lines are in feet).

Figure 9.4 – Looking southwest to KdDq-7-4, indicated by the metal excavation pegs in the centre of the photo. The ridge to the right demarcates the eastern limit of the Nanook site (KdD-9), while Site 18 (KdDq-18) is located behind the white excavation tent. The Tanfield site complex (including Morrison, KdDq-7-3, and Tanfield, KdDq-7-1), are located to the left of the shot.

Figure 9.5 – Looking east to KdDq-7-4. The de-vegetated area in the centre-left of the photo is where sod was removed in preparation for a core sample (not taken). The largest of the tundra ponds present in this area of the Tanfield Valley (refer to Figure 9.3) is visible in the upper left of the photo.

Figure 9.6 – Level 3 plan drawing of the 2003 excavations at KdDq-7-4.

Figure 9.7 – KdDq-7-4 north-south stratigraphic profiles of rows W51, W52, and W53.

Figure 9.8 – KdDq-7-4 west-east stratigraphic profiles for rows N53, N52, and N51.

Figure 9.9 – Plan drawing of the bottom of Level 5 deposits in units N53W53 (top) and N52W53 (bottom) showing the position of possible paving stones.

Figure 9.10 – Photograph of the eastern baulk of unit N53W52 showing the patterning of dark organic and light (sterile) sand which may represent the remains of sod blocks used in wall construction.

Figure 9.11 – Position of hold-down stones associated with a possible surface habitation feature. Three hearth areas are indicated in units N51W51, N51W53, and N52W53.

Figure 10.1 – Architectural attributes (and associated elements) used in analysis.
Figure 10.2a – Dwelling floor type. 420

Figure 10.2b – Dwelling floor type and season of occupation. 421

Figure 10.3 – Identified floor treatment. 422

Figure 10.4 – Number of identified sleeping areas. 424

Figure 10.5a – Dwelling floor shape. 425

Figure 10.5b – Dwelling floor shape and season of occupation. 426

Figure 10.6 – Interior dwelling size. 429

Figure 10.7 – Occurrence of isolated internal features. 431

Figure 10.8 – Types of midline feature. 432

Figure 10.9 – Orientation of midline feature to water / shoreline. 433

Figure 10.10 – Midline feature alignment to dwelling axis. 435

Figure 10.11 – Occurrence of axial features with border stones. 436

Figure 10.12 – Occurrence of paving stones inside axial features. 437

Figure 10.13 – Occurrence of end / terminus stones in axial features. 438

Figure 10.14 – Occurrence of heat / light sources inside axial features. 440

Figure 10.15 – Identified occupation length for the Late Dorset dwellings. 441
LIST OF TABLES

Table 6.1 – Radiocarbon dates from structures discussed in Chapter 6, calibrated using CALIB 5.0.1 (* marine / terrestrial origin not determined). 202-204

Table 6.2 – Late Dorset dwellings by region (S = surface, SS = semi-subterranean, SSS = shallowly semi-subterranean). 207-211


Table 7.2 – Artefacts from the Level 4 deposits inside House 6 (* flakes not included in artefact totals). 263


Table 8.2 – Dorset and early Thule radiocarbon dates from Nunguvik (calibrated using CALIB 5.02). 299

Table 8.3 – Artefacts arranged by occupation phase (L =lithics, WW/O = worked wood or organics, UW =unworked wood, F =flakes). As noted in Section 8.5.4, excavation levels were arbitrary and do not match events preserved in the dwelling. Because of this, use phases were defined to better represent the dwelling’s history and this table follows the phases previously described. 343

Table 8.4 – Artefacts from the 2001 season of excavation (* flakes not included in final totals). 345


Table 9.2 – KdDq-7-4 artefacts by category (all levels; flakes are shown in Table 9.4). 398

Table 9.3 – KdDq-7-4 artefacts by occupation level. 401

Table 9.4 – Flakes from KdDq-7-4, by unit and material. 402

Table 10.1 – Occurrence of architectural attributes in the Late Dorset dwellings used in analysis. 445

Table 10.2 – Occurrence of architectural elements in midline features. 448
CHAPTER 1 – INTRODUCTION TO THE RESEARCH

1.1 Introduction
Architecture and culture are intimately associated and, as noted by numerous researchers (e.g. Rapoport 1969a, 1980; McGuire and Schiffer 1983; Hillier and Hanson 1984; Kamp 1993), it is impossible to examine one without considering the influence of the other. Indeed, as Rapoport (1969a:46) has remarked, “building a house is a cultural phenomenon, its form and organization are greatly influenced by the cultural milieu to which it belongs”. This statement highlights the importance of recognising that dwellings are not simply passive physical spaces but are in fact meaning-laden places where individuals interact socially on a daily basis. When the architect who designs the dwelling is also its inhabitant, the form and design of that structure can be expected to closely embody the builder’s ideologies and social relationships in a way not always apparent in other forms of material culture. Given this relationship, this dissertation explores how the domestic architectural remains built and occupied by people known archaeologically as the Late Dorset, a prehistoric arctic-adapted hunter-gatherer group, can be used to inform on their larger socio-cultural world.

In order for domestic dwellings to be truly useful for understanding social organisation, I adopt two theoretical and methodological standpoints at the outset of this study: the first is that architectural remains are and must always be considered as artefacts, manufactured objects that formed one aspect of a culture’s overall adaptive system. Although this may seem to be an obvious point, it is clear that architectural remains are not always thought of or interpreted in this manner (Gilman [1987] first noted this, and the situation remains largely unchanged). By deliberately viewing architecture as one kind of artefact, associated with its own production sequence and life history, research can more naturally move to investigate the social and functional influences which acted on the artefact-dwelling as it was designed, built, and used.

The second position taken is that architecture is a socially constructed and mediated form of technology. Because technological systems are inseparable from the socio-cultural context in which they were designed and propagated, it is possible to link the archaeologically-visible actions and behaviours responsible for all artefacts with the more elusive social and symbolic constructs of which they were an intimate part (e.g. Lemonnier 1989; Lechtman 1993; Dobres 1995a). By
grounding these action sequences materially, we can begin to identify, at all stages of production, where decisions were made, how those choices were expressed archaeologically, and ultimately, the determining role played by social and / or environmental factors in a dwelling’s creation. This approach is invaluable because it consciously ties changes and continuities identified in the material culture record with the people who actively produced them (see discussion in Dobres and Robb [2005]).

It is important to note the view of technology taken here is purposefully broad and follows closely that first defined by Lechtman (1977, 1984, 1993, 1999; see also discussion in Miller [2006]). She suggests that technologies are “part and parcel of the mainstream of cultural inclinations and are irrevocably bound to the social setting in which they arise” (Lechtman and Steinburg 1979:136-137). This standpoint stresses the learned aspect of technology and draws attention to the less visible, but certainly not unrecognisable, processes or techniques of creation while purposefully avoiding an over-emphasis on the end product or ‘hardware’ as encountered archaeologically. Following this perspective, artefacts are not seen as the be all and end all of analysis, rather, they become a venue through which culturally-guided and socially dynamic actions were physically manifested (Dobres and Hoffman 1994:222-226).

1.2 Alternate Strategies for Exploring Architectural Remains
The approach I use to investigate architectural remains is not a standard analytical approach for exploring dwellings. While the theoretical and methodological perspectives that I apply are discussed briefly in this chapter and are more fully expounded in the following, this section briefly outlines several alternate models that have been used by others to examine the ‘built environment’, an expansive and inclusive term referring to any purposeful alteration of the natural world (e.g. Lawrence and Low 1990:454). The approaches which are summarised below all seek to understand how artificially created spaces (i.e. structures) influence, and are influenced by, those who work and live within their confines. Much of this theory has been developed by researchers who are interested in understanding why particular spaces are used in one manner but not another, as well as how aspects of architecture including spatial design can influence interpersonal relations.

Anthropologists have been aware of the inter-relatedness of architecture and culture since
at least the turn of the 20th century (e.g. Morgan 1881), and most early studies focussed on how social space can be used to discover aspects of social structure (e.g. Durkheim 1893; Mauss 1906). Ethnographic work has been instrumental in shaping our perceptions of architecture and the built environment, although as noted by Lawrence and Low (1990:457), most of these studies were directed from a ‘salvage’ perspective and generally did not actively seek to explain any variations observed between architectural forms. Beginning in the 1920s, however, several ethnographers working amongst various aboriginal societies adapted and developed some of the ideas first discussed by Mauss and Durkheim. Dubbed structural-functionalists, practitioners realised that architecture must not be isolated from its socio-cultural surroundings but instead should be recognised as a key component of each society’s unique social and symbolic ordering (see Lawrence and Low 1990:457).

Conceiving of architecture in this way was crucial as it allowed researchers to not only physically ‘see’ the social and symbolic perceptions held by the culture they were examining, but to also observe the manner in which the built environment affected the enactment of various social relationships on a daily basis. Taking an interest in explaining, not merely describing, variation along multi-causal lines (following Mauss [1906], who rejected moncausation), such studies examined the influence of a variety of factors and recognised that negotiations were often involved which could lead to compromises between wants or desires and basic needs (refer to Lawrence and Low 1990:458-460). Conflict and negotiation were most commonly identified as occurring with reference to a structure’s anticipated function and use life, number and composition of occupants, and building material availability and use (e.g. Alexander 1964; Rapoport 1969a, 1969b, 1980; McGuire and Schiffer 1983). The intentions of the designer(s) during construction were therefore viewed as key to understanding how and why a structure took the form that it did (see Ward 1996:40).

1.2.1 Structuralism, Habitus, and Structuration
The anthropological application of structuralism was originally outlined by Levi-Strauss (1949, 1958, 1969, 1970), who, following de Saussure (1983 [1916]), advocated the idea of binary oppositions in all aspects of daily life (i.e. matrilineal / patrilineal, conscious / subconscious, raw / cooked). Carsten and Hugh-Jones (1995:8-10) have observed that Levi-Strauss viewed dwellings
as the place in which the dichotomies defining a cultural group, which he identified as a potential source of tension, were harmonised and deliberately naturalised or made acceptable. The spatial relationships present within dwellings were seen as an almost direct representation of group social structure (Levi-Strauss 1963:534) and, equally, as an allegory for social and symbolic relationships (Lawrence and Low 1990:457). Levi-Strauss also fetishised dwellings, viewing them as encoded metaphors whose form and manner of construction embodied a variety of complex social relationships already present in the society in question (Carsten and Hugh-Jones 1995:2). The idea of dwelling as metaphor or anthropomorphisation, representing (most commonly) an animal is a relatively widespread interpretation (e.g. Ackerman 1990; Fienup-Riordan 1983, 1994; Plumet 1989; Lowenstein 1993); although the main problem with such analyses is that they are innately untestable and cannot be readily proved or disproved.

The form of structuralism promoted by Levi-Strauss has been criticised on several levels, most notably for its over-reliance on cultural diffusion as the explanatory mechanism for variation (i.e. Kroeber 1939). Researchers including Bourdieu (1977) and Giddens (1984) have also been critical of the fact that Levi-Strauss’ brand of structuralism does not allow any room for free will. In response to this latter critique, both have proposed a reformulation of the original model (these approaches are often referred to as ‘neo-structuralism’, see Hodder [2003] for discussion) by introducing the concepts of praxis / habitus and structuration.

Bourdieu (1977, 1984) has suggested that the binary oppositions which characterised the original concept of structuralism should be re-conceptualised as mnemonic devices. According to Bourdieu, such devices are developed to guide culture members in the proper ways to act and respond in a variety of social settings. Working from the idea of habitus (systems of dispositions or schemes which define and perpetuate group strategies); Bourdieu considers architecture to be a physical manifestation of those schemes. In his classic analysis of Berber houses, Bourdieu drew a link between the organisation of the dwellings, classified into lower / darker areas and higher / brighter locations, with socially defined concepts of nature and culture (Bourdieu 1977:99). According to this interpretation, the socially-constructed oppositions of nature and culture, which are fully unconscious, were manifested in the dwelling in a physical sense so that its occupants could be constantly and subconsciously reminded of how the physical and social worlds around
them should be conceived and distinguished.

Giddens’ (1979, 1984, 1993) approach considers the routinisation of daily behaviours, and specifically the rules that dictate various activities, to be the way in which the relationship between material space and immaterial social behaviours are understood. Routines of daily activity, principally the association between specific activities and interactions with particular locations within the built environment, practised over long periods of time, are what define a society’s social organisation and internal structure and are referred to as structuration. Unlike Bourdieu’s approach, which has been criticised (e.g. Kronenfeld and Decker 1979) for giving structure pre-eminence and virtually negating the role of agency and innovation, Giddens envisions a level of ‘practical consciousness’ whereby individual members of a group possessed “non-discursive, but not unconscious, knowledge of social institutions” (Giddens 1979:24). This view specifically makes linkages between individual agents and the larger social composition (Lawrence and Low 1990:489). The relationship between these approaches and the chaîne opératoire are further discussed in Chapter 2.1.4.

1.2.2 Proxemic
The proxemic approach advocates the idea that the creation and maintenance of boundaries influences spatial behaviour and that different societies can develop their own unique rules or codes of acceptable behaviour (Hall 1959, 1966). Spatial behaviour is seen as a form of non-verbal transmission which communicates to both participants and observers, through the use and organisation of space, what are acceptable and unacceptable cultural behaviours. The obvious problem with this theory is that it attributes all behaviour to a single cause, boundary maintenance, and limits the ways in which those boundaries are defined and expressed.

1.2.3 Dramaturgical
This model interprets the use of space by means of theatrical concepts and language, relying on notions of backstage (private) and frontstage (public) to recognise social concepts and rules of behaviour (Goffman 1959, 1974). According to Goffman, where in a structure a particular behaviour is enacted in a socially acceptable manner is determined by these basic boundaries (or “frames”); deeply located spaces are associated with greater power, while locations positioned
closer to the ‘frontstage’ are seen as less significant. Actions and behaviours taking place in inappropriate locations are referred to as ‘breaking frame’ (Goffman 1974:345).

While the dramaturgical model is certainly a novel application of theory, Hillier and Hanson (1984:151) have noted that a major fault with the concept is its lack of universality. They point out that the association between ‘deep’ and ‘power’ has only limited applicability, citing the case of modern hospitals where ‘powerless’ patients are located more deeply than are the ‘powerful’ doctors who traverse front and rear areas.

1.2.4 Grammatical
The grammatical approach dictates that the analysis and interpretation of space be conducted by reducing it into its basic components, with the understanding that spatial behaviour, like language, follows a series of syntactic rules (or grammars). Its main advocates are Glassie (1975) and Hillier and Hanson (1984), who both consider changes in architectural plan and spatial design to be indicators of alterations to the underlying social structure. Hillier et al. (1978:348) portray spatial organisation and social structures as ‘morphic languages’ understandable only by discovering the “principles of pattern generation in both”. Using this doctrine, Glassie (1975) examined changing styles of vernacular architecture in Virginia beginning in the 17th century and continuing into the 18th century. He concluded that a shift from open concept spatial designs (typical of 17th century architecture) to more enclosed interiors as the 18th century progressed was tied to a parallel rise in individualism (and a reduction in communalism) in the region.

Hillier and Hanson (1984; also Hillier et al. 1978) support a grammatical approach which attempts to apply more mathematical methods (although its mathematical reliability has been challenged by Ratti [2004; see also Hillier and Penn 2004]). Their use of the grammatical approach operates from the premise that architecture and language are governed by similar rules and that architecture is in fact a pseudo-grammar. Hillier and Hanson (1984:145) see architecture as being dominated by solidarities: transpatial, where spatial organisation is based upon exclusion of non-residents and the control of access to others; and spatial, where the organisation of space is based upon inclusive ideas of meetings and a lessening of control over movement. Understanding which solidarity was in operation provides a means to understand how and why designs were or were not employed.
However, Leach (1978) and Parker-Pearson and Richards (1994) have both criticised this approach for its assumption that similar strategies and concepts of space were in operation amongst all societies. They also question the ability of the model to make reliable or informed inferences on spatial behaviour without using ethnographic data to ‘prove’ those suggestions.

1.2.5 Ergonomic
The ergonomic model considers spatial efficiency, or the uses to which a space can potentially be put, as the key determinant of architectural organisation (Oswald 1984). This approach has been used in several ethnoarchaeological studies (e.g. Binford 1978a; Kent 1984; Gould and Yellen 1987) which all argued that the physical or mechanical properties of a given space determined how and when it was used. Mechanical properties identified in these studies include the number of times an activity is practised (and for how long), the size of any associated equipment or necessary materials, and the number of people required for the activity to be successfully undertaken.

A serious criticism of the model is its total dismissal of social factors as influences on the determination of space use (both Binford and Kent deny the influence of social segregation). Binford (1978:354) is clear in his rejection of social considerations, noting that “we can build a theory of space use and we can understand spatial patterning without recourse to vague notions of social context”. A focus only on efficiency and mechanics makes this model strongly monocausal, which weakens any conclusions regarding the design and use of space its advocates claim to identify. This is exemplified by the differing deductions reached by Whitelaw (1983) and Gould and Yellen (1987) concerning the spatial organisation of hunter-gatherer campsites. Both sought to understand why camps in areas with large predators are typically arranged in a circle and with dwelling entrances oriented inward. Whereas Gould and Yellen (1987) concluded that such an arrangement was solely a response to fear of predation, Whitelaw argued that social mechanisms, designed to prevent the hoarding of resources by any one household, were also at play.

1.2.6 Behavioural Archaeology
This approach was developed chiefly by Michael Brian Schiffer (1976, 1992, 1995, 2001, 2002,
and is intended to be a broadly applicable technique for analysing all aspects of material culture. By defining archaeology as “the study of the relationships between human behavior and material culture” (Reid et al. 1975:864), behavioural archaeology proponents clearly favour examining the connections between people and the material culture that they produced. A key part of the approach is a conscientious distinction between the systemic (living) context in which various pieces of material culture were produced and the archaeological context in which those artefacts are discovered (Schiffer 1972). In order to understand the relationship between the two contexts, as well as to appreciate why material culture variability can occur, Schiffer (1995:24) has argued that researchers must begin by identifying regularities or patterns as a means to establish a general science of behaviour. Viewing the archaeological record as a distorted representation of the living world in which objects were produced, supporters of this approach argue that the intervening stages which occurred as artefacts moved between systemic and archaeological contexts must be identified and understood in order to minimise misrepresentations and sharpen subsequent interpretations.

Given this concern, Schiffer (1987) has devoted considerable attention to investigating the roles played by cultural (c-transforms) and non-cultural (n-transforms) formation processes in creating the archaeological record as a way to identify how the original systemic context was ‘distorted’. As a part of this approach, the life histories of the objects being studied (represented in behavioural chains) are examined (Schiffer 1975). Schiffer contends that it is only by first defining these correlates (specific processes which occur again and again given particular circumstances) that inferences regarding the interactions between people and their associated material culture can be recognised and specific behaviours isolated. Behaviouralists suggest that once specific inferences, derived from known environmental situations, are made, they can then be related back to the systemic context in which all recovered material culture items were produced, continuing a search for cultural universalities first initiated during the processual movement (Trigger 2006:426).

By attempting to discover patterns and variability in the archaeological record through examination of causal behaviours, behavioural archaeology forces attention to be focused on the
people who produced, used, and discarded the objects, thereby “emphasizing the study of relationships between people and their artefacts” (Schiffer 1996:644). Schiffer (1995:24) holds that the study of modern populations (via ethnographic and ethnoarchaeological methods), as well as the use of experimental archaeology, can help to reveal the presence of generalised patterns of behaviour (see also Reid et al. 1975:864-866). He suggests that it is only by observing what individuals actually did in systemic situations that inferences can be drawn concerning events represented archaeologically. The most notable application of this strategy is probably William Rathje’s Garbage Project (e.g. Rathje 1974; Wilk and Rathje 1982; Rathje et al. 1992; Rathje and Murphy 1992). This project attempted to trace patterns of use and discard behaviour in a modern urban population in order to develop generally applicable correlates which could help account for behavioural patterns and variations (although, as Hodder and Hutson [2003:35] note, this denies historical particularity).

However, while some of the methodology of the approach (especially that concerning formation processes) has been more-or-less widely accepted in archaeological circles, behavioural archaeology is not without its critics. The most vocal opponents tend to be evolutionary archaeologists (e.g. O’Brien et al. 1998; Broughton and O’Connell 1999), although Binford’s (1981) assessment of the approach remains perhaps the most damning. In Binford’s view, behavioural archaeology is an unsuitably inductive approach that focuses on identifying, rather than understanding, the formation processes at work on assemblages. He takes utter exception to Schiffer’s view of the archaeological record as a ‘distortion’ of the original cultural system, arguing that the “archaeological record can only be considered a distortion relative to some a priori set of expectations; certainly it is not a distortion of its own reality” (Binford 1981:200). Binford (1981:203-204) also notes that the methodology cannot distinguish deposits resulting from ‘successional’ usage of a site, when all or part of a previously abandoned area is reused as part of a distinct event, from so-called ‘de facto deposits’ (Schiffer 1987) laid down at the close of a single horizon occupation. Although Schiffer (1985) attempts to refute Binford’s opinion, Binford is correct in pointing out that any such confusion would result in significant ‘distortions’ of the sort that the behavioural approach seeks to avoid.

In terms of the research undertaken as part of this dissertation, behavioural archaeology
has other shortcomings which contribute to its unsuitability for the research questions I pose. Significantly, while behavioural archaeologists recognise that culture is learned and can influence technology (e.g. Schiffer and Skibo 1987:33-34), they generally do not consider culture to play an active or causative role in any variations or changes identified in those traditions (e.g. Schiffer 1996:647). Further, as typified in Schiffer and Skibo (1997), behavioural archaeology most frequently explains material culture variability as the result of a desire for greater optimisation in artefact performance. While Schiffer (1999) has more recently retreated from the idea of optimisation, the significance of symbolism and meaning, including consideration of the artisan’s intentions or beliefs, are still considered epiphenomenal and are completely discounted (see discussion in Hodder and Hutson [2003:33-34]). Finally, Schiffer et al. (2001:731; also Skobo and Schiffer 2008:10) suggest that their approach is more suitable than the chaîne opératoire technique because, as they contend, the latter only considers operational sequences occurring during actual manufacture. As discussed in Section 1.3 and extensively in Chapter 2, this is clearly not the case as the chaîne opératoire strategy can and is applied to all identifiable phases of a dwelling’s use life.

1.2.7 Summary of Alternate Frameworks for Architectural Analysis
The models included in this discussion share a number of features, although significant differences in scope and emphasis clearly indicate that each enjoys a unique theoretical vantage point. In all cases, day-to-day activities and routines of behaviour are viewed as important considerations which greatly affect the design and organisation of architecture and space usage. All models are also centred on the recognition that rules (or ‘frames’) exist which condition the behaviour and beliefs of a given society’s members; these rules are closely interlinked with specific spaces (i.e. what is deemed to be ‘appropriate’ behaviour varies based upon how that space is defined). Further, each acknowledges that architecture is designed and organised so that restrictions or rules imposed on the use of space are culturally meaningful and defined, but that those meanings can change so that what was inappropriate in one social setting might be considered acceptable in another.

At the same time, each of the approaches outlined in the preceding sub-sections is not without its own unique shortcomings. None was developed to specifically examine architecture,
its design, creation, and modification, in its own right (most models have been used to examine spatial and activity areas only), and none, to my knowledge, has been successfully adapted to examine variability and consistency within the form of the actual structural remains. This is not to say that such a modification is not possible (certainly, in its broadest sense, the concept of the built environment can include the actual creation process); simply that it has not been previously attempted and reported. Additional shortcomings, as outlined on a model-by-model basis, include a tendency to look for single causes to explain behaviours, a lack of consideration directed towards the role of agency and choice, a predilection towards minimising or discounting the influence of more esoteric concerns, and a propensity to look for patterns only on a large scale.

As discussed in the following sections (and again in Chapter 2.2.3 and throughout Chapter 10), in order to understand patterns of architectural variability and constancy, a multi-scaled analytical approach is required to first identify patterns before exploring the reasons for their existence, as well as their overall socio-cultural significance. As highlighted in the remainder of this chapter, and more fully discussed in the following, the analytical and methodological approach employed in this study views architecture as a socially meaningful technology. In order to parse this meaning, the choices and options available to and selected by architect-builders must first be identified, in this case through application of the chaîne opératoire. Only by tracing and contextualising architectural choices and decisions, which underlie all material culture remains, is it possible to explore and appreciate the potential factors which influenced the design and use of domestic architecture.

1.3 Framework of Research
Lemonnier’s (1992a:1-2) observation that technologies are “not only things and means used by societies to act upon their physical environment ... [but] are – like myths, marriage prohibitions, or exchange systems – social productions in themselves” echoes Lechtman’s (1977, 1984) earlier statements on the social underpinnings of technology. Because all technological products are created using socially learned techniques that are themselves based upon generally held mental schemas or templates (technological knowledge) incorporating social, symbolic, and functional knowledge, the identification of patterned behaviours within a society should indicate universally held traditions of production. Likewise, variations away from these norms, representing instances
where more unconventional options were chosen, can be recognised and reasons for their use (e.g. unavailability of a preferred choice, functional equivalency, experimentation, or an indicator of inexperience or inadequate knowledge) more fully investigated.

Identifying the points during the creation process where such decisions were made requires a methodological technique capable of the necessarily finely-scaled analysis through which behavioural patterns and irregularities can be recognised. As discussed in the following chapter, the approach used in this dissertation is based upon the concept of the *chaîne opératoire*. Literally translated as operational sequence, this approach advocates that the complete technological process leading to the production of an artefact be identified as fully as possible. As originally envisioned by Mauss (1935, 1979a), reconstructed *chaînes* should include the social contexts of actions as well as their physical results, an aspect of the concept underplayed by Leroi-Gourhan (1964, 1965a, 1993), who adapted the strategy for archaeological use (see Edmonds 1990 and Lemonnier 1992b).

In this study, the *chaîne opératoire* is employed as a methodology useful for discovering in detail the actions taken to create an object, in this case a domestic dwelling. By examining domestic architectural remains according to this technique, patterns of similarity and variability in behaviour can be identified; these behavioural patterns (as well as more anomalous actions) are what are then used to infer social organisation and group structure. Considering all technical actions as socially meaningful, even if that meaning is largely unconscious to its practitioners (see Lemonnier 1993:6), means that the sequence of production, once identified, allows researchers to better explore and understand the social world in which those strategies and choices were developed.

In particular, we should be able to see, in the widely held behaviours and strategies which occur again and again through time and across space, something of the prehistoric mind-view in which the technology was embodied and enacted by its agents (Lechtman 1977, 1984). It is these actions, which reveal aspects of prehistoric society including identity, social relationships, worldview, and social ordering, that are often more difficult to discover using purely processual approaches. By partnering a methodology based upon the *chaîne opératoire* with a theoretical framework that envisions architecture as a socially meaningful technology, it is possible use
patterns of architectural variability to better ‘see’ the social agents who conceived and constructed the dwellings. Application of the chaîne opératoire and its suitability for my research questions are discussed more fully in the subsequent chapter.

1.4 Research Goals and Data Sources
This dissertation focuses on the domestic architectural remains of the Late Dorset. Dorset culture, subsumed under the more general rubric of Late Palaeoeskimo, appeared in the Eastern Arctic at approximately 2500 B.P. and is typically distinguished from earlier Palaeoeskimo societies on the basis of larger and more intensively occupied sites, a reduction in overall mobility, alteration of hunting and processing technologies, a greater reliance on stored resources, and much more widespread use of semi-subterranean and often rectilinear dwellings (refer to Chapter 4.5). While details of their development from earlier Dorset remains unclear, it appears that Late Dorset developed in situ at circa 1500 B.P. in and around Foxe Basin and spread rapidly from there across much of the Eastern Arctic, including north-western Greenland (Figure 1.1). Despite this immense territory, most aspects of Dorset technology are very similar in form and style (McGhee 1996:200-201), although dwelling remains are a recognised exception (e.g. M.S. Maxwell 1980a:505).

Late Dorset continued in most regions until about 800 B.P., however, populations in some isolated areas may have persisted until as recently as 500 B.P. (Chapter 5). Even though changes in site use and architectural form are frequently used to demarcate Dorset from earlier populations, M.S. Maxwell (1985:217) remarked that “Too few Late Dorset sites have been excavated, and of these, few have been published in more than preliminary fashion”. Although this assessment was made almost 25 years ago, it remains valid as researchers have pursued other avenues of Dorset technological development. Despite more recent interest directed at aggregation sites where large communal ‘longhouse’ structures, unique to Late Dorset, were used (e.g. Appelt 1999; Damkjar 2000, 2005; Park 2003, Ryan 2003a; Friesen 2007), domestic remains represent a remarkably underutilised resource which has until quite recently been almost completely neglected.

Given such an oversight, this dissertation has three chief research goals: 1) to provide a synthesis of domestic architectural remains associated with the entire Eastern Arctic Early and
Late Palaeoeskimo sequence (*circa* 4500 – 500 B.P.); 2) to document patterns of variability and similarity in form between Late Dorset dwelling features throughout the Eastern Arctic; and, 3) to begin to explore the underlying causes for those behavioural patterns and discover how they can be used to infer details of Late Dorset social structure and group order.

![Figure 1.1 Geographic range of Late Dorset culture.](image)

**Figure 1.1** Geographic range of Late Dorset culture.

In order to achieve these objectives, data from two related sources are employed. The first and largest data class is derived from previously published information on dwelling remains from areas throughout the Eastern Arctic. As this data necessarily relied upon secondary sources of information, inclusion of individual dwellings was entirely dependent upon the quality of available
descriptions; for this reason, some structures whose architectural attributes were poorly depicted had to be excluded (this issue is discussed in more depth in Chapters 6.2 and 11.3). Although such disqualifications were frustrating and limited the number of dwellings from certain areas, the analysis conducted in this study required that architectural remains be well described and / or illustrated, as well as unambiguous. Evaluation of the published sources allowed over 50 domestic structures to be compiled for this work; this database constitutes the most comprehensive macro-scaled source of architectural information possible and helped me to identify architectural behaviours which occurred broadly across Late Dorset space and time.

The second data source consists of architectural information gathered from the careful interpretation of three dwellings whose excavation I either participated in or directed. These habitation features, each described and analysed separately as case studies (see Chapters 7 – 9), were meticulously recorded so that a very finely focussed site-specific interpretation of technological behaviour could be conducted. These micro-scale analyses permitted me to not only recognise when the architect-agents who constructed these habitations followed wider patterns of behaviour (identified during the macro-scale study), but to also identify and understand where in the creation process more unusual or idiosyncratic options were chosen. Only by considering those actions within the unique context of each dwelling’s specific environmental and social settings was this analysis able to explore why such seemingly peculiar options were chosen and what (if any) significance should be attached to them.

1.5 Organisation of the Dissertation
This dissertation is composed of 11 chapters and one appendix. Chapter 2 presents a detailed synthesis of the methodological premises upon which this dissertation is based. The chapter begins by reintroducing the value of a technological approach to the archaeological record before addressing the concept of the chaîne opératoire and how it was originally developed and applied in archaeology. Following this, the remainder of the chapter discusses how the chaîne opératoire is used as a tool for understanding variability before concluding with an examination of how the concept can be applied to the study of architectural technology.

Chapter 3 presents an overview of the Eastern Arctic physical environment, together with the major biogeographical influences expected to affect dwelling performance. Building materials
which would have been available to the Late Dorset are identified, and a brief consideration of climatic conditions in the region during the period from 1500 B.P. until 500 B.P. is included. Discussion of the ‘core area’ concept is also presented.

Chapters 4 and 5 review the main culture-historical events of the Eastern Arctic’s Palaeoeskimo history. Chapter 4 begins with a discussion of the origin of the Palaeoeskimos in the Bering Strait region and their move into the Eastern Arctic sometime before 4500 B.P. Cultural developments from Early through Transitional Palaeoeskimo are traced before the chapter moves to examine the cultural developments and relevant socio-economic conditions which lead to the appearance of the Late Palaeoeskimos. Chapter 5 focuses on the Late Dorset period, from its apparent origins through to its ultimate collapse. Included are details of subsistence, settlement patterns, and social organisation. The chapter closes by considering the possibility of extra-cultural contacts between Late Dorset and other immigrating populations.

Chapter 6 continues the focus on Late Dorset, first defining the architectural terms used in this study before introducing the 52 dwellings selected for the macro-scale study of architectural technology. Constraints imposed on the analysis are highlighted, and some basic interpretation of the dwellings along temporal and geographic lines is attempted.

Chapters 7 through 9 present the case studies. Each chapter focuses on a single structure and details the specific cultural and physical environment of the relevant dwelling. Also included is a thorough consideration of the resources available to the inhabitants in each area. Excavation methodologies are outlined and the architectural attributes and elements recognised in the dwelling features are presented and interpreted in detail. Seasonality and length of occupation are inferred using the architectural remains in conjunction the faunal and artefact assemblages.

Chapter 10 begins by presenting the macro-scale analysis of Late Dorset architectural technology using the dwellings first described in Chapter 6. Each of those structures was evaluated according to its architectural attributes and elements, and the presence or absence of specific traits was used to identify the broad technological patterns used by most or all architectural practitioners. Once these large-scale action sequences were recognised, analysis shifted to re-examine the case studies in light of those broader behavioural traditions. Interpreting these small-scale activities and decisions within the dual contexts of the architect’s local
environment and as part of the overall group strategy permits us to better understand why individual agents, working within specific parameters, chose to do what we see archaeologically.

Chapter 11 summarises the results of the analysis, discusses how Late Dorset architectural technology reveals that there was some openness and fluidity in a society usually portrayed as behaviourally inflexible, and concludes with recommendations for future study. Architectural remains from periods earlier than Late Dorset are presented in Appendix A.
CHAPTER 2 – AN ANALYTICAL AND METHODOLOGICAL APPROACH FOR EXPLORING ARCHITECTURAL TECHNOLOGY

2.1 Introduction to the Analytical Perspective
The analytical and methodological framework upon which this research is based adopts the fundamental view that all technologies are constituted in a socially meaningful manner (see discussion in Dobres [2000]). Further, it is held that the organisation and process of production / manufacture, not only the ‘things’ produced, reveal vital information on a given society including their conceptions of how things should or should not be done (Lechtman 1984). While the idea that technology is more than its finished product has been around for some time (e.g. Childe 1956; Hodges 1976; Lechtman 1977; Lechtman and Steinberg 1979; Lemonnier 1986; Schiffer and Skibo 1987), a methodology capable of moving from the study of finished artefacts and towards a more holistic exploration of the technical and social processes which contributed to their creation has been slower to develop.

However, one approach has been increasingly adapted and employed by English-speaking researchers interested in moving beyond a simple examination of the static artefact and towards a contextualisation of the material culture within its dynamic socio-cultural system. This methodology, referred to as the chaîne opératoire or operational sequence, has a long history in the French tradition (see Pelegrin et al. 1988), where it was initially adapted for archaeology by André Leroi-Gourhan (1964, 1965a, 1993). Leroi-Gourhan envisioned all behaviours, whether they leave direct archaeological traces or not, as being composed of gestures which can be studied systematically so that the entire life history of an item of material culture, from conception to use and on to final discard, can be investigated. This is possible because the approach’s methodology considers actions (or gestures) to be the primary building blocks underlying the complete process of manufacture, and that series of actions (chaînes opératoires) come about “as a result of interaction between experience, which conditions the individual by a process of trial and error identical to that of animals, and education” (Leroi-Gourhan 1993:230).

As such, the chaîne opératoire offers a link between the physicality of the static artefact and the dynamic social environment within which it was produced and used, taking into account both the ‘fixed’ and the ‘flexible’ of artefact production (see also Sellet 1993; Dobres and
Hoffman 1994; Schlanger 1994). By considering the ‘flexible’ or socially meaningful suite of cultural options and choices available to a population, chaîne opératoire analyses can be differentiated from more processual behavioural archaeology (see Schiffer 1972, 1976, 1995). Unlike the latter, which identifies minimal analytical units based on observed alterations to the sequence of production, the chaîne opératoire offers a finer scale of analysis because it considers individual actions and sequences to be the minimal unit of analysis. However, as demonstrated by the range of approaches evident in several recent edited volumes (e.g. Lemonnier 1993; Renfrew and Zubrow 1994; Stark 1998a; Chilton 1999; Dobres and Hoffman 1999; Dobres and Robb 2000; Schiffer 2001), increasing numbers of researchers are taking elements from both strategies to create new interpretative frameworks to suit the particular range of questions that they are addressing.

Audouze (1999:168-169) credits this, at least in part, to the ‘fuzzy’ nature of the chaîne opératoire approach, noting that Leroi-Gourhan’s vaguely defined concepts have allowed researchers to approach their subject matter from very different perspectives that at the same time can be traced directly to his theories. In particular, this concerns an emphasis on the sequence of decisions and actions made by a technician that were either enabled or constrained by the person’s external physical world and more internal cultural world. When any technological system is viewed in this manner, the complete strategy of a group can be understood from a cognitive standpoint (Lemonnier 1992:82-85). In the case of domestic architecture, analysis would begin with the choice of an appropriate building site and move through the use of curated or newly procured building materials, the selection of building techniques, the manner in which the interior is organised, if and how the structure is maintained, how and when the dwelling is abandoned, and the potential of the structure for reuse or remodelling.

Significantly, since the chaîne opératoire involves determining, in sequence, the choices that were made by manufacturers from a group of available options when creating or modifying an object, it is possible to speculate on a cognitive level why particular decisions were or were not made (see Kopytoff 1986:84; van der Leeuw 1993:241). The selection of one option from a series of alternatives leads to the variability observable in the archaeological record (Stark 1998a:6, 1998b:27), such that “the mere comparison between the possibilities which are available to people
and those elements which are actually used yields critical information on the technological knowledge or social representation of technologies shared by the members of this society” (Lemonnier 1992:26).

2.1.1 The Technological Approach to the Archaeological Record

The French school of technologie explores the relationship between the technique, the culturally relative schema which produces an object of material culture, and the cognitive process (Stark [1998a:3-7] and Bleed [2001:105-114] offer concise summaries of the differences between the French and American approaches to technology). The French technological school has its roots in ethnology and sociology, particularly in the teachings of Marcel Mauss (1935, 1979a), who first developed the notion that social and technical elements combine to form a complete technological system when discussing his concepts of “body techniques” and the “total social fact” (refer also to Goffman [1998]). By conceiving of a technological system as an engendered amalgam of social and technical elements and not only as a series of physical movements, Mauss defined a technique as “an action which is effective and traditional” (Mauss 1979a:104, emphasis in original). Mauss is explicit in his view that actions must be learned and / or established, and give the result for which the action was intended. Furthering this point, Mauss (1979a:104) stated that “There is no technique and no transmission in the absence of tradition”, illustrating that any analysis of technology and techniques must not only consider the material or physical results of a given set of activities, but should also involve the social relations and experiences through which people learn to operate (Mauss 1979a:101-102). As Ingold (1990:7) remarks, “technique is embedded in, and inseparable from, the experience of particular subjects in the shaping of particular things” (see also Lemonnier 1993:2-3).

Mauss’s view of technology was first practically applied to archaeology by Leroi-Gourhan (1964, 1965a, 1993), who extended the applicability of Mauss’s “techniques du corps” (best thought of as ways of doing something) via the addition of le geste. Following Leroi-Gourhan (1993:114, 230-232), it is only through the gesture, which is the archaeologically visible action linking the technique to the material acted upon, that the artefact is given its context. The technique meanwhile designates the socially conditioned or learned process through which energy
is transferred from the body to act upon the physical world (see Lemonnier 1993:2-3; Chazan 1997:721; Dietler and Herbich 1998:235). The chaîne opératoire, which is composed of sequences of such gestures, emphasises the idea that underlying all technical acts is the culturally constructed knowledge of how and why objects are created in the manner in which they are. Such technological knowledge is always learned and can be acquired via one of two processes: as connaissance, or general technical knowledge (Mauss [1935] refers to this concept as part of his actes efficaces); or as savoir-faire, or know-how, usually gained through experience (see also Lemonnier 1992:6, 82-85).

Connaissance knowledge is abstract knowledge that is possessed by most or all members of a society and is linked to the general mental template or representation each person shares about a given technical act (Lemonnier 1992:81-85). In the case of the present study, connaissance knowledge might involve such things as what building materials are needed to construct a structure, as well as the properties of those various materials. In comparison, savoir-faire is more particular or practical knowledge that has been acquired as the result of learning, experience, observation, and / or repetition (Pelegrin 1991; Lemonnier 1992:6; Roux et al. 1995), and can include the evaluation of various technical processes (Schlanger 1994:148). Regarding architectural behaviour, savoir-faire knowledge might encompass issues such as the best way to situate a structure in relation to site topography or predominant wind direction, or the most efficient way to put structural elements together given available materials and the particular environmental setting. Identifying innovations (most expediently considered as savoir-faire knowledge) and their associated techniques, and then determining whether they shift to become more widely known connaissance knowledge (Mauss’s actes efficaces traditionnel or traditional efficacious acts) or remain isolated behavioural events can be determined through examination and comparison of the chaînes opératoires from a number of examples (Lemonnier 1992:11; Leroi-Gourhan 1993:233; Dobres and Hoffman 1994:245-247).

Lemonnier (1993:4-6) has noted that the technological questions researchers can address using a chaîne opératoire approach in ethnographic (and archaeological) situations can be quite variable and often depend upon the particular circumstances. Several ethnographic investigations (see for example Akrich 1993; Latour 1993) demonstrate that, when asked, a manufacturer’s
original intention regarding an item of material culture can be quite different from that which is reported after the technique has been accepted and adopted by the larger population. Therefore, the choice to adopt and use a certain technique might superficially appear to have been done for physical or functional reasons, however, other (social) motivations which can be difficult or impossible to discern archaeologically may have been equally or more important (see, for example, Govoroff [1993]). More relevant to archaeology are considerations of what can and cannot be said about an artefact when it is not possible to question the manufacturer about such things as their original intentions for creating the object, how various social and physical considerations influenced the production process, and why the techniques traditionally used to fabricate a tool type changed. In the latter case, identifying how manufacturers adapt their connaissance knowledge concerning the production of a traditional artefact form to create a new type of artefact (involving savoir-faire knowledge) can reveal the manner in which the new technology was transmitted.

As an example, during the Neolithic period in the European Alps a particular type of flat-bottomed ceramic vessel was introduced as a finished product into a region where round-bottomed vessels were traditionally made (see Pétrequin [1993] for details). However, the manufacturing sequence (an example of savoir-faire knowledge) required to successfully reproduce the flat-bottomed design was not transmitted. Pétrequin (1993:51, 69) believes this was purposefully withheld so that the makers of the flat-bottomed design could control production, as well as maintain cultural boundaries. According to Pétrequin (1993), this situation led to two possible alternatives; either the new technology would be rejected out of hand because the manufacturing techniques required to replicate the flat-bottomed vessels were not known, or a period of trial and error would be initiated, ending with the discovery of the proper, or at least functionally successful, operational sequence. Pétrequin (1993:48-49, 69) argued that the latter scenario occurred. This opinion was based on examination of pottery techniques, which clearly showed an extended period during which potters experimented with different chaînes opératoires before discovering the correct (or minimally serviceable) manufacturing process to create flat-bottomed vessels.

While it is not clear why those who traditionally made round-bottomed ceramics chose to
switch to a flat-bottomed design (Pétrequin [1993:48-49] notes that this switch involved not only the invention and adoption of new techniques for ceramic production, but also alterations to cooking techniques and perhaps reorganisation of the hearth), the fate of a technology introduced with its required replicative techniques versus one that comes without the necessary reproductive steps (whether these were purposely withheld or not) should be recognisable archaeologically via a chaîne opératoire analysis.

Investigating the process by which a newly developed or introduced technology undergoes a transition from the savoir-faire knowledge held by a limited number of people to a more widely held connaissance knowledge familiar to larger groups can be achieved by examining multiple chaînes opératoires from different contexts. Such adoptions are an example of what Leroi-Gourhan (1993:230-232) considered purposefully lucid, or fully conscious, behaviour (see the following sub-section). Instances when people intentionally retain or preserve traditional practises rather than adopt new technologies, as at social or ethnic boundaries where there is a desire for separation, are also an example of a lucid action (Lemonnier 1986:161).

2.1.2 The Chaîne Opératoire
As noted previously, Leroi-Gourhan (1964, 1965a, 1993) first introduced the term chaîne opératoire into archaeological literature, envisioning technical acts as socially conscious behaviours based on individual and collective knowledge. He insisted that consideration of any artefact involve the identification and evaluation of the gestures relating to its creation, use, modification, and discard (see Lemonnier 1992:1). Leroi-Gourhan (1993:114, 230-234) also recognised that innumerable individual gestures make up a single chaîne opératoire, and that groups of chaînes opératoires themselves combine to create a single technique. As the gesture is formed by both individual memory and a kind of group tradition, le geste functions as the link between the archaeologically visible technique and a group’s social behaviour. By incorporating gesture into the analytical framework, archaeological research has been able to move beyond the metaphysical sphere of Mauss’s enchaînement organique and consider the chaîne opératoire as the means to link people and their decision-making processes to the material culture remains contained in the archaeological record.
In its most basic form, the chaîne opératoire chronologically identifies and describes the complete series of technological operations or stages that begins with the selection of a raw material(s) and traces the production steps involved in the manufacture of an object (Lemonnier 1992:26; Sellet 1993:106; Boëda 1995:43). Part of this reconstruction involves an attempt to identify the cognitive processes associated with artefact production, particularly as this concerns the consideration of social and cultural knowledge, in addition to the strictly physical limits of the raw material or the functional requirements demanded of the artefact (Dobres and Hoffman 1994:213-214; Julien and Julien 1994:15). Cleuziou et al. (1991:96) point out that it is this strategy that can offer the greatest contribution to archaeological research, particularly regarding its emphasis on examining an object’s total life history from initial creation through use, alteration, and eventual loss or discard (see also Kopytoff 1986:84; Lemonnier 1986:147). Chaîne opératoire approaches have most commonly been used in the study of lithic manufacture (see, among many others, Pelegrin et al. 1988; Boëda et al. 1990; Bar-Yosef 1991; Jelinek 1991; Karlin et al. 1991; Bar-Yosef et al. 1992; Karlin and Julien 1994; Schlanger 1994; Chazan 1997, as well as various papers in Dibble and Bar-Yosef [eds.], 1995), although its use is certainly not restricted to these types of analyses (refer to Lemonnier 1986, 1992, 1993; Dobres 1992, 1995, 2000; Mahias 1993; van der Leeuw 1993; Karlin and Julien 1994; Roux et al. 1995; Gamble 1998; Gosselain 1998).

Indeed, Leroi-Gourhan felt no such research restrictions, as a cursory inspection of Gesture and Speech illustrates. In this book, and others, he employed a multi-disciplinary approach which incorporated ideas from the fields of palaeontology, social anthropology, philosophy, and biology to address topics as diverse as the origins and evolution of hominids, the hidden meanings of Upper Palaeolithic cave art, the relationship between people and machinery during the Industrial Revolution, and worker behaviours on modern assembly lines (Leroi-Gourhan 1993:253-254). In each of these wide-ranging studies, the chaîne opératoire was always the key analytical medium for understanding adaptation in human culture, testifying to its flexibility. In terms of archaeological utility, Leroi-Gourhan (1993:230-233) divided the chaîne opératoire into three parts; automatic (or unconscious), mechanical (or unplanned), and fully conscious (or lucid) behaviour. Of these, the first and last are generally less useful for
archaeologists because the automatic portion of the sequence is typically subsumed (though not completely negated) by learned societal responses, while an operational sequence based upon fully conscious behaviour is, practically speaking, impossible as it would require all cultural actions to be constantly and purposefully changed so that all behaviour appears completely new. Leroi-Gourhan instead viewed fully conscious behaviour as functioning primarily “to rectify the operational process by adjusting the appropriate links of the chain”, most commonly through invention or innovation (Leroi-Gourhan 1993:233).

Mechanical behaviours, however, are inherently valuable for archaeologists as these operational sequences are acquired through education and experience and thus take place in the area between conscious and unconscious awareness. Because they form the basis for individual actions and techniques, they have the most value for understanding human behaviour (Leroi-Gourhan 1993:230). Leroi-Gourhan (1993:305, 319) believed that once the process or technique was understood, the factors that shaped decisions concerning, for example, the construction of structures and the day-to-day organisation of space can be revealed. Alterations in structural form can consequently be understood in terms of technological decisions and choices (as distinct from ‘technical choices’, which Schiffer and Skibo (1987, 1997) and Schiffer [2003] define as applying only to a craftsperson’s decisions), where the addition or exclusion of particular gestures within a chaîne opératoire resulted in a recognisably different manifestation.

2.1.3 The Chaîne Opératoire and the Style Versus Function Debate
The choice of a chaîne opératoire approach for the analysis of architectural variability is useful in that it escapes the machinations of the style versus function debate that has often polarised archaeological discussions of artefacts (refer to Deetz 1965; Longacre 1970; Sackett 1977, 1982, 1986a, 1986b, 1990; Wobst 1977, 1999; Dunnell 1978; Plog 1978, 1980, 1983, 1995; Hodder 1979, 1982; Wiessner 1985; Tilley 1989; Dietler and Herbich 1998). This is because while, generally speaking, researchers agree that style is more than simply decoration and that style is also internally constructed and subject to interpretation by members and non-members of a social group, there is little other common ground.

The concept of anthropological ‘style’ has been variously defined as a means to express or
inform on social organisation (Deetz 1965; Longacre 1970; Wiessner 1983, 1985; Tilley 1989), “as a way of doing things” (Hegmon 1992:518), or as a mode to communicate symbolic meanings to those outside of one’s immediate social group (Wobst 1977, 1999; Plog 1978, 1983, 1995; Hodder 1979). Hodder (1982:125-184), while attempting to incorporate aspects of social and symbolic behaviour in his interpretations in an effort to situate people as active agents in the past, fails to give full recognition to the impact of intra-societal action and looks for the pattern rather than the process (or technique). Tilley (1989) has gone so far as to say that researchers cannot assign any sort of function to an artefact and should therefore deal only with stylistic considerations. Despite (or perhaps due to) this diversity of approaches and definitions, no one has thus far managed to satisfactorily reconcile the style / function debate, for as pointed out by Dietler and Herbich (1998:239), many of these concepts ascribe an unchanging and undynamic character to cultural groups.

Addressing the style / function dichotomy, Binford (1989:209) has observed that archaeologists “have always either implicitly or explicitly recognised that both style and function can be manifest in the same artefacts” but that problems ensue when researchers try to decide “how to cope analytically with the distinct possibility that style may have ‘causes’ of variation that are different and operate independently of properties that have more direct ‘functional causes’ or conditioners”. Taking aim specifically at Sackett’s (1986a, 1986b) concept of “ischrethic variation”1, Binford states that “a greater knowledge of technology and techniques of production” demonstrates that an archaeologist can never truly isolate a choice made solely because it is functionally equivalent to another option. He (Binford 1989:211) notes that these seemingly innocuous variations were often meaningful to those whose behaviour is being studied, and that the observed differences resulted from decisions made on the basis of considerations not immediately apparent to the researcher. He concluded that it is impossible to isolate individual decisions that were made purely because the option chosen was the functional equivalent of the one that was not selected and that Sackett’s argument that ‘style’ is little more than the result of a

---

1 Isochrethic variation is, according to Sackett (1986a:630) “equivalent in use”. This view argues that, essentially, much of the variation in the archaeological record results from the selection of a functionally equivalent or neutral material for a task or purpose (e.g. the use of moss rather than willow branches for bedding material).
If style can result from unconscious phenomena, then rational choices would not condition stability in the results of such unconsciously learned or habitually acquired characteristics, and we might be able to develop a means of identifying actors independently of what might be conditioning what they did when consciously coping with a dynamic world. It was this shift in approach that prompted my suggestion that we seek traits reflecting motor habits and other learned, habitual actions that could be expected to cross-cut or to appear on functionally different classes of phenomena.

The idea that habitual or formally redundant actions could be used to inform on social concerns was earlier discussed by Lechtman (1977). She argues that style results from patterns and choices of behaviour, and that technological style is one of the ways in which more intangible cultural patterns can be manifested archaeologically (Lechtman 1977:5-7). Such patterns allow researchers to recognise technological style “by virtue of its repetition which allows us to see the underlying similarities in the formal arrangements of the patterns of events” (Lechtman 1977:7). She further suggests (Lechtman 1993:273, 1999:223-228) that differences in the way in which physical and therefore less mutable materials are handled can be explained as a result of culturally or politically significant considerations, with style functioning as a non-verbal mode of communication.

In this sense, style is intended to communicate what is and is not appropriate according to the rules defined by a particular group of people, with the repetition seen archaeologically taken to indicate the degree to which the particular behaviour(s) was accepted (Lechtman 1977:7, 12). Technological style is thus not passive (a significant difference between Lechtman’s and Sackett’s view), but is, rather, recursive in that it involves choices which can challenge and / or reaffirm the structuring norms and practices from which it comes (see summary by Dobres and Hoffman [1994:217-218]). These choices should be readily identifiable by examining an artefact’s operational sequences.

The very impossibility researchers have had distinguishing where the physical function of
an object ends and its communicative style begins has led Gamble (1999:84-85) to state that the continuing debate concerning style and function is unnecessary. He points out that all objects are both symbolic and functional because they were created as part of a chaîne opératoire which incorporates functional or fixed considerations in tandem with cultural memories and traditions, generally subsumed under style. Lemonnier (1992:98) has remarked that the lack of agreement concerning style and function should guide archaeology towards “the basic question of an anthropology of technology – the problem of the relation between the physical function of material culture and the social (symbolic) representations of which it is a materialization”. Both views have been clearly shaped by Leroi-Gourhan’s concept of the chaîne opératoire, given that all chaînes opératoires are based on both technological and social considerations so that technological actions and decisions are also socially motivated.

It is clear from Leroi-Gourhan’s discussion of form, particularly as this regards his ideas of functional aesthetics, that he considered the fixed elements of the chaîne opératoire to be of primary consideration, with style working as a secondary concern more closely aligned with issues of ethnicity (Leroi-Gourhan 1993:302-309). Lemonnier (1992:85-86) follows this basic framework, distinguishing between two kinds of technological traits; those that are intended to communicate, either consciously or unconsciously, information (which can be tied to style and relates to the ‘flexible’ nature of an artefact), and traits whose primary purpose is to fulfil some physical or functional role (analogous to the fixed element of an artefact). These traits are often based on unconscious social choices, rather than strictly utilitarian concerns, which dictate which materials should or should not be associated with a particular task or purpose.

When trying to distinguish the meaning or information an artefact is intended to communicate via style from the physical purposes that the artefact is meant to perform (its function), it is imperative that researchers assess how that meaning is meant to be transmitted. As discussed by Lemonnier (1992:86-87; also Grøn [1991:100]; Carr [1995a,b]; Cameron [1998:192-194]), sight is the chief medium through which meaning is conveyed so that the visibility of a particular technological choice may have some bearing on both what is being expressed and to whom that information is being directed. While Sterner (1989) suggests that objects that were not intended to be seen could be more heavily charged with symbolic meaning
than less restricted items (*contra* Wobst 1977), Lemonnier (1992:87) points out that an object’s visibility (or “domain of validity”) must be evaluated in terms of its function in order to determine whether the differences were meant to express distinctions between various groups.

As an example of this approach, van Dyke (1999:483, 495-498), in a study of Bonito-style architecture in and adjacent to Chaco Canyon, uses low visibility (internal) and high visibility (external) architectural elements as a means to understand how building styles may have diffused between locations. She contends that low visibility interior features would be familiar only to cultural members who had the proper social connections to regularly access such spaces; in comparison, exterior elements are highly visible and could be seen by members and non-members alike. Based on this premise, she suggests that pueblos whose internal plan and design deviated from known Bonito patterns were not actually Bonito, even though their external architectural elements might appear to be following that building tradition. In such cases, van Dyke argues for emulation by non-members who did not share tightly controlled (*savoir-faire*) knowledge pertaining to hidden internal structural organisation, but who nonetheless wished to imitate aspects of Bonito architectural technology by copying its more highly visible elements.

Lemonnier (1992:79-91, 1993:1-16) further distinguishes between communication and representation in technological actions. He notes that while ‘communication’ implies a direct transmission of information, ‘representations’ can involve the explicit or implicit opinions or beliefs that are shared by the larger society, but which are completely unconscious (Lemonnier 1992:79-80). Three representational types exist: 1) unconscious mental representations (Leroi-Gourhan’s automatic or unconscious behaviours); 2) verbally communicable know-how (*savoir-faire*) that is automatic but learned (Leroi-Gourhan’s mechanical behaviours) and, 3) the “immediate informational content of technological actions” (Lemonnier 1992:81) which aligns with ‘symbols’. Lemonnier (1992:82) remarks that the first two kinds of representation only “differ by the degree of consciousness of the control involved”, alluding to actions that are completely automatic or instinctive, versus gestures which involve a period of learning before making the transition into automatic behaviour. The second and third forms of representation are similarly interlinked in that *savoir-faire* knowledge may not have been intended to immediately communicate information, however, that knowledge may still “belong to wider systems of
meaning” (Lemonnier 1992:82) of which symbolic actions are a key component. From this, it is
apparent that technology should be viewed as a derivative of various social productions and
conceived as operating within a larger social sphere of activities, rather than being associated
solely with physical constraints (Lemonnier 1993:2-3; Lechtman 1977:12-13, 1993:247, 273;
Dobres and Hoffman 1994:215-216). Specifically, this evokes the idea that technological
knowledge is incorporated into the group’s symbolic ideology so that the physical artefact can
inform on the technological choices and social ideology shared by members of a group.

Because prehistoric archaeologists rely on differences in the techniques used to create
artefacts to distinguish between different groups (especially as this relates to issues of culture-
historical significance), such technological alterations reveal “the relations between technological
performance and the shared cultural expectations that render the world intelligible” (Lechtman
1999:228). Accordingly, style can be seen as the end product of a series of mechanical responses,
traceable through the technique or process. Understanding shifting styles in the archaeological
record can therefore be accomplished by viewing change as the end result of a process of
innumerable individual decisions made at all points along the chaîne opératoire (Schiffer and
Skibo [1987, 1997; see also Skibo and Schiffer 2001] present a similar argument regarding the
use of correlate matrixes, design theory, and behavioural chains).

2.1.4 The Chaîne Opératoire – A Non-Binary Approach
Although often associated with the structuralist paradigm, Leroi-Gourhan did not consider himself
a practitioner of structuralism (although, as Trigger [1989:351] and Lévi-Strauss [1988] note, he
is admired by structuralists). In his introduction to the English translation of Gesture and Speech,
Randall White (1993:xiv) remarks that such “views of Leroi-Gourhan result from a certain
hostility in America [and locations outside of France] to structuralism and an almost total
ignorance of his preceding landmark works in which he constructed a synthetic model of human
thought, communication, and action”. Chazan (1997:728) also suggests that the limited access
researchers outside of France have to most technologie publications has created a situation where
misunderstandings and mistrust are common (Audouze [1999:167] alludes to the same).

The impression of Leroi-Gourhan as a structuralist was no doubt formed by the fact that
his only large-scale work available in English until 1993, *Treasures of Prehistoric Art (Préhistoire de l’Art Occidental)*, originally published in 1965[b] and translated into English in 1967), used a binary approach to interpret Upper Palaeolithic art. Yet Audouze and Leroi-Gourhan (1982:173) observe that “Though looking for obvious or hidden structures among data ... this position was quite distinct from Lévi-Strauss’s structuralism”. Indeed, Audouze and Schnapp (1992:10) note that Leroi-Gourhan was famous for “ses refus furieux d’être rattaché à une école (structuraliste en l’occurrence)”\(^2\), instead advocating the study of “the human phenomenon in its totality” (Leroi-Gourhan 1993:141).

Regardless of whether Leroi-Gourhan followed a structuralist paradigm in his analysis of art, it is clear that the *chaîne opératoire* approach is fundamentally different from structuralism. Unlike structuralism, which dictates a synchronic approach based in part on binary oppositions (in the case of architectural remains this is typically between inside and outside, see as examples Bourdieu’s [1973] examination of Berber houses in France, Glassie’s [1975] study of 18\(^{th}\) century houses from Virginia, Fienup-Riordan’s [1983, 1994] analysis of Alaskan Yu’pik houses, or Hodder’s [1997] investigation of Neolithic domestic and mortuary structures), Leroi-Gourhan preferred a multi-disciplinary or diachronic program that considered the long term and short term through *la tendance technique* (technical tendencies, the meaning of which remains open to interpretation [see Audouze 1999:168]) and *les faits techniques* (technical facts).

While this approach, which superficially appears to follow the Annales school (Braudel 1972, 1980; Le Roy Ladurie 1979; Clark 1985; Duke 1991; Knapp 1992, as well as papers in Hodder [ed.] 1987) by setting temporally restricted facts in opposition to longer-term tendencies might appear programmatic of the structuralist approach, as Audouze (2002:283) points out, Leroi-Gourhan was interested in the process which guided the developmental sequence of the artefact or behaviour through time, thus favouring longer term analyses over single events or individuals. Indeed, the *chaîne opératoire* offers a dynamic tool that can be adapted to answer specific research questions related to individual research goals.

Another major difference between Leroi-Gourhan and the early structuralists (as represented most clearly by Lévi-Strauss [1958, 1963, 1967]) is the inability of the latter to

---

\(^2\) his passionate refusal to be linked to a school (in this case structuralism)
adequately explain social and cultural change (Kronenfeld and Decker 1979). As noted in Chapter 1.2.1, post-structuralists including Bourdieu (1977) and Giddens (1979, 1984, 1993) have attempted to move beyond this shortcoming by incorporating habitus, praxis (practice, or use), and agency into their interpretations (for example, Hodder and Cessford 2004). Both approaches improve upon the structuralist methodology initially outlined by Lévi-Strauss in that they position social actors within a general interpretative framework from which human agents can alter social structures via praxis (see Lawrence and Low 1990:489; Pauketat 2001). However, both approaches are not without their weaknesses (see Dornan 2002:306, 308), particularly in terms of intentionality and choice, and neither accommodates the heterodoxic (or unorthodox) approach (Cleuziou et al. 1991:97) advocated by Leroi-Gourhan.

2.1.5 Chaîne Opératoire as an Analytical Strategy: Summary

The chaîne opératoire is not a glorified reduction sequence. While the analysis of lithic artefacts does proceed by examining an artefact’s stages as it becomes progressively smaller (moving from a core to a blank or preform through to the finished object), most other analyses, whether involving the mechanics of pottery manufacture, the fabrication of a meal, or the construction of a dwelling, involve the creation of artefacts via the addition of materials. This is an important distinction when one considers that the fabrication of many artefacts (including architectural remains) entails a series of interrelated decisions along the chaîne opératoire that must consider, amongst other things, which materials can and should be combined, which materials work well together and which do not, alternates in case one or more materials are unavailable, and the performance of the individual parts of a composite object given various circumstances.

In terms of the research questions addressed in this dissertation, it is then possible to identify at what point in the chaîne opératoire various elements (both social and physical) acted to constrain or broaden the choices available to the Late Dorset as they planned, built, occupied, modified, and abandoned their dwellings. Given such diverse considerations, organising the ensuing analysis using the chaîne opératoire approach is beneficial because it permits researchers to identify which parts of the sequence do not or cannot change from case to case (the invariants), versus those which are more mutable and allow individuals some choice, potentially resulting in
deviations (Lemonnier [1980], as discussed in van der Leeuw [1993:240-241]). The following sections will outline the research structure and expound on how the *chaîne opératoire* is used in an attempt to explore the research goals presented in the previous chapter.

### 2.2 Outlining the Analytical Framework
The final portion of this chapter examines how the *chaîne opératoire* is used in this study as the primary analytical framework for investigating architectural remains. As discussed previously, reconstructing the operational sequences responsible for the appearance of a structure can reveal the choices that were made during the creation and use of domestic architectural remains. Significantly, by identifying the most commonly made choices, it is possible to recognise the technological traditions or rules associated with the construction and use of architectural features. Identifying where along the *chaîne opératoire* different options were available makes it possible to discern choices made on the basis of cultural considerations from those that were made based on external (*i.e.* environmental) factors (Rapoport [1980:286-288] has also differentiated between these types of choices as part of an overall decision-making process without employing the *chaîne opératoire*). In the following sections, I will first outline how the *chaîne opératoire* is applied to architectural remains before moving to discuss how concepts including architectural techniques and technologies, as well as operational sequences, are treated in the course of this research.

The primary focus of this portion of the chapter is therefore to outline a strategy or methodology by which the *chaîne opératoire* can be applied to architectural remains. This includes defining in terms specific to this study how *connaissance* and *savoir-faire* knowledge and behaviours can be identified, as well as discussion of individual *chaînes opératoires* and techniques, and the role of both in producing the larger technology of domestic architecture. The advantages of using a multi-scaled approach to document and understand architectural variation will also be reviewed, while the final portion of the chapter discusses additional factors that may affect the appearance of architectural remains.

#### 2.2.1 Implementing the Chaîne Opératoire
As previously noted, most archaeological applications of the *chaîne opératoire* have concerned lithic analyses. This is probably due to the fact that gestures enacted on stone are particularly
evident and frequently permit analysts to reconstruct more complete chaînes opératoires (refer to Schlanger 1994:145). However, despite the obvious differences between lithic knapping and dwelling construction, the manufacture of each involves four basic stages: procurement of necessary raw materials, the processing of those materials to form an object of material culture, the utilisation and possible refurbishment of that item, and its ultimate discard or abandonment. Each of these stages is composed of a myriad series of actions and decisions, traceable through a chaîne opératoire methodology, during which options are evaluated and choices made based upon the unique social and environmental circumstances that the producer operated within.

Like any technology, the creation of an architectural structure involves a series of more-or-less consistently employed strategies and decisions that take into account a number of variables and regularities that result in a recognisable product. Understanding how these decisions were made, and particularly how they were impacted by numerous internal and external considerations including broadly defined connaissance knowledge, social and technical considerations, and situation-specific factors allows a greater understanding of how and why some techniques were selected over others. Accordingly, the techniques chosen to construct a structure will depend in large measure on the dwelling’s intended overall function (i.e. was it meant to be occupied for a long or short period, was it used during the warm or cold season, how many people was it intended to accommodate), raw material availability, as well as choices centring on social organisation and relations between occupants and other individuals.

As observed by Lemonnier (1992:7-9), it can be difficult to isolate a single technique and examine it on its own terms given that most techniques are connected. Additional difficulties may be encountered when attempting to determine the scale at which various techniques can be defined and compared. Lemonnier (1992:5-6) has identified five inter-related parts to every technique: matter (the raw material to be acted upon), energy (the force transforming the matter), objects (artefacts or “means of work” acting upon matter), gestures (the movement of the object engaged in the action), and specific knowledge (know-how or savoir-faire). If one of these is altered, it is likely that the others must also change (Lemonnier 1992:8). But if this is the case, how then does one define and delimit a technique? This cuts to the heart of any chaîne opératoire analysis and Lemonnier (1992:7-9) advises that this be done on a case by case basis by individual
researchers addressing specific research questions. Given this ambiguity, it is imperative that a chaîne opératoire analysis be explicit in terms of how it is employed.

In the case of the present study, ‘architecture’ is considered the general technology and the chaîne opératoire is the basic procedure used to identify in as detailed a manner as possible the physical sequence of steps comprising the life cycle of the structure. Following from this, every dwelling is viewed as an amalgam of innumerable individual techniques (e.g. the technique of wall construction or the technique of creating a floor), each of which is composed of sets of operational sequences. Recognising and documenting how each of these techniques was altered can allow inferences to be drawn on not only functional grounds, but also regarding the potential impact of structural and technical changes on social organisation and relations (and vice versa, as discussed by Bourdieu [1973] and Hillier and Hanson [1984]).

At the same time, Dobres and Hoffman (1994:213-216; also Lechtman [1993] and Bar-Yosef and van Peer [2009]) warn that a detailed description of the physical sequences resulting in the creation of an object should not be the final goal of a chaîne opératoire study (although, in my opinion, this tends to be the consistent failing amongst researchers claiming to conduct this kind of analysis). They point out that technical decisions rarely occur in a vacuum removed from social considerations, meaning that any examination or interpretation of a group’s motivations for producing a technology must consider the influence exerted on that technology by a variety of often less visible considerations.

In order to fully explore interactions between the two spheres, Dobres and Hoffman (1994:213) suggest the use of multiple analytical scales as a means to better account for variability on the local and regional level. The advantages of a multi-scaled study are more fully discussed in Section 2.2.3, while the results of the micro and macro scale analysis are presented in Chapter 10.

2.2.2 Applying the Chaîne Opératoire to Architectural Remains
Schiffer (1987) suggests that there are between three and five stages identifiable in the life cycle of a structure: three constants including initial construction, occupation, and final abandonment; as well as two more variable stages involving modification during use and refurbishment for reoccupation. Looking specifically at domestic dwellings, Sanders (1990:44, Table 5.1) has
proposed seven factors, divided amongst three categories, which help determine a structure’s form and influence how its internal space may be used. Included in this list are the fixed elements of any chaîne opératoire, climate and topography (although, as Rapoport [1969a:18-45] has noted, builders may disregard these), as well as more flexible considerations including the technology’s degree of complexity, accessibility of building, and the availability of various economic resources (primarily energy, funding, and time). The third division includes more rigid cultural behaviours such as the structure’s intended function and assorted cultural standards.

Despite their division amongst three categories, the factors listed by Sanders are inter-related so that none can be regarded as truly independent, although it is expected that more emphasis can and has been given to the flexible cultural aspects of construction than to the impact of physical (unchanging) determinants (refer to Rapoport 1969a, 1969b, 1980). Sanders (1990:44, 71) notes that while the final category, fixed cultural conventions (traditions of behaviour), is probably the most influential in terms of architectural variability, it is the first two groupings (ecologically fixed and naturally / culturally flexible) that are more commonly identifiable and therefore accessible to researchers. However, I would argue that it is possible to investigate the critical role played by fixed cultural practise on the design and use of architectural technology if a chaîne opératoire approach is employed. Adopting this analytical strategy, it becomes possible to recognise and compare individual chaînes opératoires and larger technological sequences from a number of architectural remains, increasing the likelihood that we can identify those actions that were consistently made so that “identification of the most frequently recurring of these choices enables the archaeologist to characterise the technological traditions of the social group” (Bar-Yosef et al. 1992:511; see also Rapoport 1980:284-285).

Concomitantly, detecting where variations within a technological system occur may allow researchers to determine the causes, whether social or physical, for deviations (Lemonnier 1992:19-20).

Nonetheless, archaeologists should anticipate that not all information related to the creation of a domestic structure will be preserved and available for analysis. This represents an important point of departure between archaeological research and work conducted in ethnographic and ethnoarchaeological settings, given the latter’s focus on contemporary...
populations. In these venues, where direct observation and access to informants are possible, the probability that all actions and operational sequences associated with a technology can be recorded (including available options which were not selected, as Lemonnier [1992:25-27] recommends) is greatly enhanced. However, in archaeological settings where informants are no longer available and extant deposits are unlikely to represent a complete and unaltered record of past events due to a variety of taphonomic processes (see Binford [1981] and Schiffer [1985] for discussion of the ‘Pompeii Premise’), a similarly complete picture is not always possible. This is especially true in the case of hunter-gatherers given their tendency to build using combinations of permanent and portable (typically curated) architectural elements when creating dwellings (e.g. Rapoport 1980; Kent 1992; Whitelaw 1994; Steadman 1996). Such behaviours (e.g. dismantling and curation of building materials), while normal and expected, will invariably obscure or eradicate individual chaînes opératoires and general techniques of construction.

Despite this issue, the chaîne opératoire remains the best methodology for recovering details of a feature’s architecture given the approach’s interest in tracing the process of actions and choices which contributed to the design of the dwelling. By examining each of the architectural stages and influences identified by Schiffer (1987) and Sanders (1990), decisions regarding the care and investment with which each of a dwelling’s components was created can be carefully studied. Was the amount of effort, time, and energy invested at each step merely sufficient to make the structure able to meet the predetermined functional needs of its builders / inhabitants (as Mathiassen [1927a:133-134] suggests for Inuit qarmat [see Chapter 6.3.6]), or does it appear that more than straightforward functional considerations went into each of the steps? Because each technical stage of the structure had a life history and a related chaîne opératoire, by examining all of the chaînes opératoires that contributed to the total structure, researchers can identify which architectural elements were consistently used (the more widely held connaissance knowledge), which were used infrequently (perhaps reflecting regionally or even site specific savior-faire knowledge or behaviour), and which were rarely or never employed. And because each of these steps can be quantified, inferences concerning the variations and similarities within each chaîne opératoire can be made.

Furthermore, examination of the complete life history of the dwelling can inform on
questions regarding the physical form and function of the structure as it was found archaeologically, given that in many cases modifications to the dwelling resulting from its repair or reuse should be evident. Analysis of any such empirically recognised and described variability can then assist in the delineation and discussion of behaviours which are more flexible (or variable) from the immutable actions which may help define an overall tradition. Variations from what is seen as the behavioural norm will thus no longer be dismissed as ‘noise’, with the variability instead being recognised as a possible result of context-specific environmental and/or cultural considerations. Research can then progress to questioning the underlying reasons for behaviours and gestures which are fixed or normalised, from those which may be the result of other, more localised, factors.

2.2.3 Macro and Micro Scales: Tracing Technological Behaviours through Connaissance and Savoir-Faire Knowledge

The questions that are the focus of this research must be addressed on two scales. The first is at the macro-scale, where architectural technology is examined in broad temporal and geographic terms. This stage of analysis is accomplished by analysing the architectural remains of 52 previously excavated and relatively well-reported structures with an eye to identifying the trends or recurrent choices, considered *connaissance* knowledge, made by Late Dorset populations. These routinised actions were selected by individuals and household groups from a shared pool of knowledge, possessed by most or all people as a result of a common cultural heritage, who may otherwise have been living in disparate ecological conditions. By starting with the larger macro-scale picture, it will be possible to understand in a general manner how architectural technology was conceived, organised, and practised. At this stage of research, the influence of larger scale structuring contexts can be assessed, including, as identified by Dobres (1995:28), environmental conditions, limitations of the raw materials being employed, as well as the requirements demanded of the item being created and used (see also Marquardt 1992).

Dobres and Hoffman (1994:213) make a point worth reiterating, namely that macro and micro scales “refer not only to physical levels of analysis, but also to scales at which past social action occurred and to which archaeological explanation is directed”. By stressing the social aspect of technology, the authors direct focus to the process underlying the creation of the object
as found archaeologically, and to the micro-scale negotiations which contributed to its creation. While such micro-scale decisions and practices can be constrained by larger macro-scale entities, micro-scale interactions can influence the larger social, political, and economic body, making the micro-scale key to understanding the overall technological system (Dobres and Hoffman 1994:213-215). In turn, understanding micro-scale developments requires that the technological sequence itself be identified, most expeditiously through a chaîne opératoire approach.

Once the initial macro-scale phase of analysis has been completed, variations or other otherwise discrete behaviours should be recognisable within the overall range of architectural technology. Such activity loci, whether the connaissance knowledge of a particular time or of a particular geographic region, or the more restricted / limited savoir-faire knowledge of a small number of individuals within the larger socio-political world, can be addressed using a more finely tuned micro-scale analysis. This approach gets down to the level of the people involved in the given set of behaviours being investigated (Dobres 1999:19), and offers a complementary approach to the macro-scale (Dobres and Hoffman 1999:8). The ‘moment in time’ aspect of the micro-scale, representing a single or series of choices made at a site, and which may have been made on the basis of savoir-faire knowledge, are often the cause of the variation identifiable archaeologically. Such apparently aberrant behaviours have often been labelled as “noise” and dismissed because they do not conform to the overall patterns of the macro-scale (Hodder 2000:26). This is despite the fact that micro-scale differences can be indicators of socially significant actions (Dobres and Hoffman 1994, 1999; Dobres 1995a, 1999, 2001; Wobst 2000).

As both Brumfiel (2000) and Dobres (1995) have argued, it is the amount of variation within a given activity set that can reveal the degree to which social actors were permitted to deviate away from what was considered acceptable or appropriate behaviour. This is largely because variability typically represents an instance where a choice was made between options; these choices are conditioned both by how people perceived the world around them, and what was considered an appropriate response to that perception (Brumfiel 2000:253). Where variation is high, both Brumfiel and Dobres suggest that the amount of latitude cultural members were permitted was great enough not to severely constrain their choices. Conversely, if it appears that there was little variation from a typical or standard of behaviour, then it is likely that the society in
question required its members to adhere to a much more narrow range of ‘suitable’ activities, and likely resulted in a more homogenised natural and cultural environment.

Variation could have occurred in one of three ways (refer to Cowgill 2000:57 and Dobres and Robb 2000:13): 1) via purposeful action; 2) as a result of external exogenous influences; or, 3) by chance, whereby the standard is intended to be followed but is altered through time because it is not precisely replicated with each use (aka divergence; see Eerkens and Lipo [2005]). The correspondence between these causes of variability and Leroi-Gourhan’s (1993:230-233) fully planned or lucid behaviour, mechanical or unplanned actions, and automatic or unconscious behaviour is compelling and makes use of the chaîne opératoire approach natural. By using the chaîne opératoire to first establish the range of behaviour or connaissance knowledge at the macro-scale, research will progress to identifying and interpreting variability at the micro-scale. Understanding the variations that are evident through the first stage of analysis enables the chaîne opératoire strategy to be concentrated on identifying the sources of that variation, and, subsequently, the factors which caused it. Ultimately, the questions asked should determine the analytical scales employed (Dobres 1999:19).

Of course, maintaining that culturally dictated concerns largely prescribed the design and use of architectural remains does not mean that the physical world can or should be eliminated as a strong influence on the decisions made concerning architecture. Indeed, the environment, as perhaps the ultimate macro-scale structuring agent, will always act to constrain human behaviour, especially in regions such as the Arctic where extreme conditions are often present. While people certainly were not passive beings at the mercy of the world around them (Duke 1991, 1992), without question factors including raw material availability and long-term climatic and short-term weather conditions made some options more or less attractive (Cowgill 2000:56-57). Nonetheless, as discussed by Dobres (2000:133), culture does act to condition what is and is not an appropriate response, and can even cause seemingly illogical choices to be made, as many ill-equipped European expeditions of exploration in the Arctic have highlighted (e.g. Berton 1988).

2.2.4 The Influence of Anticipated Mobility, Visibility, and Sedentism on the Interpretation of Architectural Remains

No matter what methodology is employed to examine architecture, there should be some
consideration given to concepts including anticipated mobility, archaeological visibility, and sedentism. With regard to the first, ethnographic work carried out by Kent and Vierich (1989; also Kent 1991) on contemporary hunter-gatherer groups suggests that structures intended for longer occupation should be more substantial than those for which only a brief tenancy was planned. McGuire and Schiffer (1983) have reached similar conclusions, pointing out that there is a direct relationship between the length of time that a structure was planned to be used and the durability of materials employed in its construction.

They devised two categories of shelters; low-cost / high maintenance and high-cost / low maintenance (McGuire and Schiffer 1983:282). McGuire and Schiffer (1983:284) note that mobile groups are much more likely to create circular domed structures given their comparatively low cost of construction, which generally results in a relatively shorter life span (also Faegre 1979). Off-setting the cost efficiency of the former type of structure is the need for higher maintenance, an important trade-off that groups intending to occupy a location for an extended period would have to consider (see also Rapoport 1969a, 1980). For this reason, cheaper circular domed dwellings, typically made with perishable materials, are usually associated with shorter-term occupations; in comparison, costlier rectilinear structures using more substantial materials are usually built by more sedentary populations planning an extended residency (Whitling and Ayres 1968; Rapoport 1969a, 1969b; Faegre 1979; Lyons 1996).

While an inherently logical conclusion, the problem with this premise is that it is based on the assumption that archaeological visibility and obtrusiveness (see Schiffer et al. 1978) can serve as a direct proxy for architectural investment. In most temperate regions this assumption may not be all that problematic, however, in arctic regions this becomes a significant issue given the architectural utility of sod (peat) and snow (refer to Chapter 3), two materials which are highly perishable and can effectively disappear into the underlying site substrate after dwelling abandonment. Both sod and snow were used extensively by Inuit groups (e.g. Boas 1901-07:400-401; Jenness 1922:59-75; Mathiassen 1928:118-131; Birket-Smith 1929:83-84; Balikci 1970:5; Dumond 1977:24-25, 147; Auger 1994; Burch 1998; Stefansson 2001; Lee and Reinhardt 2003; Savelle and Habu 2004), and, although the archaeological identification of these materials can be difficult (see discussion by M.S. Maxwell [1980a] and Savelle [1984]), both were used by at least
some Palaeoeskimos (e.g. Meldgaard 1960a:70; M.S. Maxwell 1980a:506, 514-515, 1985:153, 167, 221; Ramsden and Murray 1995; Renouf 2003; Ryan 2003a).

Given the tendency of both materials to ‘melt’, it can be expected that many structures made of either substance will become much less substantial as time passes, creating an impression that their construction costs were much lower than they truly were. This situation is made even more problematic when one considers Reinhardt’s (1986) conclusion that winter occupations should only be associated with more complex structures containing greater numbers of “technounits”, or layers of features (also Harp 1964, 1976; Jensen 1993; Olsen 1998; contra Nagy 1994b). Yet snow structures, which have few of Reinhardt’s technounits, were obviously occupied during the cold season, demonstrating that the uncritical correlation of ‘big’ architecture with ‘cold season / longer occupation’ and ‘small’ architecture with ‘warm season / shorter occupation’ is naïve. It also indicates that architecture alone should not be used to determine seasonality.

The question of sedentism in the arctic has been addressed by both M.S. Maxwell (1985:197) and Nagy (2000b), who suggest (based in part on structural remains) that the start of the Dorset era coincided with more intensive resource exploitation by larger and decreasingly mobile populations who may have been adopting a collector-oriented subsistence economy. Murray (1999) and Friesen (2007), citing more substantial architecture and midden deposits in some areas, suggest that this trend continued into Late Dorset (although see Stein et al. [2003] for discussion of the problems associated with equating deep site deposits with long and / or uninterrupted occupations). However, it is difficult to assess interpretations of hunter-gatherer residency because ‘sedentism’ as a concept is frequently not explicitly defined, even though it has been of interest to archaeologists for decades (e.g. Service 1966; Lee and DeVore 1968). While there have been attempts to quantify mobility (e.g. Kelly 1983, 1992, 1995) and open discussion on the theoretical issues surrounding the term (e.g. Rafferty 1985), the general lack of clarity concerning the concept means that residential variability (see Binford 1980) can be masked if ‘sedentism’ is linked only to a contemporary Western association with generational occupation in sizeable dwellings (Higgs and Vita-Finzi 1972:29; Rafferty 1985:114-115; Byrd 1989:80; Edwards 1989:9).
But as discussed by Kent (1991:35-37, 1992), few historic groups, and even fewer prehistoric ones, could be classified as sedentary using such a narrowly defined standard. She points to various Northwest Coast (Mitchell and Donald 1988; Matson 1985, 1992) and sub-Saharan groups (Hitchcock 1982; Silitshena 1983; Oswald 1987) who often occupied sites for 30 years or more but eventually relocated, as examples of settled groups that do not fit such a definition. Kent’s (1986, 1991; Kent and Vierich 1989; see also Kelly et al. 2005) research has led her to argue that the standards used to identify sedentism are unrealistic and that groups who occupied a single location for greater than six months should be considered sedentary (or seasonally / semi-sedentary, see Binford [1980]) for the simple reason that they stayed in one location long enough for the basic characteristics of sedentism (see below) to be manifested.

Ethnoarchaeological research indicates that sites occupied by sedentary groups can be differentiated from those of mobile groups on the basis of greater overall size, increased evidence for non-portable formal storage facilities, and larger and more substantially built structures (Testart 1982; Rafferty 1985; Kent and Vierich 1989; Kent 1991; although refer to Smith 2003). This research also indicates that while low-cost structures were constructed regardless of whether occupation was anticipated to be long or short, high-cost structures were only built when long-term occupation was intended. Some prehistorians (e.g. Binford 1967; Crawford 1982) have questioned the utility of these studies, arguing that researchers are compelled to accept a base correlation between extant groups and prehistoric populations. However, Kent (1991:56; also Wylie 2002) argues that analogy, if used judiciously, has remained the only recourse for researchers in the absence of cross-cultural studies that can identify meaningful (and universal) patterns in the archaeological record.

2.3 Chaîne Opératoire as a Structuring Framework for Analysis: Summary
The primary goal of the second portion of this chapter was to outline how the chaîne opératoire can be used to first identify architectural constancies and variations and then explore their underlying causes. As the primary analytical framework for this research, the chaîne opératoire employs concepts of connaissance or group knowledge, represented in this study by general methods for organising and constructing domestic structures, and savoir-faire knowledge,
indicated by unique or localised behaviours of architectural design and use. By considering architecture as a technology on par with more hardware-oriented activities (refer to Lechtman [1977, 1993] for discussion of the limitations often attached to the concept of technology), it is possible to consider dwellings as the product of a variety of diverse activities, each of which may have significantly influenced their planning and arrangement.

As a part of this approach, a multi-scaled research strategy is employed to take advantage of the complementary nature of the macro and micro scales. By beginning with the larger question of architecture across temporal and geographic scales, it is possible to first recognise how the technology was organised. It is only after the larger picture is drawn that smaller scale questions exploring architectural changes and similarities can be addressed. As argued previously, deviations from more typical behaviours represent instances where, for whatever reason, choices were made which produced a recognisably different architectural element. Such decisions were often based on experience, necessity, overall functionality, and how the structure should look (Marquardt 1992:105; Cowgill 2000:55-56). In order to explore those influences and their effects, the range of macro-scale *connaissances* behaviours must first be established, before moving to interpret localised *savoir-faire* knowledge at the scale of the site and dwelling.

As noted previously, although a *chaîne opératoire* methodology is not typically chosen to study structural remains, the broadly defined concepts Leroi-Gourhan developed make such an application quite appropriate (Audouze 1999:168-169). However, whereas many *chaîne opératoire* studies focus on delineating the most minute of gestures as part of that artefact’s overall *chaîne opératoire*, this is neither practical nor possible in this study due to the nature of domestic dwelling remains. Given this, my analysis tends to conceive of architecture in terms of *chaînes opératoires*, representative of architectural elements and attributes (see discussion throughout Chapter 10), rather than focussing on individual gestures (see Bleed 2001; Bar-Yosef and van Peer 2009). However, unlike Bleed, who advocates the study of sequences in their own right, gestures retain their key position here as only the gesture can link the socially-learned process or technique for creating a dwelling (by guiding architects, enabled by their own experience and ability, in how a dwelling ‘should’ look) with the static archaeological record.

In sum, a study of architectural technology that uses the *chaîne opératoire* represents one
avenue through which adaptability and tradition can be explored. Examining immobile architectural technology, as opposed to other more portable artefacts, provides an invaluable glimpse into how a group of people envisioned their dwellings, and how this idea may have been altered by the constraints and opportunities of the social and physical worlds around them. While the study of architecture is not without its difficulties, dwelling remains are unique in that they offer, within a single location, the almost total suite of decisions and behaviours that were made regarding production, usage, possible alteration, and abandonment of one form of socially meaningful artefact. The acts associated with their construction and use provide a tangible link to the social and symbolic constructs in which they were defined (e.g. Lemonnier 1989; Lechtman 1993; Dobres 1995a; Dobres and Robb 2005).
3.1 Introduction
The Arctic climate affects the design and construction of architecture in two keys ways. On the one hand, architects must consider the influence of extreme temperatures, wind, and extended darkness (at least in some areas); challenging conditions against which any structure would be reasonably intended to mediate. The environment can also influence the design and construction of a dwelling through the availability of possible building materials. Such resources can be primary (‘home-grown’) or secondary (exotic materials brought into an area by natural or artificial processes) and the accessibility of both may fluctuate depending upon any number of variables including seasonal considerations, short and longer term weather changes, as well as overexploitation. In this way, the environment acts to both constrain and facilitate architectural options and choices (see Olgyay 1963), although whether a particular material can be obtained will not automatically guarantee its use or influence the form that a structure may take. As observed by Rapoport (1969a:83), “the impact of the climatic factor will depend on its severity and forcefulness, hence the degree of freedom it allows”.

The purpose of this chapter is to therefore review the physical factors that may have shaped the design, construction, function, and performance of northern architectural technology. These consist of shorter-term phenomena such as wind and precipitation that, though invisible to both palaeoclimatologists and archaeologists, can play a key role in cultural adaptations. The properties and attainability of potential construction materials are also evaluated. By outlining this baseline, its influence on architecture can be explored. At the same time, this chapter is not intended to provide an exhaustive overview of research pertaining to past or contemporaneous climatic and biogeographic conditions. Rather, the information included here is intended to frame discussion of Late Dorset architectural technology by placing structural remains in their physical context. As such, environmental information deemed peripheral or not directly relevant to decisions regarding the design and construction of dwellings has been omitted.
3.2 Characterising the Arctic Environment
For most Canadians, the idea of “The Arctic” typically invokes one of three basic responses: one in which knowledge of the land, its people, and their key issues is barely perceptible; a politically motivated ‘knee-jerk’ reaction to actual or perceived threats to Canadian sovereignty in “The North”; or with a sort of northern Orientalism (refer to Said [1978] for the classic discussion of this concept) that sees northern regions as an exotic and remote land where humanity’s ability to adapt and survive is constantly challenged (for discussion, see, amongst many others, Mowat 1951; Berton 1988; Gould 1992; Damas 1995; Rowley 1996; Henry et al. 1998; England 2000; Pyc 2000; Grace 2001; Grant 2002; McGhee 2004; Mandel-Campbell 2004; as well as Spufford 1997 for an English viewpoint on the Arctic).

The natural sciences have had an equally difficult time determining what, exactly, should comprise a scientific definition of “Arctic”. Various criteria have been used, of which the most prevalent are the northern limit of the tree line (Hare and Thomas 1974), the distribution of continuous or discontinuous permafrost (Price 1972), and the 10° Celsius July isotherm (Sater 1969; Przybylak 2003). The latter seems to be the most commonly used (Stager and McSkimming 1984:27), creating a geographic region which includes much of coastal Labrador, Ungava, Keewatin (to just south of Chesterfield Inlet), and the mainland coast extending westward to Alaska (Figure 3.1). The picture is less clear-cut if one uses the distribution of human populations adapted to life in the Arctic given that both Early and Late Palaeoeskimo populations lived for centuries in sub-arctic locations including Newfoundland (Renouf 1994, 1999), the French island of Saint-Pierre off Newfoundland’s south coast (LeBlanc 2000), and the Lower North Shore of Québec (Pintal 1994).

These issues aside, as discussed by Bird (1967:13) and others (Sater et al. 1971; Bliss et al. 1973; J.B. Maxwell 1980, 1981, 1982; Edlund and Alt 1989), most areas of the Canadian Arctic and contiguous Greenland experience limited precipitation, have low overall relative humidity, and are largely reliant upon solar radiation for the main source of energy. In the High Arctic, polar desert or fell field (stone) dominate the landscape, with almost 95% of the area characterised in this manner (Bliss et al. 1973; J.B. Maxwell 1980:13). Elsewhere, vegetation is
Figure 3.1 Various ways in which the “Arctic” has been defined. The 10°C Celsius July isotherm is used in this dissertation.

generally dependent upon latitude and altitude, although as noted by J.B. Maxwell (1980:13, 1982:477), a high degree of variation exists and exceptions often occur.

During the summer months, areas above 66° 33’ north latitude experience 24 hours of sunlight, the polar day, with the total number of days of continuous daylight increasing with latitude (Stager and McSkimming 1984:27). Conversely, these locations do not experience a sunrise for the same length of time during the winter, although light is visible on the horizon (actual Polar Night only occurs north of 72° 33’ N latitude). Despite the extended period of
sunlight in the summer months, however, the region still experiences a negative energy balance given the sun’s rays reach the ground surface at an angle (never more than 47°) that minimises the total amount of radiation received. Because of this, much of the sun’s energy arrives in the Arctic second-hand, imported from the south via atmospheric circulation that brings warm air into the Arctic (J.B. Maxwell 1980:5-6, 137; Przybylak 2003:14). Contributing to this net energy loss is the high albedo of much of the region’s surface (Przybylak 2003:91; Rasmussen et al. 2003:60). Albedo refers to the reflectivity of a given surface to the sun’s radiation, and certain surfaces have a higher reflectivity than others (refer to J. B. Maxwell 1980: Table 1.7). Highest amongst those are light-coloured surfaces, such as snow and ice, which cover many areas for between 8 and 10 months of the year (J. B. Maxwell 1980:6, 139).

Other environmental elements, notably marine currents, the distribution and extent of sea ice (see Section 3.2.5), local geography, and cyclonic and anticyclonic activities, all contribute to short and longer-term physiological conditions (J.B. Maxwell 1982; Rasmussen et al. 2003:53). In terms of the role of architecture in mitigating these circumstances, several physical variables are of key consideration: temperature, humidity, wind, and precipitation (following Rapoport 1969a:89; Zrudlo 1975; Strub 1996). How the Late Dorset responded to these changing conditions forms a major component of this dissertation.

### 3.2.1 Temperature and Architecture

The 10° Celsius isotherm (Figure 3.1) is used in this dissertation to set the approximate geographic boundaries of the Arctic. Despite popular perception, the Arctic is characterised by persistent cold, rather than extreme or periodic cold (J.B. Maxwell 1980:141). The annual temperature range varies depending upon geographic classification, with areas identified as maritime undergoing the smallest difference at approximately 10° Celsius (Przybylak 2003:67). Coastal sites experience an annual temperature range of 20° Celsius, while continental locations have the greatest variance at about 40° Celsius. Such a relatively low temperature deviation at maritime and coastal locations results from the moderating affects of larger water bodies which act as heat sinks in the warm season and heat sources during cold periods, although local physiography can create micro-climatic zones (J.B. Maxwell 1980:7; Jacobs et al. 1997). Other
factors influencing the annual temperatures in the Arctic include changes in atmospheric circulation (particularly cyclonic and anticyclonic systems) and differences in the composition of the land and sea surface (Przybylak 2003:65).

Most arctic meteorological stations (J.B. Maxwell [1980: Figure 1] shows their locations) support the idea that July is both the warmest and wettest month (J.B. Maxwell 1982:381), while February is most often the coldest, though this can differ based on cyclonic activity (J.B. Maxwell 1980:139-141; Przybylak 2003:68-70, 76, Figures 4.1 – 4.4). In general terms, the warmest temperatures occur along southern Baffin Island and in Baffin Bay, while the coldest region is the uninhabitable Greenland Ice Cap, followed by the islands of the Canadian Arctic Archipelago and coastal Greenland. Winter is also the period when temperature inversions, periods when atmospheric circulation is impaired and very cold air occurs near ground surface, are most common. These are especially common in areas experiencing extended periods of winter darkness and are clearly associated with times when the landscape is covered in snow and ice (J.B. Maxwell 1982:303; Przybylak 2003:91-92).

There are four keys ways in which air temperature affects architecture (following Strub 1996:45): heat loss, phase changes of water, freeze-thaw cycles, and dimensional changes (contraction and expansion of materials). Heat loss is a passive process where interior heat is lost through the superstructure or building envelope and occurs with greater rapidity as the difference in temperature between interior and exterior environments increases. Zrudlo (1972:85) further notes that angular buildings lose significantly more energy when compared to streamlined curvilinear designs because of the right angles, where various materials meet, used in the former.

Significantly, the temperature differential between the interior living space and outside world creates a situation where water vapour (introduced in to a structure most commonly by way of breath exhalation, evaporation from damp clothing, cooking, and / or thawing of the underlying matrix) condenses into a liquid form. Because water is a poor insulator (Strub 1996:45), as it works itself into crevices in the building envelope it can compromise the ability of the structure to maintain a comfortable internal temperature. If this water then freezes, it will expand and potentially increase the size of cracks and other structural faults, further decreasing the insulating abilities of the entire structure with time. As noted by J.B. Maxwell (1980:148), low
temperatures are the single most important consideration impacting human health and activity in arctic regions, and it would be imperative that a structure possess at least minimal insulating abilities.

Although decomposition is slowed at temperature below 5° Centigrade, freeze-thaw cycles pose the greatest threat to building materials (Strub 1996:46), particularly as this relates to permafrost’s active layer (defined as the approximately one metre layer of uppermost ground which thaws annually [J.B. Maxwell 1980:16]). Structures built before the active layer re-freezes may be adversely impacted when the ground hardens if roof supports or struts sunk into then unfrozen ground warp or are shifted when the frost level reaches their base. If this occurs, problems relating to poor fits or joins between different structural elements within the overall structure can be created and / or exacerbated. Related to freeze-thaw are the dimensional changes that occur in some materials as they are subjected to very cold temperatures. In regions like the Arctic, where extended and extreme cold occurs, building materials may first weaken and crack during the cold season before expanding with potentially catastrophic results as temperatures begin to rise. A structure’s building envelope may be irreparably damaged.

3.2.2 Wind and Architecture
As noted by J.B. Maxwell (1980:150), the “effects of wind in the Arctic cannot be overemphasized”. Wind controls the movement of sea ice, dictates surface conditions on marine and freshwater bodies, is a major influence on surface vegetation, and can create wind chills that severely affect biological organisms. Despite the key role played by wind, however, few studies have been conducted on local wind conditions in the Arctic. On a regional scale, wind speeds and direction relate to cyclonic and anticyclonic activities. Also referred to as mesoscale cyclones or arctic hurricanes (Turner et al. 2003:10-12), winter cyclonic systems typically move into the Arctic from the Barents Sea and North Atlantic and are often associated with severe weather including high winds, rain, and heavy snow (J.B. Maxwell 1992). Cyclones occur in generally the same frequency in the summer months, despite a widespread decrease in atmospheric pressure during this period, with the result that high winds can also occur at this time (J.B. Maxwell 1980:157; Przybylak 2003:25). In broad terms, low atmospheric pressure and high cyclonic
activity occur in areas bordered by the Pacific and Atlantic oceans, as well as Baffin Bay, and these areas can be expected to experience high wind levels, with the most severe winds occurring between December and March (J.B. Maxwell 1982:380). Conversely, in areas including much of the Arctic Archipelago and western mainland, high atmospheric pressure and low level cyclonic activity combine to produce the lowest surface wind speeds (Przybylak 2003:25, Figure 2.6).

Beyond these generalisations, it is difficult to speak of a pan-arctic pattern of wind speeds or predominant direction given that local wind conditions are dictated in large degree by an area’s topography (Petterssen et al. 1956; J.B. Maxwell 1980:151, Table 2.39; Przybylak 2003:25). At the same time, while Barry and Chorley (1992) have found that there is no relationship between wind direction and latitude, some recording stations indicate that a predominant wind direction may occur during certain times of the year, although readings from other locations demonstrate that wind directions can shift dramatically with the seasons (J.B. Maxwell [1980:155] likens such marked seasonal wind shifts with monsoon conditions typically occurring in more temperate locations). Additionally, stronger winds are more likely to occur in coastal regions given the strong thermal gradient between land and sea, off of glaciers and down slopes (bora and katabatic winds), and in locations where air is funnelled by restricted landforms (J.B. Maxwell 1980:150-155). Therefore, in some locations the winds may blow from a predominant direction for much of a season or even a year as a result of channelling, but at other locations the winds may shift considerably with the seasons.

Surprisingly, many arctic locations experience extended periods during which no measurable wind blows at all (J.B. Maxwell 1980:157, Table 2.39). Therefore, when wind speeds for the entire year are calculated, such periods of calm contribute to a situation where arctic wind speeds fall close to the median recorded at locations further south. However, this superficial comparability is misleading given that the occurrence of winds greater than 25 km/h is also relatively common, especially during the cold season when wind chills can be deadly and must be considered (J.B. Maxwell 1980:159). The speed at which many arctic winds blow also vary seasonally and geographically and are tied to cyclonic activities so that while the most extreme wind conditions occur in the east, particularly along southern Baffin Bay, the highest wind speeds occur north of Parry Channel in the summer months, south of Parry Channel in the fall, and along
south-eastern Baffin Island during the winter (Przybylak 2003).

In terms of how wind impacts the design and comfort of a structure, Strub (1996:51) notes that the side of the dwelling against which the predominant wind blows loses the most heat and is also subjected to the severest wind erosion and wind-driven precipitation (see also Lee and Reinhardt [2003:44]). As regards the overall building envelope, the wind’s impact on the windward and leeward surfaces can be significant, particularly considering the damage that can be caused if the wind catches on any junctures of the structure. Wind drag may then increase and cause additional strain on the dwelling, eventually weakening and perhaps even destroying the superstructure (Strub 1996:48-49).

3.2.3 Precipitation and Architecture
As is true of other locations, precipitation in the Arctic is dependent in large measure on the amount of moisture in the air, the patterning of weather systems, and local terrain (J.B. Maxwell 1980:343). In areas where the air’s moisture content is higher, typically around areas of open water including polynyas (see Figure 3.2 for the location of major polynyas and leads), the amount of precipitation that falls during cold seasons can be relatively significant, especially where onshore winds (blowing from the water onto the land) occur.

Precipitation, whether it falls as rain or snow over the Arctic Archipelago, is strongly influenced by cyclonic patterning and it is largely because of this that much of the total precipitation falling in that region occurs during the summer and fall periods (although precipitation is not confined to any particular period in some areas). This pattern is accentuated in the fall due to increased areas of open water which supply additional moisture to the air, although heavy precipitation is generally unusual in the Arctic (J.B. Maxwell 1980:344, 348). As is the case elsewhere, the windward sides of elevated regions receive more rainfall than do leeward locations (Hare and Thomas 1974:36).

Snow in the Arctic Archipelago is the main source of freshwater and varies in amount from year to year, with the highest average snowfall (approximately 300 cm) falling along south-eastern Baffin Island (J.B. Maxwell 1980:355, 359). Once on the ground, the final position of snow is dependent upon a number of factors including topography, wind speed and direction, and
vegetation cover. In general, the more rugged the terrain is, the less consistent the snow cover will be, with deeper snow deposits occurring in swales and against leeward slopes (due in part to
its movement by wind; refer to J.B. Maxwell [1980: Figure 3.125]). Snow typically begins to fall in mid-August. From there, ‘winter’ moves progressively southward until the entire arctic returns to the cold season by the middle-end of September (J.B. Maxwell [1980:139], refer to Figures 3.129 - 3.138 for a month-by-month record of snowfall for various locations). The end of the snow cover season is also correlated to latitude: areas north of Parry Channel begin to lose their snow cover in late June and early July (some locales, such as Eureka Sound, have a warmer microclimate that sees the snow melt begin two weeks earlier). South of Parry Channel the melt begins in the middle part of June, while some western and eastern locations do not see a dissipation of snow until mid-July (J.B. Maxwell 1980:364).

3.2.4 Relative Humidity and Architecture
Absolute humidity in the Arctic is low (J.B. Maxwell 1980:150), with only three main moisture sources: melting permafrost, evapotranspiration from plants, and fresh and marine water bodies (Hare and Thomas 1974:36). Although varying somewhat, the lowest amounts of precipitation and atmospheric moisture occur during February and March, when most water-bodies are covered by ice, with the total amount of precipitation and relative humidity decreasing as latitude increases (Hare and Thomas 1974:36).

Despite the low overall humidity, however, moisture is an important consideration for arctic inhabitants. This is because air-borne water condenses quickly once it has been exposed to warmer air, such as that found inside a dwelling. As such, the movement of people into and out of structures, as well as the breathing of those remaining inside for longer periods, leads to a situation where water evaporates and then condenses onto building surfaces. If the water re-condenses into spaces between building materials, it can seriously undermine the ability of the structure to insulate its occupants from external conditions (Strub 1996:53). If a dwelling is built mostly or completely from snow, elevated humidity can have a disastrous impact, condensing within the snow and filling the naturally insulating air pockets with water. With time, the moisture-laden snow will cause the dwelling to become less thermally efficient and, eventually, uninhabitable (Kershaw et al. 1995:334; Lee and Reinhardt 2003:48, 50).

However, steps could be taken to reduce this problem and extend the use-life of a
structure. The historic Inuit typically cut a vent hole into a snow structure’s dome in order to release warm moist air and introduce cool dry air into the interior. Even so, these features operated on a thin edge of necessity: too much airflow meant that precious heat was also lost, while too little ventilation might allow humidity and carbon dioxide to build to unsafe levels. If any Palaeoeskimos sheltered within snow dwellings (refer to Chapter 6.3.7), a similar design component would presumably also have been used.

3.2.5 The Sea Ice Environment
The final environmental consideration to play an indirect, though important, role in how architectural structures were planned, designed, and used is the duration, extent, and type of sea ice found within different regions of the Eastern Arctic. Sea ice is the essential component of the North, directly influencing the behaviours and survival successes of most marine, terrestrial, and avian species which live either seasonally or year-round in the region (e.g. Dunbar 1984; Tynan and DeMaster 1997). Human survival and longevity in the Arctic is also deeply connected with the sea ice environment. As highlighted throughout Nelson (1969), Brody (1987), and Berton (1988), knowledge of how ice moves, where it forms or breaks first, and the types of animals attracted to its particular features are key pieces of knowledge that make ice a barrier or a boon to human life in the region.

There are three major non-exclusive classes of sea ice: land-fast ice, multi-year ice, and moving pack ice. The formation of land-fast ice (which remains attached to the land) is dictated by atmospheric and water temperatures and is the first substantial ice to develop. Marine ice can only begin to form when the ocean’s surface temperature reaches -1.8° C (Jacobs et al. 1975:524; also Chapman and Walsh 1993), although the consolidation of individual ice fragments into larger pans is subject to wind and wave action. Land-fast ice is often composed of first-year ice (ice which forms and melts within the same year) and its formation and duration is, given its location adjacent to the land, strongly tied to changes in the tide, the shape of the coast and any offshore islands, sea currents, and wind patterns (Jacobs et al. 1975; Jacobs and Stenton 1985:60). In general, more complicated coastlines (containing numerous inlets and sheltered bays) are the first areas to freeze over, while areas that are more open to the effects of ocean and wind currents
The surface of first year land-fast ice is typically smooth, although pressure ridges and open leads can form where wind or currents push less sheltered ice fields together. First year ice is generally the most ecologically productive as it is thin enough to permit the penetration of sunlight to the underlying water, allowing the growth of algae and photoplankton which in turn support the fish upon which seals depend (Stirling et al. 1981:54). First-year land-fast ice also dictates the distribution of ringed seals (a staple of the Late Dorset diet in many areas, see Chapter 5.3.3), with juvenile and immature seals largely restricted to the open water of the ice edge (sina) and leads, while the mature breeding seals maintain breathing holes under the ice (McLaren 1962:171; Smith 1973:19-21; Kemp 1976:134). Ringed seals of all ages tend to avoid areas with multi-year ice, as well as ice that is uneven or hummocky (Boas 1888:471).

First-year ice which does not melt in the summer following its formation becomes increasingly thick (reaching 3 m or more) and is termed multi-year. Multi-year ice is also denser than first-year ice and is less able to support marine animal species because its additional mass makes the maintenance of breathing holes very difficult (refer to McLaren 1958; Banfield 1974: Maps 108, 109, 158, and 161). The impassable multi-year ice plug north-east of Victoria Island (covering McClintock Channel, Melville Sound, and M’Clure Strait) typifies this situation as that ice forms a barrier separating the Pacific and Atlantic populations of walrus and bowhead whales (Banfield 1974: Map 128; Dyke et al. 1996), as well as smaller mammals. Morrison (1999:145) has dubbed this area the “great ice desert”.

An ‘intermediary’ form of ice is pack ice, which can be composed of first-year and multi-year ice. Pack ice, as its name suggests, is ice that is packed together but also moves around at the whim of water and wind currents. This dynamic situation results in pack ice presenting some of the most diverse ice conditions, with large ice fields sometimes forced together (similarly to the movement and meeting of the earth’s tectonic plates) creating huge pressure ridges reported in excess of 35 m in height (e.g. Stefansson 1921:145). Such ridges can become more-or-less permanent and extend for kilometres, presenting serious complications for anyone attempting to travel on the sea ice. Extensive areas of pack ice are avoided by bowhead and beluga whales, as well as ringed seals, although it is essential to the survival of sympagic harp, grey, and bearded
seals, as well as walrus, which all use pack ice for moulting and birthing / nursing young (Banfield 1974).

In a reversal of the process through which pressure ridges are created is the formation of leads, or linear cracks, within fast ice and large pack ice fields. Created by wind and / or wave action, leads open when an ice field is either pulled apart or when land-fast ice is torn from the shore. Such cracks can open and then re-freeze within the space of a couple of hours, or they can become permanent areas of open or recurring water throughout the remaining ice season (Figure 3.2). Ice leads are often used by seals and walrus as hauling out locations (McLaren 1962:123; also Smith 1973:29-30), and, where they open on to non-consolidated ice, by narwhals travelling north to their summering grounds in the spring (Banfield 1974:255). If these leads should unexpectedly close, or if the southward migration ahead of the reforming ice is delayed, huge pods of narwhals can become trapped (such events are referred to in Inuktitut as savssat) and present an easy target for human hunters (e.g. Porsild 1918). As further discussed in Section 3.4, the distribution of many other marine and terrestrial mammals is directly impacted by the duration, extent, and type of sea ice present in a region.

How sea ice conditions may have impacted the planning and location of Late Dorset architectural technology is still unclear considering the extent and manner in which they exploited the ice platform is not certain (see Chapter 5.3.3). The diverse locales occupied by Late Dorset imply that populations in some areas may have had to adopt localised strategies based on more restricted conditions (refer to the case studies in Chapters 7-9, as well as Chapter 10). For example, a pronounced tidal range of 10 m (Sabo 1981:51) along the southern coast of Baffin Island is a consideration for anyone living near the shore (Figure 3.3), particularly those interested in exploiting offshore marine resources. During the ice season, these twice-daily fluctuations pulverise ice caught in the tidal zone and prevent the formation of land-fast ice at the next high tide. This results in wide bands of broken, uneven, and semi-frozen slob ice (essentially a deep slush that cannot be crossed by foot or boat) that is treacherous at the least and certainly does not present an easy path of access to the resources further away from the shore. It might have been the case that the Palaeoeskimos along these coasts, like the Neoeskimos, moved onto the sea ice at least periodically during the winter in part to avoid such dangerous crossings (e.g.. Cox
Figure 3.3 Tidal variations near Kimmirut, southern Baffin Island.
and Spiess 1980). Conversely, Dorset occupying the southern coast of Newfoundland (e.g. Rast 1999) where sea ice never occurs must have used a very different economic strategy.

Another important feature of the sea ice environment is the polynya. Powerful wind and wave currents, in combination with atmospheric synoptic patterns and ocean up-welling, work to create permanent or semi-permanent areas of open water in regions that are otherwise completely covered with ice. These areas of open water act as beacons for marine and avian species throughout the cold season and the period leading up to break-up, and can be incredibly rich ecological locations (refer to papers in Stirling and Cleator [1981]). Polynyas can range in size from small open water areas involving only a few kilometres², to the North Water in northern Baffin Bay, which covers an area in excess of 50000 km² (Barber et al. 2001; also Figure 3.2). Recurring polynyas, those which form in approximately the same location year after year, have proven to be focal places not only for the migratory and resident animal species that depend on their presence for survival, but also for human groups throughout the prehistoric and historic occupation of the Eastern Arctic (Schledermann 1980; Cooke 1984; Freeman 1984; Wenzel 1984; Henshaw 2003).

### 3.3 Resources Available for Architectural Use

This section identifies the main resources which could have been employed in dwelling construction. Where possible, ethnographic observations are used to demonstrate a material’s advantages or disadvantages, as well as to highlight where and when particular resources were selected.

#### 3.3.1 Snow

The insulating properties of snow are well known (Strub 1996:50) and deposits in excess of 15 cm are able to insulate the underlying ground surface from solar radiation and absolutely halt the thawing of permafrost. While it is difficult to say conclusively whether or not any Palaeoeskimos used snow shelters as most evidence would have disappeared in the spring (but refer to Savelle [1984] and Labrèche [2003:172, 174, 177]), their use by Pre-Dorset (Schledermann 1990:113; Ramsden and Murray 1995) and Middle and Late Dorset groups has been proposed (Meldgaard 1960a:70; M.S. Maxwell 1985:167).
Several researchers (e.g. Dumond 1977:145; M.S. Maxwell 1984:368; McGhee 1996:232, see also Taylor 1965) have suggested that the first Thule Inuit migrants into the Canadian Arctic may have learned how to build snow shelters from resident Dorset populations. Lee and Reinhardt (2003:39) support this notion, observing that the spiral technique of construction, where the first layer of snow blocks is cut to create a diagonal surface upon which subsequent tiers sit and angle inward (creating the self-supporting dome or arch), was not known west of the Mackenzie Delta (where no Dorset sites have been reported). While intriguing, a Dorset origin for the igloo is not required as Jenness (1922:60-61) has pointed out that knowledge of the spiral technique was not a prerequisite for the successful construction of a snow shelter. His observations indicate that, even amongst groups who used snow dwellings regularly, marked differences in skill and know-how (as well as other considerations, including the length of time the structure was intended to be occupied) can be commonplace.

Snow structures, if employed, would have provided many of the same benefits to the Dorset that they did to the historic Inuit: to be near food sources, to participate in communal hunts, and to facilitate movement when resources in one area were exhausted. Significantly, snow structures provide a form of shelter that is easy and relatively efficient to construct (Freeman 1984; Lee and Reinhardt 2003:38). Relying on snow for dwelling construction also meant that architect-inhabitants did not have to carry the accoutrements of a more ‘permanent’ structure (particularly the roof supports and covering skins) from location to location. Dwellings located on the sea ice were advantageous in that people did not have to repeatedly traverse the dangerous band of broken and semi-frozen ice near the shoreline that was created as tides rise and fall (tidal amplitude). While this may not have been a key consideration in areas of the Central Arctic and Queen Elizabeth Islands where tidal fluctuations average 1 m or less (J.B. Maxwell 1982:3), groups on the coast of Hudson Strait, where tidal variations greater than 12 m are known (M.S. Maxwell 1985:17, Figure 2.11; Figure 3.3), would certainly have factored such events into their choice of site location and structural type.

During the historic era, the construction and location of snow structures by the Inuit was closely tied to the availability of adequate quality snow, which must be neither too hard nor too soft (Jenness 1922:59-64, 76-77; Birket-Smith 1929:78-83; Lee and Reinhardt 2003:38-40). The
search for this type of snow could be long and tedious (Schwatka 1884:218), particularly in regions where snow was compacted by strong or persistent winds (J.B. Maxwell 1980:359-360; see also Dery and Tremblay 2004). Ethnographic reports (e.g. Jenness 1922:61) indicate that once the dwelling’s shell was completed, women went into the structure, which was then sealed, and lit oil lamps to raise the internal temperature sufficiently for the inner snow surface to melt. Once this was accomplished, the lamps were extinguished so that the water could re-freeze, forming a wind-proof ice coating (Lee and Reinhardt 2003:41-42). Historically-observed snow structures could be completed very rapidly (Boas [1888:541-542] reports less than two hours), with smaller examples often finished within an hour. Their final form varied significantly between regions (Lee and Reinhardt 2003:42, Figures 44-49). These structures could be used for one or several nights, or be used for an entire winter, depending upon the outside temperature, wind, and the use of a skin liner to prolong the structure’s use life (Lee and Reinhardt 2003:44).

Snow could also be used as one component of a structure. For example, in transitional seasons when snow was either not plentiful enough for larger-scale snow structures or air temperatures had risen to the point where dwellings made completely of snow were no longer practical, snow was used only for lower walls, or to anchor tent skirts. Such dwellings, referred to as qarmat, were quite common historically (e.g. Jenness 1922:78-79, Figure 27) and were most frequently built after winter structures were abandoned but before people moved into skin dwellings. Qarmat are discussed in Chapter 6.3.6.

3.3.2 Wood
With the exception of north-central Labrador, all Late Dorset populations lived north of the tree-line (Stager and McSkimming 1984: Figure 1c) and the only architecturally-suitable wood available was that carried into the area by river and ocean currents. While certain regions, notably around the Mackenzie River (see Eggertsson 1994a) and northern and southern Ellesmere Island (Blake 1972; M.S. Maxwell 1985:16; Schledermann 1996:5), receive quantities of wood, many areas of the Eastern Arctic in fact receive little or none. This is because they are either not in the path of driftwood-bearing river and ocean currents, or because their shores are choked by near-continuous ice coverage (M.S. Maxwell 1985:15). Much of the wood that does wash onto beach
strands does so only after a long and often circuitous journey during which it was either ice-bound or subject to wind and water currents (refer to Dyke and Morris 1990; Dyke et al. 1997; Tremblay et al. 1997).

As discussed by Eggertsson and Laeyendecker (1995), Dyke et al. (1997), Tremblay et al. (1997), and Dyke and Savelle (2001), most driftwood carried to the Eastern Arctic was transported by one of two chief transport systems; the Beaufort Gyre and Transpolar Drift Stream (including both the Eastern and Western Greenland currents), or the Mackenzie Current. Because of these two delivery mechanisms, driftwood found on the beaches of the Queen Elizabeth Islands, as well as the islands and mainland areas east of the Mackenzie Delta, could have ultimately originated in the forests of Eurasia or North America (Dyke and Savelle 2001:113). Further to the east, Lancaster Sound and eastern Baffin Island receive driftwood from both northern (Greenlandic) and eastern (Baffin Bay) sources. No matter its point of origin, wood washed into the Arctic Ocean can only float for a limited period of time before becoming waterlogged and sinking, typically between 10 and 17 months (Eggertsson and Laeyendecker 1995; Tremblay et al. 1997). However, it can take a piece of driftwood as much as 10 years to travel from the Beaufort Sea to Baffin Bay, a journey that can only be accomplished with the aid of sea ice (Dyke et al. 1997; Tremblay et al. 1997). A balance must therefore exist in which there is sufficient ice to trap and transport wood without the wood melting free and then sinking, but also enough open water for the wood to be released and deposited on a shoreline (Eggertsson and Laeyendecker 1995:180).

An extreme historic example of the ability of pack ice to transport objects across the polar sea is Nansen’s (1897) account of the voyage of the Fram. Following reports that wreckage from the Jeannette, an American ship crushed in ice off of Siberia in 1881, was found on a south-western Greenland beach in 1884, Nansen realised that pack ice could be used to aid, rather than hinder, polar exploration. In 1893 he purposely froze the Fram in ice off of the New Siberian Islands, believing the Transpolar Drift Stream would eventually carry his ship safely across the Arctic Ocean to the ice-free waters of south-western Greenland. In 1896, following three years spent locked in the ice (and failing to sledge to the North Pole), Nansen, the Fram, and her crew returned safely to Norway. The participants on this journey may have benefited from an unusually
rapid passage along this route, as Rigor (1992) reports the Transpolar Drift Stream typically takes between five and six years to move ice (and any entrapped wood) from the Chukchi Sea into Fram Strait.

It is difficult to assess, based on published literature, the size and condition of the driftwood that eventually washes ashore in the Eastern Arctic. It appears that some of this wood was relatively large (e.g. Eggertsson and Laeyendecker 1995: Figure 3; Schledermann 1996:5; Dyke and Savelle 2000:114) and would certainly seem substantial enough for architectural purposes, but whether such pieces were the norm or atypical is unclear. Dyke and Savelle (2000) describe wood on beaches in the path of the eastward flowing Mackenzie Current, from which much of the driftwood on the western arctic islands derives, as being as much as 5 m in length, although most pieces average under 1 m (also Dyke et al. 1997). It seems probable that beaches not directly in the path of driftwood-bearing currents would receive fewer, and smaller, pieces (e.g. Gronnøw 1996a; Eggertsson 1994b), while beaches oriented the ‘wrong’ way would receive even less wood (Stewart and England 1983).

Structural wood was highly valued amongst most ethnographically observed populations, particularly those in regions where wood was not commonly found (as amongst the Polar Inuit [see Steensby 1910:314-315] and Plains Indians [Vickers and Peck 2004]). Given this shortage, several arctic populations seem to have altered the design of their dwelling superstructures in an attempt to compensate for a scarcity of suitable tent poles (Lee and Reinhardt 2003:55, 56, 63). Some groups, including the Central Inuit, resorted to lashing multiple smaller pieces of wood together in order to create lengths sufficient to function as tent poles (Boas 1888:551). In cases where wood was in extremely short supply, antler, narwhal tusks, or whale bones may have been substituted as supports in the superstructure (Lyon 1824:229; Peary 1894:44; Boas 1901-07: Figure 183; Damas 1984:405; Gordon 1988, 1994; Lee and Reinhardt 2003:63).

Considering the potentially lengthy period of time necessary for driftwood to move through the Arctic, it is not necessarily in optimal condition when it washes ashore, particularly in regions where it spent an extended period in the water (Dyke et al. 1997). It is likely that wood of an appropriate size and shape for construction could still be unsuitable because its condition was too poor. Even solid driftwood weathers quickly once it has beached (Dyke and Savelle
2000:115), with the result that architects would exercise a strong preference for newly arrived pieces, rather than the older wood often found on higher beach levels.

The influence of wood availability on the design and form of dwellings is most clearly demonstrated by the Mackenzie Inuit, whose territory was centred where the Mackenzie River flowed into the Beaufort Sea. The Mackenzie River carries huge quantities of construction-quality wood downstream to the coast and local populations used this virtually inexhaustible supply to create large timber structures. These dwellings contrast markedly with the whale bone, stone, and sod dwellings built in the comparatively driftwood-poor east (refer to Jenness 1922:56; McGhee [1969/70]; Schledermann [1976a]; Arnold [1994]; and Lee and Reinhardt [2003:73-92] for overviews). Intermediary areas, such as the south-western coast of Victoria Island, are at the outer limits of the Mackenzie Current’s influence and receive only limited quantities of often poorer-quality wood. Because driftwood is less reliable on this coast, the best and largest pieces of wood were used by the earliest Thule Inuit occupants, who were therefore better able to maintain more traditional building practices and construction styles (LeMouël and Le Mouël 2002:183). In contract, more recent groups were forced to use the poorer-quality and less desirable wood avoided by their predecessors, with the result that the size, shape, and organisation of the later dwellings were adversely affected.

Alix (2001) reports a similar scenario in the typically wood-poor Eastern Arctic, where techniques of tool manufacture during Thule Inuit times indicate craftspeople were concerned with conserving raw materials and maximising their serviceability.

3.3.3 Whale Bone
Whale bone, whether from large baleen whales such as the bowhead (*Balaena mysticetus*) or smaller species including the narwhal (*Monodon monoceros*) and beluga (*Delphinapterus leucas*), is another material which can be used in dwelling construction. Bones from the larger baleen whales are the most useful given their size; bowheads range between seven and nine metres in length for juveniles (George *et al.* 1990), and between 18 and 20 metres for adults (Reeves 1991). In comparison, adult male narwhals and belugas reach a maximum size of 4.7 m and 4.9 m, respectively, with females being somewhat smaller (Reeves *et al.* 2002:318-325).
Extensive survey programs directed to identify sites in which whale bone was used have clearly demonstrated that this material was only used within the natural range of the bowhead (McCartney 1979a:30, 54, Figure 9). Obviously, given their great size and weight, pieces suited to construction were too large and cumbersome to be transported between regions. Whale bone would have been available through two key means: direct hunting, or opportunistic scavenging of beached whales. Although debate concerning the ability of Dorset to hunt large whales continues (see Mathiassen 1958; Mary-Rousselière 1976; Whitridge 1999a), the fact that bowheads tend to float after death means that even naturally deceased whales would occasionally beach (Dyke and Savelle 2001:375), becoming a feasible building material for Dorset builders. The characteristics of whale bone (density and thickness) means that it decays very slowly (McCartney 1979a:27) and will, unlike driftwood, retain its integrity for extended periods.

In practical terms, Savelle (1997:870) has identified three considerations relevant to the use of bones from large whales: weight, size, and shape. Savelle (1997:870-871) further notes that whale bone could be used in two primary ways: as a structural roof support or piling (a column driven into the ground as a support piece), for which a bone’s length and shape were primary considerations; or as ‘bulk’ or a structural brace, in which case shape, weight, and compactness were most important. Examination of Thule structures indicates that there appears to have been no upper or lower size limit for bones (ribs, maxillae, and mandibles) used as roof supports. There also appears not to have been a lower size limit for bones functioning in a ‘bulk’ role, although an upper limit based on weight (400-500 kilograms) was noted (Savelle 1997:880-881). Given these observations, it appears that essentially any bowhead bone could be incorporated in construction, although both Dawson (1997, 2001) and Whitridge (2002) discuss factors, including the availability of specific whale bones and social considerations, which may have influenced the design and construction of some structures. Savelle (1997:870) notes that bone must be exposed for several years before it can be used in dwelling construction.

3.3.4 Sod
Peat (or sod) is also available in many areas of the Arctic. Developing most readily in cooler climates and in areas where drainage is limited or blocked (Edlund and Alt 1989:15), peat is
formed when plants (typically vascular mosses in the Arctic) die and begin to decompose. The ensuing matrix is anoxic, with the result that the vegetation only partially decomposes, resulting in a dense vegetative mat that can be cut and divided into turves or blocks and then used for fuel or as a building material. Peat deposits are especially common in regions which were previously glaciated and have disrupted drainage, in coastal locations with low elevation, and in higher elevations with poor drainage and high rainfall (Butzer 1964:186-187). Kevan et al. (1999) have also documented the pronounced plant and peat growth that occurs where human activities have introduced additional nutrients into the ground, a process that Collins (1952:51-52) had already observed attracted Thule Inuit to previously settled locations. My own observations made in several locations throughout the Arctic also clearly indicate that most substantial peat deposits are located near freshwater sources (ponds, streams, or areas of melt water runoff), clefts between bedrock outcrops, and at the base of slopes underlain by permafrost (see also Pielou 1994).

Architectural techniques incorporating significant amounts of peat are widely practised in some regions of the world (especially western and northern Europe), and are particularly common in locations where trees are rare, absent, or too expensive (e.g. Buckland 2000). In terms of architectural utility, peat functions as an excellent insulating material given that it (like snow) contains numerous air pockets which trap air to create a barrier between internal and external environments. This quality also means that peat ‘breathes’, allowing some measure of air exchange whereby moist internal air could be slowly exchanged for fresher external air, while the structure itself remains windproof (Arge 2000:157-158). Peat, unlike more solid materials, can also be easily cut to a desired shape and size by builders, many of whom created sod turves of a standardised type for construction purposes.

This characteristic was an important advantage when building walls of layered stone and sod given that the sod conformed to the often irregular shapes of the stones, ensuring a wind and water-tight arrangement that, with proper care, could last for decades. As with other construction materials, the builder could, and often did, choose the material based on its intended use. Roussell (1941:24-25) describes the types of turf that were available to Norse builders, noting that specific kinds were selected based on where in the structure they were intended to be used. For example, builders may have chosen sod that contained more grass roots for its durability, peatier sods for
roofs, and drier sods for walls.

Working against the large-scale use of sod in construction is the huge quantity required if a structure is to be composed primarily of the material (Wallace [2000:210] notes that each of the Norse structures at L’Anse aux Meadows in northern Newfoundland required 35,000 cubic feet / 1,000 cubic metres of sod, in addition to 86 large trees for supports). Cutting and collecting sod is also quite labour-intensive (e.g. Noble 1983-4:76-77), a consideration that may have deterred more mobile hunter-gatherers. Certainly unless builders were able and willing to locate and transport sods from different locations to a central building location, structures using significant amounts of sod would of necessity have to be located where sufficient sods were at hand. Sod also has a low load-bearing capacity, meaning that sod walls cannot support a heavy roof without the addition of crucks (support arches or frames) which shift the roof’s weight to the foundation (Noble 1983-4:69-72). Finally, sod can only be reasonably worked before it freezes, or at least before it becomes solid (see Bennett and Rowley 2008:229-230), as it becomes increasingly uncomfortable, and eventually impossible, to work as temperatures drop (Noble 1983-4:77, 80).

3.3.5 Antler
Both male and female caribou have antlers, although the greater overall body size of males (barren ground caribou, *Rangifer tarandus groenlandicus*, average 102-108 kilograms for males, versus 68-78 kilos for females, while woodland caribou, *Rangifer tarandus tarandus*, males range between 115-275 kg and females between 64-135 kg) is reflected in their larger antlers (Kelsall 1968:291, 298; Banfield 1974:305). The form and size of antlers also varies between the subspecies: Peary caribou (*Rangifer tarandus pearyi*) have the smallest antlers and woodland caribou the largest, while the mid-sized barren ground caribou have antlers that are more rounded and have fewer lobes (Gordon 1996:9). Male barren ground caribou begin to develop their antlers in March, the velvet begins to shed in mid-September and the antlers harden shortly thereafter (Banfield 1974:384). Males shed their antlers between November and February. Females develop antlers between June and September; the antlers begin to harden in late October and are not shed until after calving in April-May. Male antlers are much larger than those of the females, often averaging between 90 cm and 120 cm in length.
The local distribution of caribou is controlled by a number of factors including the depth and hardness of snow and icing events (Hoffman 1974:484-506; Freeman 1984:44; Jacobs 1989; Kohler and Aanes 2003), although specific migration routes can be followed over many generations (Kelsall 1968:108ff). Various arctic groups were aware of these routes and hunters often intercepted the caribou at bottle-necks (e.g. Fitzhugh 1981; Brink 2005) where large numbers could be harvested over short periods of time. Other groups developed a strategy of exploitation that has been likened to ‘herd following’ (see Burch 1972, 1991; Gordon 1975, 1996; Spiess 1979).

Because the Arctic presents a limited number of alternatives for roof supports, options were undoubtedly assessed and experiments made in an attempt to create structurally solid shelters. Gordon (1988, 1994) has described an unusual case where massive quantities of caribou antler (well over 2,500) were used by Thule and / or Copper Inuit groups to create habitation structures at the Nadlok site (MbNs-1). As noted by Gordon (1994:335), such antler walled and roofed structures are only possible where massive amounts of the material are available, such as at caribou water-crossings, and would only be made in areas where wood was rare or absent. The antler used in the Nadlok structures was not modified (other than being separated from the cranium), although historic groups such as the Sadlermiut and Iglulingmiut typically straightened antler (via soaking and steaming) before integrating it into a dwelling’s superstructure (Lee and Reinhardt 2003:47, 56). Taylor (1960:80-81) also suggests that antler was used by the Sadlermiut to create a lattice-like support frame. Both fresh and old (shed) antler was used in tool production (LeMoine 2005:138) and either could presumably be used in dwelling construction.

3.3.6 Ivory
Similar to antler, ivory from both walrus (Odobenus rosmarus) and narwhal was also available to Late Dorset in many regions and may have been used in dwelling construction. The tusks of male walruses can grow to 1 m (3 feet) in length (LeMoine and Darwent 1998:75), while narwhal tusks can reach 2.7 metres (9 feet) in length and weigh over 20 pounds, or 44 kilograms (Martin 2003). Both species are gregarious, are restricted to areas of open water or discontinuous ice, and are often procured by modern hunters at ice leads (Oswalt 1979; Freeman 1984:78-79), a technique
most likely also employed by the Late Dorset (LeMoine and Darwent 1998:75).

Historic accounts describe narwhal ivory as being used to support tent coverings where wooden poles were unavailable (e.g. Lyon 1824:229; Peary 1894:44; Rasmussen 1927:168), although details of its use are lacking. Builders may have lashed shorter pieces of walrus ivory (or even walrus baculum [Bennett and Rowley 2008:241]) together in order to create longer segments, or used individual sections as cross-pieces. Walrus skulls have also been used historically in wall construction (e.g. Lee and Reinhardt 2003: Figure 12.3).

3.3.7 Stone and Gravel
Stone is perhaps the most ubiquitous construction material and is often the most commonly identified piece of site furniture (see Binford 1978a, 1979). Given the minimal vegetation cover in many areas, stone and gravel are typically highly visible and readily available (the former often in boulder and slab form) for use as anchors, in walls, as paving (or underlying padding), and for various internal features. How extensively stone and gravel were used in construction is probably at least partly a reflection of a builder’s ingenuity and necessity, combined with know-how. For example, while many Inuit groups used stone extensively to create walls in excess of 1 m in height (e.g. Clark 1980), the masters of dry masonry are probably the Polar Inuit in wood-poor northwestern Greenland. Here, architects used only self-supporting stone to build their dwelling’s walls and cantilevered roofs (e.g. Holtved 1967: Figure 8; Steensby 1910:314-315).

However, in locations where access to suitable stones was restricted, architectural design and construction may have been impacted in both obvious and subtle ways. For example, a scarcity of the large stone slabs necessary to pave the tops of sleeping platforms in Thule structures at one site resulted in the recycling of stones from unoccupied homes into newer dwellings (Park 1997:279-280). The decision to ‘mine’ old dwellings not only allows researchers to infer which structures were the most recently occupied, but also provides insight into how some architects chose to maintain their building traditions and solve a supply shortage. While Dorset known domestic structures do not contain features for which such large stones were necessary, it is possible that comparable recycling strategies occurred.

Similarly, gravel was frequently used as a building material in Thule Inuit dwellings (e.g.}
Lee and Reinhardt 2003) and would also have been available to Dorset builders in many locations. The gravel used in Thule dwellings was typically obtained from *in situ* deposits encountered during excavation of semi-subterranean floors (e.g. Maxwell 1981), but could also be imported from other areas of the site (e.g. Savelle and Habu 2004). This gravel usually served to insulate the dwelling’s floor and sleeping areas from underlying permafrost and ground moisture (e.g. Le Mouël and Le Mouël 2002), and also provided a stable base upon which paving stones were positioned. If used, gravel probably functioned similarly in Dorset structures.

3.3.8 Skin
The final building material available to hunter-gatherers in the Arctic is animal skin. In the absence of other materials (e.g. birch bark, branches, woven textiles, or large boughs), and precluding the use of sod and stone to roof dwellings, skin is the only covering available in seasons when snow is not present (gut could have been used, although at least during the historic period it was very unusual to cover a structure completely in this material [Lee and Reinhardt 2003]). Various accounts list the skins of a range of species of seal, as well as caribou, musk ox, walrus, and even fish (Faegre 1979:108), as roof coverings (Lee and Reinhardt 2003:56), although Labrèche (2005:165) suggests that seal skin is better suited than caribou.

Numerous historic accounts (e.g. Hughes 1984: Figure 12; Saladin d’Anglure 1984:482; J.G. Taylor 1984:514) describe tents as being covered with skins that may or may not have been split, de-haired, or scraped until they were translucent (to admit light into the interior, see Lee and Reinhardt [2003: Figure 151]). Some dwellings also incorporated sections of semi-transparent sewn seal gut (Steensby 1910:354). The number of skins required to cover a structure varies based on the size of the dwelling to be covered, as well as the size of each individual skin. For example, Gabus (1961:108) notes 13 caribou skins were required to cover a large Caribou Inuit dwelling, while 10-15 bearded seal (*Erignathus barbatus*) skins were necessary for tents on the Ungava Peninsula (Saladin d’Anglure 1984:482; see also Labrèche 2005:166).

3.3.9 Discussion
The Arctic provides a limited choice of building materials with a diverse range of performance properties. Being able to identify the general advantages and disadvantages of each, recognising
when one material is better for a particular time and purpose than another, and knowing where to find the required materials are invaluable pieces of technical information that can only be learned through shared group knowledge and personal know-how. As will be discussed in subsequent chapters, some of the materials described previously (e.g. stone and sod), seem to have been quite commonly employed by Dorset groups, while the use of others (e.g. snow and fresh water ice) can only be guessed. Whether Dorset architects were willing or able to experiment with different dwelling forms and techniques of construction, based upon the availability of local building resources and environmental conditions, forms a key question pursued throughout this study.

3.4 The Arctic Environment in the Period 1500 B.P. – 500 B.P.
This section outlines, in general terms, the climatic conditions which are believed to have predominated in the Eastern Arctic during the Late Dorset period. Climatic changes are often called upon as the major force directing cultural development and change in the region (e.g. Larsen and Meldgaard 1958; M.S. Maxwell 1960a, 1973, 1976a, 1976b, 1985:81; W.E. Taylor 1963, 1968; McGhee 1969/70, 1972, 1976; Dekin 1972; Fitzhugh 1972, 1976a, 1997; Schledermann 1976a, 1976b, 1978a, 1978b, 1979, 1980; Barry et al. 1977; Helmer 1981, 1987; Jacobs 1986; Sutherland 1992), and most researchers accept, either explicitly or implicitly, the existence of a climatically-driven Palaeoeskimo ‘core area’.

In essence, the core area concept views the Arctic to be an inherently unstable and marginal place which frequently pushed the ability of its human occupants to, and occasionally past, their limits of survival. During periods of climatic amelioration, groups were able to expand outward from the ecologically stable and continuously occupied core (identified as the Foxe Basin – Hudson Strait – Baffin Island area) into peripheral regions which were previously uninhabitable. After varying lengths of time, the climate once more began to deteriorate so that the always marginal hinterlands again became uninhabitable, causing local populations to either retract to the core area or die. Given the inherent instability of the outlying areas, the Foxe Basin core area was considered to be the location where all (or at least most) significant cultural developments took place. These technological innovations were then either carried directly to peripheral areas by emigrating Foxe Basin populations, or were secondarily transmitted to outlying groups after they
had already departed.

This reconstruction considers climate and environmental change to be the main impetus for cultural developments in most of the Eastern Arctic, an ahistoric vantage point that has fallen out of favour with a number of researchers (e.g. Bielawski 1988; Schledermann 1990; Helmer 1991; Sutherland 1992, 1997; Appelt and Gulløv 1999). These dissenters prefer to attach at least some measure of agency to the human groups in question, although the more conventional environmentally-driven mode of thought is still prevalent (Hood 2002:242). The core-periphery model is especially problematic in that it cannot satisfactorily explain why areas far removed from the centre of the Palaeoeskimo world, notably the eastern subarctic (e.g. Renouf 1994, 1999), saw their largest and most widespread occupations in periods when all peripheral zones were supposedly abandoned. The possibility of multiple geographic core areas (M.S. Maxwell 1976a:4; Cox 1978:112; Schledermann 1978, 1990; Fitzhugh 1984, 1997:403-404, 409; Tuck and Fitzhugh 1986; Bielawski 1988; Helmer 1991) has been suggested as one avenue of explanation, although this proposal must be evaluated further.

Leaving aside the issue of the core area for now (it will be briefly revisited in the following chapter), what can be said about the environment during the Late Dorset period? A major problem with investigating past climatic conditions is that there is a relative paucity of data recording locations in the Canadian Arctic (refer to J.B. Maxwell 1981, 1982 for the locations), a situation which is compounded by the short length of time over which they have been in operation (Barry et al. 1977:201). Because of these disadvantages, the ability of researchers to infer past conditions on the basis of current ones has been compromised, particularly if data from localised areas are applied to larger regions (Jones and Kelly 1983). As a result, some researchers have argued that a longer-term record of data concerning contemporary conditions is needed before researchers can begin to understand past climates (e.g. Bradley 1985; Smol 1988).

Perhaps more serious is the fact that the different proxy data used to reconstruct the climates of diverse regions can produce contradictory results, particularly regarding the start and end date for different climatic episodes (Barry et al. 1977:205-206). As a result, data from one region may indicate a warming event, while data on the same period but from a different area may suggest a cooling phase (as for Labrador and western Greenland at circa 2500 B.P.). Given this
variability and uncertainty, characterisation of a time period as ‘warm’ or ‘cool’ may be true for much of the Arctic, but may not reflect the conditions of a particular location, or vice versa (as an example, compare the results of three different reconstructions summarised in Barry et al. [1977: Table 1], or Dyke and England [2003] in the Queen Elizabeth Islands).

An additional problem associated with attempts to link climate irregularities with culture change is that cultures (i.e. people) tend to react to immediate circumstances and not only to the longer-term climatic variations that researchers can identify (Tuck 1975:191). This is an important realisation that must be kept in mind when efforts to draw linkages between environment and culture change are undertaken. Additionally, whereas climatic trends can be identified through the study of a variety of proxy indicators (refer to Douglas and Smol [1999] for discussion of the significance of such data) including ice cores (e.g. Dansgaard et al. 1982) and peat studies (e.g. Grove 1988), shorter-term weather conditions cannot usually be pinpointed temporally (see Ovenden 1988). This is despite the fact that the latter can be exceptionally significant in terms of cultural adaptations as they impact such key socio-economic considerations as the duration and extent of sea ice and snow cover, as well as the predictability of animal behaviours (Tuck 1976a; Fitzhugh 1997). For this reason, any attempt to tie cultural developments with changing environmental conditions in an uncritical manner is foolhardy, as is an overly-simplistic blanket assumption that sees warming events as universally good for human populations and cooling episodes as universally bad (see Barry et al. 1977:199, 205-206; see also Helmer 1987).

Keeping these problems in mind, most palaeoclimatologists agree that the Holocene has been a time of relative worldwide climatic stability (e.g. Smol et al. 1991; Dahl-Jensen et al. 1998), although ice core data indicates there has been an overall trend towards increasingly cold temperatures (Bradley 1990). However, because higher latitudes are especially sensitive to climatic fluctuations (see Andrews et al. 1981; Bradley and Miller 1972; Barry et al. 1977; Roots 1989; Smol and Douglas 1996; Douglas and Smol 1999), the Eastern Arctic has undergone several more localised periods of warming and cooling within the past 10000 years. In that time, between four and six cold periods have been identified, including the period from 3000 B.P. to 1500 B.P., when large regions of the Arctic were affected (Barry et al. 1977:199; Przybylak 2003:167). After a phase of warmer than present conditions, a final cold period, the Little Ice Age
Cold conditions increase the scope and duration of sea ice coverage throughout the region, a generally beneficial situation for sympagic species including ringed seals, whose average body size is larger in areas with longer periods of ice coverage because pups are able to nurse for extended periods (McLaren 1962; also Stanford 1976). However, too much ice, brought on by protracted and/or severe cold, can be a problem as Stirling et al. (1981) have identified a 50% drop in the total population of ringed and bearded seals in the Beaufort Sea during a season of heavy ice. They further reported that the overall productivity of neighbouring polynyas decreased by 90%. These reductions resulted in large measure from the accumulation of ice that was thicker and harder than average, limiting the ability of ice-dependent mammals to maintain breathing holes (Stirling et al. 1981:54).

At least four periods of warmer than present temperatures, referred to as climatic optimums, have also been identified. While the dating and intensity of these events varies based on regional evidence, the first episode is believed to have generally occurred sometime between 6000 B.P. and 5000/4000 B.P. (Barry et al. 1977:198; Przybylak 2003:165; Mudie et al. 2005: Figure 6). A second warming period has been identified, in at least some areas of the Arctic, between approximately 4500 B.P. and 3500 B.P., and a third between 3200 B.P. and 2800 B.P. (Barry et al. 1977:198, 205). The final major warming event is known as the Mediaeval Warm Period and dates between 1100 B.P. and 800 B.P. Current evidence indicates that the start and end of the Late Dorset period occurred when the climate was warmer (Barry et al. 1977:206).

Although the Medieval Warm Period has arguably received the greatest amount of research, the earlier periods of ameliorating conditions are believed to have produced temperatures between 2.5° and as much as 4° Celsius warmer than at present, in comparison to temperatures during the Mediaeval Warm Period which only averaged about 1° Celsius warmer (Barry et al. 1977:200; Przybylak 2003:166, 173, Figure 10.4c). Given the impact that the warmer conditions of the Mediaeval Warm Period had on the Arctic environment, particularly a reduction in sea ice which was so marked that prehistoric Inuit could travel by umiak to the currently ice-locked Pearyland region of extreme northern Greenland (Knuth 1952; Jordan 1984: Figure 5), periods of even greater warmth must have radically impacted arctic plant and animal
species, and commensal human groups (refer to Furgal et al. [2002] for discussion in reference to contemporary global warming).

For example, modern anthropogenic warming of the Arctic has demonstrated that rising temperatures have negatively impacted both terrestrial (e.g. Post and Forchhammer 2002; Miller and Gunn 2004) and marine (e.g. Alexander et al. 1993; Tynan and DeMaster 1997; Stirling and Smith 2004) species. Contemporary Inuit, dependent upon these species in large measure for their cultural and economic survival, are clearly dealing with the adverse effects caused by a temperature increase of only one or two degrees, comparable to the Medieval Warm Period (e.g. Riedlinger 2001; Jolly et al. 2002; Thorpe et al. 2002; Nichols et al. 2004) and less than that of earlier periods. Later freeze-up and earlier break-up of land-fast and pack ice can curtail the ability of people to travel and access various fuels, locate building materials, and exploit food sources (Barry et al. 1977:195; Sabo and Jacobs 1980:500; McGhee 1996:116-118). Warmer conditions also detrimentally impact caribou as icing events, which seal off the tundra, are more frequent, as are spring rains that can raise calf mortality (Fitzhugh 1976a:142; Burch 1978:22). Late-forming ice will also affect the timing of caribou migrations (e.g. Vibe 1967:163; Bergerud 1974; Reidlinger 1999) and potentially alter migration routes.

On the other hand, a warming climate should favour bearded seals and walrus, which prefer open water or unconsolidated ice (although they will sometimes maintain breathing holes or break through unbroken ice [Mansfield 1975:135; Reeves et al. 2002:111]). Increased areas of open water might also cause belugas, which typically winter near the floe edge, to expand their range into regions which previously experienced greater ice coverage (Tynan and DeMaster 1997). Earlier ice break-up can also encourage greater and earlier penetration of narwhals into previously ice-covered regions given the tendency of this species to use ice leads to move into inland waters as quickly as possible (Reeves et al. 2002:323-324).

Geographically and temporally extended periods of open water, as brought on by warmer conditions, would also influence the distribution of bowhead whales and driftwood. Supplies of driftwood and bowhead bone are both directly controlled by the extent and longevity of sea ice, such that regions experiencing heavy multiple year ice conditions will not see significant penetrations of whales or wood (Dyke and Morris 1990; Dyke et al. 1996; Dyke et al. 1997).
However, ringed seals, a staple prey species throughout the Eastern Arctic, are adversely affected by warming conditions and reduced ice coverage as they use the ice platform to pup, nurse, moult, and rest (Tynan and Demaster 1997).

Warmer conditions will also influence the position of the tree-line, encouraging a northward advance of forests into regions whose soils were previously locked in permafrost (Nichols 1967, 1974, 1975; Short and Nichols 1977). Such movements should increase the wooded watersheds of such driftwood-bearing rivers as the Mackenzie, although it is unclear how long warmer conditions would need to persist in order for the tree-line to move substantially. This is because there appears to be a time-lag between the disappearance of permafrost and the appearance of trees which, at least in the Russian boreal forest, was about 400 years (Kultti et al. 2004). Warmer and wetter conditions should also increase the accumulation rate and extent of peat deposits (Bartley and Matthews 1969; Miller 1973; Nichols 1975:64).

3.5 Summary
Current information indicates that Late Dorset coincided with a warming period, although some areas may have been influenced by localised conditions which resulted in discrete microclimates. Generally warmer than present temperatures would have resulted in increased precipitation and also would have contributed to an overall reduction in sea ice. These conditions presumably caused walrus and large and small whales to increase in number and expand their range, while at the same time detrimentally impacting sympagic species. The clearing of land-fast and pack ice earlier in the season may have allowed resources including driftwood to infiltrate inter-island channels more often, although the relationship between driftwood and sea ice is complex. Warmer and wetter weather would also accelerate the growth of more extensive peat deposits.

Variability in the availability of potential building materials, as well as prey species, is expected to have been a major influence on architectural design. Uncertainty about either must have led architects to constantly re-evaluate their building needs and construction techniques, especially if a change in subsistence focus or alteration of a settlement pattern (on a large or small scale) was required. Mobility strategies in particular impact decisions regarding site placement, dwelling investment, and site and structural sedentism, considerations which can all directly affect
how architectural technology is expressed (see discussion in Chapter 2.2.5).

Observations made amongst the ethnographically observed Inuit indicate that groups dealt with variability in their local and regional environments, particularly the occurrence of resource shortfalls and boons, by investing greater or lesser amounts of effort in their domestic structures. Although Inuit life-ways cannot be considered as analogous for the Dorset adaptation (the use of Inuit analogy is discussed in Chapters 7.3 and 8.3; refer also to Wylie [2002]), the choices made by various Inuit groups in the face of similar environmental constraints and allowances do provide one example of how people can adapt to changes in their biogeographical setting. Consistently throughout the prehistoric and historic Inuit occupation of the Canadian Arctic, local conditions and environments encouraged the development of regional entities (e.g. Yesner 1985; Savelle and McCartney 1988; Andrews 1994; Betts 2005), although the search for counterparts in Palaeoeskimo society has not been seriously investigated.
4.1 Introduction

Late Dorset is part of a larger cultural grouping referred to collectively as ‘Palaeoeskimo’, a term first used by H.P. Steensby to refer to an extinct arctic-adapted culture he believed occupied the Arctic at some undetermined point in the past. Although their relationship to the historically known Inuit (and their immediate Thule ancestors, defined by Mathiassen [1927a, 1927b] a decade later) was unknown, Steensby (1917) reasoned that since his mysterious population must have been older than the contemporary Inuit, they should receive the de facto designation of “Palaeo” Eskimos.

While Steensby’s rationalisation has been proven generally correct (even if the details were not), his proposition was based on conjecture and not on physical proof. It was not until 1925 that Diamond Jenness, working with a large group of artefacts collected from sites in northern Hudson Bay and Hudson Strait, found actual evidence to support the existence of a pre-Thule population in the Eastern Arctic. Using the donated collections as a guide, Jenness was able to identify several key artefact characteristics which indicated to him that temporal and cultural divisions were present amongst the materials he was studying. Jenness divided the collection into three broad groups: one which was clearly associated with the ethnographically known Inuit and their prehistoric Thule ancestors; a second group involving materials of uncertain cultural affiliation, although he noted these were most probably crafted by Thule Inuit individuals; and a third group of “strange and unfamiliar” artefacts (Jenness 1925:434) that he linked with a previously unknown cultural tradition which he termed “Cape Dorset”.

This division was guided in part by the dark brown patina present on many of the Dorset artefacts, a staining which suggested to Jenness that they were older than the materials made by the Inuit. Jenness’ argument that the Thule Inuit and Dorset materials should be considered distinct was made stronger when he observed that none of the Dorset organic artefacts were pierced using a bow drill, an instrument used to create drilled holes (compare Jenness 1925: Figure 5 with Figure 6). Instead, “Cape Dorset” organic artefacts were perforated by scratching the object from both sides with a sharp tool, creating the narrow linear holes which are now considered a hallmark of Dorset material culture. The significance of this was not lost on Jenness.
(1925:435), who noted

the most remarkable feature about all the 500 [Dorset artefacts in
the collection] is that not one of them shows the mark of a drill: every
hole was made by gouging. The inference seems certain. The makers,
unlike all other Eskimos, were not acquainted with the bow drill; they
belong to an old culture, hitherto unknown. I shall name it, temporarily,
the Cape Dorset culture.

While some researchers remained sceptical of his findings (notably Mathiassen [1930]),
artefacts associated with the Dorset culture continued to be identified throughout the Eastern
Arctic and subarctic, including locations in Newfoundland (Jenness 1932, 1933 [although in a
1929 publication, Jenness identified Dorset artefacts as Beothuck under Dorset influence];
Wintenburg 1939, 1940), Labrador (Leechman 1939; Harp 1951), the Foxe Basin (Rowley
1940), and western Greenland (Holtved 1944). However, it was not until Henry Collins (1950)
excavated the Crystal II site in Frobisher Bay that stratigraphic proof was finally found to support
Jenness’ theory that his Cape Dorset collection belonged to a population both separate from and
earlier than the Thule Inuit (this was further corroborated at the Greenlandic sites of Sermermiut
[Larsen and Meldgaard 1958; Mathiassen 1958] and Comer’s Midden [Holtved 1944]).

Jenness’ final insight gleaned from the Hudson Bay collections was that Dorset culture,
although more “primitive” than the subsequent Thule, were not themselves the earliest settlers of
the region (Jenness 1925:437). As will be discussed below, this theory was eventually proven
correct as researchers working in Greenland, Canada, and Alaska first demonstrated the existence
of a pre-Dorset population in the Eastern Arctic (Meldgaard 1952), before establishing that they
had moved into the region by at least 4500 B.P. While the exact relationship of these early
populations to the Dorset continues to be debated (e.g. Meldgaard 1960a, 1960b, 1962; Taylor
1968; M.S. Maxwell 1985; Nagy 1994a, 2000a), it is now apparent to most researchers that the
earlier populations, referred to collectively as the Early Palaeoeskimos, were ancestral to the Late
Palaeoeskimo Dorset groups.

4.2 The Western Origins of the Eastern Arctic Palaeoeskimo
Many of the artefacts, particularly the harpoon heads upon which Diamond Jenness based his
interpretations, can on stylistic grounds be associated with the final Palaeoeskimo group to have
inhabited the Arctic, the Late Dorset. This is not all that surprising when one considers that many of the artefacts given to Jenness were surface collected, or found within the ruins of Thule and early historic Inuit houses that had been built directly on Late Dorset deposits. But, as Jenness (1925, 1933) suspected based on his preliminary study and identification, the Dorset were not the first occupants of the region.

Researchers working in Alaska have, since Jenness’ work, identified and defined the Arctic Small Tool tradition, or ASTt (Irving 1957), and the Denbigh Flint Complex (Giddings 1964). While the earliest Arctic Small Tool tradition groups are probably the parent population of all subsequent Palaeoeskimo groups, ASTt does not represent the earliest human presence in the North American Arctic. An ill-known population often called the Paleo-Arctic Tradition (Anderson 1968, 1970; also known as the Denali Complex [West 1967], amongst others) has been reported from sites throughout Alaska and as far east as north-western Yukon (Dumond 1977:36-46, Figure 15, 1984:95-95; Cinq-Mars 1979; Morlan and Cinq-Mars 1982; Anderson 1984:81-82; Cinq-Mars and Morlan 1999; Wright 2001:53). Most radiocarbon dates place this occupation between 10000 B.P. and 7000 B.P., although there are (potential) dates older than 13500 B.P. (Cinq-Mars 1990). The limited number of sites definitively associated with this period has meant that researchers are unable to firmly establish if the Paleo-Arctic Tradition is ancestral to other Bering Sea-Alaskan groups (Anderson 1984), although on current evidence it appears unlikely that it was related to later Arctic Small Tool tradition populations, including the Denbigh Flint Complex (M.S. Maxwell 1980b:165-166; Harritt 1998; Wright 2001).

The Arctic Small Tool tradition, so named because of the diminutive size of its artefacts, was first identified in the Cape Denbigh area of Norton Sound, in Alaska (Giddings 1951). While initially meant to include only the Denbigh Flint assemblage (Irving 1964), the Arctic Small Tool tradition is now widely held to include all Palaeoeskimo complexes up to the Ipiutak culture (Giddings and Anderson 1986:314). The Alaskan Denbigh Flint Complex lithic toolkit (few non-lithics have been preserved) includes finely flaked endblades and arrowpoints (both bi-pointed and edge serrated), sideblades (intended to be inserted into the sides of lances and harpoon heads), true burins and burin spall tools, microblade technology, endscrapers, and flake knives (Anderson 1984:84; Giddings and Anderson 1986:273-291).
Considered the earliest of the Arctic Small Tool tradition manifestations, the Denbigh Flint Complex is still relatively poorly known (Odess 2005:14) but is thought to have spawned the remaining ASTt cultures, including those which eventually moved eastward to colonise much of arctic Canada and Greenland. However, the earliest radiocarbon dates on Alaskan Proto-Denbigh Flint Complex materials are only *circa* 4200 B.P. (Anderson 1988:89), implying that this cultural manifestation is too young to be the progenitor of the Eastern Arctic Palaeoeskimos, whose sites on Ellesmere Island and Greenland have produced dates of *circa* 4500 B.P. (Knuth 1984; Schledermann 1990; Møberg 1999; Grønnnow and Jensen 2003; CARD). This rather strongly suggests one of three alternatives: the earliest Alaskan sites have yet to be located (sites may have been drowned during coastal subsidence); that problems exist with the methods used to date the known Alaskan sites (as is the case in the Eastern Arctic, see Chapter 5.2 and 5.4.6); or that a different point of origin for the earliest eastern populations should be sought.

Regarding the final possibility, McGhee (1983) has entertained the idea that the first migrants into the Eastern Arctic actually moved there from the north and east, across Siberia and into Greenland and the adjacent Queen Elizabeth Islands (via a route over the North Pole), rather than westward from Alaska. This suggestion, which is difficult to assess since much of the proposed migration route would have taken place over the shifting Polar ice cap, is based on the contemporaneity of radiocarbon dates from western Alaskan and Greenlandic sites, as well as stylistic similarities shared between artefacts of the two areas. Given the lack of evidence for a polar migration route, however, most researchers accept that the initial movement of Arctic Small Tool tradition people into the Canadian Arctic and Greenland took place from Alaska (Irving 1968; Dumond 1984; M.S. Maxwell 1985:37; *contra* Meldgaard 1962).

Whatever the route (or routes) that were followed, many researchers concur that the Palaeoeskimo migration into the Canadian Archipelago and Greenland was a rapid one (M.S. Maxwell 1980b:166, 1984:359, 1985:49-50; Bielawski 1982:41; McGhee 1978, 1996:73; Murray and Ramsden n.d.), an opinion based on both the near contemporaneity of dates from Alaskan and Greenlandic sites, and the preponderance of ephemeral (and therefore briefly occupied) sites between the two areas. Understanding the mechanics of this move, and why Palaeoeskimo groups first migrated into the Eastern Arctic, is unclear. Some researchers have suggested that the
warming periods (Chapter 3.4) which affected the Arctic between 6000 B.P. and 5000/4000 B.P. and 4500 B.P. and 3500 B.P. (Barry et al. 1977:198; Przybylak 2003:165) could have played a role. Such warming events may have encouraged populations who previously appear to have hunted sea mammals only during the open water season (Dumond 1972:314; Anderson 1984:84-85; M.S. Maxwell 1985:46) to spend increasing amounts of time on the coast, and to eventually adopt a more marine-oriented subsistence strategy.

Others suppose that the eastward migration was incidental, motivated by the lure of previously un-hunted animal species in what M.S. Maxwell (1985:49-50) has likened to a hunter’s paradise (Steensby [1917] was probably the first to draw such a conclusion, arguing his Paleo-Eskimos pursued musk-ox eastward to Greenland). Whatever its ultimate cause, the consequence of this migration was an uninterrupted occupation of the Eastern Arctic by Palaeoeskimos that lasted at least 4000 years.

4.3 Pioneers: The Earliest Eastern Palaeoeskimos
Like their western forebearers, the eastern ASTt Palaeoeskimos, with only a few exceptions (e.g. Meyer 1977), maintained a tradition of crafting exceptionally small and finely worked lithic tools. Although differences do exist, such as the often low frequency of microblades in some Saqqaq sites on western Greenland and eastern Ellesmere Island (Larsen and Melgaard [1958] initially thought microblades were completely absent), populations in the two regions retained a large amount of similarity. Within the Early Palaeoeskimo tradition, three complexes have been identified: the Independence I inhabitants of north-eastern Greenland (Pearyland) and High Arctic Canada, dating between 4500 B.P. and 4000 B.P.; a more widespread Pre-Dorset population which occupied much of the Canadian Arctic Archipelago and mainland from Banks Island to Labrador between 4500/4200 B.P. and 2800 B.P.; and the Saqqaq complex, 4500 B.P. to 2000 B.P., which is currently only known in western Greenland and the Bache Peninsula of Ellesmere Island (sites in the Foxe Basin were initially identified as Saqqaq by Meldgaard [1960a, 1960b, 1962], but this designation has been changed in favour of Pre-Dorset).

A fourth grouping, Old Nûgdlît (or Nuulliut), has been suggested by Knuth (1977/1978; see also Fitzhugh 1984:533-534) based on his work on the Nûgdlît (Nuulliut) Peninsula in north-
western Greenland. Three very early radiocarbon dates ranging between 6000 B.P. and 4100 B.P. were obtained from structures at the site, however all were on sea mammal material and are therefore probably too old (see McGhee and Tuck 1976; also Elling 1996). Recovered artefacts included several typologically atypical forms that, in combination with the seemingly early radiocarbon dates, prompted Knuth (1977/1978:40) to suggest that Old Nûgdlît was the earliest culture in the Eastern Arctic. Knuth (1977/1978) further suggested the site’s occupants had closer ties to Alaskan Denbigh Flint Complex than to eastern ASTt Independence I and Saqqaq populations. Despite the potential significance of this site, no other evidence of an Old Nûgdlît migration has been located.

Much more information has been collected from the remaining three groups, although how Independence I, Saqqaq, and Pre-Dorset relate to one another is debated (Larsen and Meldgaard 1958; Tuck 1975:187, 1976a; Møberg 1986:52-53; Bielawski 1988; Helmer 1994; Elling 1996; Appelt 1997:34; Ryan 2000; although refer to Helmer [1991:308] and Sutherland [1996] for interpretations of cultural continuity between these defined groups). The core area model (see Chapter 3.4) is commonly called upon to help explain the perceived population patterns identified during this period and it is often cited in theories seeking to understand the role played by the Early Palaeoeskimos in the development of the Late Palaeoeskimo Dorset. Putting aside issues such as the often strong regionalism which existed between some of these populations, and the question of where in the cultural sequence Saqqaq fits given that it is largely unrepresented outside of Greenland (although see Tuck [1976a:98] and Schledermann [1990]), it is clear that all three populations retain traits indicative of their Alaskan heritage. Each is discussed in more detail below.

4.3.1 Independence I (circa 4500 B.P. – 4000 B.P.)
The first of these groups to be recognised by archaeologists was the High Arctic Independence I complex, named for the Independence Fjord region of northern Greenland (Knuth 1952, 1954, 1958, 1966/67, 1967, 1977/78, 1981, 1983; Grønnow and Jensen 2003). Although archaeological sites were observed earlier (e.g. Bendix Thostrup 1911), their proposed antiquity was dismissed following the publications of the Fifth Thule Expedition, which argued that no group predated the
Thule in the region. In fact, the absolute manner in which the Fifth Thule Expedition researchers (particularly Therkel Mathiassen, the expedition archaeologist) dismissed the idea of a stone-using culture predating the Thule resulted in a “goodbye to all notions of a stone age ... the very existence of the Paleo-Eskimo” (Meldgaard 1996:14) until Eigil Knuth’s work in Pearyland almost 50 years later.

Supporting Steensby’s (1917) “musk-ox way” theory was Knuth’s (1967:30-32) analysis of Independence I midden deposits, which indicated that groups subsisted mainly on musk-ox and lake-bound char, exploiting these limited resources during a brief climatic warming event that permitted musk-ox, their human predators, and large amounts of driftwood to move into northern Greenland (Knuth 1983:24-25; McGhee 1996:110). Schledermann (1990:318-319; also Darwent 1994) has more recently called this almost exclusive dependence on musk-oxen into question based on his work on the central coast of eastern Ellesmere Island, although his sites are located near a polynya (Schledermann 1980) and, as such, would provide more opportunity for the exploitation of marine resources.

In general, examination of Independence I economic strategies across its geographic range indicates that while occupants of interior sites were focussed on terrestrial resources (e.g. Sutherland 1996), those situated at coastal sites (especially those near polynyas) pursued a more marine focus (e.g. McGhee 1979:34; Schledermann 1978a). In short, Independence I people adopted “diverse and flexible subsistence economies, likely based on the relative abundance of certain species in specific geographical locales ... [and] hunters were opportunistic and obtained animals more or less in proportion to their availability” (Darwent 2003:343). Darwent’s (2003) analysis of Knuth’s Pearyland fauna also suggests that groups in that area may have possessed a more diversified economy than was initially believed.

Although there is some variation in the tool kit and site structure of different Independence I populations based on region and presumed subsistence focus (Knuth 1967:34; Sutherland 1996; see also McGhee [1980] for assemblage variability resulting from the skill of individual craftspeople), lithics are typically exceptionally finely worked (if sometimes larger than those associated with other ASTt groups) and include edge-serrated arrow and lance points, bipoints, sideblades, adzes, several forms of scrapers, burins and burin spalls, microblades, and a
variety of bifaces. Organic artefacts include lance heads, harpoon heads, bone needles with round drilled eyelets, a variety of handles, and arrow fragments (Knuth 1967; McGhee 1979). Use of box hearths and the total absence of soapstone vessels in Independence I led Knuth (1967:34, 1977/78:21-22) to argue that a close relationship existed between Independence I and Denbigh Flint Complex groups given that box hearths, rather than soapstone vessels, were also used by the Alaskan population. Other categories of artefacts are also shared between Independence I and Denbigh Flint Complex populations in the two regions (Dumond 1977:83; M.S. Maxwell 1985:66; Giddings and Anderson 1986:84). However, ties to contemporary Eastern Arctic Palaeoeskimos may also be inferred based on the identification in some Independence I sites of hearth structures containing boiling stones (e.g. Knuth 1967; Schledermann 1990:51), a feature most often linked with Saqqaq populations (see Section 4.3.2).

The Independence I population density appears to have been quite low, with an estimated total in Pearyland of between 200 and 334 people (M.S. Maxwell 1985:62). McGhee (1996:65) places the population much lower in High Arctic Canada, suggesting that only two or three hundred people existed at any one time over the entire one million square kilometre area from which their sites have been reported. Even on the relatively resource rich Bache Peninsula region of central Ellesmere Island, Schledermann (1990:316) considers the Independence I occupation to have been brief, perhaps less than a single century.

4.3.2 Saqqaq (circa 4500 B.P. – 2000 B.P.)
Following on the heels of Eigil Knuth’s work in northern Greenland, work further south, in and adjacent to Disko Bay, resulted in the recognition of another Early Palaeoeskimo complex termed Saqqaq. While a pre-Thule presence in this area had been previously suspected (Solberg 1907; Holtved 1944), it was not until a collection from the community of Saqqaq was studied by Jørgen Meldgaard (1952) that a separate and clearly pre-Thule occupation with ties to the Denbigh Flint Complex in Alaska was confirmed in the area (Larsen and Meldgaard [1958:68-69] initially believed Saqqaq predated the Denbigh occupation, although it is now known that the start date for Saqqaq is contemporary with Independence I). Shortly after Meldgaard (1952) demonstrated that Saqqaq was older than Thule, it was also shown (on a stratigraphic basis) to predate Dorset
Unlike the situation further north around Independence Fjord, the Saqqaq subsistence base in Disko Bay and elsewhere was very broadly based and flexible, with numerous marine mammals, birds, and some caribou represented in the deposits (Grønnow 1994:217-218, Table 1, 1996b:27; Andreasen 1996:180-181; Kramer 1996a:42-43; Møberg 1999:457; Meldgaard 2004). Most known Saqqaq sites are in fact coastally situated (Møberg 1986:21), with midden deposits that indicate a strong focus on marine species (Larsen and Meldgaard 1958:66; Møberg 1986:21, 50; Meldgaard 2004). Although coastal site locations are the most commonly recorded, several researchers (e.g. Larsen and Meldgaard 1958:31; Grønnow et al. 1983; Meldgaard 2004) have suggested that Saqqaq populations moved seasonally between inland summer caribou hunting locations and cold period sea mammal stations located along the coast (Milne and Donnelly 2003) suggest a similar inland / coastal subsistence cycle was used by Pre-Dorset groups on Baffin Island, who spent some portion of the warm season in the interior exploiting avian and lithic resources).

Saqqaq was a particularly long-lived cultural manifestation, by arctic standards, and was initially viewed as largely homogenous throughout its entire period (M.S. Maxwell 1985:103; Grønnow 1994:232, 1996b:29-30). However, it is now believed that the first six or seven hundred years of the Saqqaq period saw the most intense occupations (Kramer 1996b:86), followed by widespread changes in material culture and subsistence strategies at circa 3500 B.P. (e.g. Kramer 1996a, 1996b; Møberg 1999:456; Meldgaard 2004). For example, the important Disko Bay site of Qeqertasussuk, which was initially occupied year-round beginning at circa 3900 B.P., became a summer-only locality starting at circa 3500 B.P. (Grønnow 1994:218; Meldgaard 2004). This shift may relate to climatic instability considering the period around 3500 B.P. is bracketed by warmer than present temperatures (refer to Chapter 3.4). Warmer temperatures would have adversely affected ringed and harp seal populations and may have necessitated groups adopt a more mobile existence (Møberg 1986, 1999; Olsen 1998:218). Climatic change may also be implicated in cultural events in Alaska, where during the same period Choris culture replaced the Denbigh Flint Complex (Giddings and Anderson 1986).

The Saqqaq lithic tool kit includes burins, burin spalls, small triangular bifaces (some of
which are edge serrated), sideblades, bipois, adze blades, endscrapers, and (apparently) arrowpoints (Larsen and Meldgaard 1958:51; Møberg 1986; Grønnnow 1994, 1996b). It was initially thought by Larsen and Meldgaard (1958) that Saqqaq lacked microblade technology, although this has since been proven incorrect (Møberg 1986:38, 1999:154; Appelt and Pind 1996; Elling 1996:196). The frozen Qeqertasussuk site produced an astounding array of organic tools, including several forms of harpoon heads, lances, atlatls, bow and arrow fragments, pieces of what are thought to be watercraft, spoons, and numerous other household items (see Grønnnow 1994, 1996a, 1996b, 1997).

The oldest Saqqaq occupations lack soapstone vessels, a trait shared with Independence I and Denbigh Flint Complex sites (Knuth 1967; McGhee 1976; Dumond 1977:83; Giddings and Anderson 1986:84). In place of soapstone pots and lamps, all three populations share box hearths, and abundant evidence of boiling stones (rounded fist-sized stones, as opposed to fire-cracked rock, which is typically composed of shattered stone) have been found at many Saqqaq occupations (Larsen and Meldgaard 1958:35-36). An alternate function for these stones has been suggested by Odgaard (2003:360), who remarks that many rocks were probably used to heat the dwelling rather than to boil liquids. It is not until after 3500 B.P. that soapstone vessels are found in Saqqaq sites (Møberg 1999:461-462), prompting Kramer (1996b:86) to note this “might indicate that lamps and vessels of soapstone were not common elements in the artefact inventory of the initial Saqqaq inhabitants”, but that they might have been employed periodically (Schledermann [1990:318] echoes this viewpoint).

Kramer’s suggestion is quite plausible considering that the typically small assemblages usually recovered from the earliest sites make it unlikely that evidence for vessel usage (probably involving only one or two pots per family) would be recovered (see also Schledermann 1990:318). As in later Dorset and Thule Inuit societies (M.S. Maxwell 1985:149; LeMoine 2003:128), it is also conceivable that vessels were highly valued and subject to special treatment / curation, making their incorporation into a site assemblage likely only after their use life had been completely spent.
4.3.3 Pre-Dorset (*circa* 4200 B.P. – 2800 B.P.)

When Collins (1956b) originally used the term ‘pre-Dorset’, he was referring to all populations prior to the start of the Dorset period. However, the classification ‘Pre-Dorset’ now mainly refers to a specific temporally restricted group which inhabited much of the Arctic in the period 4200 B.P.– 2800 B.P. McGhee (1976) was the first to use the term in this way, in order to separate occupations he excavated at Port Refuge, Devon Island (and which he associated with sites reported from the Foxe Basin [see McGhee 1976:18, 1979:104]) from nearby sites that he linked with the Pearyland Independence I manifestation reported by Knuth. The Port Refuge sites were separated into Independence I and Pre-Dorset ‘cultures’ based on differences in structural form, site layout, and variations in lithic organic artefact styles (McGhee 1976, 1979). There was also presumed to be a temporal break or discontinuity between the two sets of sites (although all date were run on driftwood or sea mammal bone [McGhee 1979:121], which typically returns dates that are too early).

As the most geographically widespread of the Early Palaeoeskimos, Pre-Dorset sites are now known as far west as Banks and Victoria islands (Taylor 1964a, 1967a, 1972; McGhee 1970a, 1970b, 1971; Müller-Beck 1977; Dyke and Savelle 2000; Savelle and Dyke 2002), the Queen Elizabeth Islands and northern Baffin Island (Mary-Rousselière 1976, 2002; McGhee 1976; Helmer 1991; Schledermann 1978a, 1990; Sutherland 1996), the Low Arctic islands and mainland (Mary-Rousselière 1955a, 1964; Taylor 1962, 1968; Nash 1969, 1972, 1976; M.S. Maxwell 1973; Dekin 1976; Meyer 1977; Ramsden and Murray 1995; Harp 1997), coastal and interior areas of Keewatin (Gordon 1975, 1976, 1996; Harp 1958, 1961), and the Ungava Peninsula and Labrador (Fitzhugh 1972, 1976a, 1980a, 1980b; Tuck 1975 [although he later refers to this occupation as Saqqaq-like (1976a:98) or Independence I-like (n.d.:100-104)]; Cox 1978; Plumat 1994; Gendron and Pinard 2000; Nagy 2000a, 2000b). The sites which have produced the oldest radiocarbon dates are in the east, and it appears based on current radiocarbon assays that Pre-Dorset did not move westward into the Coronation Gulf-Victoria Island-Banks Island area until after 3500 B.P. (Taylor [1967a:221]; M.S. Maxwell [1985:99]; although the dates recently reported by Savelle and Dyke [2002] indicate parts of this area may have been populated much earlier than was initially believed). As might be suspected given this huge
geographic expanse, subsistence economies varied from predominantly terrestrial in focus (e.g. Taylor 1967a, 1972; Müller-Beck 1977; M.S. Maxwell 1985:99; Sutherland 1996), to a mixed marine-terrestrial economy (e.g. McGhee 1979:93, Faunal Tables 1, 7, and 9; McCartney and Helmer 1987), to one that was predominantly based on marine resources (e.g. Schledermann 1990).

The Pre-Dorset toolkit shares a number of artefact types in common with the other Early Palaeoeskimo complexes: burins (of which later examples may be ground), burin spalls, microblades, endblades, arrowpoints, sideblades, endscrapers, sidescrapers, adzes, variously shaped bifaces, and a very small number of ground slate knives (McGhee 1970a; M.S. Maxwell 1985:95). Unlike the other Early Palaeoeskimo groups, however, edge serration is less common and the overall quality of workmanship is sometimes lower. Informal hearth areas consisting of flat stones with burnt fat deposits largely replace the structured box hearth arrangement more common in Independence I, although Pre-Dorset box hearths have been reported from sites in Labrador (Cox 1978; Thomson 1981, 1982; Tuck n.d.) and Igloolik (Meldgaard 1962).

Ties with the Saqqaq manifestation are suggested on the basis of several shared attributes between the Saqqaq Sermermiut site and the Hudson Strait Pre-Dorset site of Arnapik (JIlGu-9), including the occurrence of thermally altered ‘boiling’ stones at both sites (Taylor 1968:41). An unusual structure with a box hearth and boiling stones, reminiscent of Saqqaq, has also been reported from Labrador (Fitzhugh 2002:140). Soapstone vessels, though rare in early sites, are present throughout the Pre-Dorset period (M.S. Maxwell 1985:91). Organic artefacts include harpoon heads (only self-bladed examples have been found, though M.S. Maxwell [1985:86] notes slotted examples must also have been used given the number of lithic endblades), needles with drilled eyelets, awls, self-bladed or slotted lance heads, and various pieces of fishing equipment (M.S. Maxwell 1985:90-91).

4.3.4 Early Palaeoeskimo Summary
The Early Palaeoeskimo period is currently subdivided between three groups; Independence I, Saqqaq, and Pre-Dorset. Excavators initially argued that the three, although sharing a number of common traits indicative of their Alaskan origins, should be considered as discrete cultural units.
(M.S. Maxwell 1980b:167). However, the differences in material culture which were initially used to justify segregation were later minimised by Bielawski (1988:54), who noted that “Pre-Dorset is defined as much by the absence of distinctive attributes ... as by the presence of specific traits”. Bielawski (1988:56-59) further suggested that division of the Early Palaeoeskimo period into culturally separate units was artificial and that the differences seen archaeologically may have resulted from intra-cultural variation caused by factors such as seasonality and the specifics of the local environment, rather than from separate cultural traditions.

Taxonomic problems and confusion persist in some regions, such as Labrador, where sites which are attributed to the Pre-Dorset have also been described by their excavators as being more closely akin to High Arctic Independence I or Saqqaq than to Low Arctic Pre-Dorset (e.g. Tuck 1976a:98). Cox (1978:102-103) has suggested that these apparent similarities may be a result of the fact that the Labrador environment and resource base more closely resembles the High Arctic than it does more southerly regions, resulting in a situation where similar environments were selected for similar adaptive strategies. Until such parallels can be explained, it is clear that the Early Palaeoeskimo cultural sequence cannot be satisfactorily reconciled (e.g. Tuck n.d.:100-104, 1975:137-147, 1976a:98; Cox 1978:102-103), although as Appelt (1997) has pointed out, previous attempts at taxonomic revision (e.g. Helmer 1994) have been rejected or ignored.

While culture-historical relationships await clarification, the longevity, or lack there of, shown during the Early Palaeoeskimo period may be explained, at least partly, by the economic opportunities afforded to different groups in diverse areas. For example, Independence I lasted for only 400 years in Pearyland, where a predominantly terrestrial adaptation was practised (although see Darwent [2003]). Knuth (1967) believed the focus on musk-oxen in Pearyland resulted in the apparently high mobility practised by groups in there, and was also responsible for the occupation’s relatively short duration. Tuck and Pastore (1985) examined sub-arctic populations in Newfoundland, concurring with the opinion that terrestrially-focussed economies are short-lived. In both regions, human groups were made vulnerable by their reliance on musk-ox or caribou, which are prone to over-hunting and natural population crashes (McCartney and Helmer 1987; McGhee 1996:65-66), so that when their availability declined, human populations also crashed (although Sutherland [1996] argues some terrestrial economies can be relatively stable
through time).

McGhee (1976:37-39) also saw a combination of resource instability and eventual over-harvesting, in connection with climatic change, as underlying the pattern of settlement and abandonment during the Port Refuge Independence I occupation, which lasted only a few centuries (McGhee 1979:124). In contrast, the much more diversified Saqqaq economy (Grønnow 1994, 1996b, 1997; Godfredsen 1996) appears to have enabled groups to occupy south-western portions of Greenland for a much longer period. A similar combined marine-terrestrial economy practised in many areas by the Pre-Dorset may also help to explain their longevity.

4.4 The Transition: Early to Late Palaeoeskimo, Continuity or Population Replacement?
The approximately 500 year period during which at least some of the Early Palaeoeskimo complexes developed toward Late Palaeoeskimo Dorset culture is not well understood by archaeologists. Since Meldgaard (1960a:73, 75, 1962:92-93, 1977) first suggested a period of ecological stress brought on a transition from pre-Dorset to Dorset in the Igloolik region, researchers have struggled to understand if the period of cultural change which led to Dorset should be viewed as a ‘break’ or a ‘transition’. Those favouring the latter viewpoint argue for an in situ development across the Arctic from Pre-Dorset through a transitional population into Dorset (e.g. Taylor 1968; Cox 1978; Schledermann 1978a, 1990; Helmer 1980, 1994; M.S. Maxwell 1985:167; Nagy 1994a, 2000a). In opposition are those who contend that a large-scale population break occurred throughout the Arctic, with only Foxe Basin core area populations continuing to develop into Dorset (McGhee 1976: Figure 7; Tuck and Fitzhugh 1986; Tuck and Ramsden 1990, 2001; Fitzhugh 1997).

In between these two diametrically opposed views are those (e.g. Cox 1978; Schledermann 1990; Helmer 1991; Le Blanc 1994a:115; also M.S. Maxwell 1980b:169) who propose the existence of multiple geographic cores in which Dorset culture first developed before expanding to re-colonise much of the Arctic. Implicated to one degree or another in all of these scenarios is climate change, which affected both the marine and terrestrial environments upon which human groups were dependent (Fitzhugh 1976a, 1997; M.S. Maxwell 1976a, 1985:107). It remains unclear which (if either) scenario best fits the archaeological record as it is currently
understood (see Nagy [1994a] for a summary of the difficulties associated with the ‘transitional’ designation).

There is general agreement, especially in comparison to later populations, that this period involved population declines and the abandonment of some regions (although see Tuck and Fitzhugh [1986]; and Schledermann [1978a, 1990] for local exceptions), decreased sedentism, a reduction in overall site size (related to smaller group size), a continuation of the dual terrestrial-marine generalist economy (see Binford 1980, also Savelle and McCartney 1988) practised by many of the Early Palaeoeskimos, and seemingly rapid technological changes (Meldgaard 1960a, 1962; M.S. Maxwell 1973, 1985; Fitzhugh 1976a; Schledermann 1978a, 1990; Møberg 1986, 1999; McGhee 1996).

The general confusion with which most researchers regard the period between approximately 2800 B.P. and 2300 B.P. (start and end dates vary by region and cultural terminology) is indicated by the inconsistent manner in which nomenclature has been applied to the cultural deposits. For example, Independence II, Early Dorset, Dorset I, and Greenlandic Dorset have all been used by those working in Greenland to refer to sites ascribed to the same era (see Andreasen 1996, 1997, 2000, 2003; Jensen 1996; Knuth 1965, 1966/1967, 1967; Appelt 2003: Fn. 1). The situation is not improved in Canada, where High and Low Arctic transitional sites may be referred to as Transitional Pre-Dorset to Dorset, Early Dorset, or Independence II (Meldgaard 1960a, 1960b, 1962; Helmer 1980, 1991; McGhee 1981a; M.S. Maxwell 1985; Schledermann 1990; Nagy 1994a, 2000a; Sutherland 1996). On the mainland coasts of Nunavik and Labrador, as well as on the Island of Newfoundland, the terms Transitional, Early Dorset, Groswater Dorset, and Groswater have all been employed (Fitzhugh 1972, 1976a, 1976b, 1980a; Tuck 1976a; Bishop 1977; Cox 1978; Auger 1986; Tuck and Fitzhugh 1986; Pintal 1994; Plumet 1994; Le Blanc 2000, 2001; Renouf 1994, 1999, 2003; Ryan accepted). To further complicate matters, two apparently distinct (or at least western-influenced) Palaeoeskimo sites have been located on the western edge of the Eastern Arctic Palaeoeskimo world and have been termed the Lagoon Complex (Arnold 1980, 1981a, 1981b; Le Blanc 1994a, 1994b).

While these terms are not used in a synchronous manner, they all do (at least) fit within a larger transitional cultural horizon (see Helmer 1994; Nagy 2000a). The following subsections
will not delve into the reasons underlying the use of different taxonomic classifications (unless directly relevant to the questions of this dissertation), but will attempt to summarise and characterise each designated cultural group.

4.4.1 Independence II (circa 3000 B.P. – 2600 B.P.)
First identified in the same region of Greenland where earlier Independence I groups were found (Knuth [1967, 1968]; although he refers to it as Dorset in his 1952 publication), Independence II or Independence II-like occupations have been reported outside of Greenland’s Pearyland region at sites on Devon Island (McGhee 1976, 1981a; Helmer 1991:313-314), northern Ellesmere Island (Knuth 1965; Sutherland 1996), Somerset Island (Damkjar 2003), the Hudson Strait coast of Nunavik (Gendron and Pinard 2000), and Labrador (Tuck 1976a, n.d.; Cox 1978).

The culture-historical relationship of these occupations to earlier High Arctic groups and contemporaneous Low Arctic populations is not well understood, in part because of the limited number of affiliated sites. There appears to have been as much as a 1000 year hiatus of occupation between Independence I and II in northern Greenland (Grønnow and Jensen 2003:332), making a direct ancestral relationship between the two tenuous, at least in Greenland (although Knuth [1967:26] does not discount the possibility). At Port Refuge, McGhee (1976:21) observed that there are several apparent differences between the Pearyland Independence II populations and contemporary groups on Devon Island, although both populations would best be considered part of the same cultural tradition (McGhee 1981a:36). As did Knuth (1967:26) in Greenland, McGhee (1976:26-27, 1981a:37) recognised that Independence I and II populations on northwestern Devon Island shared several common traits. He offered three alternatives, explaining the presence of shared attributes as the result of: 1) a small number of archaeologically invisible Independence I people who, remaining in the High Arctic to be influenced by emerging Dorset in the Low Arctic, developed into Independence II (M.S. Maxwell [1976a] also suggests this); 2) a small Low Arctic population that continued to use supposedly High Arctic traits and eventually moved to re-colonise the High Arctic, or; 3) that Independence I persisted in Pearyland, where they evolved into Independence II and moved into the Canadian High Arctic (Knuth [1977/78] suggests High Arctic Independence II may have played a role in Dorset development to the
south).

Presumably similar mechanisms could have contributed to the appearance of Independence II or Independence II-like culture-bearers in other regions, including the Bache Peninsula of Ellesmere Island. However, Schledermann (1990:325-329) refuses to use the Independence II moniker for sites dating to this period, arguing instead that any similarities between this transitional manifestation and Independence I are due to a Saqqaq influence on late stage Pre-Dorset (and not the result of a lingering Independence I presence in the area).

Whatever their point of cultural origin, Independence II people in Greenland were, based on site distributions and faunal remains, more marine-oriented than Independence I groups in the same area (Darwent 2003:346; Grønnow and Jensen 2003:339), perhaps due to a warmer than present climate (see Chapter 3.4) which resulted in decreased ice coverage. The small amount of faunal bone from Port Refuge (McGhee 1981a:31, Table 2) is dominated by ringed seal, suggesting a similar marine focus by people who spent most of the year on the sea ice, coming onto the land only for brief periods during the warm season (McGhee 1981a:39). A comparable settlement pattern appears to have been practised in north-eastern Greenland (Knuth 1967, 1968), although the large Independence II site of Kap Sankt Jacques on Île de France, far north-eastern Greenland, implies a different subsistence strategy and / or social strategy was possible there (Grønnow and Jensen 2003:296). It should be noted that although this site does contain hundreds of features (Andreasen 2003:293), Grønnow and Jensen (2003:279, 280) note that Knuth was uncertain whether many of them should be associated with Independence II or Dorset groups.

Cultural materials from Independence II sites are, in general, quite similar to those found in contemporary late Pre-Dorset/transitional/Early Dorset occupations to the south (M.S. Maxwell 1985:117, 119), implying a level of contact or influence between these distant locations. This affinity has prompted Schledermann (1978a:56, 1978b:473, also 1990) to suggest that the “Independence II” designation should be abandoned in favour of a late Pre-Dorset/early Dorset term (the ‘Transitional’). Following a comparable line of analytical thought, Elling (1996) and Jensen (1998) both advocate treating Independence II and Dorset I (i.e. Early Dorset outside Greenland) as part of the same cultural tradition (Møberg’s [1997] interpretation of a transitional Saqqaq to Dorset site appears to support this).
The Independence II tool assemblage includes side-notched endblades and bifaces, oval sideblades, burin-like tools (specialised engraving tools resembling burins, excepting they are ground on all surfaces), microblades, stone lamps, and large eared endscrapers, as well as organic tools including needles with gouged eyelets and pointed heads, harpoon heads with open sockets and endblade slots, and lance heads designed for side-blades (Knuth 1967:39; McGhee 1976:27, 1979:36; M.S. Maxwell 1985:118-121).

4.4.2 Groswater (2800 B.P. – 2100 /1900 B.P.)
At approximately the same time as Independence II appeared in the High Arctic, occupations associated with Groswater people first appeared in Newfoundland (Auger 1984, 1986; Kennett 1990; Renouf 1994, 2005), the Lower North Shore of Québec (Martijn 1974; Taylor 1964c; Pintal 1994; Le Blanc 1996, 2001), much of coastal Labrador (Fitzhugh 1972, 1976b,1980a; Cox 1978; Tuck and Fitzhugh 1986), and the Hudson Strait area of Nunavik (Gendron 1990, 1999; Plumet 1994). Initially defined as a variant of Dorset culture on the basis of work conducted at sites in the Groswater Bay area of central Labrador (Fitzhugh 1972:148-151), ‘Groswater Dorset’ was later re-defined by Tuck and Fitzhugh (1986) as a late pre-Dorset transitional population with a dual marine-terrestrial subsistence economy. While Fitzhugh (1976b:115) initially argued that Groswater’s closest cultural relative was High Arctic Independence II and not other contemporary Low Arctic groups (also Tuck n.d.:112), Cox (1978:106) notes increased research has diminished the impression of clear cultural differences between this region and the Central Arctic (including the Foxe Basin). The earliest dates for Groswater indicate this group emerged at approximately 2800 B.P. in Labrador, disappearing from the archaeological record by about 2100 B.P. in Labrador (Loring and Cox 1986:66; Tuck and Fitzhugh 1986:164; Tuck n.d.:112), although a remnant group appears to have existed in Newfoundland until circa 1900 B.P. (Bell and Macpherson 2003; Renouf 2005; Ryan accepted).

Like other contemporary transitional groups, it is not clear if Groswater contributed culturally or genetically to the ensuing Dorset, given that Early Dorset populations (2500 B.P. – 2400 B.P.) were restricted to northern Labrador while Groswater populations occupied more southerly areas (Tuck n.d.; Cox 1978; Fitzhugh 1980a; Stopp 1997). In between these two
population bases were Intermediate and Recent Indians, with whom the Groswater appear to have had little or no archaeologically visible contact (Tuck n.d.:138; Nagle 1978; Fitzhugh 1980a:23, 27-28). Such Indian – Inuit avoidance is reminiscent of that which occurred between the Pre-Dorset and Maritime Archaic Indians in Labrador, both of whom shared similar economic and settlement patterns yet appear not to have directly interacted (e.g. Tuck n.d.:127-128, 1976:5, 102; Hood 2000)\(^1\). As with other transitional populations, Groswater also appear to have maintained a high degree of mobility and most sites are small and lack significant cultural deposits (Fitzhugh 1976a:114; Schledermann 1978a:48; Loring and Cox 1986; McGhee 1981a:39; M.S. Maxwell 1985:121; Le Blanc 1996:121).

Given the apparent climatic instability that characterised at least the start of the period (Barry \textit{et al.} 1977; refer to Chapter 3.4), Groswater populations employed a generalised marine-terrestrial economic strategy (Fitzhugh 1972:149, 1980a:24; Tuck and Fitzhugh 1986:176) that permitted their expansion onto the Island of Newfoundland, as well as the French islands of Saint-Pierre and Miquelon. Despite this elongated north-south settlement region, regular and extensive contact does appear to have been maintained between southerly and northerly Groswater groups. This is indicated by the presence of relatively large amounts of a distinctive fine-grained mottled chert (Fitzhugh 1972:126; Cox 2003:423), now recognised to have derived largely from the Cow Head chert beds on Newfoundland’s west coast (Tuck 1978; Nagle 1986) and adjacent locales (Loring and Cox 1986:71), that has been found at Groswater sites throughout Labrador (Cox 1978; 2003; Tuck and Fitzhugh 1986). Confirming that this exchange was not a one-way affair, Ramah chert from northern Labrador regularly occurs in Groswater sites from Newfoundland (Gramly 1978; Auger 1986; Tuck and Fitzhugh 1986; Renouf 1994).

In terms of material culture, a variety of side-notched plano convex ‘box-based’ endblades, oval or circular sideblades, spalled burins (apparently restricted to the earliest occupations), ground burins and burin-like tools, sidescrapers, ‘eared’ or expanded edge endscrapers, large quantities of microblades (many of which were stemmed and/or notched), and

---

\(^1\) Tuck (1976b:87; also Nagle 1978) suggests that Labrador Early Palaeoeskimos adopted Maritime Archaic Indian toggling harpoon heads and that the Indians adopted Palaeoeskimo bows and arrows. The identification of Labrador as the point of transfer has however been questioned (e.g. Noble 1971:107; Fitzhugh 1978a:70; Wright 2001:444).
round or oval soapstone vessels characterise the toolkit (Tuck n.d.:107-109; Fitzhugh 1972:148-151, 1976a:109; Cox 1978:104; Loring and Cox 1986). Lithics of the terminal Groswater occupation of Newfoundland differ stylistically from this broad overview, but fall within the range of Groswater material culture (Renouf 1994; Ryan 1997, 2003c, accepted).

Organic preservation is generally quite poor at Groswater sites and only Newfoundland occupations have yielded non-lithic artefacts. At the Phillips Garden East site (EeBi-1e) there is great variation within the harpoon heads (although Tuck [n.d.:112] notes they are virtually identical to those from Independence II sites): specimens can either have a blade slot or be self-bladed, many have an open-socket base, and have gouged line holes (Kennett 1990; Renouf 1994: Figure 6).

4.4.3 Lagoon (circa 2800 B.P. – 2300 B.P.)
The Lagoon complex is the western-most Transitional period occupation related to events in the Eastern Arctic. It is known from only two sites: the Lagoon (OjRj-3) type site on southern Banks Island (Arnold 1980, 1981a, 1981b); and the Crane site (ObRv-1) on the Cape Bathurst Peninsula (Le Blanc 1994a, 1994b). Contemporary with the Independence II and Groswater complexes discussed previously, Lagoon also overlaps temporally with late stage Pre-Dorset on the Keewatin Barrengrounds (Gordon 1975: Table 12), Early Dorset in the Foxe Basin (M.S. Maxwell 1985: Table 7.1), as well as Choris (Giddings and Anderson 1986) and Norton (Giddings 1964; Dumond 1977) populations in north-western Alaska. Because of this overlap, and considering the location of the Lagoon complex sites midway between the western (Alaskan) and eastern centres of Arctic Small Tool tradition development, Arnold (1981a: Figure 21) and Le Blanc (1994a:113-114) have both interpreted the Lagoon assemblages as displaying dual western and eastern influences (see also M.S. Maxwell 1985:139-140).

The subsistence activities of the Lagoon site occupants appear to have been directed to procuring a variety of birds, with significant amounts of ringed seal, musk-oxen, and other terrestrial species also present (Arnold 1980:419-420, Table 1). Occupants of the Crane site, an interior location thought to have been occupied in the spring through late summer period (Le Blanc 1994a:98-99), focussed on caribou, supplemented with large numbers of snow geese and
seals (Le Blanc 1994a:91-99). Lithic artefact forms fall within the reported range of late or terminal Pre-Dorset, and include endscrapers, several forms of sidescraper, burins and burin spalls, burin-like tools, multiple forms of sideblades, adzes (reflecting the abundant supply of driftwood carried to the site), side-notched endblades, stemmed endblades, and sandstone lamps.

Several types of organic artefacts (including awls and composite points with vestigial barbs) indicate that the Lagoon site occupants were influenced by or had contact with Alaskan Norton populations (Arnold 1980:423). In support of this, Arnold (1980:423-424) further cites analogies between Norton and Lagoon stone lamps, decorative motifs, and the use of lashing slots on harpoon heads. Le Blanc (1994a, 1994b) reached similar conclusions concerning the affiliation of the Crane site assemblage, noting that “the differences are overwhelmed by the compelling range of specific similarities” (Le Blanc 1994a:114) shared by the two sites. Le Blanc further suggests the possibility that Choris, a component of the larger Alaskan Norton Tradition (Giddings and Anderson 1986; Dumond 1977), also influenced the Lagoon Complex. From a geographic standpoint this is conceivable given that Choris-like finds are known as far east as the Tuktoyaktuk and Cape Bathurst peninsulas (Le Blanc 1988, cited in Le Blanc 1994a:116), while an apparent Choris site has been tested in the Mackenzie Delta (Sutherland 2006).

Whether Lagoon developed within a western secondary ‘core area’ out of earlier Pre-Dorset groups in the Banks Island-Amundsen Gulf-Victoria Island region with minimal input from contemporary populations to the east (as Le Blanc [1994a:115] suggests) is unclear. It is equally uncertain if Lagoon populations interacted to any degree with contemporary Early Dorset who are now known to have reached as far west as western Victoria Island (McGhee 1970b) and Melville Island (Henoch 1964; Taylor 1964b) (although Fitzhugh [1997:408] suspects they did). No sites have been found to suggest Lagoon groups persisted significantly into the Late Palaeoeskimo Dorset era.

4.4.4 Transitional Period Summary
As noted in Section 4.4, this period appears to have been one of relatively rapid change as populations throughout the Arctic altered their technology and settlement-subsistence foci in reaction to apparently widespread environmental instability (M.S. Maxwell 1985:122). Given the
uncertainty and risk probably brought on by such conditions, Fitzhugh (1997:395) has argued that increased long-distance trade networks were created as one means to insure that contact and interaction (as a means of risk reduction) were maintained between oftentimes isolated regional populations. This appears to have been borne out as seemingly highly mobile groups throughout the Arctic shared a number of stylistic similarities in such material culture items as side-notched endblades, harpoon heads, some architectural traits (Appendix A, also the following chapter), and other lithic materials (refer to Sections 4.4.1 - 4.4.3). Such experimentation and adaptation no doubt contributed to the archaeologically apparent inter-regional variation evident today, variability which encouraged the definition of multiple cultural traditions.

However, although this period was originally conceived as one involving rapid cultural shifts in response to the stresses of a deteriorating climate (e.g. Renouf 1993a), it is also clear, as pointed out by both Helmer (1991) and Schledermann (1990:166), that this time was not one of smooth and uniform change. In some areas it is quite difficult to clearly distinguish between the latest transitional and earliest Dorset sites (e.g. M.S. Maxwell 1984:363; Schledermann 1990:327), while in other locations sites of the two can be easily separated (e.g. Fitzhugh 1972), indicating that while close contact and diffusion occurred in some areas, groups in other locations appear to have developed largely in isolation from their closest neighbours. Such an assessment is echoed by McGhee (1981a:38-39), who notes that “Many of the defining characteristics of Early Dorset technology probably originated at different times in different areas, and were adopted over wide areas” by some combination of Transition-era people who, through such an amalgamation of traits, became Dorset.

This judgment may help to explain the impression gathered from various arctic locations that some Transitional cultural traits (often traceable directly to earlier populations) continued into the Late Palaeoeskimo period, suggesting continuity, while other Transitional traits did not, suggesting replacement (e.g. Schledermann 1990; Helmer 1991, 1992).

4.5 Late Palaeoeskimos: The Dorset
While the precise developmental sequence which saw the Late Palaeoeskimos develop, via an intervening Transitional period, from the Early Palaeoeskimos remains uncertain, it is clear that
Dorset were derived from pre-Dorset ancestors. Whether this involved continuity throughout the entire arctic (as Taylor [1968] argued in his groundbreaking study), or involved localised developments which resulted in larger-scale population replacement or acculturation (e.g. McGhee 1976:15; Fitzhugh 1997:406) is open to discussion (see M.S. Maxwell 1985:121-125). As Nagy (1994a) has highlighted, two major problems in understanding the origins of the Late Palaeoeskimos exist. The first is that most researchers are unsure what such a transition involved in terms of social, economic, and technological (re-) organisation; the second issue centres on how the mechanisms of such a transition can be identified at the site level.

Understanding that the process of Dorset development is, for the moment, largely unknown, what behavioural adjustments mark the beginning of the period researchers label Late Palaeoeskimo? As discussed in Chapter 3.4, the period around 2500 B.P. was a time of relative climatic cooling (Barry et al. 1977:199; Przybylak 2003:167). Most probably linked to this event, early Late Palaeoeskimo assemblages point to the fact that many Dorset groups were focussing more on sea mammal hunting from the sea ice (e.g. Spiess 1978; Cox and Spiess 1980; Darwent 1994), as attested by the appearance of ice creepers (or crampons) for walking on snow and ice, snow-knives for cutting snow for presumed snow structures (Meldgaard [1962:Plate 5] reports snow-knives from the Early Dorset levels in the Foxe Basin), and sled runners for small hand-drawn sleds. Mary-Rousselière (1976) also found ice chisels and ice scoops, supporting the suggestion that Late Dorset were breathing hole hunting (although refer to Cox and Spiess [1978] for an alternate opinion). There is also a marked increase in the use of soapstone lamps fuelled with sea mammal blubber, rather than the continued use of open hearths with fires sustained by wood, bone, and / or dung (although the efficiency of the later source has been called into question by Holland [1984], who discovered dung gives less than half the heat of wood. Dung fires also require excellent ventilation to ensure combustion [Brink et al. 1986]).

The identification of 27 Dorset ‘art’ objects, interpreted as model kayaks (Taçon 1983: Table 1), and full-sized pieces identified as kayak parts in Saqqaq and Dorset sites (e.g. Mary-Rousselière 1979a: 25-26, Figures 4-6; M.S. Maxwell 1985:137; Grønnow 1994:216, Figures 23 and 24) indicate that watercraft may have been present and were probably used in hunting. Furthermore, site locations also suggest the importance of easy access to the sea ice (Cox
1978:111-113; M.S. Maxwell 1973, 1985:167; Møberg 1986; Nagy 2000b), and the middens of these sites are dominated by sea mammals (Murray [1996, 1999]; Schledermann [2000]; Darwent [2001]; although exceptions do occur [e.g. Devereaux 1965; Mary-Rousselière 1984a; Howse 2005, 2008]).

The archaeological remains found at many Late Palaeoeskimo sites indicate that at least some locations were used more frequently and intensively, over longer time periods, than were most preceding Early Palaeoeskimo settlements (Harp 1976:132; Pastore 1986; Renouf 1994:190-191; McGhee 1996:130; Murray 1999; Nagy 2000a, 2000b; Hodgetts et al. 2003:114-116). Perhaps most surprising, however, is the apparently complete abandonment of key technologies including the bow drill and bow and arrow (M.S. Maxwell 1985:128; McGhee 1996:142-144; although McGhee [1970b:163-164] and Holtved [1944- II:63] report arrow shafts from, respectively, western Victoria Island and north-western Greenland). No economic rationale can be attached to the abandonment of such important equipment, indeed Jenness (1925:435) asserted that “No tribe that had once known the bow drill would have forgotten its use”. We know that bow technology was an ancestral trait for Dorset, but one that was consciously and purposely abandoned for some as yet undetermined, possibly ideological, reason (McGhee 1996:143-144; Ryan and Betts 2005).

The probable arrow shafts found by McGhee (1970b:163-164, 165, 169, Plate II, 1, Plate V, i) at two Dorset sites on western Victoria Island may in this light be significant. McGhee (1970b:163-164) notes that the style of at least one of the shafts is similar to an example reported from the Norton culture (Giddings 1964: Plate 36, figure 10), suggesting that an Alaskan influence on the Palaeoeskimos of the western Eastern Arctic may have continued at least sporadically since the Lagoon period (Arnold 1980:423).

4.5.1 Early Dorset (circa 2500 B.P. – 2000 B.P.)
There is some debate as to whether the Early Dorset period should really be viewed as part of the Late Palaeoeskimo Dorset culture, or be considered as a terminal expression of the Pre-Dorset period (e.g. Ramsden and Tuck 1990, 2001; also Schledermann 1990:174-175, 327). Those arguing for the latter viewpoint believe that there are more similarities between Early Dorset and
the preceding Early Palaeoeskimos (including those of the Transitional period) in terms of artefact styles and frequencies, subsistence foci, and architectural traditions than there are between Early and Middle Dorset (e.g. M.S. Maxwell 1985:195; Schledermann 1990:167). Based on this observation, they contend that there is little evidence to support a continuum from Early into Middle Dorset, instead preferring to categorise Early Dorset as the terminal expression of pre-Dorset (following Collins’ [1956b] usage).

Helmer (1994) has attempted to circumvent this issue by proposing a taxonomic re-classification of the entire Palaeoeskimo period. According to his plan (Helmer 1994:17, Figure 1), the groups currently designated as Transitional and Early Dorset would be placed within the same broad ‘Late Palaeoeskimo’ Dorset cultural tradition based on both shared geographical patterns and patterns of variability across time (he notes that this intentionally suppresses intraregional ‘noise’). In this way, Helmer’s proposal does attempt to answer the call by Ramsden and Tuck (1990, 2001) that interpretations of cultural-historical relationships based on similarities and differences must be made more consistent. While Helmer’s (1994) revisions have not been widely accepted by arctic researchers (most of whom continue to use the traditional, if flawed, taxonomy), terms such as “Early Dorset” are still consistently defined and used by researchers (Helmer 1994:22), no matter their culture-historical accuracy. With this in mind, this section will be devoted to discussing the main developments associated with the period 2500 B.P. to 2000 B.P. without involving itself with questions of taxonomic validity.

Early Dorset sites are distinguished from preceding pre-Dorset assemblages on the basis of such changes as an increase in the production of burin-like tools (accompanied by a decrease in the use of spalled burins), nephrite adzes, increased use of quartz crystal for microblades, and small flat-sided rectangular soapstone lamps and pots (M.S. Maxwell 1985:176-178). Ground slate knives, which M.S. Maxwell (1976a:69) notes are the best tool to separate blubber from meat and skin, are particularly common during this period (also Helmer 1980:438), and the pronounced increase in use of this tool type is probably related to the increased dependence upon sea mammals. Some endblades are tip-fluted, while others are side-notched and may have functioned as lances (Tuck n.d.:115; M.S. Maxwell 1985:110, 121). Sidescrapers and endscrapers were frequently used, and bipointed bone needles with gouged oval eyes are common throughout
the Early Dorset range.

Whale bone and ivory sled shoes, lances, and harpoon heads (predominantly of the ‘sliced’ kind, see M.S. Maxwell 1985:197, Figure 7.1) become very widespread. Art objects, known sporadically during the preceding Early Palaeoeskimo era (e.g. Meldgaard 1960a; Mary-Rousselière 1964: Plate 1, 15; Helmer 1986), increase in both overall number and geographic extent during the Early Dorset period (e.g. Taylor 1967b, 1968: Plate 243; M.S. Maxwell 1985:95-96).

The start of the Early Dorset period coincides with an increased reliance on sea mammals and the related technological developments associated with expanded used of the sea ice environment (as highlighted in Section 4.5). Many Early Dorset sites are more substantial than those left by earlier populations, suggesting a degree of sedentism in some locations that was not previously possible (Dumond 1977:97; M.S. Maxwell 1985:197; Murray 1999; Nagy 2000b). At many of these larger and more intensively used sites are found caches and storage pits, indicative of longer term occupations (Kelly and Todd 1988:239; see also Smith 2003) that attest to the ability of the Early Dorset to regularly create a dependable surplus based on a stable resource base (Binford 1983:332). This capacity to procure surplus may be related to the capability of Early Dorset hunters in at least the Foxe Basin to procure larger prey species (particularly the walrus) than their ancestors apparently were able to (Murray 1999:473, Figure 5).

In fact, Dyke et al. (1999: Table 5) note that only 0.36% of food bone from Early Palaeoeskimo sites (representing a total of 72949 bones) is walrus. In contrast, Dorset sites consistently show that walrus formed a significant portion of the diet (Dyke et al. 1999: Table 5). In support of the faunal evidence indicating increased exploitation of large mammals is the recognition that two varieties of the same type of harpoon, a larger and smaller form, were produced (M.S. Maxwell 1985:197, Figure 5.17). The larger specimen, known as Dorset Parallel Sliced (M.S. Maxwell 1976a:61), is believed to have been intended for bigger prey including walrus (Taylor 1968:52; M.S. Maxwell 1976a:61; Murray 1999:474), with some very large examples thought to have been used on beluga whales (Meldgaard 1955, cited in M.S. Maxwell 1976a:63). The smaller and more ubiquitous types were used to hunt seals (although Meldgaard [in M.S. Maxwell 1985:222] suggests one later type was developed specifically for fishing).

4.5.2 Middle Dorset (2000 B.P. – 1500 B.P.)
The beginning of the Middle Dorset period coincides with massive demographic shifts that saw the near or complete abandonment of the High Arctic (Fitzhugh 1976a; McGhee 1976; M.S. Maxwell 1985:198; Schledermann 1990) and Greenland (Appelt 2003; Jensen 2005:100; contra M.S. Maxwell 1985:210), and a similarly monumental population expansion from northern Labrador southward to Newfoundland and Quebec’s Lower North Shore (Tuck n.d.:116-125; Linnamae 1975; Cox 1978:107; Fitzhugh 1980a; Tuck and Fitzhugh 1986; Renouf 1999). The rarity of Middle Dorset sites in central and southern Labrador, as well as the Lower North Shore of Quebec, is not well understood, although the presence of Indian groups may have discouraged substantial Middle Dorset occupations (Tuck n.d.:116; Cox 1978:113; Fitzhugh 1980a:25; Stopp 1997). In the High Arctic, the absence of Middle Dorset has been linked with the major period of climatic cooling that occurred at the start of the Dorset era and culminated in an episode of extreme cold at circa 2100 B.P. (see Chapter 3.4, also Fitzhugh 1976a; McGhee 1976; Barry et al. 1977; M.S. Maxwell 1985:198).

Such exceptional cooling probably caused many of the High Arctic’s polynyas (both perpetually open primary ones, as well as secondary polynyas which clear of ice earlier than surrounding waters) to freeze over, severely restricting the northern range of many marine
mammals, as well as migratory and resident bird species (Schledermann 1980). Schledermann (1980, 1990:314) has established the existence of a strong relationship between the presence of polynyas and the location of human settlements, and has convincingly argued that the climate-induced closure of many of the High Arctic polynyas detrimentally impacted human settlement of the High Arctic. Coincident with the decreased reliability of polynyas, the duration, thickness, and extent of both land-fast and pack ice was probably also greatly expanded (particularly in the High Arctic) further limiting the ability of even sympagic species to continue in numbers sufficient to sustain human predation.

Even in more southerly locations, the cold conditions appear to have caused an overall reduction in the size and longevity of Dorset sites (M.S. Maxwell 1985:198), and may have made Middle Dorset populations more isolated, or regionalised, than earlier and later groups (Fitzhugh 1980a:26, 1997:393; Tuck n.d.:120-121). While the preceding synopsis may seem quite environmentally deterministic, it does appear to more-or-less accurately represent the cultural sequence for this period.

In terms of material culture, M.S. Maxwell (1985:196, 198; contra Ramsden and Tuck 2001) notes that there is not a great deal to separate early Middle Dorset populations from late Early Dorset ones, other than the production of a distinct set of harpoon heads. These harpoons, dubbed ‘sliced’ because of a triangular-shaped piece removed from the proximal end of an otherwise closed socket (M.S. Maxwell 1976a:61-63, 1985:Figure 7.1), were believed to have been made only by the Early Dorset (M.S. Maxwell 1985:179). However, more recent work by Odess (1998, 2002, 2005; see also Desrosiers et al. 2006) has demonstrated that these harpoons were actually made well into the Middle Dorset period (confirming M.S. Maxwell’s suspicions [1976a:61] that they might have been produced for a longer period in the Foxe Basin), certainly questioning the utility of these artefacts as meaningful horizon markers.

---

2 It should be noted that Fitzhugh’s (1980a) view of an isolated Dorset population appears to have been based primarily on the occurrence of a suite of artefacts now known to be Groswater (Renouf 1994, 2005; Ryan 1997, 2003c, accepted). Eliminating these artefacts may call the idea of a distinct ‘Newfoundland Dorset’ culture (Harp 1964; Linnamae 1975:91-93) exhibiting a “remarkable six century changelessness of style and technology” (M.S. Maxwell 1976b:5) into question (also Jordan 1986; Robbins 1986; S. Le Blanc 2000). Holly (2003) has recently reviewed how the interpretation of Newfoundland populations as regionally isolated and culturally primitive may have developed.
As reported by numerous researchers (Collins 1957; Harp 1964; Linnamae 1975; Mary-Rousselière 1976; Cox 1978:107-111; Fitzhugh 1980a; Jordan 1980, 1986; M.S. Maxwell 1985:198-216; Robbins 1986; Tuck and Fitzhugh 1986; Renouf 1994, 1999), Middle Dorset can be characterised by a suite of additional organic and lithic artefacts. These include tabular burin-like tools, tip-fluted endblades (with a greater percentage being concave-based [Cox 1978:107]), rectangular and oval soapstone lamps and pots, triangular endscrapers, sidescrapers, a reduction in the use of ground slate tools, bifaces made in a variety of forms (including asymmetric and symmetric forms that may have been notched, unnotched, or stemmed), and a decrease in the overall percentage of microblades compared to earlier periods.

Organic artefacts include a range of handles, sockets, and foreshafts; and the continued use of ice-related objects including ice creepers and whalebone or ivory sled runners indicate Middle Dorset continued to extensively use the sea ice environment. Unlike the bipointed sewing needles used by Early Dorset, Middle Dorset needles have rounded proximal ends. The Dorset Parallel harpoon head (Taylor 1968:52, Figure 22,b), first made in Early Dorset to hunt larger marine mammals (M.S. Maxwell 1976a:61; Murray 1999:474), continued to be used in this period. Finally, art objects became increasingly common during this time (Meldgaard 1960c:24; Taçon 1983, 1993), although attempts to establish whether the subjects portrayed and styles used also followed a temporally defined developmental sequence have not been successful (e.g. Meldgaard 1960a; Taylor 1967b:40).

Interestingly, unlike their Pre-Dorset predecessors who appear to have had little or no contact with contemporary Indian populations, Middle Dorset groups along the coast of Labrador and Island of Newfoundland appear to have had some level of cross-cultural interaction with their neighbours. Initial claims of contact had been based on two lines of evidence: similarities between Dorset Type F and G harpoon heads (refer to M.S. Maxwell 1985:Figure 7.23) and one illustrated by Howley (1915:330, Plate 24, no. 32) as being Beothuck in origin; and analogies in form and style between Dorset and Beothuck engraved pendants (Marshall 1978). While these claims have been largely dismissed (e.g. Fitzhugh 1980a:28-31), it is apparent that the two populations were at least aware of one another in Labrador (see Fitzhugh 1978b:152). Indeed, some form of direct or indirect contact must have occurred between Hamilton Inlet and northern Labrador as
Intermediate and Recent Indian groups regularly entered Dorset territory to access the Ramah chert quarries in Ramah Bay (Fitzhugh 1978b). Recently, Renouf et al. (2000) have argued for direct contact between Middle Dorset and Cow Head Indian populations at Port au Choix, on the north-west coast of Newfoundland. Such inter-cultural contact adds a new dimension to a cultural group often viewed as isolated at the top of the world.

Middle Dorset sites are best known from Newfoundland (Harp 1964; Linnamae 1975; Renouf 1993a, 1994, 1999), where, as M.S. Maxwell (1985:216) remarks, “These more southerly coastal inhabitants have provided us with the best picture of Middle Dorset culture”. Middle Dorset sites have also been identified in northern Labrador (Fitzhugh 1972, 1978b; Tuck 1975; Cox 1978; Jordan 1980), the Hudson Strait coast of Nunavik (Bibeau 1984, 1986; Nagy 2000a), and the northern Foxe Basin (Meldgaard 1954, 1960a).

4.5.3 Late Palaeoeskimo Summary: Early and Middle Dorset
While the earliest Dorset groups may not have differed markedly from their pre-Dorset predecessors, it is clear that as time went on the Dorset developed a distinct cultural adaptation to life in the Arctic. While climatic change has often been employed as a causative factor dictating an ‘adapt or die’ response from human groups, Nagy (2000b) has offered a different explanatory scenario that gives human agency perhaps the pre-eminent role in the cultural changes identifiable in the Dorset period. In this way, while using Binford’s (1980) collector and forager model, she considers “the degree of knowledge of the land” (Nagy 2000b:143) to be most important in terms of determining how an area’s resources are exploited, suggesting that the differential rate at which knowledge was obtained influenced when a collector-based economy (typically associated with Dorset) was adopted (Nagy 2000b:146).

Following her argument, those new to an area (i.e. Pre-Dorset) would naturally adopt a forager strategy as they gathered knowledge of the area and its resources. Only after such knowledge had been acquired could people in some but not necessarily all areas then focus on specific locations and resources, becoming (through intervening transitional populations) more logistically-oriented collectors. While Nagy’s interpretations are based on her work in the Ivujivik area of Nunavik, her explanation is also applicable elsewhere in the Arctic. For example, a similar
occidental sequence appears to have occurred in Newfoundland, albeit on a much shorter timescale, during the Middle Dorset period. Here, lacking cultural predecessors from whom to inherit knowledge of the land and its resources (although I have elsewhere suggested pioneering Middle Dorset groups in Newfoundland were in some limited contact with terminal Groswater populations [Ryan 2007]), Dorset first employed a mobile forager strategy of short-term site occupations before quickly identifying and focussing on key resource locations where increasingly longer-term and intensive collector-oriented occupations were possible (Harp 1976; Winterhalder and Smith 1981; Pastore 1986; Erwin 2003a).

Murray (1999), working with collections from Igloolik Island in the Foxe Basin, has made a similar case that at least some Dorset groups can be considered more like sedentary collectors, whereas pre-Dorset populations functioned more as foragers. Differing from Nagy however, Murray (1996, 1999) argues that environmental changes at the start of the Dorset period (specifically isostatic rebound in the Foxe Basin which increased walrus habitat) were a necessary prelude to Dorset development. Unlike many other arctic locations, Murray (1999:476) points out that walrus in the northern Foxe Basin would have been available all year, presenting something of an irresistible lure for human hunters.

Once walrus became available in sufficient numbers at the close of the Pre-Dorset period, Murray argues that resident Early Dorset populations rapidly intensified their exploitation of this resource (see Murray 1999: Figure 5). This activity produced large surpluses which supported increased human populations, but which also necessitated the use of storage (see LeMoine and Darwent 1998) and limited the mobility of those dependent upon those stored goods (Testart 1982; Kelly and Todd 1988). Another consequence of this hunting intensification was that more and more hunters and their families would be required within a relatively concentrated area to successfully kill, land, butcher, and process walrus carcasses, creating a situation where larger and more intensively used sites, associated with numerous feature types (indicative of long term occupation) resulted (Murray 1999: Table 3).

With a richer resource base as a result of year-round access to walrus, Murray (1999) interprets the Dorset adaptation around Igloolik as more stable and productive than that seen in other locations (this is, in essence, the crux of the entire ‘core area’ hypothesis, see Chapter 3.4).
As with historically known Inuit groups living in the northern Foxe Basin (e.g. Mary-Rousselière 1984b), Murray (1999) hypothesises that the Igloolik-area Dorset garnered prestige over surrounding groups by extensively hunting and then trading walrus products (Mary-Rousselière [1976:56] notes walrus hunting was the most dangerous activity of the historic period and earned its participants the most respect). According to Murray (1999:476-477), the less economically advantaged Dorset outside the Foxe Basin may have attempted to counter the Igloolik Dorset’s presumed economic and social prestige by a process of aggregation and architectural aggrandisement\(^3\) (although this interpretation is not widely accepted, see Damkjar [2000:177] and Friesen [2007]).

These two competing but not necessarily mutually exclusive paradigms for the development of the Dorset exemplify the debate surrounding the emergence of Dorset culture at \emph{circa} 2500 B.P.; on the one hand is a model driven by social considerations, while the other uses environmental change as its impetus. Whatever the ultimate cause or causes of its development, the Dorset period ultimately involved a significantly different socio-economic adaptation than that inferred amongst its presumed Early Palaeoeskimo ancestors.

\subsection*{4.6 Discussion}

This summary of the first 3000 years of arctic occupation in many ways reveals the incomplete knowledge archaeologists have regarding the cultural events and developments leading up to the Late Dorset period. As both Bielawski (1988) and Elling (1996) have noted, much of the early work on culture history in the Arctic was and continues to be conducted by researchers focussing on specific regions, which, as M.S. Maxwell (1980b:163) has observed, has made the synthesising of knowledge on an intra-regional scale difficult and therefore uncommon. As a result, a considerable amount of the Arctic’s culture history has been constructed based on information gathered from particular areas (e.g. southern Baffin Island or Igloolik) and then applied to the region as a whole. Often this has been done without clear knowledge of whether such an

\(^3\) Such architectural aggrandisement in less ecologically rich regions would appear to reverse Trigger’s (1990; refer also to Neiman 1998) model of conspicuous consumption. According to Trigger, it is the social and economic elite (not disadvantaged) who direct the creation of large-scale monuments as a means to display their wealth and dominance over others.
application is appropriate.

Compounding the potential problem of this ‘snapshot’ approach to arctic prehistory is the fact that many of the intervening areas, including the huge expanse of Baffin Island’s east coast, remain largely *terra incognita* from an archaeological viewpoint. This makes it nearly impossible to reliably establish if the events which took place at one time and in one location are relevant to those in another. This is exemplified by Helmer’s (1991, 1992) excavations on northern Devon Island. Unlike the core-fringe model which states that all innovations originate in the core and move outward, Helmer (1991:316) envisions a series of changing cultural alignments through time as the populations he was studying fell under different cultural and regional influences while all the while experiencing their own localised developments. Similarly, research on the Bache Peninsula led Schledermann (1990:324-325) to conclude that Greenlandic Saqqaq contributed to the *in situ* development of Dorset from earlier pre-Dorset groups, contradicting the traditional view that Dorset developed in the Low Arctic without input from other regions (Møberg [1997] and Jensen [1998] have also suggested late Saqqaq populations may have influenced Dorset groups in Greenland).

This should not be taken to mean that the definition of different cultural traditions based on limited work is unnecessary or unwarranted for establishing culture historical sequences. However, the continued use of cultural designations without meaningful introspection in the face of ongoing research can make their use increasingly untenable if they cannot be adjusted to allow for the inclusion of new data (*e.g.* Cox 1978; Schledermann 1978a, 1990; Helmer 1991, 1992). This problem has been highlighted by both Helmer (1994) and Hood (1998), who observe that archaeological theory and the interpretation of material culture remains run the risk of becoming dogmatic if they exclude or dismiss new research which does not easily fit within the pre-existing framework. Helmer (1991:316) has gone so far as to state that “the broad regional models ... proposed in the past are empirically inadequate and should be abandoned in favour of more particularistic local reconstructions”.

Underlying much of this discussion is the issue of continuity versus discontinuity of populations within various regions, and the related questions of how much influence different areas exerted on one another and the extent of that diffusion. For example, while Fitzhugh
(1997:407) continues to support the original core area model premise that ‘fringe’ populations did not influence ‘core’ groups, he does acknowledge that populations located on the periphery could exercise some influence on one another through lateral trait diffusion. However, as the idea of a single core region of development gradually cedes to a model incorporating multiple developmental areas (e.g. Cox 1978), how archaeologists are supposed to first identify a mini-core and then pinpoint its periphery becomes much more complicated (Fitzhugh [1997:409] acknowledges tracing these demographic trends has become increasingly difficult).

Finally, in locations such as the High Arctic, where human occupations are supposed to be punctuated by periods of absence (see McGhee 1976), how does the fact that at least some areas appear to have been continuously occupied during phases when the larger region was supposedly abandoned (e.g. Schledermann [1978a] and Helmer [1980] working in, respectively, central Ellesmere Island and Karluk Island) fit the cultural historical scheme as it currently stands?

At the moment, what is certain is that the rate and extent of cultural change within the Arctic has at times occurred at an astonishing rate, almost as though “everyone in the Eastern Arctic had informational contact with everyone else through the interlocking systems of a multitude of contiguous bands” (M.S. Maxwell 1985:4).

The following chapter presents an overview of Late Dorset material culture development. Discussion also focuses on chronological issues and reviews the evidence which suggests that the Eastern Arctic after 1500 B.P. may no longer have been the sole domain of Palaeoeskimo populations.
CHAPTER 5 – THE LATE DORSET

5.1 Introduction
Many of the artefacts used by Diamond Jenness (1925) to define the Dorset period were in fact produced by the Late Dorset during the final phase of Palaeoeskimo occupation of the Arctic. Archaeologists now know that Late Dorset emerged around 1500 B.P. and disappeared archaeologically between 1000 B.P. and 500 B.P. (M.S. Maxwell 1985:239). The Late Dorset period has been likened to a cultural fluorescence by several researchers (e.g. Taçon 1983:43; McGhee 1996:202) and is characterised by pronounced population movements and trade networks, the widespread appearance of artistic and (inferred) ideological behaviours, and the periodic occurrence of large-scale social gatherings (M.S. Maxwell 1985:216-245; McGhee 1996:200-234). The abrupt disappearance of Late Dorset culture has been described by Tuck (1975:198) as “perhaps the most perplexing problem in Canadian prehistory” and highlights the fact that Late Dorset is still poorly known across much of its range (Helmer 1981:165-171; McGhee 1981a:76; Schledermann 1990:330). Late Dorset sites are known from Melville Island (Taylor 1964b) and western Victoria Island (McGhee 1970b; Savelle and Dyke 2002) east to northern Labrador (Fitzhugh 1976b; Tuck 1976a) and from north-western Greenland (Appelt and Gulløv 1999) south to Richmond Gulf in south-eastern Hudson Bay (Harp 1976). Late Dorset sites are, conspicuously, absent from south-central Labrador and Newfoundland (Tuck and Fitzhugh 1986).

5.2 Late Dorset Chronology
The beginning of the Late Dorset period is traditionally placed between 1500 B.P. and 1400 B.P. (most published dates favouring the former). There has been much less agreement concerning when the Late Dorset period ended. For the past 50 years many researchers have agreed that the majority of Late Dorset disappeared at around 1000 B.P., perhaps relating to the appearance of immigrating Thule Inuit or climatic changes, but also held that so-called ‘remnant’ populations persisted in some regions (notably the Hudson Strait area) until as late as the 12th or even 15th centuries A.D. (M.S. Maxwell 1985:218, 239-245). Support for the existence of very late Dorset populations was based primarily on a large suite of radiocarbon dates derived mainly from sites on
the Ungava and Labrador peninsulas (M.S. Maxwell 1985:217, 239-241; refer also to CARD), as well as the belief that Dorset people interacted with Thule Inuit groups who did not arrive in the Eastern Arctic until after 1000 A.D. (see Section 5.4.6).

However, more recently Park (1993, 2000) has disputed the validity of post-1000 B.P. Dorset radiocarbon dates (indeed, he suggests that the Eastern Arctic was completely abandoned by humans between 1200 B.P. and 850 B.P.), arguing that samples producing dates younger than 1000 B.P. are either anomalous or do not relate to actual Dorset activities, and are therefore misinterpreted. Consequently, Park (1993:206-208) believes post-1000 B.P. results should be rejected on three grounds: 1) late dates actually derive from non-Dorset (i.e. Thule Inuit) occupations; 2) late dates are not statistically valid as they are the only assays for a feature or site; and, 3) late dates are artificial because they have been contaminated by young carbon.

Beginning with the first of these reasons, Park (1993:208-211, 2000:196-200) states that researchers dealing with mixed cultural sites have frequently misinterpreted complex or shallow stratigraphy and assigned levels to Dorset when they should have been identified as Thule. According to Park (1993:210), these stratigraphic misidentifications have perpetuated the idea that Late Dorset culture persisted past 1000 B.P. As a result, any assays earlier than 600 B.P. are automatically assigned to Late Dorset, when, Park (1993:213) argues, they should more accurately be associated with the Thule. A Thule ascription should even be made at what appear to be single component Dorset sites because those assessments are “probably more compatible with a Thule occupation that is poorly visible archaeologically” (Park 1993:213) than with the Dorset (i.e. Thule were present at these sites but evidence of this was not preserved). However, Plumet (1994:135, 138), who excavated several of the sites dismissed in such a fashion, has taken strong issue with this contention, noting that it is impossible to address the idea of a ‘phantom’ Thule presence being responsible for the post-1000 B.P. dates and states that this point weakens Park’s entire case. Plumet notes that the interpretation of an arctic hiatus between 1200 B.P. and 850 B.P. cannot be taken on faith, stating that “Park fait valoir que l’inflexion de la distribution bimodale des dates attribuées au Dorsétien dans l’Arctique canadien ... refléterait la disparition
He continues by remarking that the cultural sequence from northern Nunavik “aucun indice ne permet d’attribuer les dates récentes à une réoccupation discrète de sites dorsétiens par des Thuléens, comme le croit Park”\(^2\)(Plumet 1994:139). Park would presumably level a similar argument against the post-1000 B.P. Dorset dates from northern Labrador, where Fitzhugh (1994:244; see also Kaplan 1983:215-230) notes that radiocarbon results indicate that six of ten known Late Dorset sites overlap chronologically with the Thule era (after 1250 A.D. in Labrador) yet have no Neoeskimo presence.

The second of Park’s reasons for rejecting all Dorset dates younger than 1000 B.P. is that many assessments represent the only date obtained from a structure or site, and as such are statistically invalid. Park (2000:194) suggests that only contexts with multiple dates should be regarded as legitimate given all radiocarbon dates are actually radiocarbon estimates which produce a date range rather than a precise date. Because of this characteristic of the radiocarbon dating method, Park (1993:206-213, 2000:194-195) notes that it is probable that some samples will yield results which are younger \(i.e.\) post-1000 B.P.) than the actual age of the material tested, just as it is possible that results older than the same material will also be obtained. To avoid such a problem, Park (2000:195) advocates that all Dorset sites thought to date after 1000 B.P. be subjected to multiple radiocarbon assessments in order for a date range and central dating tendency to be identified, prior to making any interpretations of that site’s occupational age.

However, a number of sites have now been subjected to multiple radiocarbon estimates, weakening Park’s criticism. For example, Friesen (2004) has recently run and reported on a series of radiocarbon results he has obtained from three Late Dorset sites on south-eastern Victoria Island. Nine calibrated results clearly show that Dorset in the Iqaluktuuq area were present until at least 800 B.P., if not later (Friesen 2004: Table 1). Given these results, Friesen (2004:688) notes that it is logical to assume that at least some of the contemporaneous dates from Dorset

\(^1\) Park has to earn his assertion that the bimodal distribution of dates attributed to Dorset in the Canadian Arctic ... reflects the disappearance of Dorset, and that the latest dates are really Thule

\(^2\) does not permit the attribution of recent dates to a discrete reoccupation of Dorset sites by Thule as Park believes
sites elsewhere in the Eastern Arctic questioned by Park should also be valid. These include the suites of radiocarbon dates reported by Plumet (1979, 1994: Figure 17) from several sites on the northern Ungava coast. These dating results suggest Dorset on their eastern range may have persisted until as late as 500 B.P., overlapping with Thule Inuit in the area for approximately 200 years (Fitzhugh 1980; 1994: Figure 1). Additional support for pushing the Late Dorset cultural period past 1000 B.P. comes from a series of eighteen calibrated radiocarbon results from three sites in the Thule District of north-western Greenland that indicate Late Dorset occupied this area between 1150 B.P. and 650 B.P. (Appelt et al. 1998; Appelt and Gulløv 1999:19-20; Lund-Rasmussen et al. 1999:71). Several additional Late Dorset sites from the High and Low Arctic have also been dated using multiple samples and indicate a post-1000 B.P. Dorset occupation (refer to CARD).

The final rationale offered by Park for rejecting all Dorset dates younger than 1000 B.P. is the possibility that these samples were contaminated with young carbon from later activities at a site. The vast majority of arctic archaeologists are aware of the difficulties associated with the radiocarbon dating method in this region, and the most obvious sources of contaminants (refer to McGhee and Tuck 1976; Arundale 1981; Tuck and McGhee 1981; Morrison 1989; Nelson and Møhl 2003; as well as Nelson and McGhee 2002). Old carbon is probably the most pervasive source of contamination in arctic contexts and comes primarily from sea mammal products (this is why most researchers avoid dating materials derived from the marine environment, although a less obvious contamination mechanism involves the impregnation of terrestrial-derived materials with sea mammal oils [Morrison 1989:61]), driftwood (which might have died long before being used), and the peat matrix which often encases archaeological deposits (this process is less well understood, although it is known that peat can act as a carbon ‘sink’, trapping carbon and later releasing it via the freeze-thaw process; refer to Olsson [1985], Damon et al. [1996] and Waelbroeck et al. [1997]).

While each of these concerns represents a valid mechanism in which a radiocarbon sample can be contaminated, it is possible to minimise such an occurrence so that the accidental incorporation of younger carbon within a sample can be avoided. Obviously this entails ensuring that samples selected for dating do not contain sea mammal products or driftwood (although the
introduction of old carbon is less of a concern as regards the end of the Late Dorset period), and only dating samples collected from deposits that were sealed from earlier and later activities so that the results are not compromised. If this is done, then it should not be necessary to adopt Park’s (1993:208) “most conservative interpretation” that all Dorset radiocarbon assays resulting in post-1000 B.P. dates be summarily rejected.

In sum, sites yielding multiple radiocarbon dates between 1000 B.P. and 500 B.P. have been obtained from western and south-eastern Victoria Island, Somerset Island, Little Cornwallis Island, Ellesmere Island, Nunavik, northern Labrador, and Greenland (CARD), and many of these are assessments for which “no specific objections can be raised” (Park 1993:206). Given that the criticisms offered by Park for rejecting dates younger than 1000 B.P. are at least as tenuous as the reasons for accepting them, I have adopted the position for this dissertation that while Late Dorset in many regions of the Arctic may have disappeared around 1000 B.P., populations continued to persist in some locations until at least 800 B.P., and most probably until 500 B.P. on their eastern and southern limits.

5.3 Characterising the Late Dorset Period
As mentioned in the introduction to this chapter, Late Dorset is the first recognised and generally best known (see Schledermann [1990:330]) Eastern Arctic Palaeoeskimo group. The period is marked by a proliferation of carvings on bone, ivory, antler, soapstone, and wood (Lyons 1983; Taçon 1983), which McGhee (1996:202) and LeMoine (2005:140-141) speculate may be related to the wider use of metal (copper and iron) tools by Late Dorset carvers. While it remains difficult to extrapolate Late Dorset behaviour given that many of their sites are still unpublished (M.S. Maxwell 1985:217), it is clear that many aspects of the Late Dorset adaptation were very different from their Palaeoeskimo ancestors.

5.3.1 Identifying Late Dorset Origins and Spread
The mechanisms which drove the rapid development and spread of Late Dorset after the major depopulation events of the preceding Middle Dorset period are still largely unknown. Most researchers concur with M.S. Maxwell (1985:217), who saw a causal relationship between the ameliorating climates immediately preceding the appearance of Late Dorset (see Chapter 3.4) and
the development and spread of this cultural group throughout most of the Eastern Arctic. As discussed in Chapter 4, the end of the Middle Dorset period is marked by large-scale regional abandonment and the apparently total disappearance of human groups from the High Arctic and Greenland as populations either died out or retracted to more southerly and presumably ecologically stable regions. Even in some parts of the ‘core area’, including the southern coast of Baffin Island, local conditions appear to have been such that Dorset populations of a sufficient size and intensity to be visible archaeologically could not be supported (M.S. Maxwell 1985:216, 233-237; Odess 1998:421, 2005:85 [Odess argues Middle Dorset were present, contra M.S. Maxwell]). A drop in population in the Foxe Basin itself may also have occurred in this period (M.S. Maxwell 1985:212).

Given such marked demographic changes, it is unclear whether Late Dorset developed locally from resident Middle Dorset populations whose sites remain to be located, or represent new population movements and re-colonisation events after some period of regional abandonment. The latter scenario has been the predominant view (e.g. McGhee 1976:37-39; M.S. Maxwell 1985:81; Fitzhugh 1997:406) since Meldgaard (1954a, 1954b, 1960a, 1960b, 1962) first reported unbroken occupational sequences from earliest Pre-Dorset to latest Dorset in the Foxe Basin (the identification of this area as the heartland of Palaeoeskimo development was based largely on this). However, as with other investigations during the early years of arctic archaeology (see Helmer 1996:306), complete site descriptions, including those for several critical cultural ‘type’ locales, have never been fully published by Meldgaard. As a result, information on the Foxe Basin occupations must be pieced together from a variety of disparate sources (for example, Meldgaard’s [n.d.] harpoon head typology is widely cited despite not being published, and copies of the manuscript are difficult to obtain). Despite this, the Foxe Basin sites have taken on an almost mythological status in Eastern Arctic archaeology as the region became synonymous with the ‘core area’ of Palaeoeskimo development (refer to Fitzhugh [1997:400-403], also Chapter 3.4) and changes there used to relatively date other locations (see Odess [2005:87] for the dangers of doing this).

Hood (1998:15) notes that as a result of this, the Foxe Basin area has become ensconced within interpretive “black boxes” that obscure, through repeated citation, the preliminary state of
the analysis on these occupations. For example, with the exception of the Pre-Dorset to Dorset transition (Meldgaard 1962), there is very little discussion (other than basic chronology) of how each Foxe Basin phase fits within the overall Palaeoeskimo developmental sequence. A single plate (Meldgaard 1962: Plate 5) is the only place where differences and similarities between groups are presented, and the changes identified between Dorset III (Middle Dorset) and Dorset IV (Late Dorset) are vague and difficult to pinpoint. Nowhere in the presentation are the profound changes between Middle and Late Dorset that Meldgaard (in M.S. Maxwell [1985:217]) identified as rivalling that seen during the transition from Pre-Dorset to Dorset implied.

Archaeologists have attempted to amend this situation with new research in the Foxe Basin (e.g. Murray 1996, 1999; Odess 2002), and although their work has met with varying degrees of success, it does appear that Meldgaard’s interpretation of the Foxe Basin occupations as more intense and long-lived than elsewhere is generally correct (see Harp 1976, 1997; McGhee 1976:34; M.S. Maxwell 1985:216, 233-237; Schledermann 1990:201; Helmer 1991:314, 1996:305; Odess 1998:421, 2005:85). Therefore, despite the serious problems posed by the scarcity of Foxe Basin publications, and recognising the problems associated with inter-regional comparisons (refer to Odess 2005), particularly when these regions are often poorly dated (Schledermann 1990:331), this area remains the most probable point of origin for Late Dorset culture.

However, while the Foxe Basin appears to have played the predominant role in Late Dorset development, the process is complicated by indications that Palaeoeskimos outside the region also contributed to Late Dorset culture. Although the mechanics of this influence are still poorly understood, Schledermann (1978a) suggests that some regions, including the High Arctic, were more continuously occupied than generally acknowledged, and that they played a role in Late Dorset development. Whether this influence, indicated by the presence in Late Dorset assemblages of traits rare or absent in the Foxe Basin, was exerted via long distance trade and communication links, or resulted from an amalgam of local traits as Foxe Basin populations spread into other regions and encountered resident populations, is not clear (refer also to McGhee [1976:28] and Schledermann [1990:331]). Similar conclusions have been reached in Labrador, where subtle stylistic similarities between Middle and Late Dorset suggest that some level of
cultural continuity existed (Tuck 1975:179-183, 186; Fitzhugh 1980a:25, 1980b:600; Thomson 1988:89-91, 145), despite an apparent occupational hiatus of 400 or 500 years (Cox 1978:99; Fitzhugh 1980b:600, 1994:243). A scenario such as Jordan (1980:626) envisions for Early to Middle Dorset development in Labrador (in situ development with significant Foxe Basin influence) may also apply to Late Dorset development. However, much additional work is needed in Labrador and other such ‘sub-core’ locations (Cox 1978:114-116; Fitzhugh 1997:404, 407), as well as in areas that remain terra incognita archaeologically (e.g. the west coast of Baffin Island, as well as its eastern part north of Cumberland Sound), before issues of Late Dorset evolution and spread can be resolved.

5.3.2 The Late Dorset Tool-Kit
In most regards, Late Dorset equipment follows the general themes developed by their Early and Middle Dorset predecessors. Various forms of bifaces, scrapers, and burin-like tools continued to be used, as were bone needles with rounded heads, and handles for stone tools. Soapstone vessels are common, with small thin-walled round or oval examples dominating, although rectangular thicker-walled vessels reminiscent of earlier periods continued to be manufactured in some areas (McGhee 1976:21-23; Cox 1978:111). Microblades, which were less common in the Middle Dorset era than in the Early Dorset period, become even less common in some regions, as are ground slate knives (Cox 1978:111; M.S. Maxwell 1985:224-225, Table 7.6). Gear associated with life on the sea ice (e.g. snow-knives, ice creepers, and ice picks) continues to be widely found (M.S. Maxwell 1985:216-239). Other artefact types also persist from earlier Dorset, but their form and intended function were altered (e.g. the Dorset Parallel harpoon head becomes longer and narrower, and has more sharply defined basal spurs in Late Dorset [M.S. Maxwell 1985:221, 227]).

Stylistic seriation of Late Dorset assemblages has been attempted, although few temporally sensitive attributes have been identified thus far (M.S. Maxwell 1985:227). M.S. Maxwell (1985: Table 7.7) provides a list of those artefacts he posits change through time, of which the most useful and widespread (because of their resilient material) are triangular stone endblades. These tools continue from Middle Dorset (without the characteristic Middle Dorset
tip-fluting technique) and are straight-based or very minimally concave in the earliest Late Dorset sites, but become increasingly basally concave (and frequently exhibit edge serration) as time passes (M.S. Maxwell 1985:223-224, 227). There are also indications that side-notched slate knives become less common with time, possibly being replaced by functionally equivalent and increasingly numerous transverse-edge bifaces (also referred to as oblique-edged) (M.S. Maxwell 1985: Table 7.7). In Labrador, Fitzhugh (1976b:112) posits the development of a unique lithic macro-industry during Late Dorset that might have been related to the availability of Ramah chert. Bone and antler lance heads are also increasingly rare at later Late Dorset sites, while the frequency of stemmed chert or ground slate specimens increases.

The distribution of organic artefact types is directly related to preservation conditions and their occurrence in Late Dorset sites is highly variable. Thus, while organic artefacts are generally poorly known from areas such as Labrador, which is notorious for its poor preservation conditions in all but the extreme north, they are well represented at sites in the High Arctic where permafrost preservation is almost complete. For this reason, the regional distribution of organic tool types should not be interpreted as showing where specific tool categories were or were not manufactured. Instead, it should simply be taken as an indicator of the types of tools that were produced and preserved. Of the harpoon heads recovered from Late Dorset sites, only the Dorset Parallel type continues (with stylistic alterations) from earlier periods, while five new forms (Types F, G, Ha₁, Ha₂, and J) were developed after 1500 B.P. and are illustrated in M.S. Maxwell (1985:Figure 7.26). A variant of the Type G is equipped with distal rivet holes for presumed iron or copper endblades, and its appearance may relate to the increased availability of these metals in the Late Dorset period (McGhee 1996:202). All of these harpoon heads could be interchanged on a Dorset-style thrusting harpoon foreshaft that was suited to hunting at the floe-edge (or sina), on pack ice, or in open water conditions (M.S. Maxwell 1985:132-133, 136). Whether any part of the Late Dorset harpoon kit was particularly well-suited to breathing hole hunting is unclear (see Section 5.3.3).

The development of a second style of foreshaft in later Dorset that was thrown is probably causally related to the increasing periods of open water brought on by the rising temperatures leading up to the Mediaeval Warm Period (McGhee 1981a:76; M.S. Maxwell 1985:136, 223,
McGhee (1981a:76) in fact does not believe that any of the Palaeoeskimo groups preceding the Late Dorset practised open water hunting. Damkjar (2005:162-163) thinks that even if Late Dorset populations developed harpoon technology that was better suited to open water hunting, the ecological and related economic impacts of a protracted warming episode placed populations under serious stress given that they appear not have developed other useful open water hunting technology (*e.g.* floats).

The technological evidence for fishing is less direct. A limited number of leister parts and fish spears have been recovered from Late Dorset sites (Rowley 1940: Figure 1j, Figure 2h), and Meldgaard (in M.S. Maxwell 1985:222) links the Type J harpoon head with fishing activities. But no artefacts have been identified which demonstrate that Late Dorset groups fished through lake or sea ice (M.S. Maxwell 1985:141), nor has direct evidence for Dorset construction of fishing weirs been located (although as Savelle [1987:Plate 2c, 3a, 3b] notes, such evidence can be completely erased over a single year). However, while M.S. Maxwell (1985:141-142) reports that Dorset fishing equipment was not as efficient as that of the Thule Inuit for taking large numbers of fish, they were obviously still capable of landing huge numbers (for example, Friesen [2000b:24] notes that over 70% of the fauna from one Late Dorset site was composed of char remains).

### 5.3.3 Subsistence and Settlement Patterns

Although the faunal assemblages from a number of sites have, with varying degrees of detail, been presented, only two comprehensive large-scale studies of Late Dorset subsistence have been conducted; the first by Maribeth Murray (1996, 1999) in the Foxe Basin, and the second in the High Arctic by Christyann Darwent (2001). While dealing with markedly different environmental circumstances, both studies concurred on several points regarding the Late Dorset subsistence economy: that the Late Dorset economy was more diversified or broadly based when compared to earlier populations in the same areas (Murray 1996:94-95; Darwent 2001: Table 5.7, 117-118); that Late Dorset increasingly relied on so-called ‘second-tier’ or ‘buffer’ species to guard against failures in their preferred prey choices (Murray 1996:94; Darwent 2001:117-121); and, based on the first two findings, that Late Dorset groups were less mobile than previous Palaeoeskimo groups (Murray 1996:94; Darwent 2001:120, 129 [although, as discussed below, the universality
of this last point is debatable].

Murray’s and Darwent’s analyses confirm the importance of sea mammals (particularly ringed seals) to the Late Dorset diet, but also contradict previous assumptions regarding Dorset subsistence (best summarised by M.S. Maxwell [1985: Table 6.1, 131]). According to M.S. Maxwell, arctic hare and fox formed a minor part of most faunal assemblages, however, in all of the High Arctic sites analysed by Darwent (2001:115, 129), fox and hare were both heavily exploited whereas artiodactyls (caribou and musk-ox) were virtually absent (Schledermann [1990:223] reports a similar situation on the Bache Peninsula). Fox also appear in high numbers at sites in north-western Greenland (Bendix 2000), and even in the Foxe Basin, where fox and caribou form an often significant percentage of the faunal remains (Murray 1999: Figure 2). Darwent (2001:117-118) feels that the broad resource base exploited by High Arctic Late Dorset probably reflects true diversification and intensification, although she notes the use of ‘alternate’ species may also be related to diminishing numbers of ringed seals caused by a warming climate and related decreases in sea ice. Late Dorset may also have intensified their use of fox because caribou, whose skins are usually used for winter clothing (Stenton 1991a,1991b) but who are also prone to over-hunting (McCartney and Helmer 1989), were absent from the area (Savelle and McCartney [1988:29-30] note fox exploitation rises in such situations, since fox fur can be substituted for caribou). Morten Meldgaard (1997) and Bendix (2000), working (respectively) at Saqqaq and Late Dorset sites in Greenland, also relate the high number of fox to their possible use in clothing.

Previous faunal work had also suggested that geese and ducks were rarely exploited by Dorset (M.S. Maxwell 1985:131-132), yet despite the fact that these birds do vary in occurrence (see Darwent [2001:117], although she does not infer seasonality from this), goose and duck species are present, and indeed dominate some faunal assemblages. Schledermann (1990:201-269), Bendix (2000), Damkjar (2005:163), and Howse (2008) report moderate to large numbers of ducks and geese from Late Dorset sites, indicating that earlier perceptions of these species as relatively unimportant may have been skewed by the fortuitous analysis of sites where these species were either not used or were unavailable. Certainly Damkjar’s (2005: Figure 10) summary of faunal assemblages based on site type indicates a great deal of variation exists in species
exploited. It is probable that much of this variation in faunal assemblages within and between regions and times resulted from regional and seasonal variations in the resource base, as Dorset hunters exploited the resources accessible to them (refer to Robbins [1985] for regional subsistence variations amongst Middle Dorset on the island of Newfoundland).

The location of the overwhelming majority of Dorset sites on the coast, and often in association with polynyas, clearly attests to a focus on marine resources (Schledermann 1978a; M.S. Maxwell 1985:136). Even sites not positioned directly near the shoreline (i.e. near-interior, see Rowley-Conwy [1990]) have marine resources present in their faunal assemblages (although the number of truly terrestrially-oriented sites is under-reported [but not unknown, e.g. Michea 1950; Taylor 1958; Lee 1966; Stenton 1989:235-237] as inland surveys are rare). Surveys indicate, with the exception of some areas of higher then normal ecological productivity (i.e. the Foxe Basin, see Murray 1999), that Late Dorset population density was relatively low (Schledermann 1990:101; Odess 1998:420), with the population of an ‘average’ Dorset winter village suggested to comprise 20 to 30 inter-related individuals (McGhee 1996:204).

Perhaps relating to the massive population shifts that coincided with the appearance of Late Dorset are settlement and subsistence changes that seem to include more intense use of the sea ice environment (Fitzhugh 1980b:600; M.S. Maxwell 1980a:514-515, 1985:110; Tuck and Fitzhugh 1986:166; Thomson 1988:63, 149 [who suggests in northern Labrador that this change was related to the presence of Thule Inuit]; McGhee 1996:197). Although various pieces of equipment (refer to Chapter 4.5) have been used to secondarily infer Dorset use of the sea ice, identifying the extent of this adaptation is complicated by the fact that most direct evidence is lost annually during the break-up, with the result that “the best evidence for ... use of the sea-ice environment is no evidence at all” (Wenzel 1984:45). The rarity or absence of Late Dorset winter settlements in areas including Labrador (Thomson 1988:63) and southern Baffin Island (M.S. Maxwell 1980a) implies these groups, whether breathing hole hunting or focussing on the sina, spent more time on the sea ice (Fitzhugh 1980b:600; M.S. Maxwell 1980a:508; McGhee 1996:197), periodically relocating, as did some historic Inuit groups (Morrison 1983:65; Damas 1984), when local seal populations were exhausted. A switch away from longer-term land-based structures at some locations is further suggested by the generally thin cultural deposits and poorly
developed middens of even the most substantial-looking Late Dorset structures (M.S. Maxwell 1980a; Fitzhugh 1980b:600; Tuck and Fitzhugh 1986:166).

Determining how the Dorset acquired the animals they subsisted on during the ice season is also a subject of contention. The presence of toggling harpoon heads (harpoons that, having pierced an animal’s skin, twist horizontally in the wound as the attached line pulls tight, making it difficult to slip back out) in Early and Transitional Palaeoeskimo assemblages (e.g. Knuth 1967:36-40, 76; McGhee 1976:13-23, 27) suggests that later Dorset groups had become progressively more efficient and adept sea ice hunters. Toggling harpoons become increasingly common in assemblages from southern Baffin Island (Meldgaard n.d.; M.S. Maxwell 1974/1975, 1976a), prompting M.S. Maxwell (1985:223) to conclude that the Late Dorset were capable of taking seals directly through their breathing holes. However, Spiess (1976, 1978) and Cox and Spiess (1980) have come to a different conclusion based on their examination of seal and walrus remains from middens in Labrador. They concluded, based on age of death and tooth sectioning analyses, that there was a “de-emphasis” on breathing hole hunting during the period from 2000 B.P. – 1500 B.P. (late Middle Dorset / early Late Dorset). Instead, Spiess (1978) and Cox and Spiess (1980) argue that Dorset focussed on hunting seal and walrus from the floe edge and ice leads from freeze-up until spring break-up (as indicated by the high percentages of juvenile seals, an age group typically restricted to open water areas, with the presence of foetal and newborn remains further supporting winter hunting).

Murray (2005) has recently reached similar conclusions based on her analysis of ringed seal remains from several Pre-Dorset sites, likening the Palaeoeskimo pattern of sea ice exploitation to that of the polar bear, which concentrates its hunting efforts at the ice edge and along leads. Although additional analyses of the age categories of hunted seals has been conducted for the Middle Dorset period (e.g. Hodgetts 2004, 2005), none (to my knowledge) has been attempted on Late Dorset faunal assemblages in order to further address Late Dorset sea ice / open water hunting capabilities (Wenzel [1984:47] notes that a similar problem plagues Neoeskimo research). Regarding hunting strategies, M.S. Maxwell (1985:132-134, 136-137) examined harpoon technologies throughout Dorset and concluded that equipment was better suited for thrusting (i.e. sina and breathing hole) than for throwing (open water) situations,
although later Dorset populations had made design adjustments to harpoon foreshafts suggesting that greater flexibility and suitability for open water was desired (M.S. Maxwell 1985:134). At least some Dorset harpoon did function well in open water, as evidenced in an experiment carried out by Cornelius Nutarak and Father Guy Mary-Rousselière (Nutarak 2002). Using a replica Dorset harpoon in an open water setting, Nutarak struck and landed a seal, subsequently retrieving the harpoon head which had clearly twisted (or toggled) sideways inside the wound.

Finally, based in part on a lack of substantial Late Dorset structures in areas that had previously seen more intense occupations, some researchers believe that later Dorset was more mobile than earlier populations were. For example, in both northern Labrador and southern Baffin Island most Late Dorset sites are composed of relatively insubstantial middens and cultural deposits that indicate that although sites may have been revisited multiple times, each of the occupations was brief (Fitzhugh 1980b:600; M.S. Maxwell 1980:513; 1985:234). This pattern stands in contrast to the preceding Middle Dorset, for whom a settlement pattern similar to that of the seasonally sedentary Thule and historic Labrador Inuit is supposed (Fitzhugh 1976c:140; Spiess 1978:55, 59; Cox and Spiess 1980:660). This indicates that a certain amount of variability exists in at least some parts of the overall Late Dorset territory. With this in mind, the significance of Cox and Spiess’ (1980:667) observation that Dorset settlement-subsistence patterns vary even within Labrador should not be underplayed, for it is key to remember that Dorset adapted to their environment, and as that environment varied from region to region across the Eastern Arctic, so too did the Dorset economic system. Dorset regionalism is a fact, whether in economics (Robbins 1985), style of tool manufacture (LeBlanc 2000), or art (Lyons 1983), therefore variability in architectural form and preferred settlement locations should also be expected, precluding sweeping generalities of the Dorset socio-economic system and its relation to all other aspects of Dorset life as homogeneous.

5.3.4 Ideological and Social Life
Most researchers agree that the Late Dorset employed a shamanic religious or belief system (Saladin d’Anglure 1962; Swinton 1967; Taylor 1967b; McGhee 1996:155; Plumet 1997; Odgaard 2001; Sutherland 2001). This view is based primarily on the study of Late Dorset art,
which consists largely of small portable carvings, as well as a petroglyph site northwest of Ungava Bay (Arsenault et al. 1998; Arsenault et al. 2005). This locale was earlier attributed to the Dorset by Taçon (1993) on the basis of similarities between the faces carved there and other, more transportable, Dorset art recovered throughout the Eastern Arctic (M.S. Maxwell 1985:165). This affiliation has since been confirmed with the recovery of diagnostic Dorset artefacts (Arsenault et al. 2005; Langlais and Gagnon 2006).

Swinton (1967) and Taylor (1967b) both believed that most art was created by specialist shaman carvers because of the close stylistic similarities between pieces found hundreds of kilometres apart, leading to suggestions of a “shamanistic fraternity” (M.S. Maxwell 1985:165) linked together by trade networks that controlled the style and form of the representations (Lyons 1983; M.S. Maxwell 1985:227; Schledermann 1990:332). Such a system is possible given that the Late Dorset appear to have maintained elaborate trade and information networks, probably depending upon them to a much larger extent than had earlier Palaeoeskimos (Odess 1998; Odess et al. 2000:194). However, the recovery of additional carvings shows that a much wider range of styles and skill levels are recognisable (McGhee 1974/75, 1996:155, 172; Taçon 1983:57; Sutherland 1997:291-292), implying that carving activities were much more widespread and involved both skilled and unskilled artisans. Based on this, Taçon (1983:50) argues that art fulfilled (after Pasztory 1982:27) both a shamanic (‘shamanic equipment’ produced by and for a shaman specialist for group purposes) and shamanistic (produced by individuals for their own personal use) role.

Approximately 70% of known Palaeoeskimo art was produced during the Late Dorset period (Taçon 1983:52), confirming Meldgaard’s (1960c:24) opinion that representational objects were more common in later Dorset, although carvings are known from the Pre-Dorset and Early Dorset periods (Taylor 1968: Figure 24a-i; M.S. Maxwell 1973: Figure 56; Helmer 1986). Numerous explanations have been proposed to account for the apparent proliferation of art in the Late Dorset period, with most focussing on cultural stressors related to environmental changes and the infringement of Thule Inuit on Dorset territory (McGhee 1981b:51, 1996:203; Thomson 1982:9; Taçon 1983:57, 60; Sutherland 2001). However, as Taçon (1983:43) notes, no single cause is likely to be responsible for the sudden increase in carvings.
Human and bear representations are the most common subjects (Taçon 1983:48-49, Table 1), and there are suggestions that many of the bears, portrayed as either skeletonised or ‘flying’, are the spirit helpers of shamans (e.g. McGhee 1996:164). For a particular class of carvings, depicting humans and bears with holes or gouges carved into their chests or throats, the conclusion of magic or ritual killing is virtually inescapable (e.g. Thomson 1988:109, 110, 111, 112; McGhee 1996:Plate 7). Various other animal species are represented, with their frequency possibly relating to their availability in particular regions (Sutherland 1997:291). Mary-Rousselière (M.S. Maxwell 1985:228) recovered multiple examples of bears, humans, and seals from the Button Point site on Bylot Island that were covered in ‘paints’ made of red ochre and graphite, suggesting special significance was attached to these colours (M.S. Maxwell [1985:227] reports objects treated in a similar fashion at sites in the Foxe Basin). Application of red ochre washes on soapstone vessels was particularly common in Late Dorset (M.S. Maxwell 1985:149), and some locations have been suggested as spiritual centres because they contain relatively numerous traces of inferred shamanic activities (e.g. M.S. Maxwell 1985:228; Plumet 1997).

Plumet (1989) has addressed the issue of Dorset symbolism in the archaeological record most directly. He interprets the axial, or midpassage, structure common in Dorset structures as serving two very important roles. From a functional perspective, he notes the contiguous stones and central hearth setup of the axial meant that energy generated by small fires was quickly transferred through the entire feature, whose stones would release this heat slowly, requiring fewer fires to heat a dwelling than would be the case in a stand-alone hearth (Plumet 1989:320; also Odgaard 2003). With the development of more efficient and smokeless oil-burning lamps at the start of Dorset, Plumet (1989:320-321) argues that the axial feature should no longer have been necessary from a functional perspective. Nonetheless they continued to be used, albeit in less standardised (and less thermally efficient) forms, throughout Dorset (Plumet 1989:321), and particularly during the Late Dorset period (M.S. Maxwell 1980a:507). The persistence of the axial arrangement, and the bilateral symmetry it imposes, suggests to Plumet that the axial had taken on a symbolic role in society, standing for the axial skeleton. Representations of the vertebral column and bilateral symmetry are also seen in Dorset art.
souligner le squelette axial du gibier avec sa symétrie bilatérale, indique sans doute l’importance symbolique qui lui est attachée et qui peut-être était transférée par analogie à l’habitation: les structure de la zone axiale ... constituent le système nerveux central et la colonne vertébrale qui réunit les membres de la famille ou de la bande à un niveau d’intégration supérieur et assure la cohérente de son fonctionnement (Plumet 1989:324).

Communal longhouse structures in the Ungava area also repeat the central axial spine and bilateral symmetry Plumet considers to be the fundamental aspect of Dorset symbolism. Here the structure’s (and group’s?) backbone is interpreted as being represented by rows of fire pits or boxes (Plumet 1989:322, Figure 5), and the areas adjacent to these features were where community members participated in symbolic and social activities. Thus, in much the same way as the central nervous system works, the axial area functioned as a channel for communication and exchange between the entire band as it gathered in the structure (Plumet 1989:323). Individual family spaces, with a private hearth situated in a niche built into the peripheral wall, branched off of the vertebral column in a manner reminiscent of ribs (Schledermann [1996:93] concurs with the identification of individual family space within the communal structure).

Whether the elongated design of longhouses permitted the level of communication envisioned by Plumet is unclear. Both Park (2003) and Friesen (2000a:214) have remarked that the layout of a longhouse must have constrained group interactions within the confines of the structure, although both concur that ritualised activities involving aggregated groups of people were likely (see also M.S. Maxwell 1985:157; McGhee 1996:204-207; Schledermann 1996:100; Appelt 1999:35; Damkjar 2000:177). Park (2003:247-248) has suggested that this linear arrangement reflected a Dorset worldview that was focussed on linearity (this is a variation on Plumet’s [1989] axial skeleton theme), a subject that has also been noted by others (e.g. Taçon 1983; M.S. Maxwell 1985:128; McGhee 1996:142, 144). Ryan and Betts (2005) have attempted to take this Dorset focus on linearity one step further, suggesting that non-linear forms were in

---

3 underlines the prey’s axial skeleton with bilateral symmetry, indicating without doubt the symbolic importance attached to it, and that it may have been transferred by analogy to the dwelling: the structure of the axial zone ... constituting the central nervous system and vertebral column that unite members of the family or band on a superior level of integration and assure the coherence of its function.
fact tabooed by Dorset as part of an overall social ideology. The absence of curvilinear design in artwork (Taçon 1983) despite the widespread use of metal engraving tools, the absence of bow technology (see Chapter 4.5), and neurobiological research involving form constants (Oster 1970; Lewis-Williams and Dowson 1988; Bressloff et al. 2000, 2002; Lewis-Williams 2002) and binary oppositions (or Hodder’s [1986] structured sets of difference) are used to support this idea.

In general, however, M.S. Maxwell’s (1985:165) assessment that artwork provides the chief avenue for exploring Dorset ideology and symbolism appears to be true. There are suggestions that Dorset ideology shaped the selection of organic materials for some technologies (Lemoine 2005), and that these choices may have been influenced by seasonal taboos (M.S. Maxwell 1985:165-166). Despite suggestions of seasonal prohibitions, however, there are no archaeological indications that Dorset limited their use of marine or terrestrial animal products based on whether they were located on and using the resources of the sea or land, as the Thule Inuit had (McGhee 1977).

5.4 Late Dorset and the Question of Contact
Relating directly to the question of when Late Dorset culture disappeared is the issue of whether Late Dorset populations were in extra-cultural contact with any other populations. It has been long thought that the so-called remnant Late Dorset who occupied the Hudson Strait, as well as other areas, were probably in some contact with newly arrived Alaskan Thule Inuit and were ultimately either assimilated into or out-competed by them (e.g. Rowley 1940; O’Bryan 1953; Meldgaard 1960b:589; Taylor 1963:462; Dumond 1977:145; Bielawski 1979; Jordan 1979, 1984:548; Plumet 1979:116; Thomson 1982; Fitzhugh 1994; Gulløv 1997; McGhee 1997; Shields and Jones 1998; Morrison 1999:150-151; Friesen 2000a; Ossenberg 2005). However, the evidence used to support this hypothesised interaction, presented below, is scanty, mostly indirect, and controversial. Coupled with the issue of potential Dorset-Thule Inuit contact is the possibility of contact between the Late Dorset and mediaeval Norse who, based on historical records, were plying the Baffin Bay – Gulf of St. Lawrence region between approximately 1000 A.D. and the mid-14th century A.D. (Jones 1964:96), and who recorded encounters with indigenous North American populations. Below is an overview of the information cited in support of Late Dorset /
Thule Inuit and Late Dorset / mediaeval Norse interaction.

5.4.1 **Inuit tales of the Tunit**
The earliest, and perhaps most evocative, evidence for extra-cultural interaction comes from Inuit oral history. When Jørgen Meldgaard (1960a:71-72, 1960b:594) heard tales of the ‘Tunit’ from local Inuit while excavating Dorset sites in the Foxe Basin during the 1950s, he saw similarities between the Tunit of legend and the archaeological remains of the Dorset that he was excavating. To Meldgaard, the fact that the Inuit reported the Tunit possessed such ‘Dorset’ traits as square semi-subterranean structures, the use of rounded stone lamps, stone tools, and an absence of dog traction, amongst other characteristics, made a conclusion that “the Tunit had nothing to do with the Thule Culture – they were the Dorset people” (Meldgaard 1960b:594) inescapable. Meldgaard was thus the first to observe that these legends might in fact be a record of encounters between the Early Thule Inuit and Dorset (although Kleivan [1996:225] notes that Meldgaard credits Diamond Jenness with the suggestion that Dorset be called Tunit) and that Inuit oral history might be a source of information on the Dorset people. Although the descriptions of the Tunit vary between regions (for example, while working at the community of Resolute Bay on Cornwallis Island I was told the Tunit were small black or green mischievous people who could disappear down cracks in the sea ice, while in comparison, the Tunit living at the Nunguvik site on northern Baffin Island were described as giant in stature, possessing almost superhuman strength), most Inuit stories concur that the Tunit were very strong but avoided conflict (e.g. Boas 1888:634-635; Hawkes 1916:143-146; Rasmussen 1931:425; also Rowley 1994:370-371), and that

> It was the **Tunit** who made our country inhabitable, who discovered where the caribou crossed the water and made hunting grounds there, found the fish in the rivers and built salmon dams, built fences here and there and forced the caribou to follow certain paths.  
> (Told to Rasmussen and reported by Mathiassen [1927b:187])

With the acceptance by a number of researchers (e.g. Fitzhugh 1985:48; M.S. Maxwell 1985:128; McGhee 1996:135) that the Tunit might be Dorset, and that the stories told may have resulted from actual contact between the two populations, it was quickly assumed that clear archaeological proof of extensive interactions would be found (M.S. Maxwell 1985:239-240).
However, unequivocal evidence of this predicted contact remains to be identified, and in this absence a number of theories have been proposed about how the Dorset and Thule might have acted upon encountering one another (these are summarised in Friesen [2000a]).

However, Robert Park (1993:219-220) has called into question archaeologists' acceptance that the Tunit were in fact Dorset, noting that Tunit stories could have developed without requiring the Thule to have met anyone at all. Park correctly observes that archaeological remains in the Arctic are often highly visible and that Late Dorset ruins would have been even more apparent when the ancestors of the Inuit first arrived in the Eastern Arctic. He suggests that stories about the people who had occupied these sites would have developed naturally as the Inuit attempted to explain whose physical traces they saw and where they might have gone, and that these tales would naturally agree to some degree with the archaeological remains. With time, Park (1993:220) suggests, such stories might also incorporate evidence of their own Thule ancestors, negating the need for the Inuit to have actually met the Dorset (or earlier Thule) to invent tales of Tunit people. Hawkes (1916:147) has observed a similar point, noting that in areas where Tunit might not have been directly encountered, stories would nonetheless be developed and told, but that in these areas the stories would take on a more mythological quality that many of the Tunit legends lack. While Park’s caution should be considered, it is nonetheless tempting to view elements of these stories as tales that could only have been learned and passed down through direct contact or observation. For example, Boas (1888:635) records that the Tunit “made neither kayaks nor bows”, a point thus far been borne out by modern archaeological work, but which would not be obviously apparent to the avocational Thule archaeologist.

5.4.2 Genetic and Osteological Investigations
Evidence of Dorset-Thule contact has also been sought through both genetic and osteological means (e.g. Oschinsky 1960, 1964; Anderson and Tuck 1974; Utermohle 1984; Shields and Jones 1998; Lynnerup et al. 2003; Hayes et al. 2005; Ossenberg 2005), although these approaches have yielded contradictory results. Complicating interpretations of Dorset physiology is the fact that the skeletal remains of less than 30 Palaeoeskimo individuals (all incomplete and fragmented) are known from the Eastern Arctic and Sub-Arctic, of which only 24 can be linked to the entire
Dorset period (Lynnerup et al. 2003: Table 1). Such a small sample frustrates any investigation of whether Dorset and Thule contributed biologically to each other if only morphological attributes are used. This is particularly true if Ossenberg (2005:52) is correct in arguing that Dorset and Thule Inuit populations shared a common ‘Paleoarctic’ ancestry (it had previously been thought [e.g. Dumond 1977:92] that the Thule Inuit derived solely from a distinct and later ‘Neoarctic’ migration event). Because of this potential shared genetic heritage, Ossenberg (2005:52) contends that skeletal morphometrics alone cannot confirm or refute the possibility of gene flow between the two populations. Nevertheless, Ossenberg (2005:53) references Dumond (1977:145), who suggests that migrating low density populations moving into an area whose resident population was also low in density might choose to interact with, rather than simply outright displace, those that they encountered (Kelly [1995:222] notes arctic populations are amongst the lowest in density of any area). Such a relationship should ensure that while technologies might be altered, the genetic material of both groups could be expected to contribute to future generations. While her analogy involves ‘Paleoarctic’ and migrating ‘Neoarctic’ populations in Alaska’s Aleutian Islands, it is clear she intends the reader to extrapolate to a scenario involving Thule Inuit and Dorset populations in the Eastern Arctic.

In contrast, Hayes et al. (2005) use ancient and mitochondrial DNA from three populations (Dorset, Thule Inuit, and Sadlermiut) to establish each groups’ haplogroup, concluding that the Dorset did not contribute to Thule Inuit populations, noting that there was “little evidence of gene flow across the Dorset-Thule transition ... [supporting] ... the hypothesis that a genetic replacement accompanied the cultural replacement of the Palaeo-Eskimos by the Neo-Eskimos” (Hayes et al. 2005:24). Somewhat surprising, however, were the DNA results obtained from the remains of the prehistoric Sadlermiut.

As will be outlined in Section 5.4.3, the Sadlermiut have played a key role in archaeological interpretations of Dorset-Thule contact and the physical remains of these people were selected for DNA analysis given their ambiguous cultural position. When Hayes et al. (2005:26) analysed the Sadlermiut DNA, they found that while the marker frequencies for Dorset and Thule were distinct, the Dorset and Sadlermiut could not be distinguished statistically (Hayes et al. 2005:23-24). In fact, the Sadlermiut haplogroup polymorphic marker was intermediate
between those of the Thule and Dorset (Hayes et al. 2005: Table 4), leading the authors to conclude that the Sadlermiut might represent a remnant Dorset population that had subsequently been influenced genetically by the Thule (Hayes et al. 2005:26). This scenario may be supported by Shields and Jones (1998), who measured Sadlermiut teeth and noted they were unusual in comparison to those of other Inuit groups, but contradicts Utermohle (1984:334-351).

5.4.3 The Sadlermiut and Ammassalimmiut
As noted above, the Sadlermiut remain something of an archaeological mystery. The Sadlermiut (Sallirmiut / Sagdlermiut) lived on Southampton, Walrus, and Coats islands, at the north-western entrance to Hudson Bay. But for one adult woman and four children, the Sadlermiut died out during the winter of 1902/1903, probably as a result of a disease (typhus, typhoid, and dysentery have all been suggested) introduced by European whalers over-wintering on Southampton Island (Ross 1977; Rowley 1994:326-363). The origins of the Sadlermiut have been disputed (refer to Rowley 1994: Table 1), as has their cultural position in the Eastern Arctic. Henry Collins (1955, 1956a, 1956b, 1957), who conducted extensive excavations at Sadlermiut sites, was convinced they were the final remnant Dorset population, as was Frederica de Laguna (1979:21). Therkel Mathiassen (1927a:283, 287) considered the Sadlermiut to be Thule and therefore Tunit (Mathiassen differentiated the Thule from the Inuit), while Clark (1980) envisioned them as Thule influenced by Dorset.

History records several meetings between Europeans, predominantly whalers and explorers (Lyon 1825; Paton 1825; Comer 1906, 1910, 1921; Ferguson 1938; Ross 1984; Clark 1986), and the Sadlermiut, and their ‘strangeness’ in comparison to other Inuit groups was widely noted. Contemporary Inuit appeared not to have a great deal of respect for the Sadlermiut, whom they considered to be dirty and inferior (Collins 1956c; Rowley 1994:370-371). Although both the Sadlermiut and neighbouring Inuit groups denied they were Tunit (Mary-Rousselière 1955b; Pitseolak and Eber 1975), archaeologists have cited a number of material culture traits which have been taken to suggest otherwise. Rowley (1994) notes that chief amongst these were that the Sadlermiut used primarily chipped (rather than ground) stone tools, generally lacked metal or other trade materials, were self-isolating and refused to trade with other Inuit, and spoke an
unfamiliar dialect. M.S. Maxwell (1985:245) also identified hints of Dorset influence in the use of vertical slab stone construction in Sadlermiut dwellings, as well as the production of flaked stone side-notched endblades (traits more often seen with the Dorset).

However, Rowley (1994:376) argues against these and other traits being used to ascribe a Dorset cultural affiliation to the Sadlermiut. Instead, she notes that the characteristics which made the Sadlermiut so different from their Inuit neighbours were traits that resulted from isolation caused by changes to traditional trade routes (a result of European whaling/trading stations, see Ross [1993] for the extent of whaling in Hudson Bay and Hudson Strait), and adaptations made to the specific and relatively resource constrained environment of Southampton Island. For example, she notes that the use of limestone, rather than soapstone, lamps by the Sadlermiut was not a reflection of their Dorset status (disregarding that Dorset were not known to have even used such lamps), but was a result of a lack of soapstone on the island (she notes a similar solution was found by the Thule at Brooman Point [McGhee 1984a:70]). Despite Rowley’s treatise, however, the results reported by Hayes et al. (2005) would seem to call into question her conclusion that the Sadlermiut were unrelated to the Dorset. Instead, the admixture of Dorset and Thule genes that appears to have produced the Sadlermiut people calls to mind Ossenberg’s (2005) suggestion that cultural transformations can occur without necessitating total genetic transformations.

Further to the northeast, the Ammassalimmiut of eastern Greenland have also been suggested as a surviving Dorset population (Meldgaard 1960c:31, 1977:34; Taylor 1965:8), largely on the basis of carving styles incorporating transformational ‘flying’ bears and ‘tupilaks’ (or tupilaqs, representing magical spiritual creatures) that were thought to derive from Dorset traditions (e.g. Mathiassen 1933; Meldgaard 1967:56; Swinton 1972:111; Jordan 1984:546). However, Petersen (1964:73) has suggested that this style of carving was not produced by the Ammassalimmiut until the beginning of the 19th century and hence could not have been learned through Dorset contact. However, elements of the Dorset carving tradition have been suggested to continue into the Thule and historic Inuit periods in Labrador (e.g. Swinton 1967; Martijn 1968; Vastokas 1971/72; Blodgetts 1978), suggesting that the influences identified as Dorset-related in the Ammassalimmiut may not be so easily dismissed. No genetic research has been conducted on the Ammassalimmiut to ascertain their ancestral lineage.
5.4.4 The Brooman Point and Qeqertaaraq Sites
The Brooman Point site on Bathurst Island provides perhaps more direct evidence of Dorset-Thule geographic and temporal proximity, as well as a suggestion of contact between the two populations (McGhee 1981b, 1984a, 1996:213, 218-221, 1997). The site consists of a Thule winter village with a small number of insubstantial Late Dorset summer structures located nearby (the majority of Dorset structures are believed to have been destroyed when the Thule dwellings were constructed, as evidenced by the Dorset artefacts recovered from that area of the site) (McGhee 1984a). Whereas both the Late Dorset and Thule organic artefacts from the Thule component of the site were almost perfectly preserved in the thick frozen middens, the Dorset artefacts excavated from the thin Dorset house deposits had all undergone severe weathering. The markedly different preservation in the two areas indicated to McGhee (1984a:86-87, 1997:211) that the Thule must have occupied the site very shortly after it was abandoned by the Dorset because if the Dorset artefacts recovered from the Thule deposits had been exposed for any length of time, they would have shown at least minimal evidence of weathering. That they did not indicated they had been quickly buried in the Thule occupation layers and protected by permafrost. Such close sequential occupation made it improbable to McGhee (1997:211-212) that the two groups were not at least aware of one another’s existence, whether direct contact occurred at this site or not.

In addition, the presence of a Thule bone knife handle on the living floor of one of the Dorset dwellings is used to support the premise that Dorset and Thule had either face-to-face contact and perhaps trade, or that Dorset visited an abandoned Thule site and collected the object (McGhee 1984a:86-87, 1997:211). Dorset knowledge of Thule technology is further suggested at this site, as well as several others, based on the identification of a small number of Dorset artefacts with circular holes, rather than the elongated gouged holes Dorset typically produced (McGhee 1997:211). Such perforations were not produced with the aid of a bow drill as the Thule did, but through the use of a twisting motion of the hand (interestingly, the copper amulet discovered by Harp [1975:39] and discussed in Section 5.4.7 was perforated in this manner). This limited evidence suggests a situation of “ephemeral or hostile interaction between two groups whose occupation of the local area slightly overlapped in time” (McGhee 1997:211). Such meetings
“might have continued over several centuries without leaving significant archaeological evidence of contact” (McGhee 1997:212).

Similarly, the recovery of two Thule artefacts, a musk-ox horn doll and an antler arrowhead, from a Late Dorset semi-subterranean structure at the Qeqertaaraq site (see Section 6.6.1) in Hatherton Bay suggests additional contact was possible between Late Dorset and Thule Inuit in north-western Greenland (Appelt and Gulløv 1999: Figure 7). The excavators believe that Dorset and Early Thule populations in the Thule District overlapped for between 50 and 100 years, although they think the area immediately surrounding the Qeqertaaraq site to be Dorset territory while adjacent regions to the north and south were held by the Thule (Appelt and Gulløv 1999:65-66). Like McGhee (1997), they note that the Thule artefacts in the structure at the Qeqertaaraq site could have arrived there as a result of either direct contact or Dorset curation, further agreeing with McGhee that, while occasional contact was likely, Dorset and Thule actively avoided one another and had no substantive cultural impact on each other. In northern Labrador a similar pattern of awareness but avoidance is proposed based on the recovery of carvings thought to represent ritually killed Thule people (Thomson 1988:139-140; Fitzhugh 1994).

5.4.5 Technological Transfers?
A number of additional pieces of technology have been cited as indicators of interaction between Dorset and Thule Inuit. Of these, breathing hole sealing, snow-knives and snow structures, the use of soapstone, sled shoes and iron, and the adoption of a particular style of harpoon head have been suggested as Dorset technologies that were adopted by the Thule Inuit when they arrived in the Eastern Arctic. Conversely, Thule Inuit traits suggested to have been passed to the Dorset include use of entrance passages with cold-traps and rear sleeping platforms.

The Inuit practice of hunting ringed seals at their breathing holes on the sea ice has been widely documented during the historic period (e.g. Stefansson 1913; also papers in Freeman 1976). Yet despite the prevalence of this behaviour historically, David Morrison (1983:276) believes, based on work at Early Thule sites in the Coronation Gulf area, that the earliest Thule in the Eastern Arctic did not know how to hunt seals through their breathing holes and that this practice was most probably learned from neighbouring Dorset populations (Morrison 1983:279;
This interpretation has been questioned (e.g. Park 1993:219; also see Cox and Speiss [1978:661]) on the basis that the Palaeoeskimos appear never to have used dogs in great numbers (Dumond 1977:92, 97; although both Møhl [1986] and Morey and Aaris-Sørensen [2002] note dogs were more common in the pre-Dorset period than during the Dorset era), unlike the Inuit who relied to varying degrees on dogs to locate breathing holes and dens in the ice. Park (1993:219) further argues that the Dorset sea ice hunting toolkit appears to have been markedly less complex than that known for the Neoeskimo period, implying the two used very different strategies to accomplish the same goal, making it unlikely that the Thule Inuit learned this activity from the Dorset.

However, other researchers (e.g. M.S. Maxwell 1985:85) question the key role assigned to dogs during the hunt, noting that dogs are not required for a hunt to meet with success (although whether the large numbers of people usually required for a productive breathing hole hunt would have been present in a typical Dorset winter camp is not clear). Contemporary Inuit also appear to have differing opinions on the importance of dogs for successful breathing hole hunting (see, for example, Pelly 2001:49). It remains unclear when and where the Thule Inuit developed the ability to hunt in fast ice, and if the Dorset had developed the means to hunt seal through their breathing holes (refer to Cox and Spiess 1978).

A similar debate surrounds the question of whether ‘snow-knives’, designed to cut snow into regularly shaped blocks for snow structures, were passed to the Thule Inuit from the Dorset. Bone, antler, and ivory objects identified as snow-knives (e.g. Meldgaard 1962: Plate 3 extreme right; M.S. Maxwell 1973: Figure 65b, 1985: Figure 7.24q) are known throughout the Dorset era (Meldgaard 1962:93; Dumond 1977:97; although McGhee [1983:22] cautions against assuming the function of these artefacts), and their appearance, along with settlement patterns and site stratigraphy, are used to support the idea that snow structures (which can be difficult but not impossible to locate archaeologically [Savelle 1984]), were used by the Pre-Dorset and Dorset (e.g. Dumond 1977:97; Cox and Spiess 1980; Ramsden and Murray 1995; M.S. Maxwell 1980a, 1985:153).

Because snow-knives were believed to have been absent in early Alaskan assemblages but are found in Eastern Arctic Thule sites, various researchers (e.g. Ford 1959:143; Dumond
1977:145; M.S, Maxwell 1984:368; McGhee 1984d:372, 1996:232; Gulløv and Appelt 2001:146, see also Taylor 1965:7) have proposed that snow structures and their associated technology were passed from the Dorset to the Thule Inuit, who then transmitted this knowledge westward to Neoeskimo populations remaining in Alaska. However, snow probes pre-dating the Thule migration into the Eastern Arctic are now known from at least one region of Alaska (Stanford 1976:39), prompting suggestions that snow-knives will also eventually be recovered there (Stanford 1976:96). Regardless, it remains an intriguing fact that the spiral technique of snow-house construction was not known during the early historic period west of the Mackenzie Delta (Lee and Reinhardt 2003:39), outside of what was Dorset territory (although Alaskan groups did build temporary rectangular snow structures [Stefansson 1914:61]).

Dorset-Thule Inuit contact had also been suggested based on the appearance in Eastern Arctic Thule Inuit assemblages of bone sled shoes, soapstone vessels, and iron (de Laguna 1947:14; Dumond 1977:145; Bielawski 1979; Jordan 1979; M.S. Maxwell 1985:240; McGhee 1996:221; 2000), materials thought to be rare or absent from Alaskan Thule sites. However, probable bone sled shoes are now known from Alaskan sites (e.g. Giddings and Anderson 1986:71, 84, Plate 28a, b), while the switch from pottery to soapstone vessels in the Eastern Arctic relates to both a lack of suitable clay sources east of Alaska for vessel-making and the use of driftwood, rather than greenwood, which burns for an inadequate length of time to properly fire ceramics (Arnold and Stimmel 1983; Arnold 1994:274-275). Furthermore, although rectangular Dorset and Thule soapstone pots are reminiscent of one another, McGhee (1984d:372) notes that the large crescent-shaped Thule lamps have no counterpart in Dorset.

The lure of iron may provide a more provocative indicator of contact. McGhee (1984c; 1996:201; 2000:182) has suggested that western Thule populations might have learned of eastern iron sources, available from meteors in the Cape York area of Greenland (as well as possibly from the Norse), through contact with Dorset groups. Iron was a key component of the Late Dorset tool-kit (LeMoine 2005:143), and its value was known to Alaskan Thule groups as well (Dumond [1977:118, 125] notes that iron of Asiatic origin has been found at several Alaskan sites). It is possible that entrepreneurial Thule groups viewed the Greenland source as a more accessible resource and were drawn eastward to exploit it. This migration is typically envisioned as quite
rapid (e.g. McGhee 1969/70; McCullough 1989; Stimmel 1994; Morrison 1999, 2000), with the earliest currently known Thule sites found in the Lancaster Sound – Smith Sound area, adjacent to the Cape York region (see McGhee 1984c; Morrison 1989). Given the rapid and apparently focussed nature of this movement, the most straightforward explanation would seem to involve some level of communication with resident Late Dorset populations.

The final hypothesised technological transfer between Dorset and Thule Inuit is based on stylistic similarities between Dorset and Thule Inuit harpoons. Henry Collins (1937:315-316, 1940:571) first noted that the Thule Type 5 and the Dorset Parallel / Dorset Parallel Sliced type harpoon heads (refer to M.S. Maxwell 1985: Figure 7.1a and Figure 7.23a for illustrations of the Dorset type and Figure 8.14l-p for the Thule versions) were similar in form, suggesting on this basis that the two populations had come in to contact. While it is clear that the Thule harpoon is based on the Dorset form, it does not appear in Early Thule sites as one would expect if the Thule learned of this style through contact with the Dorset (Jordan 1984:542; M.S. Maxwell 1985:272). Rather, the Thule Type 5 only shows up during the Modified or Post-Classic Thule Period (after 500 B.P.), after all cultural traces of Dorset had vanished. Given this, it appears that this type of Thule artefact was indeed modelled on Dorset prototypes, but from examples (or ‘souvenirs’ after McCartney [1977:343-346]) collected from abandoned sites and not via face-to-face meetings.

Conversely, the Dorset in Foxe Basin are suggested to have altered aspects of their architecture as a result of contact with the Thule (Meldgaard 1960b:589). Operating on the assumption that the oldest dwellings are located on the highest fossil beach ridges, Meldgaard (1960b:589) compared Dorset structures nearest the present shoreline with ones higher up. He noted two differences between the earlier and later Dorset dwellings and ascribed this to contact: the first was that the latest/lowest structures had sleeping benches positioned at their rear, as did the Thule dwellings; while the second sign of influence was the occurrence of cold-trap entrances in the latest Dorset structures. However, as noted previously, it is difficult to evaluate Meldgaard’s work in the Foxe Basin since it has only been rudimentarily published. Nonetheless, Middle and Late Dorset dwellings with entrance passages (some with rudimentary cold-traps) and

---

4 Leroi-Gourhan (1946:404-412) also saw similarities between Dorset and Thule types, but he argued that this was due to trait diffusion and not an actual Thule migration into the area.
rear sleeping platforms are known elsewhere (e.g. Harp 1964; Fitzhugh 1976c, 1980b:600; Cox 1978; Fogt 1998; Ryan 2003b), bringing into question Meldgaard’s conclusion of Thule Inuit influence (the question of Thule influence on Late Dorset architectural remains will be discussed in the following chapter). It has also been suggested that a particular type of rectangular stone structure found in Labrador might also reflect interaction between Dorset and Thule (Fitzhugh 1980b:601; Kaplan [1983: Figure 56] refers to these as Sculpin Island-1 type structures), although most researchers concur they are Thule in origin.

5.4.6 Dating the Thule Inuit Migration into the Eastern Arctic
In order for Dorset-Thule Inuit contact to be possible, both groups had to have been present in the Eastern Arctic at the same time. Any temporal gap between occupations, no matter how slight, immediately negates the possibility that the two groups could have met. Unfortunately, while multiple radiocarbon dates indicating contemporaneous occupations of the same or adjacent sites would represent persuasive evidence that contact was possible (Park 1993), such tight chronological control has been largely absent in the Eastern Arctic (M.S. Maxwell 1985:240). This lack of precision can in part be explained by the radiocarbon dating method itself, which has produced several dates on Late Dorset and Early Thule samples whose standard deviations are greater than the period in which contact has been realistically proposed as possible (refer to CARD), making it impossible to determine whether occupations were contemporaneous or not (Park 1993:194-195; McGhee 1997:210).

In terms of when the Thule arrived in the Eastern Arctic, McGhee (2000:188) has suggested that the hundreds of radiocarbon dates collected from Thule Inuit sites produce a time range placing Thule groups in the Eastern Arctic generations before they actually appeared. He attributes the apparent discrepancy between radiocarbon results and the ‘real’ occupation to systemic problems with the radiocarbon dating technique, arguing that many radiometric results are between one and two centuries earlier than when the first Thule Inuit actually entered the Eastern Arctic (McGhee 2000:188, 189). Such inaccurately early results could be an outcome of the selection and comparison of different terrestrial materials (i.e. locally grown wood, grasses, various tundra vegetation, and terrestrial mammals) whose absorption rates of $^{13}$C and $^{14}$C vary,
complicating comparisons and making inconsistent results possible in some circumstances (McGhee and Tuck 1976:14; Schledermann and McCullough 1980:840; Olsson 1985; McGhee 2000:188; Park 1994, 2000:197). Based in part on these considerations, McGhee (2000) suggests that archaeologists push the initial appearance of the Thule in the Eastern Arctic forward by two or three centuries from the traditional start date of 1000 AD originally proposed by Mathiassen (1927a:7).

Advancing the Thule migration in such a manner concurs with dendrochronological analyses conducted in Alaska, with Norse historic records of contact in Baffin Bay (McGhee 2000:190), and with McCullough’s (1989:258) placement of the stylistically early Ruin Island Thule phase in the 12th century A.D. A 12th or 13th century A.D. migration also has some serious repercussions for questions of Late Dorset – Thule Inuit contact. Although Thule colonisation has (with the exception of Mathiassen [1927a:194]) been viewed as rapid (e.g. McGhee 1984c; McCullough 1989; Morrison 1999), it is still assumed that the areas closest to Alaska contain the earliest Thule sites, with progressively younger sites occurring as the distance from Alaska increases. This assumption in turn supports a second implicit premise, namely that eastern Late Dorset populations, separated from Alaska and its invading Thule Inuit culture-bearers by thousands of kilometres, survived past 1000 B.P. because they were the last to come in to contact with the Neoeskimos (M.S. Maxwell 1985:240-243).

In order for this scenario to work, it requires not only a pattern wherein Late Dorset progressively vanished from west to east, but also a reverse situation where Thule Inuit would first appear in the west and move eastward, mirroring the Dorset disappearance. This scheme appeared to be partly justified when three radiocarbon dates from the Nelson River site (OhRh-1) on southern Banks Island indicated a Thule occupation at \textit{circa} 1000 B.P. (Arnold 1994; CARD), seeming to confirm Mathiassen’s (1927a) date for the start of the migration. However, a new series of dates from Nelson River and the almost coeval site of Washout (NjVi-2) obtained by Friesen and Arnold (2008) has revealed that Thule probably did not appear in the western Canadian Arctic before the 13th century A.D, supporting McGhee’s (2000:186-187) earlier contention that dates near to 1000 A.D. are at least one or two centuries too early. These new assays, which underline the fact that Early Thule sites on either side of the Eastern Arctic are
virtually coeval (refer to CARD), indicate that the Thule migration did not occur over a span of centuries but, rather, occurred with amazing rapidity as groups moved to exploit resources in the Lancaster Sound area (Morrison 1999). Of significance for the question of Dorset-Thule contact is the fact that when the beginning of the Thule migration is advanced two-hundred years, support for a semi-gradual west-to-east replacement of Dorset groups by the Thule (possibly permitting some measure of contact and interaction) is considerably undermined.

However, Labrador represents one area where a linkage may be drawn between the advance of Thule Inuit settlement and the disappearance of Dorset. As Fitzhugh (1994:244) notes, of the ten known Late Dorset sites in the region, six date to the period in which the Thule Inuit are believed to have begun their move down the Labrador coast (refer to Kaplan [1983:216-230] for the dates). The earliest Thule Inuit sites date to 1250 A.D. (circa 700 B.P.) and are on Killinek Island at the top of the Labrador peninsula (Fitzhugh 1994:259). However, a significant southern spread of Thule Inuit down the Labrador coast did not occur for another 200 years (between 500 B.P. and 300 B.P., or the 15th to 17th centuries A.D.). Both Fitzhugh (1980b:600) and Kaplan (1983:219, 220) believe that this comparatively late expansion was probably caused by the presence of a relatively significant Late Dorset population between Killinek Island and Nain. Fitzhugh (1994:259) notes that although the two cultural groups appear to have shared the area for several generations, evidence of interaction is minimal as the two groups appear to have lived “separate lives”.

The possibility that late and abbreviated opportunities for contact between immigrant Thule Inuit and resident Late Dorset groups, as identified in Labrador, may have been more widespread than originally predicted is possible if McGhee (2000) is correct in arguing against a large scale Thule Inuit presence in the Eastern Arctic until the 12th or 13th centuries A.D. It is then no longer a question of whether or not the Late Dorset remained a viable cultural entity after 1000 B.P. when the Thule were thought to have entered their territory (see Park 1993), but becomes one of when the Thule themselves moved far enough east to have entered the Dorset homeland. If Thule groups did not intrude into Dorset territory until after 700 B.P., then the period of overlap and potential interaction shrinks from half a millennium to less than 200 years, perhaps offering one reason for the apparent lack of large-scale acculturation between the two
populations (McGhee 2000:190; although Helgason et al. [2006] suggests interaction between Late Dorset and Thule Inuit groups was much more widespread than is generally suspected).

5.4.7 The Dorset and Norse
There have also been some indications that the Late Dorset may have come into contact with the medieval Norse. Despite Vilhjamur Stefansson’s claim to have discovered a race of so-called “Blond Eskimos” on Victoria Island that he believed to be the descendants of Inuit and Norse (Stefansson [1928]; refer to Jenness [1921] for an argument against this theory), the most likely location for Norse contact with indigenous North Americans would be along the Atlantic coast of North America. This region is closest to the Norse homeland and includes areas (e.g. Helluland [Baffin Island], Markland [Labrador], and Vinland [Newfoundland and the Gulf of Saint Lawrence], see Sigurdsson [2000:233]) that were known to the Norse and where they recorded meeting ‘skraeling’ (alternately, wretched or weaklings), probably a combination of Dorset, Inuit, and ancestral Innu (McGhee 1984b:9-10; Odess et al. 2000).

Evidence of Dorset interaction with the Norse has come from four locations: Hudson Bay, Labrador/Newfoundland, north-western Greenland, and the Hudson Strait area. At Gulf Hazard, an inlet connecting Richmond Gulf with south-eastern Hudson Bay, Elmer Harp (1975:Figure 2) located a copper amulet of “typical Dorset form” within a Late Dorset structure dated to 795±160 B.P. (Harp 1976: Table 5). Metallurgic analysis demonstrated that the copper was in all likelihood not from North America, that it had been smelted, and that it had been worked into its final form sometime after it was smelted by cold hammering (Harp 1975:42). Harp (1975:37) is quite clear to report that the context within which the amulet was found was undisturbed and sealed, and that the object derived from an undoubtedly Dorset cultural layer.

Given both the radiocarbon date on the structure and the trace analysis results on the copper, Harp (1975:42) concluded the sheet copper comprising the amulet was Norse in origin. Although he believes the material originated in Europe and was transported to the Eastern Arctic by the Norse, Harp (1975:43-44) does not believe that the Dorset and Norse actually met in southern Hudson Bay, but more probably to the north along southern Hudson Strait. He also notes the possibility that the copper could have arrived at the site through Thule Inuit
‘middlemen’ who were in actual contact with the Norse in Greenland. Two additional pieces of sheet copper have been identified in an apparently mixed Dorset-Thule assemblage from the nearby Belcher Islands (Mathiassen 1927a:290-292). These pieces were examined by Jørgen Meldgaard, who reported to Harp (1975:43) his belief that they were also Dorset amulets. To the north, a fourth fragment of sheet copper has been recovered from a Late Dorset longhouse structure in northern Ungava (Plumet 1982:262). Analysis of its metal composition demonstrated that its percentages of trace elements are comparable to the European-derived Gulf Hazard piece. Unfortunately, it has been impossible to obtain reliable radiometric dates on this site, making it difficult to assess whether it is contemporaneous with the Richmond Gulf occupations.

Even further north, a single piece of smelted iron has been reported from an apparent Late Dorset component on Axel Heiberg Island (Sutherland 2000a:160), while a fragment of a Norse bronze vessel has been recovered from the Qeqertaaraq site on north-western Greenland (Appelt et al. 1998; Appelt and Gulløv 1999). The Norse pot fragment is from a cultural layer dating to circa 550 B.P., which the excavators note is very close to the time when this style of vessel was produced. Such a narrow temporal window between its manufacture and incorporation in the site suggests that the pot could only have arrived at the site on a Norse ship, indicating a possible trading relationship between the two groups (Appelt and Gulløv 1999:66; although earlier the excavators [Appelt et al. 1998] suggest it was possible the pot fragment could have been traded by the Thule Inuit to the Dorset). In exchange for European goods, Appelt and Gulløv (1999:66) suggest the Late Dorset traded musk-ox hair which they might have collected during hunting trips to nearby Ellesmere Island (M.S. Maxwell 1960b) and which has been identified in a Norse site to the south (Arneborg 1998:81), as well as walrus ivory (the excavators noted that quantities of walrus bone were excavated at the site).

The recovery of a complete Late Dorset-style soapstone vessel (pictured in Wallace [2000: Figure 12.20]) from the Norse site of L’Anse aux Meadows on Newfoundland’s Great Northern Peninsula also points to Norse-Dorset interaction (Ingstad 1977:216-217). The lamp derives from what is thought to be roof-fall, strongly suggesting that it post-dates the building of the Norse structure, and its presence has been used as evidence of Norse-Late Dorset contact further north (most likely Labrador, where Late Dorset are not known south of Nain) (Ingstad
It is of course unclear whether the Norse removed the lamp from an abandoned Dorset site or obtained it via a face-to-face meeting, but McGhee (1984b:14) favours a scenario involving contact given the lamp is undamaged. His rationale for exchange rather than curation is that lamps like the one from L’Anse aux Meadows are fragile (it is small and quite thin-walled [Wallace2000: Figure 12.20]) and are very rarely found complete as the Dorset would not readily abandon undamaged vessels.

Unlike previous researchers, who suggest that contact between the Norse and Late Dorset was largely unplanned and secondary to other pursuits (e.g. McGhee 1984b:14), more extensive interaction over a larger geographic area has been proposed by Patricia Sutherland (2000a,b, 2002). She uses three primary artefact categories found at Dorset sites in support of this interpretation: spun cordage or yarn; woodworking technology; and carved images of people (Sutherland 2000a). Comparison of cordage from Baffin Island and Labrador with examples from Greenland indicates that the technology employed was comparable between regions, as was the material used (some examples from Greenland are made from arctic hare and goat, whereas a piece from Baffin Island is made from arctic hare and had probable goat hairs attached [Sutherland 2000a:161]). Sutherland (2000a:161) argues that the cordage is indicative of a Norse presence as the Dorset would have no practical reason to develop this technology given their own skin clothing would be much better suited to arctic conditions than Norse textile cloth. Instead, she suggests that much of the cordage found in Dorset sites was obtained from the Norse as a curiosity or scavenged from their abandoned sites.

Woodworking techniques are cited as further evidence of a Norse presence at several sites. It is suggested that woodworking techniques, including mortise and tenon joinery, are atypical of Dorset but characteristic of Norse craftsmanship, while square holes (some with oxidisation marks thought to be the remains of iron nails) and sawing marks are also considered to be outside the Dorset woodworking repertoire (Sutherland 2000a:162, Figure 100a-e). The third major category of evidence used to support more extensive Dorset-Norse interaction are carvings (presumably crafted by Dorset artisans) of people with ‘European-type’ faces (M.S. Maxwell 1985:163-164; Odess et al. 2000:197; Sutherland 2000a:163, 2000b:241). Potential European features, in contrast to the more Inuit-styles Dorset faces, are indicated by “a distinctive long and
narrow face with a prominent straight nose and occasional hints of a beard” (Sutherland 2000b:242), however, the usefulness of these criterion have been questioned by Park (2004), who notes that the identification of one image as having European features and another as having non-European features is inconsistent (Gulløv [1983] has also attempted to differentiate with varying success how Europeans are represented in carvings by Inuit).

As with claims of Dorset-Thule Inuit contact, a significant criticism of Dorset-Norse contact has been the radiocarbon dates, which Park (2004, 2008) notes have produced results that are too early to accord with a mediaeval Norse presence (Sutherland [2000a:163] also notes the results have been contradictory). As Park (2004, 2008) recognises, many of the dates on materials from the proposed contact sites predate the Norse settlement of both Iceland (securely dated to 870 A.D.) and Greenland (thought to have begun *circa* 985 A.D.), making it impossible in his view for the Norse to have been present in the Eastern Arctic at this time. As a result, Park (2004, 2008) suggests that many of the traits named as Norse or Norse-influenced might in fact have been developed independently by the Dorset without a Norse influence (Park also suggests that contact with other indigenous North American groups might have led to the introduction of spinning techniques). In contrast, Sutherland (2000a:162-163) suggests that the dates are early because they have been contaminated by their environment (Wallace [2000:210] notes a similar problem at the L’Anse aux Meadows site), maintaining on stylistic grounds that the identified cordage, wood, and carvings were made by or influenced through contact with the Norse during the late 13th and early 14th centuries A.D.

However, given our poor understanding of radiometric dating procedures and the potential causes of anomalies in the Arctic, it seems certain that radiocarbon assessments alone will not settle the question of Dorset-Norse contact in the Eastern Arctic. In order to determine whether contact took place between Dorset and Norse (or other early mediaeval Europeans) in the Eastern Arctic, and if so, to determine the extent of such interaction on both the Dorset and Norse, the extent and duration of these meetings must be investigated. If, as McGovern (1979:80) suggests, all the materials identified at the point of his assessment resulted from a single episode of friendly or acrimonious contact, then minimal cross-cultural influence is implied. However, if multiple meetings occurred over more geographically extensive areas (McGhee 1984b), or if they
involved more intensive episodes of interaction (Sutherland 2000a,b, 2002), then a greater
cultural impact on one or both populations might have been the result.

5.4.8 Summarising the Question of Contact
One of the problems in assessing claims of contact has been that most researchers are unsure of
what such a meeting might actually entail, as well as how to identify it archaeologically. Initially,
researchers assumed that the Dorset would have been rapidly and completely assimilated into a
Thule society that was far more advanced, adopting all aspects of their technology and social
organisation (e.g. Bielawski 1979). At the opposite end of this debate were those who argued that
contact between the two populations was unlikely given radiocarbon dates (e.g. Park 1993), or
very limited because the Dorset might have avoided the Thule, successively abandoning more
ecologically productive locations and retreating to less attractive areas as the Thule Inuit spread
Ultimately, most proposals regarding the disappearance of the Dorset culture identify, as their
core causal factors, an inability on the part of the Dorset to adapt to climatic change and
presumed resource failure, exacerbated by an influx of competing Thule migrants (M.S. Maxwell
1985:239-241). Rather than the abundant archaeological evidence of interaction some expected,
virtually all sites or areas where contact is suggested to have taken place indicate that, if contact
occurred, it was irregular, unplanned, and did not affect the contacting groups in a definitive way
(e.g. McGhee 1997).

As regards Dorset interaction with mediaeval Norse populations, interpretations have also
met with less than universal agreement. While Norse objects in Dorset sites have been
documented at several locations throughout the Eastern Arctic, interpretations of how they
arrived in their final contexts range from direct contact and trade with Norse, to trade through
Thule Inuit middlemen, or, alternately, that these materials were scavenged, are intrusive, or have
been misinterpreted. However, although many artefacts have long been recognised as European in
origin, the idea that such apparent meetings played any sort of significant role in cultural
developments in the Eastern Arctic has only recently been put forth. That these encounters might
have resulted in cultural and biological catastrophe for the Dorset, in the form of European
contagions to which they had no immunity (Thomson 1988:153; Agger and Maschner 2004; McGhee 1996:223; see also McGhee [1994] for discussion of the potential role of introduced disease amongst early Inuit in the Eastern Arctic), remains to be determined.

Finally, a consistent theme running through the discussion of whether Late Dorset contacted other populations, whether they be Thule Inuit, mediaeval Norse, or even Amerindians (refer to Fitzhugh [1980a:29, 1978b], Tuck and Fitzhugh [1986:166], and Bourque and Cox [1981]), is the undependable nature of the radiocarbon dating method in the Arctic and Sub-Arctic. The issues of unreliable radiocarbon results and sample contamination are serious ones and have no simple solution. Furthermore, as both M.S. Maxwell (1985:253) and Morrison (1989:48) have noted, these difficulties are compounded by a tendency on the part of researchers to pick and choose dates that agree with typologically-driven age estimates for an occupation, while rejecting apparently good dates simply because they do not fit within that same age estimate (e.g. M.S. Maxwell 1985:200; refer to McGhee [2000:184] for discussion of the exceptionally high rejection rates in Thule archaeology).

Odess (2005) warns that this problem is being exacerbated by the misuse and over-dependence on typological cross-dating between regions as a means to compensate for the shortcomings of radiometric dating techniques. Until archaeologists find a satisfactory means to overcome problems with absolute and relative dating methods, the issue of Late Dorset contemporaneity with other populations can never be resolved to the satisfaction of all concerned. At the same time, artefactual evidence from sites throughout the Eastern Arctic does strongly support Fitzhugh’s (1994:241) assessment that “the meeting and mixing of Inuit ancestors with earlier peoples in the Eastern Arctic must have been more complex than Park’s isolationist reconstruction permits”.

5.5 Summary
As noted by Helmer (1996:305), the period between 1500 B.P. and 500 B.P. is often “considered to be one of the most intrinsically interesting periods in Eastern Arctic prehistory”. No doubt this opinion has been shaped by the series of marked changes preserved archaeologically that can only hint at the profound social, ideological, and technological changes that occurred during the Late
Dorset era. The proliferation of art, the widespread occurrence of periodic large community aggregations, the potential for extra-cultural contacts with at least two other very different cultures, and the apparently widespread changes in economic and settlement patterns together suggest that this was one of the most dynamic periods in Eastern Arctic human history. Further contributing to the hold Late Dorset has on the mind of many researchers is the fact that this culture disappeared under circumstances that remain to be fully clarified.

As should be apparent through the course of this chapter, while Late Dorset culture is the best generally known Palaeoeskimo culture, it is also surprisingly poorly known in many key respects. The mechanisms which underlay the development and exceptionally rapid spread of this cultural group, whether they met other populations, the possible impact of these meetings, and the ultimate causes of the disappearance of Late Dorset all remain to be satisfactorily identified. Of particular relevance to this dissertation are questions concerning the influences that may have been operating upon Late Dorset culture. For example, whether Late Dorset developed in relative isolation in the Foxe Basin without the influence of other contemporary groups, as has been traditionally thought, can be questioned based on the presence of traits that are more often associated with earlier High Arctic occupations. Similarly, the impact of potential meetings between the Late Dorset and Thule Inuit and/or mediaeval European Norse must also be addressed, particularly as this concerns how the introduction of new ways of construction, organisation of space, and perhaps building materials might have influenced Late Dorset architecture, which I have elsewhere identified as the most varied of any of the Eastern Arctic Palaeoeskimo groups (Ryan 2003a).
CHAPTER 6 – LATE DORSET DOMESTIC STRUCTURES

6.1 Introduction
This chapter reviews available information on Late Dorset domestic structures with the intent of recognising the general range of technological behaviour present during the period. In order to adequately investigate Late Dorset dwellings the majority of the chapter is concerned with presenting normative descriptions of previously excavated structures in order to begin to identify the basic mind-set or general strategy underlying their design and use. It is necessary (and well advised) to begin with an overview of the available information on Late Dorset dwelling structures to allow any routine steps – sequences of actions repeated time and again when an ‘appropriate’ home was built – to be established. Such recurring behaviours create the patterning we can see in the archaeological record and are direct evidence for habitual practices or *habitus*. Recognising repetitive sequences of actions is also important for defining the scale and scope of the collective *connaissance* knowledge relating to dwellings (Chapters 2.2.3 and 10.3.1) and may ultimately help to explain continuity and change in their forms.

At the same time, this overview will also highlight architectural elements which appear atypical. Such idiosyncrasies may be the anticipated end products resulting from actions and choices anchored in *savoir-faire* knowledge, or they may represent the inadvertent consequences of unconscious or unplanned decisions (*e.g.* Eerkens and Lipo 2005). Dwellings are presented by geographic region (Low Arctic, High Arctic, Greenland, and Labrador). Discussion of possible chronological developments among directly dated dwellings is included at the end of this chapter, as is consideration of potential geographic developments. Reference to earlier Palaeoeskimo architectural remains is made where appropriate and specific data are included in Appendix A.

6.2 Constraints of the Analysis
As discussed in Chapter 2.3, analysis of architectural remains using a *chaîne opératoire* approach is contingent upon a number of factors which necessarily restrict the utility of some previously excavated structures for the overall study. Paramount amongst those limitations is the quality of the architectural description; if insufficient information is available on a given structure, no matter how unusual or ‘interesting’ it might appear, it must be omitted from further consideration. Many
of the structures excluded from this study were investigated during the initial phase of archaeological activity when dwellings were often perfunctorily recorded as most research was focussed on building culture histories. Structures in a poor state of preservation, such as those suffering significant natural or human-caused disturbance, are also left out even in cases where they are well reported. Dwellings which were minimally tested are of varying utility and usually not used, although less well described architectural remains associated with plan drawings and / or photographs are included.

The architectural data shown in Appendix A and discussed in this chapter relies primarily on published sources, with additional information taken from unpublished Masters and PhD theses where available. I attempt to standardise descriptions and feature identifications as much as possible, however the excavator’s original feature designations are maintained to avoid unnecessary confusion. The following section defines several architectural terms which are commonly used but which may be a source of confusion for those unfamiliar with Palaeoeskimo architecture. In instances where multiple descriptors appear in the literature to denote the same basic architectural feature, the most appropriate designation is used for the sake of consistency. Subsequent to this, a region by region synthesis of Late Dorset dwelling remains is presented.

6.3 Architectural Terminology
Researchers working in the Eastern Arctic have tended to somewhat arbitrarily divide structures into five categories: tents, houses, qarmat, longhouses (or megalithic structures, e.g. Gulløv and Appelt 2001), and undetermined. While longhouses are defined using generally accepted criteria (Damkjar 2000), the four others are usually assigned using a process of elimination. Above ground or surface dwellings, frequently bounded by a berm or ring of stones, are usually referred to as ‘tents’ whereas structures appearing more substantial (typically semi-subterranean) are often called ‘houses’ and frequently linked with longer-term or more intensive usage. Dwellings falling between these two classes can be referred to as ‘heavy’ tent rings (Nagy 2000a), ‘tent houses’ (Knuth 1952), or equated with the Inuit qarmat (Ryan 2003b). Features not accommodated by the above terms are placed within the undetermined category if they are still considered dwellings.

Each category brings its own terminological baggage of which researchers may not be
aware. The relation between length of stay and architectural cost has received the most attention and many researchers agree with Binford (1990:120) “that all else being equal, there is a very general inverse relationship between mobility and investment in housing”. However, in the Arctic the blanket correlation of substantial construction with cold weather (e.g. Reinhardt 1986) must be questioned in light of the role of snow structures which leave little archaeological trace (see Section 6.4.3) but were a key part of the Inuit adaptive strategy. Conversely, the sparse remains left by Independence I groups (Knuth 1966/1967, 1967a, 1967b) testify that structures now appearing quite underwhelming could be used for substantial periods in cold seasons. Given this situation I avoid terms such as tent and house, instead preferring neutral classifications such as dwelling or structure which do not relay unintended interpretations of function and seasonality.

6.3.1 Semi-Subterranean and Surface Structures
Semi-subterranean structures, sometimes called pit houses, are dwellings whose living floors have been excavated into the subsoil. In the majority of cases such structures can be visually identified based on surface examination, although it is possible that living floors appearing to be below ground are not (e.g. raised perimeter berms create the impression of a depressed interior). The reverse can also be true if the interior was very shallowly dug. In this study a dwelling is considered to be semi-subterranean if any intentional excavation of the floor below the natural ground surface has been undertaken.

Surface structures are features not excavated into the ground and include those whose floors are sunken because of unintentional compaction caused by daily use. The dimensions of surface structures are usually defined by a peripheral border of hold-down stones, sods, or other materials. In cases where such a perimeter is not defined, it may be possible to approximate the dwelling’s size and shape if a vegetation patch or concentration of cultural remains is present. It is likely that this latter dwelling form is under-reported (or classified as undetermined or a palimpsest feature) because they can be difficult to isolate, even when not covered by plants or sods, and often lack definable architectural elements.

6.3.2 Axial and Central Features
The axial feature has also been referred to as a mid-passage feature, mid-passage hearth, hearth
passage, axial pavement, axial arrangement, negative or pit axial, or central passage. Eigil Knuth (1952) was the first to describe midline linear stone features, which he called mid-passages, based on his Independence I (Chapter 4.3.1) work in the Peary Land region of north-eastern Greenland. However, the term mid-passage feature is not used in this study as it may misleadingly give the impression that these features actually served as passageways; the term axial feature is preferred. There is general agreement that axial features probably fulfilled many of the same roles as did similarly designed features inside Saami kāhtes (Figure 6.1).

As originally described (Knuth 1952, 1954, 1966/1967, 1967a, 1967b), Independence I axial features consist of two parallel rows of thin upright stone slabs set end to end across the short axis of an elliptical tent ring. The rows were often oriented to a water source if one was present; the space between the rows varied between 40 cm and 80 cm in width and was carefully and fully paved with flagstones. Small stone cobbles or slabs laid along the outer edge of the uprights functioned as supports. In the middle of the axial was set a true box hearth (see Section 6.3.3) constructed of four slab uprights. These stones were distinct from those used to create the double row, hence two of the hearth’s four sides were actually double-walled (Figure 6.2a), a form apparently restricted to the High Arctic (Appendix A). Inside the box was a paving slab which was usually covered with a layer of burnt wood and bone. By Independence II times (Chapter 4.4.1) the axial feature had been modified to include lateral expansions or ‘wings’ at both ends, the use of thicker slabs or cobbles, and the disappearance of the true box hearth.

Since Knuth’s work researchers have further expanded the definition using “rather flexible criteria” (Olsen 1998:103) with the result that a diverse number of forms are currently referred to as axial features (e.g. Figure 6.2a-c). Such a broad definition can be problematic as it makes the axial feature, possibly invested with symbolic properties (e.g. Plumet 1989; Odgaard 2003), the most variable architectural element found at Palaeoeskimo sites. Given this variability, all axial features herein are given detailed descriptions so that their precise form is apparent.

The term central feature is used for less defined or informally constructed midline features and therefore includes a broader range of forms. Notably, central features lack many of the elements which help define the more structured axial feature, particularly the architectural elements (e.g. uprights and paving stones) which lend the latter a more planned appearance (see as examples...
Figures 8.12 and 8.17). Also included in this designation are ‘negative’ central features. Negative central features essentially reverse the elements of axial features and central features in the sense that they are defined by a conspicuous absence of readily visible architectural elements.

![Image of 18th century Saami dwelling](image_url)

**Figure 6.1** Illustration of an 18th century Saami dwelling (from Leem 1767). Compare this midline axial feature containing a central hearth and storage compartments with the Palaeoeskimo example shown in Figure 6.2a.

An excellent example of this kind of feature was found in an Early Dorset dwelling in west Greenland (Jensen 1998:66-68, Figure 4). The dwelling was described as a 5 m by 2.5 m / 3 m
Figure 6.2 Axial features and central feature. A) 'Classic' box hearth axial feature with a double row of uprights defining the hearth area (adapted from Knuth 1967: Plate 7a), B) 'Negative' midline consisting of pit features (adapted from Harp 1976: Figure 8a), C) Paved central feature (adapted from Schledermann 1990: Figure 71).
pavement which actually consisted of two circular-to-oval paved areas separated by an unpaved linear section measuring 2.5 m in length and 70 cm in width. Soapstone vessel fragments and burnt fat concentrations in the unpaved area indicated the central part of the dwelling formerly contained pot supports and / or boiling locales. A similar feature, defined by a series of midline pits, was identified in Newfoundland at the Middle Dorset Phillips Garden site (Harp 1976; also Figure 6.2b).

6.3.3 Box Hearths, Hearths, and Hearth Areas
Box hearths, as the name indicates, are hearths which are shaped like a box or square. The most readily identifiable form consists of four tabular stone slabs arranged so they are perpendicular to one another, this form can occur in isolation (Figure 6.3a) or in association with axial and central features (see below). Stand-alone three-sided box hearths have also been reported and both the three and four-sided forms may or may not surround a horizontal paving stone. Some box hearths are associated with boiling stones and / or fire-cracked rocks (Figure 6.3b), suggesting indirect heating methods were practised to warm dwellings and food.

Hearths located inside an axial feature are only considered true box hearths if, as shown in Figure 6.2a, the four stones forming the box perform only that duty and do not also help form the axial feature’s rows (i.e. the box hearth is double-walled on the two sides parallel to the feature’s long axis). In cases where the hearth inside an axial feature is formed simply by setting two stones perpendicular to the long axis of the axial feature (e.g. Figure 6.4a), it is referred to as a central or lateral hearth. If the two transverse stones supported a fat burning stone vessel, the feature is categorised as a pot support (see Section 6.3.4).

In contrast to the slab or tabular stone hearths described previously, fireplaces enclosed by variously numbered cobblestones are simply termed hearths. Hearths often occur near the centre of a dwelling but can also be asymmetrically positioned and typically appear more circular in plan view, probably due to the rounded cobblestones used to create them (Figure 6.3c). The final hearth form is the hearth area, which refers to discrete areas inside a dwelling where evidence for the controlled use of heat or fire has been identified but where associated structural elements cannot be localised. Usually correlated with defined concentrations of burnt materials (including
Figure 6.3 Variants of the defined hearth. A) Freestanding 3-sided box hearth (adapted from Badgley 1980: Figure 4), B) Box hearth with boiling stones (adapted from Grønnow and Jensen 2003: Figure 5.65), C) Boulder-defined hearth (adapted from Renouf 1994: Figure 12).
bones, blubber, and wood), reddened or otherwise heat-damaged stones or subsoil, or deposits of melted and hardened fat, the majority of reported hearth areas are probably best seen as unstructured fireplaces that were not used intensively or for an extended period.

### 6.3.4 Pot Supports and Platforms
Pot supports (also referred to as lamp stands) can be found as separate architectural elements (Figure 6.4a) and also as part of axial features (Figure 6.4b). As implied by the name, pot supports were constructed to support soapstone or graphite stone vessels and were typically formed by placing one or two upright notched or un-notched slabs, sometimes referred to as andirons, on either side of a horizontally-placed stone (although this base rock is not always present). The space created underneath the supports was probably occupied by a second vessel which provided the heat for the cooking pot above (see Odgaard [2003: Figure 8] for one possible reconstruction). The form and size of this second and lower vessel can sometimes be isolated by the occurrence of a vessel-shaped deposit of burnt fat on the face of the underlying basal stone (e.g. McGhee 1981a: Figures 30 and 31). As described in LeMoine et al. (2003:274), the stone uprights could be very carefully situated to insure maximum stability and reduce the chances that valuable vessels might be damaged, while in other instances (e.g. Zimmermann 1999: Figure 18) an andiron might be impermanently fixed.

Lamp platforms differ from pot supports in that the platform is formed by only a single horizontal stone. Frequently, but not always, this support stone was pecked to create a shallow hollow in which the lamp was evidently placed when lit (Figure 6.4c). Lamp platforms have been identified as integral parts of the axial feature and can co-occur with pot supports, but isolated examples are also known, implying they were a less fixed element of the dwelling’s furniture.

### 6.3.5 Entrance Passages and Cold Traps
In most Palaeoeskimo dwellings an entrance, where identifiable, is usually recognised based on a break in a wall berm or a larger gap between hold-down stones. In some cases however, a more structured or formal entryway was evidently constructed and took the form of a discrete passage attached to the front of a dwelling. Such passages are usually identified based on the presence of
Figure 6.4  Pot supports and lamp platforms. A) Stand-alone pot support inside dwelling (photo by author), B) Pot support inside axial feature, note left upright support’s notched top (adapted from Rowley and Rowley 1997: Figure 4). C) Lamp platform with pecked base (adapted from Hinnerson Berglund 2003: Figure 6).
a two-sided berm or line of stones extending outward from the dwelling’s front wall (Figure 6.5). Probably functioning similarly to a wind porch, such passages varied between 1 m and 3 m in length and were no doubt constructed in order to limit the ability of cold outside air and wind from directly enter the dwelling’s interior. Such extensions would also reduce snow incursions and probably also served as a convenient storage area for a variety of items. It is unclear if or how these features were roofed and it is also possible that some were created partially or totally with snow, making them more difficult to identify archaeologically.

**Figure 6.5** Plan of the Late Dorset structure at NiHf-45 (Murray 1996: Figure 4.9). Note entrance passage to right and rear wall expansion to left.

Cold trap entrances are an elaboration of the more straightforward entrance passage and worked to further protect the interior of a dwelling from cold air. Cold traps are ingeniously simple and work by blocking cold air (which sinks) along the low points of the entrance passage (typically in a more deeply dug section nearest the living area) and preserving warm air within the
upper living area. The best known and best developed cold traps occur in Neoeskimo semi-subterranean dwellings (Figure 6.6) and snow structures, although less developed forms have also been identified in some Palaeoeskimo dwellings (Appendix A and following sections). Use of cold traps, always less than 15 cm below the interior floor’s depth, during the Late Palaeoeskimo period is now widely accepted by researchers (e.g. Park 1993:217) who acknowledge that such entrances developed without Neoeskimo influence.

![Figure 6.6 Reconstructed Thule Inuit dwelling at the M-1 site (QeJu-1) showing the cold-trap entrance in lower left.](image)

6.3.6 Qarmat

Qarmat is an Inuit term for structures occupied during the fall and / or spring which came into widespread use as Inuit in many parts of the Eastern Arctic abandoned large scale whaling based out of semi-permanent semi-subterranean whale bone structures for a more mobile seal-based economy using snowhouse villages on the sea ice (M.S. Maxwell 1985:286). Therkel Mathiassen (1927b:133) first linked the appearance of qarmat with this transition, envisioning such structures
as relatively lightly built short-term dwellings intended for use in “the unpleasant period in the fall from the time when the tent becomes too cold until the snow becomes firm enough to be suitable for building snow houses, a period that is rarely longer than a month or so”. Both Mathiassen (1927b:132-133, see also 1928:136-138) and Schledermann (1976a:42-45) argued that qarmat, because they were typically roofed only with skin and not sods and whale bone, could be distinguished from earlier and more heavily roofed cold season Thule dwellings.

However, both historic sources and archaeological data indicate that such a clear distinction between qarmat and sod and whale bone dwellings is not so easily made. Many qarmat must be considered semi-subterranean because they were often situated within the depressions of old Thule winter houses (Boas 1888:448-449; Mathiassen 1928:136-138), while archaeological work (e.g. Park 1988; Sabo 1991) has demonstrated that some were substantially roofed. These findings are supported by historic observations of inhabited qarmat, described as being built with “stones and the bones of whales ... the roof being formed of skins, turf and snow” (Parry 1845:545). Others were “entirely constructed of the bones of whales, unicorns [narwhal tusks], walruses and smaller animals, the interstices being filled with earth and moss” (Lyon 1824:235). Parry (1824:545; also Schledermann 1976a:41-42) further notes that some of the qarmat he observed were occupied for extended periods, up to five months, before being abandoned. Given this, it is clear that not all qarmat were intended, or functioned, as short-term low-cost dwellings. Similarly, the fact that not all Thule winter dwellings were roofed using whale bone and copious amounts of sod (Mathiassen 1927b:132) suggests that their universal association with elaborate and costly architecture is not always warranted.

Instead, the qarmat appears to represent a cool and / or cold season dwelling type which actually occurred in several varieties and ‘costs’, with the final form probably being determined at least in part by considerations including local snow conditions and economic pursuits, availability and quantity of building materials, and the length of time builders anticipated remaining in a particular area (see Chapter 2.2.5). Although less effort has been invested in examining seasonal variation in Palaeoeskimo dwellings, it is logical to assume that a similarly flexible building tradition existed and that correlates of the Inuit qarmat existed then as well.
6.3.7 Snow Structures
Identifying the archaeological traces of snow dwellings is notoriously difficult. Researchers attempting to examine the role of snow structures in arctic cultures are immediately confronted with two inescapable problems; the first is that snow melts, removing with it almost all signs that a structure was formerly present. As observed by Savelle (1984), the annual thaw also causes horizontal and vertical displacement of artefacts and affiliated materials, further complicating analysis by obscuring the original size and shape of any dwelling. The second issue relates to where snow dwellings were built, for at least during the historic era most were located on the sea ice whose yearly melt would completely remove all signs of a structure’s presence.

Researchers interested in reconstructing Dorset subsistence rounds have used indirect evidence from settlement pattern analyses to suggest at least some groups had incorporated the sea ice into their cold season settlement system where they may have lived in low-cost snow shelters (see Chapter 5.3.3). For example, M.S. Maxwell (1980:514, 1985:153) argued that there were insufficient cold season sites and dwellings on south-eastern Baffin Island to accommodate all of the people who seem to have lived there. He reasoned that Dorset households moved onto the sea ice soon after it stabilised to be close to the productive floe edge (or sina) located along the area’s outer islands (see Chapter 9.2 and 9.3.4, also Figure 9.2). A similar scenario may have occurred in northern Labrador where distance between land and floe edge expands markedly as the cold season progresses (Fitzhugh 1980b). As noted by Spiess (1978) and Cox and Spiess (1980), travel time between the land and sina would soon become impractical, making an ice base logical. In both scenarios the adoption of a mobile winter round using ‘cheap’ dwellings on the sea ice is a natural development. It is also likely that structures made partially or completely from snow were built on the land at least periodically, perhaps in tandem with other more visible dwelling types (e.g. Park 1988), further accounting for the paucity of obvious cold season sites.

However, only Savelle (1984) has suggested a methodology for identifying the actual traces of land-based snow structures, although his investigation was restricted to a known snow structure site and aided by an informant who lived in the structures (Labrèche [2003] was similarly assisted). There are currently no positively identified snow structures recognised solely on archaeological remains; although their use has been inferred at some sites from the Pre-Dorset
period on (refer to Chapter 3.3.1). Proxy data used to support such a deduction most commonly includes the identification of snow knives for cutting snow blocks (e.g. M.S. Maxwell 1973: Figure 57d, 1985: Figure 6.4; Helmer 1980: Plate 2a) and the interpretation of faunal and sparse architectural remains (e.g. Ramsden and Murray 1995).

Current information, based on secondary data sources and analogy with Inuit groups, suggests that snow was probably used as a cold season building material by at least some pre-contact Inuit and Palaeoeskimos. However, problems associated with identifying such dwellings means that it is difficult to assess the role and importance of snow structures amongst the Dorset.

6.4 Late Dorset Architectural Remains from the Low Arctic
Our current understanding of the Eastern Arctic’s prehistory suggests that Late Dorset developed from groups who continued to occupy central parts of the Low Arctic while many outlying areas were depopulated during the Middle Dorset period (refer to Chapter 5.3.1). Given the central role often assigned to the Foxe Basin in this development, it is fitting that the “three or four scarcely visible hollows” excavated by Graham Rowley (1940:491) at Abverdjar (NiHg-1) in the Foxe Basin were the first recognised Late Dorset structures to have been formally investigated. In the intervening years, Late Dorset dwellings have been encountered and excavated at disparate locations throughout the Low Arctic, although the number that has been adequately described in publications is surprisingly low. The following sections summarise the available information on a site by site basis (locations are indicated in Figure 6.7).

6.4.1 Tikilik / Arnaquaaksaat, Foxe Basin (NiHf-4)
Murray (1996:73-78, Figure 4.11) presents a synopsis of Susan Rowley’s (1992, 1993a, 1993b) largely unpublished work on Late Dorset Feature 4 (see also G. Rowley and S. Rowley 1997). Although partially built over by a Thule semi-subterranean sod structure, the visible part of Feature 4 (Figure 6.4b) was reported as being largely unaffected by the later structure. Information on Feature 4’s size and perimeter type are not provided, although the dwelling was rectangular in shape and semi-subterranean in nature. A well-defined axial feature (refer to Murray 1996: Figure 4.11 and Rowley and Rowley 1997: Figure 4) defined by a double row of slab uprights (some of which were missing) measured 4 m in length by 1 m in width. The axial
feature’s interior was carefully paved with flagstones and a single large upright lamp support with a notched top was located at one end of the axial feature. A matching support, suggested by a space in the flagging on the other side of an intervening basal slab, had been removed. It also appears that a lateral sleeping area composed of a fine gravel mattress under a layer of cushioning moss was positioned adjacent to the axial feature (refer to Figure 6.4b). The caption accompanying Rowley and Rowley’s photograph also noted that a fire pit was located at the opposite end of the axial feature from the pot support. Murray (1996) examined the food bone and suggested the structure was occupied between late summer and mid-winter, although year-round use was possible.

Figure 6.7 Low Arctic Late Dorset sites discussed in the text.

6.4.2 NiHf-45, Foxe Basin
Information regarding Feature 1 comes from Murray (1996:68-73) and is based on excavations by Susan Rowley (1991a, 1991b; also Rowley and Rowley 1997). Described as a shallow rectangular semi-subterranean structure (Figure 6.5), Murray (1996:68) lists the features dimensions as 9.45
m x 8.1 m. However, the affiliated structural plan (Murray 1996: Figure 4.9) indicates the actual interior dimensions are only approximately 6.75 m by 7 m. It seems likely that the numbers reported by Murray were taken from the outer edges of two extensions projecting from the main living area (an entrance passage and a rear alcove). Using these points artificially inflates the amount of actual living space, thus the smaller dimensions more accurately reflect the dwelling’s internal size. Feature 1 was virtually carpeted with stones, although only those in a small area (about 1 m by 1.5 m) of the rear were identified as paving stones.

A paved entrance passage / porch measuring 1.5 m in width and 2.25 m in length (Murray reports 1.1 m and 2.3 m) extended from the dwelling’s front wall at a slightly oblique angle. A paved semi-circular lobe measuring 1.2 m deep by 1.5 m in width extended from the rear wall and appears to have formed a shallow niche of unknown purpose (a similar feature was present in House 6 at the Bell site; see Chapter 7.5.8 and 7.5.10). Murray’s faunal analysis suggests a minimum use from late summer through early fall, but year-round occupation was also possible.

6.4.3 Newell Sound-4, Frobisher Bay (KgDl-4)
Odess (1996:200) reports that this site is the latest in the Palaeoeskimo sequence for Frobisher Bay and is also the most recent known site outside of the Ungava and Labrador peninsulas (although the latter claim is incorrect, see Table 6.1). Two structures (Houses 1 and 2) were excavated, however House 2 appears to have been significantly disturbed by the builders of House 1 (Odess 1996:177-178) and only the latter structure is used in this study.

House 1 (Odess 1996:174-177) was semi-subterranean and semi-elliptical (D-shaped), measuring 4 m by 6 m. The floor was excavated between 15 cm and 40 cm into the ground and the fill from the excavation was used to create the structure’s wall berms. Cribbing stones lined the inner wall surfaces to minimise slumping. A large area of paving, measuring approximately 2.5 m by slightly over 6 m, was built in the central part of the dwelling and an axial feature was present in the middle of the pavement (these elements are not illustrated). The axial feature is described as being approximately 3 m in length and varying in width from 70 cm at one end to 1.2 m at the other. The feature was defined by a double row of upright stones and while it is unclear from the description if the feature was paved, two pot support hearths (each with two upright
notched blubber-encrusted stones) were located at either end of the axial feature. An entrance was not identified. A short occupation was inferred based on the small amount of material culture and a late fall – early winter occupation was suggested (apparently based on the architectural remains).

Interpretation of the dwelling’s stratigraphy indicated that, at or near the time of abandonment, several large boulders were moved into the structure. Although the excavator does not make the association, it is possible that these represent ‘closing stones’, rocks purposefully moved to cover a dwelling when its occupants abandon it, as appears to have occurred at the Eigil Knuth site in north-eastern Greenland (Andreasen 2003:293, 295). Alternately, these might represent hold-down stones which were haphazardly moved into the interior when the superstructure was being dismantled.

6.4.4 Cordeau / DIA.1, Diana Bay (JfEl-1)
Structure B is described as a rectangular semi-subterranean dwelling that had been excavated no more than 50 cm into the ground (Plumet 1976:197, Figure 24, 1994:125). The internal axial feature was described as similar in plan to one at Okak 3 in Labrador (Figure 6.15) in being defined by a double row of slab uprights which framed an interior area that was paved with large and medium-sized flagstones. A centrally-located but unstructured hearth area was identified in the axial feature, although it is unclear from Plumet’s description if flagging stones were present along the outside edge of the uprights (as reported in the Okak 3 dwelling). Covering one half of the axial was a large horizontal slab that seemed out of position and was difficult to interpret; Plumet suggests this stone was originally supported by a wooden post which had subsequently decomposed (why is unclear), although it may have been an entrance ‘jamb’ (see Section 6.6.3).

6.4.5 Tuvaaluk, Diana Bay (JfEl-4)
Badgley (1980) describes structures C, E, and G as semi-subterranean dwellings whose perimeter walls may have been constructed at least partially of sod blocks. In addition to the possible use of sod, each was defined by a gravel berm whose interior wall margins were lined with crib stones to curtail slumping. Structures C (measuring 3.6 m by 3 m) and E (3.2 m x 3 m) were both rectangular in outline, while Structure G (built against a bedrock outcrop) was oval and measured
3.3 m by 2.25 m. Badgley inferred single nuclear family occupancy based on dwelling size.

Structure C (Figure 6.3a) had two distinct areas of paving on either side of a central open space (possibly representing a negative central feature, see Section 6.3.2, also Figure 6.2c) and a three-sided box hearth was located in one corner. An unidentified stone cluster is indicated on the interior margin of Structure E (Badgley 1980: Figure 4) although this feature is only vaguely identified as cultural in origin. Structure G appears not to have had any internal features.

6.4.6 Gulf Hazard-1, Richmond Gulf (HaGd-4)
House 1 was identified as a summer dwelling by Harp (1976:130, Figure 7) although he notes that the form of the structure was unlike that encountered at other Dorset sites (he does not specify in what way). Defined by a circular to rectangular perimeter of hold down stones with a diameter of approximately 6.1 m, the structure appears to have been minimally excavated into the subsoil. Half of the interior was paved with large flagstones while the remainder was more-or-less free of stones and may have been the sleeping area. A small pit (partially lined with stones) in the paved half of the dwelling was thought to be for food storage, a possible hearth area was nearby. Harp concluded this was a multi-family dwelling based on its large size. Notably, this dwelling produced the reworked amulet of smelted copper used by Harp (1975; also Chapter 5.4.7) to infer primary or secondary contact between the Late Dorset and Norse.

6.4.7 Gulf Hazard-8, Richmond Gulf (HaGd-11)
House 1 (Figure 6.8) was circular, approximately 4.5 m in diameter, and excavated about 15 cm into the ground (Harp 1976:132, 134, Figure 8). The perimeter of the feature was defined by a low sod berm and a carefully laid axial feature divided the interior between two lateral cleared sleeping areas. Harp (1976:132), in describing the axial feature’s construction, called attention to “the smooth lines of the outer edges, and the careful selection of slabs which fit together like a jigsaw puzzle, with smaller pieces to plug the gaps”. This feature lacked upright border stones, ended approximately 75 cm before the perimeter berms and was 2.9 m in length. It was 1.14 cm wide at one end and 1.37 cm at the other. Two pot supports were located at either end of the axial, each was equipped with paired notched upright supports which flanked a horizontal blubber-encrusted stone approximately 30 cm in length. The care with which the structure was
constructed led Harp to speculate that an expert, perhaps the head of an extended family, was responsible for directing its meticulous planning and construction. The total area of the structure is 15.9 m$^2$, which (according to Cook [1962, as reported in Hassan 1981:73]) is theoretically large enough to shelter an extended family, making Harp’s interpretation feasible.

Figure 6.8 House 1 from Gulf Hazard-8 (HaGd-11) (Harp 1976: Figure 8b). Harp (1976:132) referred to this structure as “a thing of beauty”.
6.4.8 Summary
A total of nine Late Dorset dwellings have been published in sufficient detail to be of use in this study. All were semi-subterranean, although some seem to have been minimally dug into the subsoil. Internal dimensions range from the very small Structure G at Tuvaluuluk (5.83 m²) to over 47 m² at NiHf-45 (mean 19.77 m², median 13.35 m²). Rectangular-shaped dwellings predominate (n = 5), with the remainder reported as circular / oval or D-shaped (as discussed in Chapter 10.3, this is significant as there is a direct relationship between a dwelling’s footprint and the form of the superstructure). Cribbing stones were laid in four dwellings to reduce the likelihood of internal wall slumping.

A possible central feature was encountered in one dwelling while four axial feature structures were recorded; all axial features were paved (two also had external lateral paving stones) and three included a double row of stone uprights. Formal pot support arrangements were present in three of the axial features (one axial feature also contained a fire pit), while the fourth axial contained evidence for an undefined hearth area. A single 3-sided box hearth was encountered and there is a single example of an entrance passage coupled with a small expansion or niche extending outward from the rear wall.

6.5 Late Dorset Architectural Remains from the High Arctic
As noted in Chapter 5.3.1, the Late Dorset colonisation of the High Arctic marked the reappearance of Palaeoeskimos in a region of the Eastern Arctic that had not seen a sustained human presence since the close of the Early Dorset era. Available information on Late Dorset domestic architecture in the region derives from the Bache Peninsula on eastern Ellesmere Island, Dundas Island, Devon Island, Little Cornwallis Island, and Bathurst Island (Figure 6.9).

6.5.1 Franklin Pierce, Franklin Pierce Bay, Ellesmere Island (SiFi-4)
A single sod and gravel walled rectangular structure was identified at this site (Schledermann 1990:261-265, 1996: third colour plate following page 110). The dwelling was outlined by a variably preserved perimeter berm measuring approximately 1 m in width, interior measurements were about 3.8 m by 3.5 m, of which approximately half (focussing on the central area) was excavated. Two lateral raised gravel sleeping areas about 1 m in width were located to either side
Figure 6.9 High Arctic and Greenland Late Dorset sites discussed in the text.

1. Longhouse (SgFm-3)
2. Oldsquaw (SgFk-3)
3. Franklin Pierce (SiFi-4)
4. Piper (Sffk-39)
5. Snowdrift Village (RaJu-1)
6. RaJu-2
7. Maze Village (RaJu-3)
8. RaJu-4
9. McCormick Inlet (QkJa-1)
10. Tote Road (QkHn-37)
11. Arvik (QjJx-1)
12. Tasiarlik (QiLf-25)
13. Brooman Point (QiLd-1)
14. Qeqertaaraq, Inglefield Land
15. Snowdrift, Inglefield Land
16. Qallunatalik / Polaris, Inglefield Land
of a midline axial feature oriented along the structure’s long axis. The axial feature appears to have had a double row of stone uprights (although many of those were missing) which defined a paved interior about 80 cm wide. The rather substantial architectural remains and the (apparently) plentiful faunal remains led Schledermann to suggest the structure may have been occupied for an extended period, possibly in the late fall and/or winter based on the absence of bird bones in the recovered faunal assemblage. Schledermann (1990:265) notes this feature is very similar to Feature 3 at the Oldsquaw site. While neither is specifically described as surface or semi-subterranean, photos indicate both were either surface or very minimally sunken dwellings.

6.5.2 Longhouse, Knud Peninsula, Ellesmere Island (SgFm-3)
The Dorset House 1 Component represents the only known domestic structures in the vicinity of the large 45 m long longhouse which lends the site its name (Schledermann 1990: Figure 65). Two shallow semi-subterranean structures surrounded by low gravel berms form this component, although only House 1 was investigated (Schledermann 1990:220-224, Figures 83 and 84). Interior measurements of House 1 were 4 m x 2.8 m and the dwelling’s long axis is perpendicular to a nearby polynya. A faint break in the berm wall facing the water likely represented an entrance. Boulders and other stones encountered inside the dwelling appear random and are apparently in secondary position, possibly displaced from the berms (where they may have functioned as hold-down stones) when the dwelling was disassembled. No internal features were identified and the occupation was interpreted as short and probably warm season.

6.5.3 Oldsquaw, Little Skraeling Island, Ellesmere Island (SgFk-18)
Two rectangular semi-subterranean structures, Features 1 and 3, were excavated at the site (Schledermann 1990:253-261). Feature 1 (Figure 6.10) measured 5.5 m by 4.5 m and was defined by a low gravel wall, a probable storage pit was located near the dwelling’s centre and a small charcoal concentration suggests a likely hearth area near one corner (Schledermann 1990: Figure 103). The floor may have been partially paved when occupied although there was no obvious pattern to the stones. A short occupation was suggested.

Feature 3 measured 5.5 m x 5 m and was similarly outlined by a low gravel wall. The utility of the feature for this study is somewhat compromised given only 40% of the interior
(predominantly along the central axis) was excavated (Schledermann 1990: Figures 104 and 105). An axial feature 65 cm wide and at least 1.5 m in length was encountered, it was paved with large flat slabs and at least one long side was defined by large upright stone slabs. Evidence for an unstructured hearth area inside the axial feature was suggested by a small amount of burnt willow material. The dwelling contained few cultural materials (although an associated midden yielded a large quantity of lithic flakes) and a short occupation was suggested.

Figure 6.10 Feature 1 from the Oldsquaw site (SgFk-18) (adapted from Schledermann 1990: Figure 103). A possible unstructured hearth area was identified in the structure’s north-western corner.

6.5.4 Piper, Johan Peninsula, Ellesmere Island (SFFk-39)
The possible dwelling feature is represented by an axial feature measuring 4 m in length by 1 m in width (Schledermann 1990:265-267). At one end of the axial feature is a “typical Late Dorset hearth” (Schledermann 1990:265-266) or pot support consisting of two upright supports flanking a horizontal paving stone (the vessel would be positioned parallel to the axial feature’s long axis) (Schledermann 1990: Figure 109). A number of smaller stones were located around the pot.
support. There was a break in the central part of the axial (it may have been partly dismantled, or never built up), while the other end of the feature is composed of a double row of stone uprights (these look more like cobbles than slabs), with two possible terminus stones at the end. This rectangular structure contained multiple small round stones, it may have functioned as a possible cache or as a supporting container for a skin boiling bag. Two piles of what appear to be boiling stones near the axial may relate to this activity. Schledermann (1990:267) observed that the combination of elements making up the axial feature (low elevation, platform, hearth, and possible cache) are common amongst the Late Dorset features in the Bache Peninsula area.

6.5.5 Snowdrift Village, Dundas Island (RaJu-1)
Five dwellings were excavated by McGhee (1981a:45-55) and four are included in this study.

Feature 1
The most obvious architectural element of this surface structure is the large and well preserved axial feature running parallel to the water through the dwelling’s long axis (Figure 6.11). Measuring 2.1 m in length and 1 m in width, the pavement was carefully laid and defined on both sides with cobbles and smaller boulders averaging 10 cm in height (McGhee 1981a: Figure 22). Situated in the centre of the axial feature was a pot support composed of a horizontal charcoal and blubber-encrusted slab flanked on either end by upright stone supports (the latter were 15 cm high and spaced 35 cm apart). A large end stone at the end of the double row of uprights marked the terminus of the axial. To either side of the axial were levelled gravel areas mostly free of rocks, these were interpreted as sleeping areas. The cleared zones were irregular in shape and size (80 cm wide x 2 m long and 1.1 m wide x 2 m long) and suggest a D-shaped floor plan (McGhee 1981a: Figure 24).

Feature 2
This surface structure consists of a heavily disturbed axial feature structure running perpendicular to the water and measuring 2.8 m in length and 1.2 m in width (McGhee 1981a:45, 50, Figures 25 and 26). The rocks (both slab and cobble) comprising the paved axial were very large and had at least one row of edging stones. Evidence of additional structural elements (e.g. cleared lateral
areas) were lacking and the possible dwelling’s size and shape could not be determined.

![Diagram of D-shaped Structure 1 from Snowdrift Village (RaJu-1)](image)

**Figure 6.11** D-shaped Structure 1 from Snowdrift Village (RaJu-1) (adapted from McGhee 1981a: Figure 24). Note the large terminus or end stone directly north of the axial feature.

**Feature 3**
This feature was also a surface structure and consisted of a well preserved axial feature running parallel to the shoreline and measuring 3.8 m by 1 m (McGhee 1981a:50, Figures 27 and 28). The axial feature was paved using medium and large slabs and had a double row of rounded boulders. Two offset pot supports, each consisting of upright lamp supports flanking a horizontal blubber-encrusted flat stone, were located. Levelled gravel areas to either side of the feature (90 cm in width) were probably sleeping areas, a moss mattress was laid overtop of the gravel and was preserved by the almost perennial snow-bank at the site (this deposit was supplemented by additional modern moss growth). The edges of this vegetation were used to suggest the outermost limits of the structure as no other signs of a perimeter (*e.g.* hold-down stones) were present. A storage pit was found in one of the lateral sleeping areas. Possible stone guy wire anchors, represented by piled stones, were located approximately 1 m from the northern and
southern ends of the axial feature.

**Feature 4**
This structure was also a surface dwelling and contained a paved axial feature with lateral border stones, all constructed with slabs and cobblestones and measuring 2 m x 1 m (McGhee 1981a:50, Figures 29-31). The comparatively short axial in this feature may be the result of stone scavenging some time after the dwelling was abandoned as suggested by an asymmetrically located pot support and amorphous scattering of stones near the west end of the axial (the side of which appears to have been disturbed). The pot support was composed of a substantial horizontal slab covered with a large amount of burnt fat (2 cm thick) and two flanking upright lamp supports spaced 35 cm apart. The built-up fat layer on the hearth stone was covered by a small flagstone, “perhaps by the housewife who hoped to preserve it for later use” (McGhee 1981a:50, Figure 30). Lateral sleeping areas, represented by cleared and level gravel areas measuring 1.2 m and 1.4 m in width, were present and each had a covering layer of moss and willow twigs that formed a mattress. Similarly to Feature 3, many of the artefacts from this dwelling were found in close association with the axial, and no peripheral marker was recognised.

**6.5.6 RaJu-2, Dundas Island**
Dwellings at the site involve two surface structures with axial features running perpendicular to the water (McGhee 1981a:55-56, Figure 33). Only one axial was well preserved and measured 4 m by 60 cm, it was paved with slabs but lacked the edging stones found at the Snowdrift Village site. At least one pot support was identified in the western part of the feature and consisted of two upright lamp supports (it is unclear if these flanked a horizontal slab). A second hearth or pot support may have been present in the eastern part of the axial, although there is no description. Lateral sleeping areas consisting of levelled gravel were located on either side of the axial, these each measured approximately 1.2 m in width.

**6.5.7 Maze Village, Dundas Island (RaJu-3)**
The site consists of three dwellings with axial features, as well as an isolated area of square paving measuring 3 m on each of its sides with a possible hearth (indicated by a burnt blubber
concentration) located in one corner (McGhee 1981a:56, Figure 34). The largest of the three axial structures ran parallel to the shoreline and measured 3 m by 80 cm, it was paved and lined with stones (some of which had been displaced). At least one centrally-located hearth was located in the axial (associated with one standing lamp support) and a second hearth may also have been present at one end of the feature. Sleeping areas were present but were not as clearly marked as at Snowdrift Village. A second axial feature was perpendicular to the coast and was apparently identical to that described previously, except it had a large terminus stone at either end of the axial arrangement. A third axial structure was poorly preserved and pointed to the water.

6.5.8 RaJu-4, Dundas Island
Three surface structures with axial features were located, two of which ran parallel to the shore while the third and smallest example was perpendicular to the water (McGhee 1981a:56). No excavation was conducted at the site although the lack of vegetation meant that below ground probing was not necessary to record the architectural information. The smaller perpendicular axial measured 3 m x 1 m and was carefully paved with horizontal slabs and lined by two rows of rectangular cobbles. Two pot supports were identified (the supports for each were about 30 cm apart) and a single terminus stone was present at one end of the axial. The second axial was 4 m by 80 cm and also had pot supports, although these were spaced 50 cm apart to presumably accommodate larger vessels. As with the first axial, a single end stone was placed at one end of the feature. The third axial was 5 m x 90 cm and constructed similarly to the other at the site (this feature also had pot supports placed 50 cm apart for larger vessels) and there was only one end stone present.

6.5.9 McCormick Inlet, Melville Island (QkPa-1)
Discovered and described by geologists (Henoch 1964; Taylor 1964b), the structure represents the most north-westerly Late Dorset site currently known. The rectangular surface structure measured 4.5 m by 5.2 m and was defined by a low gravel berm. Inside was an axial feature 1.2 m in width which ran along the short axis of the dwelling; it was paved with non-contiguous stones and set off by a double row of slab stone uprights (Henoch 1964: Figures 3 and 4). Two areas of fire were recorded, the first was near the centre of the axial and appears to involve a lamp
platform (a 5 cm deep depression in the stones was noted, although it is unclear from the
description if this was natural or artificial), and an offset hearth area indicated by “smoke” stained
(burnt blubber?) stones. On either side of the axial were sleeping zones, one radiocarbon date on
material from the lamp platform (Table 6.1) confirmed a Late Dorset affiliation.

6.5.10 Tote Road, North Devon Lowlands, Devon Island (QkHn-37)
A buried axial pavement 2.5 m in length and 50 cm in width was located via test pitting (Figure 6.2b). The axial feature (Helmer 1991:313, Figure 15) was fully excavated and made with large
and small slabs, there are no indications that vertically-placed stones were used to define its long
axis, nor does it seem that internal divisions, hearths, or other elements were present. Using
apparent hold-down stones as a guide it appears that the axial feature was situated along the short
axis of a sub-rectangular dwelling (presumably a surface structure as no signs of a sunken living
floor are mentioned) measuring approximately 3.5 m by 4.5 m. A radiocarbon date on driftwood
suggests the structure belongs to the Transitional period (see Chapter 4.4), although its elevation
and artefacts indicate a Late Palaeoeskimo (i.e. Late Dorset) affiliation.

6.5.11 Arvik, Little Cornwallis Island (QjJx-1)
The site has a very thin vegetation cover making most architectural features clearly visible without
necessitating excavation (LeMoine et al. 2003). Radiocarbon dates suggest occupation early in
Late Dorset (Table 6.1), although some diagnostically later Late Dorset artefacts also indicate the
site, containing both surface (equated with warm season use by the authors) and semi-
subterranean structures (cold season structures), also saw use at the end of the period.

Feature 9
This structure was defined by a low gravel berm enclosing a vegetated shallow semi-subterranean
interior measuring about 5 m by 4 m (LeMoine et al. 2003:269, Figure 12). Some kind of central
feature positioned at a 90° angle to the water had evidently been built at the time the dwelling was
occupied, however most of the stones had been removed for probable recycling at another
structure. Although not identified as such in the excavation plan (LeMoine et al. 2003: Figure 12), a break in the northern wall berm may represent an entrance (if this is the case, it would
rather unusually not provide a waterfront view, refer to Chapter 10.2.1).

**Feature 12**  
This feature was a surface structure defined by a broken ring of hold-down stones with an approximate diameter of 4 m (LeMoine et al. 2003:260, 263, Figure 6). No internal features were present and the recovered faunal assemblage (predominantly seal and fox) suggests a cold season resource base, although a warm season occupation was assumed based on the architecture.

**Figure 49**  
Unlike Feature 9, the only other semi-subterranean structure excavated at this site, Feature 49 was very well preserved and was subsequently reconstructed (LeMoine et al. 2003:269, 271, 273-275, Figures 13-15). Feature 49 was surrounded by a low gravel berm outlining a relatively heavily vegetated and shallowly depressed interior measuring 4.5 m by 4 m. It is believed that this abundant vegetation cover resulted from the breakdown of the structure’s sod walls, which subsequently ‘melted’ into the interior depression (some formed turves were still identifiable in the interior). The axial feature was laid along the dwelling’s short axis and was framed by a double row of upright slabs (the only axial at the site to include this element) measuring 4 m x 1 m. The interior of this feature was carefully paved with horizontal flagstones and contained two evenly spaced pot supports, each comprised of two uprights with notched tops. A large flat anvil stone complete with its cobble hammerstone was also built into the axial feature.

Direct evidence concerning the superstructure’s roof framework was identified, as whale bones occurred both *in situ*, as a post near the rear of the dwelling, as well as in secondary position (represented by fragmentary rib sections) inside and behind the structure. A dome-shaped roof was indicated, possibly created by angling rib bones upward to a horizontal ridge pole which would have given the structure a broad and flat shape (LeMoine et al. 2003:275) similar to a Thule whale bone structure reconstructed at Brooman Point (McGhee 1984a:21, Figures 14 and 15). Reconstruction efforts also revealed that the structure’s construction had involved significant energy and time (LeMoine et al. 2003:273-275). The reconstructed entrance was positioned at the front (shoreward) end of the axial feature. A single radiocarbon date (Table 6.1) indicated this structure was constructed during the earliest occupation of the site.
Feature 53
A lightly constructed surface structure was interpreted as a warm season tent ring defined by a
discontinuous oval of hold-down stones measuring 4 m by 3 m (LeMoine et al. 2003:260, Figures
4, 5a, and 5b). Internal features consisted of two lamp platforms, one each in the northern and
southern halves of the structure, each marked by a slightly concave surface with reddening from
heat exposure. Affiliated with the southern lamp platform, whose surface was pecked to create a
shallow concave top, were two hearths made of small flat stones. Each hearth was composed of
two slabs set on end to create a V shape around one end of a horizontally-laid smooth stone. The
excavators suggest that the two upright stones may have acted as windbreaks. At least one hearth
contained burnt blubber and other materials.

6.5.12 Tasiarulik, Little Cornwallis Island (QiLf-25)
Excavated structures include a number of surface tent rings and shallow semi-subterranean
structures equated with longer-term cold season use (LeMoine et al. 2003:258, 267).

Feature 30
This dwelling is believed to be a warm season surface tent ring with peripheral hold-down stones
indicating an oval interior measuring 5 m by 5.5 m (LeMoine et al. 2003:263, Figure 7). A
possible cache (represented by a rectangular group of slabs) and a centrally located hearth area
(suggested by a fire-reddened stone and cluster of cobbles) were identified, and a large number of
flakes and other cultural materials were excavated from the interior and affiliated midden.

Feature 59
This structure was defined by low gravel berms surrounding a shallowly excavated rectangular
interior measuring approximately 4.5 m by 4 m (LeMoine et al. 2003:267, Figure 10). An
entrance could not be identified although an axial feature running along the dwelling’s long axis
and perpendicular to the shoreline was present and made of medium-sized boulders. LeMoine et
al. (2003:276) note the axial in this feature was fairly typical of those at the site in that it lacked a
double-row of flanking border stones. However, the feature was unique in that the stones used
were discontinuous so that they created an interrupted and seemingly less functional pavement
about 1 m wide. Three hearth areas, located at the approximate centre and near the ends, were
recognised based on the presence of heat-altered stones and some burnt bone and blubber.

**Feature 74**
The dwelling was defined by low gravel berms framing a shallow interior depression measuring 4 m by 4 m, a cobble axial feature was located inside (LeMoine *et al.* 2003:267, 269, Figure 8). The axial feature, which measured 4.5 m x 70 cm and pointed to the water, was more continuously paved than Feature 59 and contained at least two hearths and perhaps as many as three. The structure had suffered some post-abandonment disturbance, both natural and human-caused, and it is apparent that some architectural stones had been removed for reuse elsewhere.

**Feature 90**
Although perimeter hold-down stones were completely absent from this surface feature (size could not be determined), it is interpreted as the remains of a tent ring (LeMoine *et al.* 2003:263, 266, Figure 9) on the basis of vegetation cover, the presence of a slab hearth, and an artefact concentration. The excavators suggested the remains did not represent those of a snow structure given that the feature contained an internal hearth. They observe that such features would be of little practical or functional use in a snow dwelling (refer to Section 9.4.3) and that architecturally similar structures interpreted as snow structures do not contain immobile heat sources (*e.g.* Ramsden and Murray 1995).

**Feature 91**
This is the smallest semi-subterranean structure excavated at the site, with interior measurements of only 2.5 m by 3 m (LeMoine *et al.* 2003:269, Figure 11). As with Features 59 and 90, Feature 91 was surrounded by a low gravel wall, was shallowly excavated into the subsoil, and contained a midline axial feature running along the shorter axis. The feature was oriented at a right angle to the water and made of large boulders with two hearth areas. Architectural stones had evidently also been removed from this dwelling for use elsewhere on the site.

**6.5.13 Brooman Point, Bathurst Island (QiLd-1)**
It appears that the majority of the Late Dorset occupation at this site was disturbed by the construction of 20 large Thule Inuit semi-subterranean sod and whale bone structures and
associated features beginning early in the Neoeskimo occupation of the Eastern Arctic and continuing for several generations (McGhee 1984a). Five shallow semi-subterranean Late Dorset structures were identified away from the main locus of Thule activity and were excavated (McGhee 1996:213-229, 1997), their contents were subsequently used to support the possibility of direct Late Dorset – Thule interaction at or near the site (refer to Chapter 5.4.4). The structures themselves are described by McGhee (1997:210-211) as sub-rectangular, shallowly excavated (10 cm – 15 cm), and lacking identifiable internal features. Relatively few artefacts were located in the dwellings, their associated middens were thin and poor, and a short-term summer season of occupation was proposed (McGhee 1996:213).

6.5.14 Summary
Well over half of the structures reported from the High Arctic are surface dwellings. Visibility may partially explain the prevalence of surface dwellings in this region as the vast majority of the High Arctic is classified as Polar Desert and supports very limited vegetation (see Bliss et al. 1973; J.B. Maxwell 1980:13) that would otherwise reduce site and structural visibility (although other factors may also be at work). The dimensions and shape of a number of these surface dwellings could not be determined as perimeter markers were often absent or too heavily disturbed. Rectangular and square forms dominated the semi-subterranean structures while all of the circular or oval dwellings were identified as warm season occupations. Axial features were frequently located in the dwellings and exhibit a range of forms including the use of slabs or cobblestones and the variable occurrence of a double row of upright stones, internal paving, hearth areas, pot supports, and terminus or end stones. Other than the axial feature, the most frequently identified internal element were cleared lateral zones interpreted as sleeping areas. Where internal dimensions could be established, liveable interior space most commonly ranged between 12 m² and 22 m² (although some features were considerably smaller, see Figure 10.6). No entrance passages were described and no interior paving (outside of the axial feature) was reported from any structure.

6.6 Late Dorset Architectural Remains from Greenland
The known geographic distribution of Late Dorset sites in Greenland is quite restricted in
comparison to earlier occupations, some of which covered virtually the entire coast (see Chapter 4). Late Dorset sites are thus far only reported from north-western Greenland (Inglefield, Hall, and Washington lands) where it is separated from Ellesmere Island by narrow stretches of water (Figure 6.9). This distribution is not surprising considering current evidence indicates Greenland, like the Canadian High Arctic, was depopulated throughout the preceding Middle Dorset era. Late Dorset in Greenland undoubtedly represents an expansion eastward from Canada as a part of the general post-1500 B.P. repopulation of the High Arctic (see Chapter 5.3.1).

Architectural information on the Late Dorset remains located in Washington Land are currently only available in Danish (Andreasen and Lange 2000). Andreasen (2003:297) notes they are comparable to those excavated in Inglefield Land but does not provide further detail. The Hall Land sites were all recorded or revisited by Eigil Knuth and reported in Grønnow and Jensen (2003). Only one dwelling feature is illustrated (Kap Buddington; Grønnow and Jensen 2003: Figures 2.2 and 2.3), however other than an axial feature set off by a double line of stone uprights, no architectural information can be discerned. Given this situation, only the Inglefield Land features can be included in this discussion of Late Dorset architecture.

6.6.1 Qeqertaaraq, Inglefield Land
Two Late Dorset domestic structures were excavated at the main Qeqertaaraq site as part of the Gateway to Greenland project (Appelt and Gulløv 1999:7-20). A third structure, Snowdrift, is located on the south-western extreme of Qeqertaaraq and is treated in the subsequent sub-section.

Structure 1
Appelt and Gulløv (1999:7-11) describe the dwelling’s pre-excavation appearance as sub-rectangular and semi-subterranean. The depression, which was excavated 40 cm into the subsoil, measured 4 m by 5 m when encountered and was outlined by a slight gravel berm. Three discrete occupation horizons (Phases 1 – 3) were identified during excavation, with each episode of use slightly modifying the structure’s architecture (none of these phases are illustrated).

Phase 1 is the oldest occupation (Table 6.1) and is associated with three internal features: a semi-circular platform of gravel approximately 2 cm thick and measuring 2.2 m x 1.1 m along the western long axis; a fat concentration in the central area of the dwelling associated with an
upright stone lamp support (its probable mate was found 80 cm away); and a turf wall 20 cm in height and between 11 cm and 12 cm in width along the north-western and western walls. Using the remnants of this wall as a guide, it appears that the dwelling measured approximately 3.6 m by 3 m during Phase 1. The excavators felt that the entrance located in the southern wall was a cold-trap variety that was positioned between 10 cm and 15 cm below the interior floor level (Appelt and Gulløv 1999:8). A presumed workspace was identified in the eastern half of the dwelling, where there was no gravel cushion, based in part on a higher density of artefacts.

Structure 1 was enlarged during Phase 2 to the size (4 m by 5 m) observed at excavation. Expansion appears to have occurred along the south-eastern part of the structure as this area did not have a sod wall. Rather than rebuilding the sod wall along the dwelling’s new limits it appears that the structure’s occupants instead constructed a stone wall. A possible sleeping area may have been present in the western part of the structure given an overall lack of artefacts. This phase of use was not radiocarbon dated.

The Phase 3 occupation, which was reported as being difficult to distinguish from earlier uses, appears to have been brief. The only recognised architectural alteration was the addition of an area of paving (in several layers) in the north-western interior. This phase was not dated.

Structure 4
Appelt and Gulløv (1999:11-20) describe this 4.75 m x 5.25 m feature as an almost square semi-subterranean dwelling between 30 cm and 40 cm below the modern ground level and surrounded by a low gravel berm (Appelt and Gulløv 1999: Figures 4 and 8). As with Structure 1, multiple occupation horizons were identified (Upper, Lower, and Lowest level, although the Lowest level may not represent a separate occupation episode, refer to Appelt and Gulløv 1999: Figure 13). Subsequent to its abandonment a Thule tent ring was built over the western part of the dwelling, although it caused minimal disturbance.

The Upper level is the most recent and was suggested by Appelt and Gulløv (1999:19) to date near the close of the 13th century AD (the excavators question the accuracy of the radiocarbon dates, listed in Table 6.1, which were obtained from these deposits). The dwelling’s perimeter walls were made of gravel displaced when the structure was excavated and an entrance was positioned on the western wall, which was much less robust than the others. A turf deposit up
to 1 m in width and containing large stones and bones extended inward from the north and especially eastern walls (Appelt and Gulløv 1999: Figure 5), the directions from which the predominant winter winds blow. The excavators believe this sod deposit was purposefully placed here to help insulate the dwelling from these winds (refer to Chapter 3.3.4 for discussion of sod’s insulation value). Near the northern wall was a three-sided paved stone box that may have anchored a roof support, while an intermittent area of paving near the sod / bone / stone wall liner hosted an activity area. In the western part of the dwelling, where there was no flagging, was a sleeping area. A fragment of a European bronze bowl and a Thule ivory doll and arrowhead (Appelt and Gulløv 1999: Figure 7) hint at extra-cultural contacts between Late Dorset and newly arrived populations (see Chapter 5.4.7).

The Lower level of Structure 4 is suggested to date to the 11th century AD (Appelt and Gulløv 1999:20; Table 6.1), when a series of pits 10 cm – 20 cm deep and filled with dark and greasy soil were dug along the west-east long axis of the dwelling (Appelt and Gulløv 1999: Figure 8). Although the excavators do not propose this, the linear midline pit feature is suggestive of a ‘negative’ central feature (see Section 6.3.2 and Figure 6.2c). To the north of the pit feature was an activity area, while a sleeping area measuring about 1 m by 4 m was situated to the south of the midline row of pits. The excavators indicate the perimeter walls associated with the Lower level occupation may have been lined with sods, although this was not definitive.

The linear arrangement of pits was still present in the lowest and oldest level (Appelt and Gulløv 1999: Figure 10), as was the southern sleeping area. A small number of artefacts were located; all diagnostic specimens were Late Dorset.

6.6.2 Snowdrift, Inglefield Land
Located at the southern limit of the Qeqertaaraq site was a single structure, so named for the nearby snowdrift which helped preserve its organic component (Zimmermann 1999:20-23). The structure was square and measured 3.5 m x 3.5 m from the interior of the turf walls which still defined the dwelling (Zimmermann 1999: Figure 17). These walls, ‘melted’ to 5 cm in height and 40 - 100 cm in width when observed, are thought to have been around 15 cm - 20 cm in height and approximately 30 cm wide when first built. The structure was oriented to the water and an
axial feature with thick upright stone slabs defined a 70 cm wide paved interior. Photographs of the axial indicate it was not particularly carefully made and the upright stones seem to have been laid onto, rather than set into, the ground (Zimmermann 1999: Figures 17 and 18). Near the centre of the axial was a horizontal lamp platform with a 30 cm by 40 cm circular depression, rimmed in burnt blubber, pecked into its surface (Zimmermann 1999: Figure 18).

Two blubber encrusted stone lamp supports were also located. Neither was in primary position (these may have originally flanked the lamp platform); one was leaning against the outer face of the axial near the lamp platform while the other was found some distance from the axial. The form of the illustrated support (Zimmermann 1999: Figure 18) differs from those reported elsewhere as its top was ‘horned’, possibly due to the narrow width of this particular support stone (which cause the notch to extend completely across its top, rather than ending in the middle as is more common, e.g. Figure 6.4b). The areas to either side of the axial were cleared of stones and were probably sleeping zones.

6.6.3  Qallunatalik / Polaris, Inglefield Land
Four or five rectangular to square structural depressions outlined by low gravel berms are visible at the site and Feature 1 was excavated and very well described by Grønnow (1999:42-62). Feature 1 was semi-subterranean and excavated approximately 20 cm below the top of low broad wall berms (depth below ground surface was not noted). The perimeter berms measured 50 cm in width and were still remarkably intact, as indicated by their interior margins which still formed a sharp angle from their top down to the floor. The dwelling’s internal dimensions were 3.6 m by 5.1 m and it seems likely that a turf wall, at least partially composed of cut ‘bricks’, had been constructed along the edge of the living floor against the inner wall of the depression.

Although partially disturbed, an axial feature measuring 1 m in width and running along the long axis from wall to wall was present. It is difficult to determine how much of the axial was framed with stone uprights as some appear to be missing, although it seems that most of the southern edge of the axial was so lined (Grønnow 1999: Figures 43 and 44). Nearest to the apparent entrance (in the west of the structure) the axial was heavily built with uprights (including a terminal end stone) and carefully fitted horizontal paving stones. A large flat slab set
in this part of the feature served as the lamp platform and had a shallow depression measuring 20 cm by 40 cm pecked on to its surface, the edge of the hollow was encrusted with burnt fat (see Figure 6.12). A stone pot support of a form similar to that from the Snowdrift site (above) was found near the lamp platform. The central area of the axial was either not paved or had many of
its stones moved after abandonment, while further down the feature was a single fire-cracked paving stone around which a 1 m diameter concentration of small and medium-sized gravel had been spread (Grønnow 1999: Figure 48). The rear part of the axial was paved with thin friable paving stones and lined with the remains of stone uprights (including an end stone). Outside of the axial were two lateral zones which had been cleared of larger stones. A layer of small and mid-sized gravel had been evenly spread over the southern area; no gravel was present north of the axial feature although numerous twigs suggest a mattress had once been present and that this space was the sleeping area. The structure’s entrance was in the western wall facing the water so that people entered directly into the northern part of the structure where the matrix was somewhat compacted. Two large (50 cm - 60 cm) stone slabs found in secondary context on top of the axial feature near the entrance may represent ‘jambs’ (stones which were originally set vertically to frame the door). Two shallow pits located in the northern sector of the dwelling near the entrance were thought to be inadvertently caused by unintentional wear and tear as people entered / exited the structure.

6.6.4 Summary
Four Late Dorset domestic structures, all from Inglefield Land, have been reported in sufficient detail to be incorporated into this study. With the exception of the dwelling from the Snowdrift component of the Qeqertaaraq site, all of the dwellings are semi-subterranean, whereas the Snowdrift structure was defined by raised sod walls. All of the structures were rectangular or square in plan view, while two (Snowdrift and Qallunatalik Structure 1) had well defined stone axial features formed with both upright and paving stones. Interestingly, the Qallunatalik dwelling’s axial feature also had an end stone, similar to examples from the Canadian High Arctic (see previous section). Both stone axial features also possessed lamp platforms with pecked depressions, as well as at least one pot support. Structure 4 at the Qeqertaaraq site may have contained a ‘negative’ central feature defined by a linear group of pits. All of the dwellings contained lateral cleared areas, some of which were interpreted as sleeping areas. Sod was used in all of the dwellings to create or supplement the wall berms (or to form the wall in the case of the Snowdrift structure). The three semi-subterranean dwellings also exhibited definable entrances,
and the one located at Qeqertaaraq Structure 1 could function as a cold trap. Dwelling size varied between 12 m² and 25 m² (mean 18.55 m², median 19.18 m²).

6.7 Late Dorset Architectural Remains from Labrador
Much of the archaeology done in Labrador was conducted during the 1970s and was primarily oriented to defining the region’s basic cultural sequence (e.g. Fitzhugh 1972, 1976b, 1976c, 1978a; Tuck 1975, 1976a; Cox 1977, 1978; McGhee and Tuck 1975; Kaplan 1983). While this is an important first step in the archaeological investigation of any region and laid the framework for subsequent work in Labrador, this approach has meant that much of that archaeology was not conducted using strategies effective for investigating architectural remains. Specifically, large-scale horizontal excavations useful for exposing most or all of a dwelling’s architectural elements were not always a priority, with the result that a limited sample of structures from seven sites are described in sufficient detail to be used in this analysis (Figure 6.13).

6.7.1 Avayalik-1 (JaDb-10)
This site is located on the easternmost of the three islands making up the Avayalik Islands, which are located approximately 25 km south of the tip of the Labrador Peninsula (Figure 6.13). Multiple depressions were visible on the vegetated terrace and the most clearly defined was chosen for excavation, revealing a Late Dorset dwelling that had been dug into an earlier Middle Dorset structure and midden (Jordan 1980; Fitzhugh et al. 2006).

Once cleared of vegetation and stones moved about due to post-occupancy caching activities, a rectangular semi-subterranean structure measuring 3 m by 3.75 m was revealed. Perimeter walls consisted of layers of sods and stones and the superstructure was apparently framed with driftwood (Jordan 1980:616) although none is shown in a plan photograph (Jordan 1980: Figure 6). The covering was suggested to have consisted of skins and / or sods, however the relatively thin vegetative overburden would seem to argue against the extensive use of sod. An axial feature constructed with heavy (15 cm – 20 cm thick) upright slabs and boulders ran along the long axis from wall to wall and measured about 80 cm in width (Jordan 1980: Figure 6). The axial feature was paved with large and small slabs but there was no evidence of a hearth or internal subdivisions. Outside of these uprights, and running the full length of the axial feature,
Figure 6.13 Labrador Late Dorset sites discussed in the text.
1 Avayalik-1 (JaDb-10)
2 Peabody Point (IICw-1)
3 Big Head 6 (IICw-8)
4 Beacon Island 5 (IICv-6)
5 Shuldham-9 (IdCq-22)
6 Okak 3 (HjCl-3)
was a narrow strip of paving stones; beyond this pavement were areas of gravel and small stones interpreted as sleeping areas. A cache built of stone uprights was constructed near one of the walls and held lithic raw materials. An entrance was not located and a comparatively short occupation was inferred given the small number of artefacts and thin cultural layer.

6.7.2 Peabody Point (IICw-1)
The site is located in Seven Islands Bay near the mouth of Komaktorvik Fjord (Figure 6.13). Nagle (1984:242-244) reports a single semi-subterranean sub-rectangular structure defined by a sod wall berm measuring 4 m by 4 m. An axial feature composed of paving stones but without a double row of stone uprights was reported; no evidence of hearths was identified. A fall and/or winter occupation was suggested based on the use of sod walls and the sunken floor, as well as the site’s protected location. Two dates from the structure (Table 6.1) are thought to be about 300 years too old for the recovered artefact assemblage.

6.7.3 Big Head 6 (IICw-8)
Three semi-subterranean depressions were identified at this site, located 5 km west of Peabody Point in Seven Islands Bay (Nagle 1984:244-246). Houses 1 and 2 were excavated and revealed to be 4 m circular dwellings containing undescribed axial features. Nagle (1984:245) suggests that the two structures were contemporary based on similarities in the style of artefacts and architecture, although two radiocarbon dates (Table 6.1) do not support this interpretation. A fall/winter occupation was inferred based on the site’s sheltered location.

6.7.4 Beacon Island 5 (IICv-6)
Located approximately 6 km east of Peabody Point and Big Head 6, this site contained three cobblestone pavements measuring about 2 m on each side (Nagle 1984:246-248). Structures 2 and 3 were excavated and a thin 5 cm cultural deposit was encountered within and under the paving. Nagle was unsure of the function of the pavements, suggesting they might have formed a platform for either skin tents or snow structures. A mid-winter or early spring occupation was suggested based on site location, which differed from the supposed fall/winter Peabody Point and Big Head 6 sites. The single date from Structure 2 (Table 6.1) is on sea mammal fat and is
probably too early, although it does indicate the structure was occupied late the Late Dorset era. Nagle suggests all three structures were contemporaneous given their proximity to one another.

6.7.5 Shuldham Island 9 (IdCq-22)
The site is located on the south-western corner of Shuldham Island, at the head of Saglek Bay (Figure 6.13). Three Late Dorset structures were excavated, although House 1 is not considered further given that it was heavily disturbed during construction of a later Thule Inuit dwelling.

House 2
House 2 (Thomson 1988:72, 86-89; Figure 6.14) was visible prior to excavation as a 20 cm deep oval depression measuring 4.75 m by 4 m, with the longer axis pointed to the water (Thomson 1988:72). Raised sod walls were present along the rim of the depression, although it is unclear if these relate to House 2 or to a later Thule Inuit qarmat or tent which was constructed overtop of the Dorset dwelling (the Neoeskimos probably also cut sod from inside House 2 for their own structure). However, unlike House 1, House 2's architecture was not affected by this later use. House 2 contained a paved axial feature with a double row of stone uprights measuring 4 m by 1 m which divided the interior into two lateral paved zones measuring 2 m and 1 m in width (Thomson 1988: Figure 11). Two distinct paving layers were actually located (refer to Figure 6.14), suggesting that the structure had been renovated at least once, probably soon after it was originally constructed (remnants of an axial feature 1 m south of the intact axial may relate to this earlier usage). The axial feature was constructed of thick upright slabs and evidence was located for two hearth areas in the form of concentrations of burnt fat and charcoal.

A heavy horizontal slab was laid on the outermost (eastern) side of the southern paved area facing the water and may mark the location of the entrance (see Figure 6.14). There was a 30 cm vertical difference between this slab and a smaller area of paving extending outward from the main part of the structure which Thomson (1988:74) suggests may represent the beginning of a cold-trap entrance or, alternately, a food cache. To the east of the small secondary area of paving was a large overturned slab (not illustrated in Thomson [1988: Figure 11]) that Thomson suggests may have supported part of the roof and a lintel or threshold stone when upright.
Tent Ring 1
Tent Ring 1 was reported as D-shaped and was very large, measuring 9 m in length and between 4 m and 8 m in total width (Thomson 1988:77-79). The structure, which was not illustrated, was defined by one row of anchoring stones and the central interior area appears to have been at least partially paved with stones that were decomposing when excavated. An entrance facing the water was identified by a 1 m long double row of stones extending outward from the main line of the structure (this suggests some form of covered, or at least walled, entrance passage). The presence of several hearths inside the dwelling was noted but these were generally not described, although Thomson (1988:79) does mention at least one notched stone indicative of a pot support. Multi-

Figure 6.14 Shuldham Island 9 (IdCq-22) House 2 (adapted from Thomson 1988: Figure 11).
family use in the spring or fall immediately before or after more substantial dwellings were required was suggested (Thomson 1988:79) based on the structure's large size (estimated to be between 55 m$^2$ and 60 m$^2$) and the presence of multiple hearth areas. This suggests that Tent Ring 1 may represent the Palaeoeskimo equivalent of a *qarmat*-type dwelling. One radiocarbon date from inside the feature places the occupation early in the Late Dorset period (Table 6.1).

**6.7.6 Okak 3 (HjCl-3)**
The structure on Okak Island is currently the most southerly known Late Dorset dwelling in Labrador (Figure 6.13) and is located just south of the tree-line. The rectangular semi-subterranean structure was excavated 50 cm into the subsoil and was relatively large, measuring 7 m – 8 m in length and 6 m in width (Cox 2003:429, 432, Figures 11-13; Figure 6.15). The north and west margins were well defined by sod and stone walls with an acute interior angle.

Cox (2003:429; Figures 11 and 13) refers to the dwelling’s axial arrangement, oriented along the long axis, as the most elaborate of any thus far seen in the Labrador Late Dorset period. Defined by upright slabs varying in thickness between 8 cm and 15 cm, the axial ranged between 2 m and 2.5 m in width and was approximately 5 m in length (ending 1 m – 2 m before the walls). Its interior was paved with flat slabs and the floor outside of the stone uprights was also paved along the length of the feature to a maximum width of almost 1 m (Figure 6.15). On either side of the axial feature and extending from the outer paved strip was a 1 m wide area of sand and pea gravel containing few rocks, both areas were interpreted as lateral sleeping platforms.

Two hearths were recognised inside the axial feature. The southern pot support was composed of an upright notched stone abutting a horizontal stone. A V-shaped deposit of burnt blubber was located on this base and probably reflects the lamp’s approximate size and shape. In the northern part of the axial feature was a second pot support created by flanking a base stone (covered with charcoal) with two stone uprights at either end (only one of these was notched on its top). A third pot support, consisting of a single upright and base stone, was located outside of the axial feature and to its east (Figure 6.15). The density of tools and range of radiocarbon dates (Table 6.1) suggests that the structure had been occupied repeatedly over a relatively long period.
6.7.7 Summary
The majority of described Late Dorset structures from Labrador are semi-subterranean (n = 6).
Three of the dwellings for which shape could be determined were rectangular or sub-rectangular, three others were round or oval, and one was D-shaped (the shape of the other features could not be identified or was not reported). Axial features were present in six semi-subterranean dwellings; the four which were described in detail were reported as being internally paved. Three of the four axial features also possessed a double row of stone uprights, although the presence of hearth areas and / or pot supports within the axial features was quite variable. Paving and / or cleared lateral areas were relatively common amongst the structures, and two probable entrance passages (one possibly a cold-trap) were located. The use of sod and stone in wall construction appears to have been a regular technique and dwelling size varied from about 11.25 m² to over 55 m² (mean 28.38 m², median 14.92 m²).
6.8 Discussion
The following sections attempt to interpret the architectural remains summarised in the preceding sections and begin to set the stage for a more holistic analysis of this technology using elements of the chaîne opératoire approach outlined in Chapter 2. By producing a multi-regional synthesis of Late Dorset architectural technology it is possible to better understand the extent and nature of the variability and patterning seen therein (and discussed in the following subsections). Once this has been achieved, the study changes focus for the next three chapters (Chapters 7 – 9) to present the in-depth analysis of three Late Dorset dwellings from three different areas of the Eastern Arctic. These case studies, which consciously integrate details of the local and regional environment and resource base into the interpretation of architectural remains, are intended to aid in understanding on a more detailed scale how people were influenced by their surroundings (both physical and social) when operating within their overall technology of architecture.

6.8.1 Chronological Developments?
It is difficult to assess whether the various dwelling forms and architectural elements produced and used during the Late Dorset span can be linked in any meaningful way to chronological developments. In addition to the usual radiocarbon issues in the Arctic (see Chapter 5.2), there is another very real problem which complicates our ability to arrange the Late Dorset dwellings described previously in a chronological sequence. This relates directly to the fact that complete Late Dorset sites (e.g. all of the sites on Dundas Island), not merely individual structures located therein, lack even a single radiocarbon date. In the absence of absolute dates, artefact styles have been used to suggest a general range of occupation for some of the sites although such relative methods, which are not without their difficulties and chronological assumptions (e.g. Odess 1998:421-422), require diagnostic artefacts such as harpoon heads be present. The general lack of temporal control within Late Dorset is especially severe in the High Arctic where only seven structures included in this analysis were directly dated (Table 6.1).

Issues of chronological control and temporal placement are further exacerbated by the fact that the age of only nine structures has been determined using more than one radiocarbon date (Table 6.1). Relying on single dates to order dwellings is risky because an unknown number of these estimates may be unrecognisably ‘off’. This can occur if, for example, a result falls within
the Late Dorset range but erroneously places occupancy at the end of the period instead of at the beginning, or vice versa. This situation appears to have happened when Structure 4 at the Qeqertaaraq site (Section 6.6.1) was radiocarbon dated. Eight samples, collected from distinct occupation phases, were submitted for radiocarbon dating and all of the results fell within the expected Late Dorset time-frame. Results from the earliest phase of use indicated occupation during the early-middle part of the period, *circa* 1300 B.P. – 1100 B.P., and the more recent occupation was dated between about 900 B.P. and 550 B.P. (Table 6.1).

However, several of these dates did not agree with the interpreted stratigraphy, nor with the occurrence of three foreign artefacts (two Thule and one Norse) found in the upper deposit. Facing a discrepancy between absolute and relative dating methods, the excavators (Appelt and Gulløv 1999:19-20) disputed the radiometric results, suggesting instead that the oldest occupation probably occurred around 1100 AD or 850 B.P. (corresponding with dated samples AAR-3221 and K-6706, Table 6.1), and the second use of the structure occurred at the end of the 13\textsuperscript{th} century AD, *circa* 650 B.P. (agreeing with samples AAR-3218a and AAR-3218b, Table 6.1). This is a significant inconsistency and indicates how dating imprecision within the Late Dorset period can potentially undermine attempts to explore architectural variations and consistencies from a chronological perspective.

Considering these issues, it is prudent to speak only very generally of chronological developments and the results are by no means conclusive. Shown in Figure 6.16 are all of the directly dated dwellings described in the previous sections, these are subdivided into regions. The oldest structures are located in the Low Arctic, where Late Dorset is thought to have developed and where the oldest occupations are expected to have been located. The High Arctic and Labrador appear to have been occupied shortly thereafter, consistent with a rapid population spread outward from the core area (refer to Chapter 5.2 and 5.3.1). In Greenland, the pre-1000 B.P. dates have been challenged and the dwellings are suggested to have been occupied from 850 B.P., coincident with the Oldsquaw (SiFk-18) site on Ellesmere Island (Table 6.1). Looking first at the early end of the period (excluding Qeqertaaraq Structure 4), three structures from three different regions of the Arctic date to around 1400 B.P. These are Structure C from the Tuvaaluk site in the Low Arctic, Feature 49 from the Arvik site in the High Arctic, and Tent Ring 1 from...
the Shuldham Island-9 site in Labrador. Despite the possibility that they were occupied contemporaneously they share little in common and all described architectural elements are known throughout Late Dorset, as well as during earlier periods (Appendix A). Even the axial features, which frequently receive so much attention that Jensen (1998:60) has referenced a “tyranny of the mid-passage”, show little conclusive variance regarding orientation to / from the coast, a preference for extending fully across a structure versus ending partway, or possessing or lacking a double row of stone uprights.

At the other end of the Late Dorset period are eight post-800 B.P. dwellings (Figure 6.16) which are the latest directly dated structures currently recorded. These structures hail only from Greenland, the Low Arctic, and Labrador; there are no post-800 B.P. dwellings known from the islands of the Arctic Archipelago and it seems that much of that region was depopulated. The exclusive use of slabs to form the axial feature stood in marked contrast to later examples at the Tasiarulik site, where rounded cobblestones were employed (even though slab stones were also available, though slightly less so) to form features the authors noted would have been less practically functional than those made with slabs. Other than time, the authors could not speculate on what might have motivated this changing preference. However, while LeMoine et al.’s observations are interesting, the utility of using slab versus cobblestone axial features as a means to establish dwelling chronology appears to be limited as very late structures elsewhere in the Eastern Arctic, including those at Gulf Hazard and in Labrador, continued to be formed with slab stones.

A second example of an axial feature that may be chronologically sensitive is a form whose width increases along its length so that it is asymmetric in plan (e.g. Figure 6.8). Only three semi-subterranean structures containing this kind of axial feature have been identified in the literature and include two Low Arctic examples represented by Newell Sound House 1 and Gulf Hazard-8 House 1, as well as Okak-3 in Labrador. Excepting Gulf Hazard-8 House 1, each axial feature was defined by a double row of upright slabs and had a strip of paving which ran down the axial feature’s full length outside of the rows of uprights (e.g. Figure 6.15). All four dwellings date to or after 800 B.P. (Table 6.1) and it is possible, considering the standard deviation for each, that they were contemporaneously occupied (Figure 6.16). However, as with Arvik Feature
Figure 6.16 Calibrated (CALIB 5.0.1) radiocarbon dated Late Dorset structures by region.
Figure 6.16 Calibrated (CALIB 5.0.1) radiocarbon dated Late Dorset structures by region.
Table 6.1 Radiocarbon dates from structures discussed in Chapter 6, calibrated using CALIB 5.0.1 (* marine/terrestrial origin not determined).

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Borden Number</th>
<th>Location</th>
<th>Feature</th>
<th>Lab Number</th>
<th>Material Dated</th>
<th>Normalised Date (B.P.)</th>
<th>Calibrated Age (2σ)</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuvaaluk JfEl-4</td>
<td></td>
<td>Diana Island, Diana Bay</td>
<td>Structure C</td>
<td>Qc-632</td>
<td>charcoal</td>
<td>1660±95</td>
<td>1811-1360</td>
<td></td>
</tr>
<tr>
<td>Tuvaaluk JfEl-4</td>
<td></td>
<td>Diana Island, Diana Bay</td>
<td>Structure C</td>
<td>Qc-633</td>
<td>Moss</td>
<td>1470±100</td>
<td>1592-1178</td>
<td></td>
</tr>
<tr>
<td>Arvik QjJx-1</td>
<td></td>
<td>Little Cornwallis Island</td>
<td>Feature 49</td>
<td>TO-4916</td>
<td>Antler</td>
<td>1580±60</td>
<td>1530-1407</td>
<td></td>
</tr>
<tr>
<td>Nunguvik PgHb-1</td>
<td></td>
<td>Navy Board Inlet, Baffin Island</td>
<td>N71</td>
<td>GaK-2339</td>
<td>burnt bone</td>
<td>1370±120</td>
<td>1527-1006</td>
<td></td>
</tr>
<tr>
<td>Tuvaaluk JfEl-4</td>
<td></td>
<td>Diana Island, Diana Bay</td>
<td>Structure C</td>
<td>Qc-631</td>
<td>charred plants</td>
<td>1380±100</td>
<td>1516-1068</td>
<td></td>
</tr>
<tr>
<td>Shuldhham Island 9</td>
<td>IdCq-22</td>
<td>Saglek Bay, Labrador</td>
<td>Tent Ring 1</td>
<td>Beta-9439</td>
<td>charcoal</td>
<td>1520±60</td>
<td>1514-1346</td>
<td></td>
</tr>
<tr>
<td>Nunguvik PgHb-1</td>
<td></td>
<td>Navy Board Inlet, Baffin Island</td>
<td>N72</td>
<td>S-478</td>
<td>burnt bone</td>
<td>1380±95</td>
<td>1514-1070</td>
<td></td>
</tr>
<tr>
<td>Tasiarulik QjJx-10</td>
<td></td>
<td>Little Cornwallis Island</td>
<td>Feature 30</td>
<td>TO-4532</td>
<td>caribou bone</td>
<td>1450±60</td>
<td>1386-1300</td>
<td></td>
</tr>
<tr>
<td>Qeqertaaraq n/a</td>
<td></td>
<td>Inglefield Land, Greenland</td>
<td>Structure 4 (lower?)</td>
<td>Ka-6972</td>
<td>burnt blubber</td>
<td>1455±40</td>
<td>1371-1308</td>
<td>Appelt and Gulløv 1999:Table 5</td>
</tr>
<tr>
<td>McCormick Inlet</td>
<td>QkPa-1</td>
<td>Melville Island</td>
<td>n/a</td>
<td>GSC-148</td>
<td>Moss</td>
<td>1150±160</td>
<td>1336-741</td>
<td></td>
</tr>
<tr>
<td>Peabody Point 1</td>
<td>liCw-1</td>
<td>Komaktorvik Fjord, Labrador</td>
<td>House 1</td>
<td>SI-3372</td>
<td>charcoal</td>
<td>1315±95</td>
<td>1313-1092</td>
<td></td>
</tr>
<tr>
<td>Peabody Point 1</td>
<td>liCw-1</td>
<td>Komaktorvik Fjord, Labrador</td>
<td>House 1</td>
<td>SI-3869</td>
<td>charcoal</td>
<td>1335±70</td>
<td>1308-1178</td>
<td></td>
</tr>
<tr>
<td>Qeqertaaraq n/a</td>
<td></td>
<td>Inglefield Land, Greenland</td>
<td>Structure 4 (upper?)</td>
<td>AAR-3217b</td>
<td>burnt bone</td>
<td>1320±40</td>
<td>1293-1185</td>
<td>Appelt and Gulløv 1999:Table 5</td>
</tr>
<tr>
<td>Franklin Pierce SiFi-4</td>
<td></td>
<td>Franklin Pierce Bay, Ellesmere Island</td>
<td>Feature 1</td>
<td>TO-5474</td>
<td>muskox bone</td>
<td>1280±50</td>
<td>1277-1177</td>
<td></td>
</tr>
<tr>
<td>Big Head 6 SiCw-8</td>
<td></td>
<td>Komaktorvik Fjord, Labrador</td>
<td>House 2</td>
<td>SI-3894</td>
<td>charcoal</td>
<td>1225±65</td>
<td>1255-1069</td>
<td></td>
</tr>
<tr>
<td>Bell NiNg-2</td>
<td></td>
<td>Iqaluktuuq, Victoria Island</td>
<td>House 6</td>
<td>S-3038</td>
<td>bone collagen</td>
<td>1035±125</td>
<td>1239-698</td>
<td></td>
</tr>
<tr>
<td>Site Name</td>
<td>Borden Number</td>
<td>Location</td>
<td>Feature</td>
<td>Lab Number</td>
<td>Material Dated</td>
<td>Normalised Date (B.P.)</td>
<td>Calibrated Age (2 δ)</td>
<td>Reference (if not on CARD)</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------</td>
<td>---------------------------------</td>
<td>----------------</td>
<td>------------</td>
<td>----------------</td>
<td>------------------------</td>
<td>-----------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>Qeqertaaraq</td>
<td>n/a</td>
<td>Inglefield Land, Greenland</td>
<td>Structure 4 (upper)</td>
<td>AAR-3217a</td>
<td>burnt bone *</td>
<td>1190±40</td>
<td>1171-1064</td>
<td>Appelt and Gulløv 1999:Table 5</td>
</tr>
<tr>
<td>Beacon Island 5</td>
<td>liCv-6</td>
<td>Seven Islands Bay, Labrador</td>
<td>Structure 2</td>
<td>SI-3373</td>
<td>seal fat</td>
<td>1160±60 / 730±60</td>
<td>1170-986 / 728-572</td>
<td></td>
</tr>
<tr>
<td>Cordeau / DIA.1</td>
<td>JfEl-1</td>
<td>Diana Bay, Nunavik</td>
<td>Structure B</td>
<td>Gif-1954</td>
<td>charcoal</td>
<td>1090±90</td>
<td>1167-924</td>
<td></td>
</tr>
<tr>
<td>Newell Sound 4</td>
<td>KgDi-4</td>
<td>Frobisher Bay, Baffin Island</td>
<td>House 1</td>
<td>Beta-61069</td>
<td>sea mammal</td>
<td>1130±50</td>
<td>1118-964</td>
<td></td>
</tr>
<tr>
<td>Tasiarulik</td>
<td>QjJx-10</td>
<td>Little Cornwallis Island</td>
<td>Feature 59</td>
<td>TO-4533</td>
<td>musk ox horn</td>
<td>1060±80</td>
<td>1068-833</td>
<td></td>
</tr>
<tr>
<td>Big Head 6</td>
<td>liCw-6</td>
<td>Komaktorvik Fjord, Labrador</td>
<td>House 2</td>
<td>SI-3893</td>
<td>charcoal</td>
<td>1045±60</td>
<td>1053-918</td>
<td></td>
</tr>
<tr>
<td>Okak 3</td>
<td>HjCl-3</td>
<td>Okak Bay, Labrador</td>
<td>n/a</td>
<td>SI-2154</td>
<td>charcoal</td>
<td>1005±95</td>
<td>1047-794</td>
<td></td>
</tr>
<tr>
<td>Oldsquaw</td>
<td>SfFk-18</td>
<td>Skraeling Island, Ellesmere Island</td>
<td>Feature 3</td>
<td>TO-1557</td>
<td>charcoal</td>
<td>990±50</td>
<td>958-799</td>
<td></td>
</tr>
<tr>
<td>Qeqertaaraq</td>
<td>n/a</td>
<td>Inglefield Land, Greenland</td>
<td>Structure 1 (Phase 1)</td>
<td>K-6703</td>
<td>muskox bone</td>
<td>985±45</td>
<td>953-799</td>
<td>Appelt and Gulløv 1999:Table 5</td>
</tr>
<tr>
<td>Tuvaaluk</td>
<td>JfEl-4</td>
<td>Diana Island, Diana Bay</td>
<td>Structure C</td>
<td>Qc-625</td>
<td>charcoal</td>
<td>815±110</td>
<td>936-557</td>
<td>Appelt and Gulløv 1999:Table 5</td>
</tr>
<tr>
<td>Qeqertaaraq</td>
<td>n/a</td>
<td>Inglefield Land, Greenland</td>
<td>Structure 1 (Phase 1)</td>
<td>K-6702</td>
<td>muskox bone</td>
<td>950±45</td>
<td>924-797</td>
<td>Appelt and Gulløv 1999:Table 5</td>
</tr>
<tr>
<td>Cordeau / DIA.1</td>
<td>JfEl-1</td>
<td>Diana Bay, Nunavik</td>
<td>Structure B</td>
<td>Gif-1956</td>
<td>charcoal</td>
<td>920±90</td>
<td>923-744</td>
<td>Appelt and Gulløv 1999:Table 5</td>
</tr>
<tr>
<td>Qeqertaaraq</td>
<td>n/a</td>
<td>Inglefield Land, Greenland</td>
<td>Structure 4 (upper?)</td>
<td>AAR-3221</td>
<td>willow twigs</td>
<td>940±45</td>
<td>918-796</td>
<td>Appelt and Gulløv 1999:Table 5</td>
</tr>
<tr>
<td>Nunguvik</td>
<td>PgHb-1</td>
<td>Navy Board Inlet, Baffin Island</td>
<td>N71</td>
<td>S-766</td>
<td>plant</td>
<td>860±70</td>
<td>917-681</td>
<td></td>
</tr>
<tr>
<td>Tasiarulik</td>
<td>QjJx-10</td>
<td>Little Cornwallis Island</td>
<td>Feature 91</td>
<td>TO-4534</td>
<td>muskox bone</td>
<td>920±50</td>
<td>910-790</td>
<td></td>
</tr>
<tr>
<td>Qeqertaaraq</td>
<td>n/a</td>
<td>Inglefield Land, Greenland</td>
<td>Structure 1 (Phase 1)</td>
<td>K-6704</td>
<td>muskox bone</td>
<td>920±45</td>
<td>909-791</td>
<td>Appelt and Gulløv 1999:Table 5</td>
</tr>
</tbody>
</table>

Table 6.1. Radiocarbon dates from structures discussed in Chapter 6, calibrated using CALIB 5.0.1 (* marine / terrestrial origin not determined).
<table>
<thead>
<tr>
<th>Site Name</th>
<th>Borden Number</th>
<th>Location</th>
<th>Feature</th>
<th>Lab Number</th>
<th>Material</th>
<th>Normalised Date (B.P.)</th>
<th>Calibrated Age (2σ)</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Okak 3</td>
<td>HjCl-3</td>
<td>Okak Bay, Labrador</td>
<td>n/a</td>
<td>SI-2506</td>
<td>charcoal</td>
<td>895±85</td>
<td>908-737</td>
<td></td>
</tr>
<tr>
<td>Qeqertaaraq</td>
<td>n/a</td>
<td>Inglefield Land, Greenland</td>
<td>Structure 4 (lower)</td>
<td>K-6706</td>
<td>muskox bone</td>
<td>925±38</td>
<td>907-794</td>
<td>Appelt and Gulløv 1999:Table 5</td>
</tr>
<tr>
<td>Qallunatalik / Polaris</td>
<td>n/a</td>
<td>Inglefield Land, Greenland</td>
<td>Feature 1</td>
<td>Ka-6969</td>
<td>twigs</td>
<td>900±45</td>
<td>905-744</td>
<td>Grønnow 1999:60</td>
</tr>
<tr>
<td>Gulf Hazard 1</td>
<td>HaGd-4</td>
<td>Richmond Gulf, Hudson Bay</td>
<td>House 1</td>
<td>GX-2065</td>
<td>charcoal</td>
<td>795±120</td>
<td>903-654</td>
<td></td>
</tr>
<tr>
<td>Newell Sound 4</td>
<td>KgDI-4</td>
<td>Frobisher Bay, Baffin Island</td>
<td>House 1</td>
<td>Beta-61068</td>
<td>pine wood</td>
<td>800±70</td>
<td>780-673</td>
<td></td>
</tr>
<tr>
<td>Qeqertaaraq</td>
<td>n/a</td>
<td>Inglefield Land, Greenland</td>
<td>Structure 4 (upper)</td>
<td>AAR-3219</td>
<td>arctic hare</td>
<td>770±40</td>
<td>725-675</td>
<td>Appelt and Gulløv 1999:Table 5</td>
</tr>
<tr>
<td>Gulf Hazard 8</td>
<td>HaGd-11</td>
<td>Richmond Gulf, Hudson Bay</td>
<td>House 4</td>
<td>GX-2066</td>
<td>charcoal</td>
<td>695±90</td>
<td>722-556</td>
<td></td>
</tr>
<tr>
<td>Qeqertaaraq</td>
<td>n/a</td>
<td>Inglefield Land, Greenland</td>
<td>Structure 4 (upper)</td>
<td>AAR-3218a</td>
<td>burnt bone *</td>
<td>695±35</td>
<td>678-570</td>
<td>Appelt and Gulløv 1999:Table 5</td>
</tr>
<tr>
<td>Qeqertaaraq</td>
<td>n/a</td>
<td>Inglefield Land, Greenland</td>
<td>Structure 4 (upper)</td>
<td>AAR-3218b</td>
<td>burnt bone *</td>
<td>680±55</td>
<td>678-562</td>
<td>Appelt and Gulløv 1999:Table 5</td>
</tr>
<tr>
<td>Avayalik Island 1</td>
<td>JaDb-10</td>
<td>Avayalik Islands, Labrador</td>
<td></td>
<td>SI-3864</td>
<td>charcoal</td>
<td>670±60</td>
<td>675-560</td>
<td></td>
</tr>
<tr>
<td>Shuldhgam Island 9</td>
<td>IdCq-22</td>
<td>Saglek Bay, Labrador</td>
<td>House 2</td>
<td>Beta-2411</td>
<td>charcoal</td>
<td>600±60</td>
<td>648-546</td>
<td></td>
</tr>
<tr>
<td>Shuldhgam Island 9</td>
<td>IdCq-22</td>
<td>Saglek Bay, Labrador</td>
<td>House 2</td>
<td>Beta-9437</td>
<td>charcoal</td>
<td>470±120</td>
<td>634-324</td>
<td></td>
</tr>
<tr>
<td>Qeqertaaraq</td>
<td>n/a</td>
<td>Inglefield Land, Greenland</td>
<td>Structure 1 (Phase 1)</td>
<td>K-6705</td>
<td>walrus bone</td>
<td>545±50</td>
<td>630-520</td>
<td>Appelt and Gulløv 1999:Table 5</td>
</tr>
<tr>
<td>Shuldhgam Island 9</td>
<td>IdCq-22</td>
<td>Saglek Bay, Labrador</td>
<td>House 2</td>
<td>Beta-3817</td>
<td>charcoal</td>
<td>470±60</td>
<td>550-345</td>
<td></td>
</tr>
</tbody>
</table>

Table 6.1 Radiocarbon dates from structures discussed in Chapter 6, calibrated using CALIB 5.0.1 (* marine / terrestrial origin not determined).
the traits characterising the axial features of these four dwellings were not present in other similarly dated structures.

Finally, it should be noted that this examination of directly dated dwellings has revealed no evidence in support of the theory, first put forth by Meldgaard (1960b) and echoed by others (see Chapter 5.4.5), that there was a “Thule influence” on Dorset architecture. Based on his work at the Kapuivik site on Jens Munk Island in the Foxe Basin, Meldgaard had stated that the cold-trap entrances and raised rear sleeping areas associated with structures he identified as very late Late Dorset were evidence that Dorset groups had contacted pioneering Thule populations and adopted aspects of their material culture. Although it is difficult to fully evaluate the validity of Meldgaard’s interpretations considering illustrations or photographs of the Kapuivik structures have never been published, we do know that entrance passages have been used since at least Middle Dorset times (Appendix A). At least one of those entrances (from House 1 at the Koliktalik 1, Hdg-2) was characterised as having a clearly defined sunken, or cold-trap, component (Appendix A; Fitzhugh 1976c:130-131), demonstrating that their use by Late Dorset was not necessarily a result of contact with Thule Inuit.

Furthermore, other than Kapuivik, there are no published descriptions of Dorset dwellings containing a rear raised sleeping platform, indicating that this architectural element is not a feature of terminal Late Dorset architecture (note that Renouf [2003:400-401] incorrectly ascribed a dwelling containing this feature with Labrador Dorset. The dwelling she cites [House 1 at Shuldham Island-9] was heavily reworked by Thule Inuit and the rear platform and cold trap entrance relate to that secondary occupation [see Thomson 1988]).

In conclusion, at the moment we are left with little to indicate concretely that the form and organisation of Late Dorset domestic structures is linked in any meaningful way to temporal developments. However, as additional structures are investigated and more precise date ranges are obtained, it may prove possible to better arrange dwellings chronologically, perhaps allowing for the recognition of architectural elements and features possessing chronological significance.

6.8.2 Regional Patterns and Anomalies
There does appear to be some association between architectural remains and the region in which
they are located, although as with attempts to trace developments chronologically, the results are less than overwhelming. Table 6.2 itemises the architectural elements associated with each of the dwellings discussed previously (note these are presented by region and there has been no attempt to subdivide dwellings chronologically).

Perhaps the most obvious regionally limited architectural trait is the occurrence of end or terminal stones in association with some axial features (see Figures 6.11 and 6.12). Thus far the presence of end stones, large rocks placed at one or both ends of an axial feature, has only been reported from sites in the High Arctic, as well as within a single structure from Greenland (refer to Table 6.2). The purpose of these stones is unclear, certainly their placement was quite deliberate, however, they seem to have performed no readily apparent function and may relate to more symbolic considerations. For example, it is possible such stones were situated to ‘close off’ an axial feature’s interior, although the circumstances governing the decision to use a single stone versus a pair cannot be identified. In cases where one end stone was present there seems to be no relationship between the end of the axial feature at which it was located and any obvious environmental features (e.g. the position of the shoreline).

It is also apparent that the use of sod as a building material was quite restricted in the High Arctic. In fact, excepting Feature 49 at the Arvik site (Section 6.5.11), not a single structure with sod berms has been reported from the region (Table 6.2). However, this may most expediently be explained by practical considerations relating to the classification of much of the High Arctic as Polar Desert (J.B. Maxwell 1980:13). Vegetation in such locations is highly restricted and in most areas would not be adequate to permit the development of sufficient peat for construction purposes (though exceptions do occur, such as at Nunguvik on northern Baffin Island, see Chapter 8). The generally discontinuous and under-developed plant communities found in the High Arctic are probably also a contributing factor underlying the relative abundance of surface dwellings (typically associated with shorter term warm seasons usage by their excavators) in comparison with other regions (20 in the High Arctic, versus 3 in the other regions). The lack of more deeply excavated structures in the High Arctic (the five semi-subterranean dwellings recorded were all described as quite shallowly dug) may relate to a settlement pattern where less archaeologically visible structural types (e.g. snow structures) were preferred, perhaps due to a
<table>
<thead>
<tr>
<th>Site Name</th>
<th>Type</th>
<th>Shape</th>
<th>Size in m&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Entrance</th>
<th>Pavement</th>
<th>Axial Feature</th>
<th>Axial Elements</th>
<th>Orientation to Shore</th>
<th>Paved</th>
<th>Uprights</th>
<th>Internal Features</th>
<th>Axial Span</th>
<th>Sleeping Areas</th>
<th>Other Features</th>
<th>Season</th>
<th>Length of Occupation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low Arctic</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tikilik F.4</td>
<td>SS</td>
<td>rect</td>
<td>cannot determine</td>
<td>yes</td>
<td>?</td>
<td>yes</td>
<td>double Pot support, hearth, fire pit</td>
<td>lateral (2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>long</td>
<td></td>
</tr>
<tr>
<td>NIH-45</td>
<td>SSS</td>
<td>rect</td>
<td>6.75 x 7.0 (47.25)</td>
<td>partly in rear 1.0m x 1.5m</td>
<td>no</td>
<td></td>
<td>rea alcove</td>
<td>late summer - late autumn</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>moderate</td>
<td></td>
</tr>
<tr>
<td>Newell Sound-4 House 1</td>
<td>SS</td>
<td>D-shaped</td>
<td>4.0 x 6.0 (r.d.)</td>
<td>around axial 2.5m x 6.0m</td>
<td>yes</td>
<td>short</td>
<td>yes double Pot supports (2), crib stones</td>
<td>late fall - early winter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>moderate</td>
<td></td>
</tr>
<tr>
<td>Cordeau Structure B</td>
<td>SS</td>
<td>rect</td>
<td>around axial</td>
<td>yes</td>
<td>?</td>
<td>yes</td>
<td>double central hearth area</td>
<td>unknown</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuvaaluk Structure C</td>
<td>SS</td>
<td>rect</td>
<td>3.6 x 3.0 (10.8)</td>
<td>lateral areas paved</td>
<td>Central feature</td>
<td>?   short</td>
<td>central feature? Defined by lateral pavements box hearth, crib stones, sod walls</td>
<td>unknown</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuvaaluk Structure E</td>
<td>SS</td>
<td>rect</td>
<td>3.2 x 3.0 (9.6)</td>
<td>no</td>
<td></td>
<td></td>
<td>stone cluster, sod walls</td>
<td>unknown</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuvaaluk Structure G</td>
<td>SS</td>
<td>oval</td>
<td>3.3 x 2.25 (5.83)</td>
<td>no</td>
<td></td>
<td></td>
<td>sod walls</td>
<td>unknown</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gulf Hazard 1 House 1</td>
<td>SSS</td>
<td>circular to rect</td>
<td>6.1 (29.21)</td>
<td>half paved</td>
<td>no</td>
<td></td>
<td>Unpaved area, hearth area, pit warm</td>
<td>unknown</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gulf Hazard 8 House 4</td>
<td>SS</td>
<td>circular</td>
<td>4.5 (15.9)</td>
<td>yes</td>
<td>?</td>
<td>short</td>
<td>yes no Pot supports (2), asymptotic width</td>
<td>sod berm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>High Arctic</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Franklin Pierce Feature 1</td>
<td>S</td>
<td>rect</td>
<td>3.8 x 3.5 (13.3)</td>
<td>yes</td>
<td>?</td>
<td>long</td>
<td>yes double lateral (2)</td>
<td>late fall or winter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>moderate</td>
<td></td>
</tr>
<tr>
<td>Longhouse</td>
<td>SSS</td>
<td>rect</td>
<td>4.0 x 2.8 (11.2)</td>
<td>berm break</td>
<td>no</td>
<td></td>
<td></td>
<td>warm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>short</td>
<td></td>
</tr>
<tr>
<td>Site Name</td>
<td>Type</td>
<td>Shape</td>
<td>Size in m (m²)</td>
<td>Entrance</td>
<td>Pavement</td>
<td>Axial Feature</td>
<td>Axial Elements</td>
<td>Sleeping Areas</td>
<td>Other Features</td>
<td>Season</td>
<td>Length of Occupation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>------</td>
<td>-------</td>
<td>---------------</td>
<td>-------------------------</td>
<td>----------</td>
<td>---------------</td>
<td>----------------</td>
<td>----------------</td>
<td>----------------</td>
<td>--------</td>
<td>---------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oldsquaw F.1</td>
<td>SS</td>
<td>rect</td>
<td>5.5 x 4.5 (24.75)</td>
<td>remnant possible</td>
<td>no</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>storage pit, hearth area</td>
<td>unknown</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oldsquaw F.3</td>
<td>S</td>
<td>square</td>
<td>5.5 x 5.0 (27.5)</td>
<td>yes</td>
<td>perpend</td>
<td>long</td>
<td>one (min.)</td>
<td>partial</td>
<td></td>
<td></td>
<td>unknown</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Piper</td>
<td>S</td>
<td>?</td>
<td>?</td>
<td>yes</td>
<td>?</td>
<td>no</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>unknown</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Snowdrift Village F.1</td>
<td>S</td>
<td>D-shaped</td>
<td>?</td>
<td>yes</td>
<td>perpend</td>
<td>long</td>
<td>double</td>
<td>Pot support, end stone</td>
<td>lateral (2)</td>
<td>mid-summer</td>
<td>short</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Snowdrift Village F.2</td>
<td>S</td>
<td>?</td>
<td>?</td>
<td>yes</td>
<td>perpend</td>
<td>yes</td>
<td>one (min.)</td>
<td></td>
<td></td>
<td></td>
<td>mid-summer</td>
<td>short</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Snowdrift Village F.3</td>
<td>S</td>
<td>?</td>
<td>?</td>
<td>yes</td>
<td>parallel</td>
<td>long</td>
<td>double</td>
<td>lamps stands (2)</td>
<td>lateral (2)</td>
<td>mid-summer</td>
<td>short</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Snowdrift Village F.4</td>
<td>S</td>
<td>?</td>
<td>?</td>
<td>yes</td>
<td>perpend</td>
<td>yes</td>
<td>double</td>
<td>Pot support</td>
<td>lateral (2)</td>
<td>mid-summer</td>
<td>short</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RaJu-2</td>
<td>S</td>
<td>rect</td>
<td>4.0 x 3.0 (12.0)</td>
<td>yes</td>
<td>perpend</td>
<td>yes</td>
<td>none</td>
<td>Pot supports (2)</td>
<td>lateral (2)</td>
<td>summer</td>
<td>short</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maze Village F.1</td>
<td>S</td>
<td>?</td>
<td>?</td>
<td>yes</td>
<td>parallel</td>
<td>yes</td>
<td>double</td>
<td>Pot support, hearth area?</td>
<td></td>
<td>summer</td>
<td>short</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maze Village F.2</td>
<td>S</td>
<td>?</td>
<td>?</td>
<td>yes</td>
<td>perpend</td>
<td>yes</td>
<td>double</td>
<td>Pot support, hearth area?, end stone</td>
<td>lateral (2)</td>
<td>summer</td>
<td>short</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site Name</td>
<td>Type</td>
<td>Shape</td>
<td>Size in m²</td>
<td>Entrance</td>
<td>Pavement</td>
<td>Axial Feature</td>
<td>Orientation to Shore</td>
<td>Long / Short Axis</td>
<td>Paved</td>
<td>Uprights</td>
<td>Internal Features</td>
<td>Axial Span</td>
<td>Sleeping Areas</td>
<td>Other Features</td>
<td>Season</td>
<td>Length of Occupation</td>
</tr>
<tr>
<td>-------------------</td>
<td>------</td>
<td>-----------</td>
<td>------------</td>
<td>----------</td>
<td>----------</td>
<td>---------------</td>
<td>----------------------</td>
<td>-------------------</td>
<td>-------</td>
<td>-----------</td>
<td>-------------------</td>
<td>------------</td>
<td>-----------------</td>
<td>---------------</td>
<td>--------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Maze Village F.4</td>
<td>S</td>
<td>square</td>
<td>3.0 / side (12.0?)</td>
<td>fully paved</td>
<td>no</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>hearth area</td>
<td>summe r</td>
<td>short</td>
<td></td>
</tr>
<tr>
<td>RaJu-4 F.1</td>
<td>S</td>
<td>?</td>
<td>?</td>
<td>yes</td>
<td>perpend</td>
<td>yes</td>
<td>double</td>
<td>Pot supports (2)</td>
<td>?</td>
<td>?</td>
<td></td>
<td></td>
<td>summe r</td>
<td>short</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RaJu-4 F.2</td>
<td>S</td>
<td>?</td>
<td>?</td>
<td>yes</td>
<td>parallel</td>
<td>yes</td>
<td>double</td>
<td>Pot supports (2)</td>
<td>?</td>
<td>?</td>
<td></td>
<td></td>
<td>summe r</td>
<td>short</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RaJu-4 F.3</td>
<td>S</td>
<td>?</td>
<td>?</td>
<td>yes</td>
<td>parallel</td>
<td>yes</td>
<td>double</td>
<td>Pot supports (2)</td>
<td>?</td>
<td>?</td>
<td></td>
<td></td>
<td>summe r</td>
<td>short</td>
<td></td>
<td></td>
</tr>
<tr>
<td>McCormick Inlet</td>
<td>S</td>
<td>rect</td>
<td>4.5 x 5.2 (23.4)</td>
<td>yes</td>
<td>?</td>
<td>short</td>
<td>double</td>
<td>lamp platform, hearth area</td>
<td>full</td>
<td>lateral (2)</td>
<td>unknown</td>
<td></td>
<td>unknown</td>
<td>short</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tote Road</td>
<td>S?</td>
<td>?</td>
<td>?</td>
<td>yes</td>
<td>?</td>
<td>short</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>none</td>
<td>partial</td>
<td></td>
<td>unknown</td>
<td>short</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arvik F.9</td>
<td>SSS</td>
<td>oval?</td>
<td>5.0 x 4.0 (20.0)</td>
<td>Central feature</td>
<td>perpend</td>
<td>no</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>unknown</td>
<td>short</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arvik F.12</td>
<td>S</td>
<td>circular</td>
<td>4 (12.56)</td>
<td>no</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>unknown</td>
<td>short</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arvik 49</td>
<td>SS</td>
<td>rect</td>
<td>4.5 x 4.0 (18.0)</td>
<td>yes</td>
<td>perpend</td>
<td>short</td>
<td>yes</td>
<td>double</td>
<td>Pot supports (2), anvil stone</td>
<td>full</td>
<td>cold</td>
<td>unknown</td>
<td></td>
<td></td>
<td>short</td>
<td></td>
</tr>
<tr>
<td>Arvik F.53</td>
<td>S</td>
<td>oval</td>
<td>4.0 x 3.0 (9.42)</td>
<td>no</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>hearth (2), lamp platform (2)</td>
<td>warm</td>
<td>short</td>
<td></td>
</tr>
<tr>
<td>Tasiarulik F.30</td>
<td>S</td>
<td>oval</td>
<td>5.0 x 5.5 (21.9)</td>
<td>no</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cache, hearth area</td>
<td>warm</td>
<td>unknown</td>
<td></td>
</tr>
<tr>
<td>Tasiarulik F.59</td>
<td>SSS</td>
<td>rect</td>
<td>4.5 x 4.0 (18.0)</td>
<td>yes</td>
<td>perpend</td>
<td>long</td>
<td>yes</td>
<td>no</td>
<td>hearth areas (3)</td>
<td>full</td>
<td>cold</td>
<td>unknown</td>
<td></td>
<td></td>
<td>short</td>
<td></td>
</tr>
<tr>
<td>Site Name</td>
<td>Type</td>
<td>Shape</td>
<td>Size in m (m²)</td>
<td>Entrance</td>
<td>Pavement</td>
<td>Axial Feature</td>
<td>Axial Elements</td>
<td>Sleeping Areas</td>
<td>Other Features</td>
<td>Season</td>
<td>Length of Occupation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>------</td>
<td>--------</td>
<td>----------------</td>
<td>----------</td>
<td>----------</td>
<td>---------------</td>
<td>----------------</td>
<td>----------------</td>
<td>---------------</td>
<td>--------</td>
<td>----------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tasiarulik F.74</td>
<td>SSS</td>
<td>rect</td>
<td>4.0 x 4.0 (16.0)</td>
<td>yes</td>
<td>perpend</td>
<td>yes</td>
<td>hearth areas (2, perhaps 3)</td>
<td>cold</td>
<td>unknown</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tasiarulik F.90</td>
<td>S</td>
<td>?</td>
<td>?</td>
<td>no</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>slab</td>
<td>warm</td>
<td>unknown</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tasiarulik F.91</td>
<td>SSS</td>
<td>rect</td>
<td>2.5 x 3.0 (7.5)</td>
<td>yes</td>
<td>?</td>
<td>short</td>
<td>yes no</td>
<td>hearth areas (2)</td>
<td>cold</td>
<td>unknown</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brooman Point</td>
<td>SSS</td>
<td>subrect</td>
<td>?</td>
<td>no</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>cold</td>
<td>unknown</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Greenland**

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Type</th>
<th>Shape</th>
<th>Size in m (m²)</th>
<th>Entrance</th>
<th>Pavement</th>
<th>Axial Feature</th>
<th>Axial Elements</th>
<th>Sleeping Areas</th>
<th>Other Features</th>
<th>Season</th>
<th>Length of Occupation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qeqertaaraq Str.1 (Phase 1)</td>
<td>SS</td>
<td>subrect</td>
<td>3.6 x 3.0 (10.8)</td>
<td>cold trap</td>
<td></td>
<td>Central feature</td>
<td>?</td>
<td></td>
<td></td>
<td>gravel platform (1)</td>
<td>work space, sod wall, pot support</td>
</tr>
<tr>
<td>Qeqertaaraq Str.1 (Phase 2)</td>
<td>SS</td>
<td>subrect</td>
<td>4.0 x 5.0 (20.0)</td>
<td>Central feature</td>
<td>?</td>
<td></td>
<td></td>
<td></td>
<td>west end</td>
<td>sod, stone walls</td>
<td>west end</td>
</tr>
<tr>
<td>Qeqertaaraq Str.4 (upper)</td>
<td>SS</td>
<td>square</td>
<td>4.75 x 5.25 (24.94)</td>
<td>berm break</td>
<td>possible, unpatterned stones</td>
<td>Central feature</td>
<td>perpend</td>
<td></td>
<td>west end</td>
<td>central feature (negative) made of linear pits</td>
<td>west end</td>
</tr>
<tr>
<td>Qeqertaaraq Str.4 (lower)</td>
<td>SS</td>
<td>square</td>
<td>4.75 x 5.25 (24.94)</td>
<td>Central feature</td>
<td>perpend</td>
<td>long</td>
<td>central feature</td>
<td>in south</td>
<td>north activity area</td>
<td>long</td>
<td></td>
</tr>
<tr>
<td>Qallunatalik Polaris Feature 1</td>
<td>SS</td>
<td>rect</td>
<td>3.6 x 5.1 (18.36)</td>
<td>berm break, jambs?</td>
<td>yes</td>
<td>perpend</td>
<td>long</td>
<td>some</td>
<td>double</td>
<td>lamp platform, pot support, end stone</td>
<td>full</td>
</tr>
<tr>
<td>Snowdrift</td>
<td>S</td>
<td>square</td>
<td>3.5x 3.5 (12.25)</td>
<td>yes</td>
<td>?</td>
<td>yes</td>
<td>double</td>
<td>lateral (2)</td>
<td>sod wall</td>
<td>short</td>
<td></td>
</tr>
<tr>
<td>Site Name</td>
<td>Type</td>
<td>Shape</td>
<td>Size in m²</td>
<td>Entrance Pavement</td>
<td>Axial Elements</td>
<td>Feature</td>
<td>Other Features</td>
<td>Season</td>
<td>Length of Occupation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>----------</td>
<td>-------</td>
<td>------------</td>
<td>-------------------</td>
<td>----------------</td>
<td>------------------</td>
<td>----------------</td>
<td>--------</td>
<td>---------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labrador Labrador</td>
<td>SS</td>
<td>rect</td>
<td>6.0 x 4.25 (14.55)</td>
<td>Tracre</td>
<td>no</td>
<td>Axial</td>
<td></td>
<td>yes</td>
<td>moderate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avayalik-1</td>
<td>SS</td>
<td>rect</td>
<td>3.0 x 3.75 (11.25)</td>
<td>Tracre</td>
<td>no</td>
<td>Axial</td>
<td></td>
<td>yes</td>
<td>moderate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peabody Point-1</td>
<td>SS subrect</td>
<td>House 1</td>
<td>4.0 x 4.0 (16.0)</td>
<td>no</td>
<td>no</td>
<td>Axial</td>
<td></td>
<td>yes</td>
<td>moderate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Big Head-6 House</td>
<td>SS circular</td>
<td>1</td>
<td>4.0 x 4.0 (16.0)</td>
<td>no</td>
<td>no</td>
<td>Axial</td>
<td></td>
<td>yes</td>
<td>moderate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Big Head-6 House</td>
<td>SS circular</td>
<td>2</td>
<td>4.0 x 4.0 (16.0)</td>
<td>no</td>
<td>no</td>
<td>Axial</td>
<td></td>
<td>yes</td>
<td>moderate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beacon Island-5</td>
<td>S</td>
<td>side</td>
<td>2.0 x side (8.0)</td>
<td>no</td>
<td>no</td>
<td>Axial</td>
<td></td>
<td>yes</td>
<td>moderate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shuldham Island-9</td>
<td>SS oval</td>
<td>4.75 x 4.0 (14.92)</td>
<td>no</td>
<td>no</td>
<td>Axial</td>
<td></td>
<td>yes</td>
<td>moderate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shuldham Island-9</td>
<td>SS oval</td>
<td>4.75 x 4.0 (14.92)</td>
<td>no</td>
<td>no</td>
<td>Axial</td>
<td></td>
<td>yes</td>
<td>moderate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Okak-3</td>
<td>SS</td>
<td>rect</td>
<td>7/8 x 6.0 (42-48)</td>
<td>Tracre</td>
<td>no</td>
<td>Axial</td>
<td></td>
<td>yes</td>
<td>moderate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pot support</td>
<td>partial?</td>
<td>lateral</td>
<td>support</td>
<td>unknown</td>
<td>short</td>
<td>Pot supports</td>
<td>Pot supports</td>
<td>Pot supports</td>
<td>Pot supports</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6.2 Late Dorset dwellings by region (S = surface, SS = semi-subterranean, SSS = shallowly semi-subterranean).
less settled lifestyle, although this suggestion requires much additional settlement-subsistence work to be properly evaluated.

Turning to the Low Arctic and Labrador, it is possible that the occurrence of paving outside of the axial feature is an architectural trait more commonly found in dwellings located in these regions. As shown in Table 6.2, only three structures in the High Arctic and Greenland have evidence for paving stones (and in only one case is this evidence definitive), whereas nine dwellings in the Low Arctic and Labrador have some portion of their floor paved. Given the number of structures reported from the High Arctic and Greenland, this does not appear to be an issue of sample size, instead the higher frequency of paving in the Low Arctic and Labrador may relate to more functional purposes reflecting environmental conditions. Specifically, while many high latitude structures are located on well-drained substrate, dwellings located in more southerly locales are often situated in vegetated areas where sub-soils are more organic and generally wetter. The decision to partially or fully pave a dwelling’s interior might be a reflection of these conditions, as builders knew (or could anticipate) that paving stones might act as a partial barrier to the moisture in the underlying soil and decrease the likelihood that living floors would become uncomfortable.

Other than these architectural tendencies, no other aspects of Late Dorset behaviour can be related to regional differences or peculiarities of local behaviour. This includes traits such as overall dwelling size (Labrador has a very high mean dwelling area, however, its median size is the second smallest of the four regions), axial features made with cobblestones versus slab stones, number of internal hearths (correlated with number of resident families), and orientation of the axial feature (i.e. perpendicular versus parallel to the coast or other major landmark). This latter point is somewhat surprising as the manner in which the axial feature is laid out would presumably affect such aspects of dwelling design as entrance placement and interior organisation and use (refer to Figure 6.1).

6.9 Setting the Stage for the Case Studies
The macro-scale analysis begun in this chapter and continued in Chapter 10 establishes that there is a great deal of constancy and variability in Late Dorset architecture. The continuation of certain
behaviours in tandem with the introduction or reappearance of others suggests that the Late Dorset technology of architecture existed both as a static expression of underlying cultural ideals and knowledge, and an inherently flexible and sensitive body of knowledge responsive to the needs and goals of builders in various situations. As such, the dwellings discussed in this chapter represent the products of countless series of decisions and choices made by Late Dorset builders operating in a variety of situations where available options were assessed through the dual lenses of cultural preference and fixed environmental practicality. These sequences of actions constitute the underlying technological traditions, identified and discussed in Chapter 10.2.1, that guided the design, construction, use, possible remodelling, and dismantling of domestic dwellings.

Identifying the general technological traditions directing the creation of domestic dwellings is the first step in understanding why some elements of Late Dorset architecture were altered while others remained essentially unchanged through time and space. As discussed in Chapter 2.2.4, in order to fully appreciate how these changes and continuities came about, it is necessary to reconstruct each operational sequence and retrace the techniques responsible for the individual elements which combined to form that dwelling. Because, as noted in Chapter 2.2.2 and 2.3, precise chaînes opératoires of previously excavated dwellings are difficult to reconstruct without detailed field observations, micro-scale analysis of the case studies becomes an invaluable addition to the overall examination of Late Dorset architectural technology.

By reconstructing the operational sequences which created the case study dwellings, it is possible to identify precisely where choices were made which caused the structures to conform to or deviate from the identified general way of doing things. As Dobres (1999) notes, this brings analysis and understanding down to the scale of the craftsperson who balanced innumerable considerations when creating what we encounter archaeologically. A better understanding of small-scale technological choices makes it possible to extrapolate individual choices, strategies, and sequences of behaviours as influenced by social and environmental factors back to the larger techno-social world. In a sense, we are looking for variations in the patterning and then attempting to make sense of that ‘noise’ by placing it within its larger social milieu.

Detailed information regarding the dwellings forming the case studies is presented in the next three chapters. Following this, analysis moves in Chapter 10 to fully integrate the general
range of behaviours practised by Late Dorset (macro-scale) with the much more finely scaled
analysis permitted by the case studies. As argued by Marquardt (1992), using multiple analytical
scales is an important technique as the larger and smaller scale are often able to inform on one
another, permitting us to discover aspects of cultural behaviour whose significance might not
otherwise be apparent. This is done largely by examining the process leading to the final product,
not focussing solely on the finished artefact.
CHAPTER 7 – CASE STUDY 1 - HOUSE 6, BELL SITE (NiNg-2), SOUTH-EASTERN VICTORIA ISLAND

7.1 Introduction
The primary purpose of this chapter is to present, in as comprehensive a manner as possible, the analysis of a Late Dorset domestic structure from the Bell site (NiNg-2), located on south-eastern Victoria Island (Figure 7.1). This dwelling was excavated with the theoretical and analytical approaches employed in this dissertation kept firmly in mind so that the processes leading to its planning and design, construction, use, and abandonment could be identified and investigated. Every attempt was made to collect as much information on the feature’s architecture as possible, remembering that inadequate recording methods could result in the potential loss of critical data.

Fieldwork at the site was conducted as part of the Iqaluktuuq Archaeology Project, a cooperative venture between Dr. T.M. Friesen of the Department of Anthropology at the University of Toronto and the Kitikmeot Heritage Society, based in the community of Cambridge Bay on Victoria Island. House 6 was excavated in 2002 by a crew consisting of students from the towns of Cambridge Bay, Kugluktuk, and Gjoa Haven, as well as the University of Toronto.

7.2 The Physical Environment of South-eastern Victoria Island
Victoria Island is the second largest island in the Canadian Arctic Archipelago and is classified as part of the Arctic Lowlands physiographic group. South-eastern Victoria Island, including both Iqaluktuuq and the modern community of Cambridge Bay, fall within the Victoria Lowlands, a geological formation characterised as having fairly flat sedimentary bedrock, generally low relief, and numerous large and small tundra ponds and lakes (Bostock 1970, 1972). Overtop of the bedrock is unconsolidated glacial till, underlying this are Palaeozoic limestone, sandstone, dolomite, and shale bodies (Thorsteinsson and Tozer 1962; Fyles 1963).

During the last glacial maximum, southern Victoria Island was covered by the Laurentian Ice Sheet, which, once melted, left much of the area near or under water (Wilson et al. 1958). While Johnson (1962) believes that the land has risen at a more-or-less standard rate since de-glaciation, he notes that the rate of uplift around Cambridge Bay, which he places at between 1.16 m and 1.96 m per century, may be somewhat slower than the average for the entire island.
Figure 7.1 Victoria Island and area, showing locations mentioned in the text.
Andrews et al. (1980), using archaeological site elevation data gathered from locations throughout the Eastern Arctic, developed a series of emergence curves for four periods: 4000 – 3200 B.P.; 3200 – 2400 B.P.; 2400 – 1600 B.P.; and 1600 – 800 B.P. Speaking generally, they remarked that land emergence was most rapid in the centuries immediately following de-glaciation and that the rebound rate slowed during each subsequent period (Andrews et al. 1980: Table 1). However, a major discrepancy in the authors’ calculated rebound rates occurs at Iqaluktuuq, where several marine-oriented sites representing the Pre-Dorset – Neoeskimo periods are consistently located at elevations higher than predicted by the models (Andrews et al. 1980: Tables 3-6). No easy explanation for this difference (which contradicts Johnson’s [1962] findings at nearby Cambridge Bay) could be offered.

The area around Wellington Bay, including Ferguson Lake and the intervening portion of the Ekalluk River, lies at the interface of two vegetation zones, sub-polar desert and tundra (Tedrow 1977:141-142). Vegetation cover today is discontinuous and includes dwarf shrub sedge, heath, willow, and various species of moss and lichen (Tedrow 1977:380). Ferguson Lake, measuring 75 km in length and covering 740 km² (Kristofferson 2002:19), is the largest water-body on Victoria Island. The Ekalluk River, which flows into the eastern end of the lake before re-emerging at its western side to drain into Wellington Bay, has a huge watershed, draining approximately 5835 km² of south-eastern Victoria Island (Kristofferson 2002:15). The resources of the Iqaluktuuq area in particular are seasonally abundant (refer to Section 7.3) and consist primarily of barren ground caribou, a variety of summer-resident bird species, and arctic char (*Salvelinus alpinus*).

As indicated in Table 7.1, southern Victoria Island experiences a total of 42 days without a sunrise (as opposed to true polar night, which only occurs north of 72° 33’ N latitude, see Chapter 3.2), and an equal number of days in which the sun is continuously over the horizon.

### 7.3 Potential Range of Resources at Iqaluktuuq

Early 20th century ethnographic observations indicate that the Inuit of south-eastern Victoria Island had developed a dual subsistence economy to deal with the region’s marked seasonal availability of marine and terrestrial resources (Jenness 1922:111). Coupled with data from
<table>
<thead>
<tr>
<th></th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Daily Average Temperature (°C)</strong></td>
<td>-32.8</td>
<td>-33</td>
<td>-29.7</td>
<td>-21.4</td>
<td>-9.2</td>
<td>2.4</td>
<td>8.4</td>
<td>6.4</td>
<td>-0.3</td>
<td>-11.5</td>
<td>-23</td>
<td>-29.6</td>
</tr>
<tr>
<td><strong>Days Below 0°C (Maximum)</strong></td>
<td>31</td>
<td>28.3</td>
<td>31</td>
<td>29.7</td>
<td>25.6</td>
<td>3.6</td>
<td>0</td>
<td>0</td>
<td>9.3</td>
<td>29.2</td>
<td>30</td>
<td>31</td>
</tr>
<tr>
<td><strong>Days Above 0°C (Maximum)</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.3</td>
<td>5.4</td>
<td>26.4</td>
<td>31</td>
<td>31</td>
<td>20.7</td>
<td>1.8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total Precipitation (mm)</strong></td>
<td>4.6</td>
<td>5.1</td>
<td>6</td>
<td>6.5</td>
<td>9.4</td>
<td>12.5</td>
<td>21.7</td>
<td>26.7</td>
<td>19.3</td>
<td>14.6</td>
<td>7.2</td>
<td>5.3</td>
</tr>
<tr>
<td><strong>Total Rainfall Amount (mm)</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.1</td>
<td>1.6</td>
<td>9.8</td>
<td>21.7</td>
<td>24.5</td>
<td>11.4</td>
<td>0.4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total Snowfall Amount (cm)</strong></td>
<td>5.6</td>
<td>6.4</td>
<td>7.4</td>
<td>7.5</td>
<td>9.3</td>
<td>2.8</td>
<td>0</td>
<td>2.2</td>
<td>8.9</td>
<td>16.2</td>
<td>9.3</td>
<td>6.3</td>
</tr>
<tr>
<td><strong>Average Snow Depth (cm)</strong></td>
<td>21</td>
<td>24</td>
<td>28</td>
<td>31</td>
<td>30</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>7</td>
<td>14</td>
<td>18</td>
</tr>
<tr>
<td><strong>Days with Snow Depth Greater Than 10cm</strong></td>
<td>30.3</td>
<td>28.3</td>
<td>31</td>
<td>30</td>
<td>29.1</td>
<td>8.2</td>
<td>0</td>
<td>0</td>
<td>0.03</td>
<td>9.5</td>
<td>22.8</td>
<td>27.2</td>
</tr>
<tr>
<td><strong>Snow Depth at Month End (cm)</strong></td>
<td>22</td>
<td>26</td>
<td>30</td>
<td>32</td>
<td>22</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>12</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td><strong>Average Wind Speed (km/h)</strong></td>
<td>22.4</td>
<td>21.6</td>
<td>21.2</td>
<td>20.4</td>
<td>20.7</td>
<td>19.6</td>
<td>19.7</td>
<td>21.5</td>
<td>22.4</td>
<td>23</td>
<td>20.9</td>
<td>21.2</td>
</tr>
<tr>
<td><strong>Predominant Wind Direction</strong></td>
<td>NW</td>
<td>NW</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>N</td>
<td>W</td>
<td>NW</td>
<td>NW</td>
<td>NW</td>
<td>NW</td>
<td>NW</td>
</tr>
<tr>
<td><strong>Maximum Wind Speed (km/h)</strong></td>
<td>89</td>
<td>89</td>
<td>84</td>
<td>80</td>
<td>80</td>
<td>93</td>
<td>71</td>
<td>79</td>
<td>87</td>
<td>101</td>
<td>82</td>
<td>97</td>
</tr>
<tr>
<td><strong>Wind Direction</strong></td>
<td>N</td>
<td>NW</td>
<td>NW</td>
<td>NE</td>
<td>NW</td>
<td>NW</td>
<td>SE</td>
<td>NW</td>
<td>NW</td>
<td>NE</td>
<td>NW</td>
<td>NW</td>
</tr>
<tr>
<td><strong>Ice Coverage Out of 10, Weekly</strong></td>
<td>10, 10, 10, 10</td>
<td>10, 10, 10, 10</td>
<td>10, 10, 10, 10</td>
<td>10, 10, 10, 10</td>
<td>10, 10, 10, 10</td>
<td>10, 10, 10, 10</td>
<td>10, 10, 10, 10</td>
<td>10, 10, 10, 10</td>
<td>10, 10, 10, 10</td>
<td>10, 10, 10, 10</td>
<td>10, 10, 10, 10</td>
<td>10, 10, 10, 10</td>
</tr>
<tr>
<td><strong>Days Without a Sunrise</strong></td>
<td>December 1 - January 11 (n=42)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
archaeological research, it is clear that most Inuit spent the winter on the sea ice, hunting seals through their breathing holes and relocating as local populations were exhausted (Morrison 1983:65; Damas 1984). In the spring, inland resources along lakes and rivers were exploited, as were resident musk ox herds and the returning caribou (Jenness 1922:119-121). These mobile inland camps were maintained throughout the summer, while large numbers of arctic char and caribou, the latter migrating south to their winter territories, were exploited during the autumn (Morrison 1983:65-66). Surplus food was stockpiled at this time, and this was also a period of group aggregation as people awaited the formation of a stable ice platform (Jenness 1922:110-111). Cached summer foods no doubt helped supplement winter sealing (Morrison 1983:65-66).

While it is not difficult to envision a similar economic system during the Late Dorset era, the appropriateness of using late prehistoric and early historic Inuit land use patterns as a guide for interpreting Late Dorset archaeological remains is unclear. As both Hood (1998) and Friesen (2002) note, the recorded Inuit socio-economic system has, either implicitly or explicitly, shaped many archaeological reconstructions of life in the Palaeoeskimo period. Friesen (2002:339) stresses that “the recent Inuit pattern ... can stand as a sort of ‘null hypothesis’ of one way to incorporate the Iqalukturq region into the economic, social and ideological annual cycle of a hunter-gatherer group” (emphasis in original), but that it should not be “considered the ‘best’ way or the ‘only’ way to live”.

Transposing historic patterns on to the prehistoric past can be tricky, even when the group in question has a direct historical link to the prehistoric archaeological record. For example, although modern Inuit in nearby Cambridge Bay consider the Iqaluktuq fishery to be a very important economic pursuit, Friesen (2002:340) remarks that there is little evidence that this was the case archaeologically. Echoing this conclusion is Whitridge’s (2001) finding that, for at least the Classic Thule period (circa A.D. 1000 – 1400); fishing was actually of minimal economic importance, despite the fact that fishing technology is extremely well represented in archaeological assemblages. As these observations should illustrate, any study attempting to use analogy between historically known and archaeologically encountered groups should be aware that one cannot function as a ‘window’ on the other (see also Morrison [1987]). Nonetheless, it is also true that the choices and decisions made by an extant population can provide useful insights.
and comparisons against which past populations may be interpreted (Friesen 2002).

For example, there is no apparent reason to reject the idea that the Late Dorset did not face the same fall scheduling conflicts as the Copper Inuit, who had to balance two key autumn procurement activities, the caribou hunt and the char fishery. Both species typically appear at approximately the same time each year but do not necessarily arrive at the same place, meaning that the Copper Inuit often had to alternate their use of each species (Farquharson 1976). Because of this, places where caribou and char reliably appear and can be exploited sequentially or simultaneously become very important to a population’s socio-economic round. As one location where such an overlap occurs, Iqaluktuuq must have been as significant to the Late Dorset, at least at some points, as it was to the historic Inuit who lived in the area (Jenness [1922:246] refers to this group as the Ekaluktomiut, whose root name refers to the Ekalluk River area).

7.3.1 Terrestrial Resources
Two large ungulate species, non-migratory musk oxen and migratory caribou, comprise the chief terrestrial resource base at Iqaluktuuq. Both can experience radical population changes, with massive decreases probably linked to a combination of adverse weather events (Mech 2005) and over-hunting (Barr 1991). However, researchers working on Banks Island have discovered that musk ox populations are capable, given appropriate conditions, of substantial population resurgences (e.g., Larter and Nagy 1997). A similar recovery seems to have occurred at Iqaluktuuq considering the contrast between the numerous sightings made in 2002 and the very few individuals described by Taylor (1972:53) in the mid-1960s. Banfield (1974:411) records that musk oxen typically occur in groups of between three and 100, with an average group numbering 15 animals. Musk oxen normally seek out more sheltered areas where vegetation tends to be relatively lush (such as the willow and sedge meadows found around the Bell site), feeding in these areas throughout the spring and summer before moving to windswept areas for the winter months (Banfield 1974:412).

Caribou move through the Ferguson Lake – Wellington Bay area twice yearly, on their northward migration from the Arctic mainland (via the still frozen Dease Strait) to summer foraging areas in the spring, and during their return journey to the mainland in the fall (Jenness
1922:125; Kelsall 1968; Jakimchuk and Carruthers 1980). Although herd numbers have decreased
during the 20th century (see Banfield 1954:68-69), Stefansson (1951:224; also Banfield 1954:10)
reported herds estimated in the hundreds of thousands, or even millions, moving south across
Dease Strait from south-eastern Victoria Island during the fall. However, despite these huge
numbers, Blehr (1990:310) notes that the importance of knowing where the herds will regularly
and predictably appear cannot be underestimated, particularly considering that caribou density
(outside of the migration period) is typically not more than two animals per single km² (Hall 1989;
also Banfield 1974:385).

Even when caribou populations crash, as they periodically do (Burch 1972; Grønnow et
al. 1983; Meldgaard 1986; Minc 1986; Sabo 1991:75), human groups who know where
traditional migration routes are and are able to access them would be able to procure at least
some animals considering it is unlikely an entire region’s caribou population would disappear.
This is particularly true along major migration routes (Banfield 1954), such as between Ferguson
Lake and Wellington Bay where geography and topography tightly constrain the movements of
the herds, making it unlikely that caribou would completely fail to appear there. This does not
mean that crashes, when they occurred, did not stress groups depending on caribou for essential
products including skins for clothing (Blehr 1990:320; Stenton 1991) and antler for tools (Stenton
1986:67-74; 1991:19), in addition to meat and bone. But it almost certainly made such shortfalls
less frequent and severe.

Historically, fall was the preferred time for hunting caribou (Jenness 1922:102; Birket-Smith
are a number of reasons for this, chief amongst them being that the animals’ meat and fat content
are highest (Reimers and Ringberg 1983; Adamczewski et al.1987), while the skins are neither
warble fly-infested (as they are in the summer) nor have hair that has grown too long to be
suitable for clothing (as it is later in the fall and winter) (Stefansson 1951:337; Balikci 1970:42;
Arnold 1981a:124-125; Blehr 1990:320). These same considerations were presumably relevant to
the Late Dorset seasonal round and procurement schedule, and groups must have been concerned
with obtaining at least some caribou while they were in optimal condition. The concentrated
presence of peak health caribou along the Ekalluk River in the fall is therefore expected to have
been, at least periodically, a major draw for groups in the general region.

Little is known concerning Late Dorset methods for hunting caribou, although the Neoeskimos sometimes used drive systems consisting of *inuksuit* and shooting blinds / pits to kill large numbers of animals during organised communal hunts (*e.g.* Stefansson 1914:58; Jenness 1922:124; Birket-Smith 1929:108-109). At least four systems are now known from the north side of the Ekalluk River; two northeast of the river and closer to the ocean (Taylor 1972: Figure 22a; also Figure 7.2), and two more to the northwest, nearer Ferguson Lake (Brink 2005: Figure 2; also Figure 7.2). As Brink (2005:2) points out, drive systems are difficult to date because they usually contain very few artefacts and datable faunal material, although at least parts of the northwestern system are believed to be of “considerable antiquity” (Brink 2005:15-16). Taylor (1972:76; also McGhee 1996:114-115) used variations in the amount of vegetation within the shooting pits of the north-eastern system to suggest that this drive was used during the Neoeskimo period, and probably earlier. Brink (2005:15-16, 18) agrees that any of the people at Iqaluktuuq could have begun to construct the drives, with elaborations made by later groups.

It seems likely that the Late Dorset, who were present in relatively large numbers at Iqaluktuuq in some seasons, may have been responsible for parts of these communal systems. However, the absence of associated artefacts or faunal remains suitable for dating makes it difficult to confirm a Dorset link, although the discovery of a probable Late Dorset drive system from Labrador (Fitzhugh 1981) indicates this hunting technique was not unknown. Regardless of whether Dorset groups used the Iqaluktuuq drive systems, the caribou-dominated middens from the Bell site in general (Friesen 2002:340), and House 6 in particular (Howse 2008; also Section 7.6.1), strongly imply some sort of successful hunting strategy was employed.

The final terrestrial species of note to the Dorset economy is the arctic fox (*Alopex lagopus*) (see Chapter 5.3.3). Fox remains appear in modest but consistent numbers in Palaeoeskimo sites throughout the Arctic and make up a small portion of the faunal remains from House 6 (see Section 7.6.1). Unlike other areas of the Eastern Arctic (refer to Chapter 5.3.3), it is improbable that the Ekalluk River Late Dorset were targeting fox specifically as a primary fur source given the obvious availability of caribou. Instead, fox procurement may tie into Darwent’s (2001:117-118) suggestion that Late Dorset were broadening their resource base in response to
the decreased availability of ringed seals, as well as an apparent tendency for some Late Dorset populations to remain sedentary for longer periods of time (this issue is discussed further in Chapter 10.3.2). Fox traps, the most common means for capturing fox, are known on the south side of the Ekalluk River (Friesen pers comm. 2005).

7.3.2 Avian Resources
A variety of resident and migratory bird species are present on south-eastern Victoria Island (Parmalee et al. 1967). Resident species include willow ptarmigan (Lagopus lagopus), rock ptarmigan (Lagopus mutus), and common ravens (Corvus corax), as well as numerous species of marine birds, dominated by gulls (particularly glaucous, Larus hyperboreus, and Thayer’s, L. thayeri). Migratory sea ducks (e.g. common eider, Somateria mollissima, king eider, Somateria spectabilis, and oldsquaw, Clangula hyemelis) are resident in the area during the open water period. In regions of the Eastern Arctic where polynyas occur, seabirds are much more plentiful in both total number and species diversity (Le Page et al. 1998:126). However, polynyas are not found anywhere along the south coast of Victoria Island (Smith and Rigby 1981; also Figure 3.2), delaying the influx of many species until after lakes and ponds begin to clear of ice.

Once arrived, large and small tundra ponds, as well as wet willow and sedge meadows or marshes, appear to be favoured by many migratory species (Parmalee et al. 1967), including Canada geese (Branta canadensis), snow geese (Chen caerulescens), sandhill cranes (Grus canadensis canadensis), various jaegars (pomarine, Stercorarius pomarinus, parasitic, S. parasiticus, and long-tailed, S. longicaudus), and arctic loons (Gavia arctica). The many small tundra ponds and wet meadows dotting the Iqaluktuq area, as well the foreshore areas of Ferguson Lake, present suitable breeding and staging areas for many of the species listed, as well as others (refer to Parmalee et al. 1967).

7.3.3 Lacustrine and Riverine Resources
Two species dominant the available fish species in the Ekalluk River and Ferguson Lake system; arctic char and lake trout (Salvelinus namaycush). Unlike arctic char, lake trout is a strictly freshwater species and resides year-round in lakes and streams (Pielou 1994:302). However, there is no evidence anywhere in the Eastern Arctic that Late Dorset fished for lake trout through
winter lake ice (M.S. Maxwell 1985:141) and all individuals identified in Late Dorset contexts were presumably caught in the open water season.

On the other hand, arctic char are anadromous and can be found in marine, brackish, and fresh waters (where they spawn), although Johnson (1980) reports that some populations are strictly non-anadromous. Analysis of the char stocks at Freshwater Creek (comparable to the Ekalluk River system) near the community of Cambridge Bay indicate that non-spawning char leave lakes and rivers for the ocean to feed as soon as the ice breaks and rivers are passable, continuing this run until approximately July 15th (DFO 2004:10). Generally speaking, sea run char return to freshwater anywhere between September and October at many Eastern Arctic locations, although the Freshwater Creek run generally lasts from August 15th until September 15th (DFO 2004:10). However, char that will spawn during the summer do not leave their home lake during
that spring’s break-up (Dutil 1986), instead spending an entire year within the comparatively poor freshwater ecosystem (McCart and Den Beste 1979:4). When these spawners travel to the ocean the following spring, they are much thinner than the non-spawning char (who made the feeding run the previous year), and partly because of this, the spring char fishery produces a lower yield than the fall migration (Brice Bennett 1976:68). Historically, Inuit who depended upon the spring char run fared poorly compared to those who exploited the fall return migration (e.g. Rasmussen 1931:62, 65-66). This situation mirrors the spring versus fall caribou hunt (see Section 7.4.1).

The Ekalluk River has historically supported a massive char population, although as noted in Section 7.3, Friesen (2002:340) is unsure how far into prehistory this historically noted reliance extended. A highly productive commercial char fishery (DFO 2004) has taken place at Iqaluktuuq intermittently since 1962 (Barlishen and Webber 1973) and one of the processing facilities near the outlet of the river leant its name to the nearby Late Dorset Freezer site. There is no reason to suspect the river system did not maintain a similarly high carrying capacity in the past, at least once the Wellington Bay – Ekalluk River – Ferguson Lake drainage system approached its current configuration. The fact that Late Dorset groups were able to acquire large amounts of arctic char, as indicated by the number of char bones recovered from the Freezer site (over 9000 in a single 1 m x 1 m unit [Friesen 2002:340]) and House 6 (Howse 2008: Table 1), indicates the fishery was flourishing. Even the warmer than present temperatures which occurred during the Late Dorset era (see Chapter 3.4) should not have seriously impacted the overall productivity of the Iqaluktuuq char stocks (Johnson 1980:67).

It is unclear what kinds of technology Late Dorset fishing on the Ekalluk River may have employed. The Inuit often utilised large stone weirs to trap and spear fish, although weirs appear not to have been used here within living memory (Friesen 2002:340). It is extremely unlikely that evidence of prehistoric weirs would survive given Savelle’s (1987: Plates 2c, 3a, 3b) report that ice and water currents can completely remove all traces of these features from rivers within a single year. While Inuit legends (e.g. McGhee 1996:135) suggest that the Dorset constructed some weirs (and caribou drive systems) that were later used and / or modified by the Inuit, it seems unlikely that this will ever be corroborated archaeologically. Dorset leister parts have been found at some sites in the Eastern Arctic and were conceivably used on the Ekalluk River,
although none have been identified in the Iqalultuuq sites thus far.

Small harpoon heads may also have been employed in fishing, as suggested by both M.S. Maxwell (1985:141) and Jørgen Meldgaard (in M.S. Maxwell 1985:222); although Taylor (1967:223) felt they were more probably used to spear caribou. Noteworthy is M.S. Maxwell’s (1985:142) observation that inflexible harpoon heads are both less efficient and more labour intensive than more elastic tridents (or kakivaks) when large quantities of fish are being acquired. Net sinkers have been identified in some Palaeoeskimo assemblages (e.g. Renouf 1994: Figure 10) and it is possible that netting technology may have been used for fishing at Iqalultuuq, although there is no evidence to support this.

7.3.4 Marine Resources
As discussed in Chapter 3.2.5, the extent and longevity of sea ice is the determining factor controlling the distribution and availability of marine resources. Ice formation and break-up in Wellington and Cambridge Bays are tied to conditions in adjacent Amundsen and Coronation Gulfs, as well as Queen Maud Gulf. The Canadian Ice Service Ice Archive (n.d. a; Table 7.1) indicates that conditions in Wellington and Cambridge Bays are broadly comparable, averaging 41 weeks with 70% or greater coverage and 11 weeks of open water (30% or less coverage).

However, the two water-bodies do differ regarding the timing of ice formation and break-up. In Wellington Bay, July and October are considered to be the ‘transitional’ periods when there is either too much ice for the use of boats or the ice is too thin to support a person’s weight. In comparison, the ice does not begin to break up in Cambridge Bay until the fourth week of July (a week later than Wellington Bay) and has reformed much more than in Wellington Bay by the second week of October. The earlier development of a stable ice platform over Cambridge Bay may at least partly explain why Inuit hunters (as reported by Taylor [1972:53]) consider this area to be a better sealing location than Wellington Bay. Neither Wellington nor Cambridge Bays contain polynyas (Smith and Rigby 1981; also Figure 3.2).

Relatively heavy ice conditions such as those typically found in Wellington Bay mean that the only year-round marine residents are sympagic ringed seals, as well as smaller numbers of bearded seals that sometimes make and maintain breathing holes (e.g. Reeves et al. 2002:116;
The area is currently outside the range of walrus and large baleen whales (Dyke et al. 1996; Savelle et al. 2000); although smaller beluga whales do occasionally visit the south-eastern shores of Victoria Island (Banfield 1974:251). Polar bears, usually considered a marine mammal, are also not typically found in the Wellington Bay – Cambridge Bay areas, although the northern range of grizzly bears has been moving northward within recent years to include Victoria and Melville Islands (e.g. Doupé et al. 2007; Friesen [pers comm. 2008] also notes a small amount of grizzly bone has been identified at the Late Dorset Cadfael site, as well as possibly from a separate context at Bell). There is little to suggest that any prehistoric population exploited marine fish to any degree (Whitridge 2001).

Recovered faunal remains from sites along the Ekalluk River indicate that, with the exception of the Pre-Dorset Wellington Bay site (NiNg-7) and Late Dorset Cadfael site (NiNg-17), marine resources typically played a secondary role to those of the terrestrial environment in local Palaeoeskimo economic pursuits. While fish were of obvious importance to those at the Freezer site (Figure 7.2), where 67% of the fauna was comprised of fish (Friesen 2002:340), Howse’s (2008) analysis of Late Dorset faunal remains from the Bell site indicates that terrestrial resources (primarily caribou) were the main economic focus of those inhabitants. At the same time, her analysis demonstrates that the Bell site House 6 occupants at least occasionally visited the coast, given the presence of small amounts of ringed and bearded seal (Howse 2008: Table 1). Damkjar (2005:162-163) has previously suggested that sites with small amounts of seal, such as in Bell House 6, may be evidence of a general inability on the part of Late Dorset to efficiently hunt in open water; although he also suggests that lower frequencies of marine animals may relate to localised considerations (see Section 7.6).

### 7.3.5 Organic and Inorganic Materials Suitable for Architectural Purposes

There are eight basic materials available for architectural use in the Arctic: snow, wood, whale bone, sod, antler, ivory, stone, and skin (see Chapter 3.3). Two of those, bowhead whale bone and ivory, appear to have been unavailable along south-eastern Victoria Island for at least the past 3000 years due to sea ice coverage through McClintock Channel - Larsen Sound - Queen Maud Gulf - Coronation Gulf - Dolphin and Union Strait (Reeves et al. 1993; Dyke et al. 1996; Savelle
et al. 2000; Dyke and England 2003). The six other materials suitable for use in architecture are obtainable in the region and are discussed below.

Snowfalls have been recorded in every month at Cambridge Bay except July, however there no snow cover (excluding localised permanent or semi-permanent patches) in either July or August (Table 7.1). In fact, as shown in Table 7.1, so little snow is on the ground by the end of October that it is unlikely that enough would have been available for any sort of architectural purpose before the middle or end of November (Jenness [1922:59] notes that a minimum of 30 cm of snow is required). The rapid spring snow melt that takes place during June also makes it probable that snow would be less and less available (and probably an increasingly unattractive building material) as the warm season progressed. The remaining months, December through May, have greater than 10 cm of snow on the ground for most or all of their days, and represent the period for which the use of snow in construction should be expected to have been greatest.

Sod or peat is available in relatively good quantity at several locations along the Ekalluk River, with the Bell site being perhaps one of the best. From a practical perspective, the site is well located for people interested in using the material architecturally as the amount of time and energy needed to collect and transport it from other locations may have made its use prohibitive (Noble 1983-4:76-77). An additional consideration pertaining to the use of sod in construction would be local conditions. Even where sod is present in sufficient quantity, it can only be collected and used during a limited period of time given the material becomes increasingly difficult to gather and process as temperatures drop (Noble 1983-4:77, 80). Sod that is frozen in permafrost is completely unusable as it has the consistency of stone and fractures in a similar manner if removal is attempted (this is also true of any attempt to excavate into it to create a sunken living floor). In such circumstances, sod would be most easily collected when both the rate of thawing and the depth of permafrost below ground surface are increased. This occurs only after the albedo (reflectivity) of the ground surface is reduced as the snow melts and the earth begins to warm, from the late spring (mid-June) until early fall (September).

Antler is only available at Iqaluktuuq ‘on the hoof’, that is, from caribou that remain resident along the coast of Wellington Bay throughout the spring and summer (at which point the still developing antlers are smaller and less mature), or from individuals migrating south through
the area in the fall. Any animals successfully hunted at this point would yield larger antlers given
the growth period has almost ended (see Chapter 3.3.5). Gordon’s (1988, 1994:335) research on
the Keewatin Barren Grounds indicates that it is possible to create a dwelling’s supporting
framework using only antler, although he remarked that such a construction method is only
feasible in areas where huge number of caribou are available, typically at water crossing on
migration routes (Iqaluktuuq is one such location). As noted in Chapter 3.3.5, some historic
populations, including the Sadlermiut and Caribou Inuit, steam-straightened antler for a variety of
uses, including use in dwelling construction when wood was unavailable.

Stone is readily available to any Bell site occupant, despite the fact that the site is covered
in a fairly thick mat of vegetation. Stones are occasionally visible through the undergrowth
directly on the site and many more could easily have been obtained by walking to the shore of
Ferguson Lake, or to the bank of the river (both are less than a 10 minute walk from House 6).
The abundance of stone in the Thule dwellings and caches certainly indicates that distance and
availability of stone alone were not considerations effecting whether the material was used.

Dorset dwellings, like traditional Inuit structures, must have been covered at some points
during the year with animal skins, mainly seal and caribou, although other species could also be
employed (see Chapter 3.3.8). Both seal and caribou are found in the Ekalluk River area; however
the skins would be more or less suited for architectural use depending upon when in the year they
were harvested. For example, bearded and ringed seals moult, respectively, between March – June
and mid-May – mid-June (Banfield 1974:366, 372) and may not have been desirable, while
Jenness (1922:79) notes that the winter coat of the caribou were used by the Copper Inuit to
cover shelters as the hair was too long to be useful for clothing. For Late Dorset awaiting the fall
caribou migration along the Ekalluk River, the acquisition of skins must have been as much a goal
as was the procurement of meat, antler, and bone (Stenton 1991). Like the Inuit, Late Dorset may
have spent much of the time after the fall hunt industriously processing and sewing skins into new
clothing and tent coverings (Jenness 1922:142; also McGhee 1977). The presence of ringed and
bearded seal bones in the faunal assemblage from House 6 (Howse 2008) suggests that the skins
of these animals could also have been used in a similar manner.

Finally, although antler was used in some circumstances for framing Inuit structures
(Gordon 1988, 1994), wood was much more commonly employed in the construction of a dwelling’s superstructure. During the Thule Inuit phase in eastern Amundsen and Coronation Gulfs, where (as previously mentioned) whale bone is rare; wood was much more frequently used (Taylor 1972:9; Morrison 1983, 1999; Le Mouël and Le Mouël 2002) and appears to have been a highly valued material. This value was no doubt attached to its relative rarity in the region, as suggested by its removal and recycling in at least one Thule site (Morrison 2000:224; also Slaughter 1982:141). This behaviour has been reported historically as the Polar, Netsilik, and Copper Inuit frequently curated and recycled appropriately sized wood for their dwellings (Steensby 1910; Jenness 1922; Rasmussen 1931). Interestingly, Balikci (1970:19) reports that in the absence of large pieces of wood, the Netsilik often used a blood glue to secure small pieces of wood together to create lengths that were of sufficient size for use as tent poles.

Late Dorset in Coronation Gulf probably collected their wood in the same manner as the Inuit: as drift carried to the area via the Mackenzie Current (see Chapter 3.3.2); via trade with mainland groups who could more easily access wood from the tree line or river transport; or by travelling to the mainland themselves to directly procure it (Jenness [1922:20-22] notes the Copper Inuit required upwards of six months to complete such journeys). However it was acquired, wood was obviously highly valued by the Dorset as very few structural components have been identified in the Eastern Arctic (M.S. Maxwell 1980: Figure 1 is a notable exception).

7.3.6 Summary and Discussion of Available Resources
The brief resource analysis presented above indicates that the Iqaluktuuq area was a very ecologically rich place during at least two periods of the year. The massive spring and fall caribou and char migrations concentrated two economically important species within a geographically limited area, and the predictability with which these movements occurred must have helped make the region an attractive (irresistible?) place that became an important central scheduling point. The location of a major seasonal aggregation locale at the Cadfael site (Friesen 2007) on the north side of the Ekalluk River indicates that the Iqaluktuuq area functioned at least periodically in this capacity for regional Late Dorset groups. The presence of additional animal species broadens the area’s economic potential and may have made year-round occupation at or in the vicinity of
western Ferguson Lake possible at times, as has been suggested in other areas of the Eastern Arctic (e.g. Murray 1996, 1999; Darwent 2001).

In the face of apparent environmental degradations associated with the Medieval Warm Period (see Chapter 3.4), which would adversely impact sympagic species (due to delayed formation, extent, and duration of sea ice cover) and terrestrial herbivores (whose forage could be restricted due to increased icing events), predictability at Iqaluktuuq might have made it seem an ecological haven. As Brink (2005) notes in the case of caribou, Iqaluktuuq’s geography and topography work to the hunter’s advantage, funnelling animals (fish as well as caribou) through known channels with the result that even if the overall population was depleted, at least some of the animals essential for human survival would appear. Furthermore, the presence of additional resident species (e.g. musk oxen and ringed seals), perhaps viewed as lower-ranked ‘fall back’ species when other resources were in the area, offered hunters and their families some insurance if more valuable animals were delayed or came in lower than expected numbers.

Finally, unlike much of Victoria Island, which Damas (1972:7) has characterised as “virtual wasteland”; Iqaluktuuq, and the Bell site in particular, contain comparatively richly vegetated areas suitable for the construction of structures (Chapter 3.3.4) using thermally efficient peat (although it is not clear when the vegetation mantle was established at Iqaluktuuq). Edible plants, which M.S. Maxwell (1985:129) notes are often overlooked in dietary reconstructions, are found in sheltered areas around the site and may have formed a much appreciated warm season addition to an apparently overwhelmingly meat-based diet. The presence of a variety of building materials, a southerly facing placement to maximise exposure to the sun, and a well drained substrate offer obvious attractions to which, judging by the number of structures, the Late Dorset took advantage. Such a confluence of resources no doubt allowed Late Dorset to gather at Iqaluktuuq (Friesen 2003), as they could do only at other similarly rich locations in the Eastern Arctic where the environment was sufficiently productive to support more numerous populations (e.g. Damkjar 2000, 2005).

7.4 The Bell Site (NiNg-2)
The Bell site was first visited by archaeologists in the summer of 1963 when William E. Taylor,
Jr., accompanied by a small crew, visited the Ferguson Lake – Wellington Bay area on the recommendation of Diamond Jenness (Taylor 1972:53). Jenness, who travelled southern Victoria Island extensively as part of his ethnographic work with the Copper Inuit, had heard of the Iqaluktuuq area from his informants (refer to Jenness 1922) and had made note of the area’s excellent resource base. He recognised, based on this, that the region had a high potential for archaeological sites and reasoned that the area’s rich resource base must have stretched into an undetermined portion of the pre-contact era. Taylor returned to the Ekalluk River again in 1965 and 1988, testing and excavating sites of the Pre-Dorset, Early/Middle and Late Dorset, and Thule cultures (Taylor 1964, 1967, 1972; Taylor et al. 1988).

The Bell site, located by Taylor in 1963, is one of three Late Dorset sites known between Ferguson Lake and Wellington Bay (Figure 7.2). The others; Freezer (NiNg-8), a char fishing occupation located near where the river flows into Wellington Bay, and Cadfael (NiNg-17), a large aggregation site north of the river that contains four communal longhouse structures and 24 associated hearth rows; have also been investigated (see Taylor 1967, 1972; Friesen 2002, 2004, 2007). There are no Dorset domestic structures currently known on the north side of the Ekalluk River, probably because, as Taylor (1967:227) recognised, the area is more suited for hunting and less so for habitation. It seems probable that at least some of the inuksuit caribou drive fences visible on the north side of the river, as well as the associated hunting pits and processing areas, also date to this period (Taylor 1972; Brink 2005).

### 7.4.1 Physical Setting

The Bell site is situated in an area referred to by the local Inuit as “Iqaluktuuq”, or “place of many char”. Approximately 50 km northwest of the modern community of Cambridge Bay (69° 06’ N, 105° 03’ W), Iqaluktuuq refers specifically to a roughly 3 km meandering stretch of the Ekalluk River that flows from Ferguson Lake into Wellington Bay. The Bell site is located at the head of the lake near the river’s outlet, on the southern side of the westward flowing river (Figure 7.2). The site is positioned on the northern side of a gently sloping elongated bowl-like vale whose long axis angles south-eastward to the shore of the lake (Figure 7.3). Given this topography, the site has some protection from the predominant northwest wind (Table 7.1) and offers an excellent
view up Ferguson Lake, although the higher ground present between the site and river obscures
the view of both the river’s channel and the land north of it to the occupants living on the south-
western area of the site, where House 6 is positioned (Figure 7.4).

Figure 7.3 Looking from the rear of House 6 toward Ferguson Lake.

Similarly, animals and people moving on the northern side of the river would be unable to
clearly see this area of the Bell site, an advantage the Late Dorset were no doubt aware of as the
activities associated with a habitation site could disrupt the movements of migrating animals and
adversely affect hunting success (Brink 2005:15). People living at the Bell site were also unable to
see Wellington Bay, although the ocean can be viewed by walking to higher ground immediately
south of the site, where the Early/Middle Dorset Ballantine site is located (Figure 7.2), or by
following the riverbank downstream for 10 or 15 minutes. It took the field party, walking at a
normal pace and carrying day packs, approximately one hour to walk from the Bell site to
Wellington Bay.

As noted, Bell is located on the northern slope of a three-sided vale so that it enjoys a
southern exposure to the sun; the fourth ‘side’ opens onto Ferguson Lake (Figure 7.5). At lower
elevations, particularly in the direction of the lake, the ground is somewhat swampy and should be considered generally unsuitable for occupation in the warmer months. As elevation and distance from the lake increases, the land becomes better drained and vegetation changes from a ground cover predominated by thick mosses and various species of grass and sedge to also include increased clumps of low-growing (< 1m) arctic willow shrubs and other deciduous plants. Away from the immediate shoreline of the lake, large stones and crumbled bedrock occasionally break through this vegetation cover. Larger boulders and wind-eroded denuded pockets (‘blowouts’) occur along the northern terrace bordering the site, where boulder caches and more recent tent rings also occur.

Figure 7.4 View of House 6 looking north. Only the high ground north of the Ekalluk River (right background) is visible from this area of the site.

The area encompassed by the Bell site is the most lushly vegetated part of the Iqaluktuuq area. This is due in part to the concentration of nutrients, particularly nitrates, which were deposited here since the site was first occupied (refer to Kevan et al. 1999), probably by the Early Dorset, whose apparently in situ artefacts have been found at various locations on the site,
including outside of House 6. Considering the cumulative effect of such occupations, it seems logical to assume that the Late Dorset who first settled at the Bell site encountered an area that might have been slightly less ‘green’ than it appears today, although the peat into which House 6 was constructed was fully humified, suggesting that the area was already relatively verdant by the Late Dorset era. Today the thick and often hummocky vegetation cover at Bell consists of several species of moss, grass and sedge, a variety of flowering species including arctic willow (*Salix arctica*), arctic heather (*Cassiope tetragona*), arctic fireweed (*Chamaenerion latifolium*), Labrador tea (*Ledum groenlandicum*), and either yellow arnica (*Arnica alpina*) or yellow marsh saxifraga (*Saxifraga hirculus*). Wetter areas in the more southerly (lower) parts of the vale support small colonies of cotton grass (*Eriophorum sp.*), in addition to grass / sedge / moss mixes. Low-growing berry-bearing plants such as crowberry (*Empetrum nigrum*) and arctic cranberry or partridgeberry (*Vassinium vitis-idaea*), both of which are very high in Vitamin C, can also be identified. It should also be noted that the northern side of the vale, upon which the site is situated, is much more heavily vegetated than the southern slope.

In terms of climatic conditions, environmental data compiled from the Environment Canada (n.d. a) weather station in the community of Cambridge Bay over the past 30 years (1971-2000) are used as a proxy for Iqaluktuuq. Table 7.1 has been created based on data selected from the larger Environment Canada charts (available on their website) and shows those longer-term weather factors that would most directly impact the design and use of domestic structures. As noted in Chapters 3.4 and 5.3.1, the archaeological appearance of Late Dorset culture coincides with a trend to warming conditions at *circa* 1500 B.P. which culminated in warmer than present temperatures between 1100 B.P. and 500 B.P., generally referred to as the Mediaeval Warm Period. While temperatures recorded by Environment Canada can be expected to be lower than the temperatures during the latter part of the Late Dorset period, this temperature difference is thought to have been only on the order of 1° Celsius (Barry *et al.* 1977:200; Przybylak 2003:166, 173, Figure 10.4c). For this reason, contemporary data serve as a useful and relevant point of comparison for climatic conditions between 1500 B.P. and 500 B.P.

As indicated in Table 7.1, only three months, June – August, experience monthly average temperatures above the freezing mark, while September temperatures average just below 0°
Celsius. At either end of this warmer period are temperatures which are, on average, 11°C Celsius colder. Such rapid thermal shifts very clearly delineate what can be considered the ‘warm’ or above freezing season (later June, July, August, and perhaps early September), from the cold or below freezing season (later September through the middle of May). ‘Transitional’ spring and fall periods can be roughly correlated with late May through early-mid June, and late August through mid-September, although of course the actual timing of seasonal changes is subject to more variables than air temperature alone and these monthly markers can serve as estimates only. Annual thawing of permafrost is expected to proceed most rapidly between June and mid-September, when temperatures are consistently above freezing and most snow has melted.

July and August are on average the wettest months in Cambridge Bay (Table 7.1) and this is no doubt the same at nearby Wellington Bay. In contrast, due to the extremely cold and dry air mass that dominates the region between November and May, less than 10 mm of precipitation fall during each of these months. This means that the total amount of snow needed for use in housing (measured as total snow depth per month) is generally not widely available until November or December, when average depth of snow cover is greater than 15 cm, and continues in an average year until May. However, wind patterns and local topography can result in some locations (particularly the leeward side of slopes) having deeper deposits earlier than more exposed locales, where sufficient snow might never accumulate (refer to Savelle 1984).

Average wind velocities recorded in Cambridge Bay indicate that speeds are fairly consistent through the year, ranging between slightly less than 20 km/h and 23 km/h (Table 7.1). These relatively low average wind speeds are consistent with Przybylak’s (2003:25, Figure 2.6) findings, which indicate that the islands in the middle of the Arctic Archipelago, removed from the large marine water-bodies where storm systems develop (J.B. Maxwell 1992), usually experience low surface wind speeds. However, J.B. Maxwell (1980:150) emphasises that even minimal winds can cause significant physiological stress when combined with low temperatures. For this reason, he notes that while average wind speeds may appear comparable to those in more temperate regions, wind speeds in the Arctic can be quite variable even within a short period of time (J.B. Maxwell 1980:159). Given this variability, the actual effects of wind (and wind chill) can be masked in this cold climate, especially when one considers its potential effect as it approaches the
maximum recorded speeds (refer to Table 7.1).

In terms of direction, winds in Cambridge Bay are fairly uniform, blowing from the northwest for most of the winter months (Table 7.1). As spring approaches, the winds shift to blow from the northeast, and are at their most variable during the warmer summer months when winds typically blow from the west and northwest. At Iqaluktuuq, winds blow down across central Victoria Island and Wellington Bay for most of the year, travelling eastward up the Ekalluk River and into the Ferguson Lake basin.

An important consideration for the Late Dorset at Iqaluktuuq must also have been the condition of the sea ice. Late Dorset across the Arctic were highly dependent upon marine resources, particularly ringed seals (Murray 1999; Darwent 2003), and hunters and their families would have paid particular attention to ice conditions in their vicinity. According to data collated and presented by both The Atlas of Canada (n.d.) and Canadian Ice Services (n.d. a) for the years 1971 through 2000 and shown in Table 7.1, sea ice in Wellington Bay does not begin to break up until early or mid-July and is almost completely gone by the last week of that month in an average year. It will not begin to re-form until the middle of October and typically does not present a stable platform until late October. This means that, in an average year and under contemporary weather conditions, Wellington Bay experiences approximately 11 weeks with less than 30% sea ice coverage and 41 weeks when ice covers greater than 70% of the water surface.

### 7.4.2 Cultural Setting

The most obvious cultural features at Bell are those associated with the Thule Inuit occupation of the site (Figure 7.5). Easily visible from the air, these large semi-subterranean sod and stone structures confirmed to Taylor (1964a, 1967, 1972) that Jenness had been correct in his assessment of the area’s archaeological potential. Taylor’s initial work at the site identified, in addition to the Thule component, the presence of in situ Late Dorset deposits, as well as Early Dorset artefacts that he suggested indicated either an actual Early Dorset occupation or curation by ensuing Late Dorset occupants (Taylor 1967:223).

Taylor (1967:54) describes the site as containing 16 semi-subterranean structures and associated stone caches situated along a sloping ridge that varies between 5 m and 7 m above Ferguson
Lake, or between 14 and 16 m asl. The five “stone house ruins” all appear to be Thule, while the remaining features, marked by rectangular or oval depressions, may be Thule or Dorset. Near the northern edge of the site, closest to the river, several other dwellings were observed. Structures recorded as House 1, House 2 and House 3 on Taylor’s site map (1967: Figure 16) were partially excavated. The site was revisited in 1988 (Taylor et al. 1988), at which time a large stone Thule structure (House 4), located approximately midway between Houses 1 and 3, was completely excavated. As well, a structure referred to as House 2 and described as a “5 x 4.5m shallow sub- rectangular depression NW of House 3 and near the S [south] end of Bell site” was partially excavated (Taylor et al. 1988:1). It should be noted that the House 2 of the 1988 excavations does not refer to the House 2 of the 1965 excavations, as shown in Taylor (1967: Figure 16). This point will be elaborated upon in Section 7.5.6.

![Aerial view of the Bell site showing House 6 under excavation (left foreground). Four Thule Inuit semi-subterranean structures (recognisable by their stone architecture) are visible along the terrace edge toward the river.](image)

**Figure 7.5** Aerial view of the Bell site showing House 6 under excavation (left foreground). Four Thule Inuit semi-subterranean structures (recognisable by their stone architecture) are visible along the terrace edge toward the river.

 Renewed archaeological work in the Ferguson Lake – Wellington Bay area by the
Iqalultuuq Project has confirmed and expanded upon many of Taylor’s initial findings. At least eleven Late Dorset and six Thule dwellings are now known to have been constructed at the site (Friesen *pers. comm.* 2002), in addition to a number of other structures of uncertain cultural affiliation (Figures 7.3 and 7.6). Numerous late prehistoric and historic tent rings and caches are also present. On the northern side of the river, at least two (and perhaps three) hunting systems consisting of *inuksuit* and shooting pits (Brink 2005) have added to the number of drive systems first reported by Taylor (1967, 1972) closer to the sea coast (refer to Figure 7.2). Further to the west, the longhouse structures initially located by Taylor have been mapped and partially excavated (Friesen 2000, 2007), providing additional information on the Late Dorset occupation. It is unclear, based upon current information, what (if any) relationship existed between the Bell site and the other Late Dorset occupations at Iqalultuuq.

At least three other Late Dorset locales have been reported on south-eastern Victoria Island. Two longhouse aggregation sites were located during helicopter survey in 1988: Oxford - II (NgNg-2) in Oxford Bay (near Starvation Cove), midway between Wellington and Cambridge Bays; and Jamesee-1 (NkLx-3) near Jamesee Lake on the Jayco River, about 5 km inland from Albert Edward Bay, which opens onto Victoria Strait (Figure 7.1). Both sites appear to have multiple domestic structures nearby (Taylor *et al.* 1988). A third Late Dorset longhouse site was located at the close of the 2002 field season near Freshwater Creek, just outside of the town of Cambridge Bay (Friesen *pers comm.* 2002), but unlike the Oxford II and Jamesee-1 longhouse sites, the Ekvana site (NgNc-19) appears not to have had associated Late Dorset domestic habitations. Based on current knowledge of the region’s archaeology, it appears based on sheer number of architectural remains that the Bell site was the favoured location for Late Dorset.

7.5 Excavation of House 6
House 6 is located at the south-eastern end of the site, furthest from where the Ekalluk River emerges from Ferguson Lake (Figure 7.6). It is one of a group of six shallow semi-subterranean Late Dorset structures which occur in a rough arc that follows the edge of gently sloping ground that rises up to a northern vegetated terrace separating the Bell site from more recent and largely
Figure 7.6 Map of the Bell site indicating the position of House 6 (map adapted from Friesen 2000b).
historic occupations (NiNg-18) along the southern bank of the Ekalluk River. This area of the site is farthest removed from the main visible locus of Thule Inuit occupation, which appears to have been centred largely along the north-eastern part of the terrace leading towards the water.

7.5.1 Late Dorset Architectural Forms Present at the Site
Late Dorset structures at the site can be divided into two gross categories based on surface inspection. The first of these, appearing as semi-rounded and relatively deep depressions up to 1 m deep, seem to be the smaller of the two types of dwelling and have diameters of approximately 2.5 m (it is possible that they were larger but have been reduced in area by post-occupation slumping of the sharply-angled walls). Alternately, these depressions, which have not been excavated, might have served as large storage pits (it is also conceivable that they may represent very small single-roomed Thule dwellings lacking entrance tunnels). The second dwelling type, of which House 6 is a member, appear as shallow (< 50cm) rectangular depressions in the surface vegetation.

7.5.2 Selecting the Structure
House 6 was selected for excavation largely because of the apparent separation between this area of Late Dorset activity and the subsequent Neoeskimo occupations closer to the lake (Figures 7.3 and 7.6). While the robust stone and sod dwellings in that area were obvious Thule features, several comparatively ephemeral structures were more ambiguous and could not be assigned a cultural affiliation without first recovering diagnostic artefacts. By comparison, the shallow rectangular dwellings found in the southern part of the site not only gave the impression of a physical separation from the Thule presence at the site, but also compared most favourably with Late Dorset architectural remains reported elsewhere in the Eastern Arctic.

House 6 was also selected because of its well-drained appearance, which suggested excavation could progress without prohibitive delays caused by permafrost. In comparison, the deeper Late Dorset dwellings, with their apparently thick mantle of moss and wet interiors, suggested an environment less conducive to the goals of the research, which was the complete and careful excavation of one Late Dorset structure. Finally, visual inspection of House 6’s surface indicated that architectural elements were present beneath the vegetation overburden.
7.5.3 Appearance of the Structure Prior to Excavation
Surface inspection of House 6 showed a shallowly excavated rectangular structure partially built into the sloping ground to grid north (Figures 7.3 and 7.4). Oriented northeast so that its long axis pointed to the lake, an asymmetrically-placed entrance was suggested by a break in the eastern wall. The raised terrace immediately north of House 6 offers some protection from the north-westerly winds that dominate from late summer to late winter (Table 7.1).

Preliminary inspection of House 6 indicated the structure measured approximately 5.25 m by 4.25 m (excavation increased these dimensions to approximately 5.75 m by 4.5 m, or 25.9 m²), with a northwest-southeast long axis pointed toward Ferguson Lake (Figure 7.3). The depression defining the interior of the structure was most apparent along the northern perimeter of the house where builders had dug into a small natural embankment when excavating their dwelling. Several rocks, most situated on or near the dwelling’s peripheral berm, were visible through the overlying vegetation. No internal features were indicated.

7.5.4 Excavation Strategy and Methodology
An excavation grid consisting of 50 one meter² units was situated over the depression and its associated berm using a theodolite, and a total of 33 m² were excavated to sterile. This grid was not oriented to magnetic north, rather, it was set in relation to the dwelling itself so that the structure’s long axis and that of the grid corresponded. Because of this arrangement, all discussion of direction in the following sections refers to grid north and not to the cardinal point (i.e. grid north is in actuality northeast when magnetic north is used). Elevations were taken for each of the excavation units using each square’s south-eastern corner before excavation began.

Once this was completed, all of the squares (with the exception of those in the most southerly grid row, which appeared to be outside of the dwelling) were de-sodded. Ten centimetre baulks were left in place along the edges of all units, and once sterile substrate was reached stratigraphic profiles were drawn of the baulks and they were then removed. Prior to excavation it was determined, in order to most clearly expose the complete chaîne opératoire of the structure, that a horizontal excavation strategy would be used so that each level could be exposed throughout the structure in its entirety before the next level was removed. In addition, all units were excavated according to natural levels. Within each unit, flakes and faunal materials
were recorded and catalogued according to level and flakes were piece-plotted onto the unit drawing. Artefacts were recorded in three-dimensions referencing the south-eastern excavation peg of each unit and their positions indicated on unit drawings. With the exception of Levels 2 and 3, whose mixed cultural deposits could not be differentiated, 100% of all deposits were dry screened through 3 mm mesh.

At the start and end of every excavation level a 1:10 scale drawing was made in each unit. On these sketches were indicated the positions of all flakes and artefacts recovered, and all structural features were marked (those which were not yet fully exposed were indicated by a dashed line), as were any other notable features. Stones and other elements thought to have structural significance were left in situ, or, where this was not possible, removed only after they had been drawn on to the unit plan and their elevation taken using the theodolite. Stones that were clearly not associated with the house occupation, or that appeared to be out of context, were mapped and then removed so that a less ambiguous view of the dwelling’s architecture could be recognised. Upon its completion, a short written description of each level was made by the given excavator; particular note was made of the matrix’s composition and characteristics, associated finds, and apparent relationship to neighbouring units and / or the dwelling’s overall architectural form. Stratigraphic profiles were drawn of the north and east baulk walls of all units as sterile substrate was reached, while profiles of all four walls were recorded in units along the margins of the excavation. The baulks were then removed.

All excavations were conducted using trowels. A plan drawing is shown in Figure 7.7.

7.5.5 Feature Stratigraphy
Six stratigraphic levels were identified during the excavation of House 6 and north-south and west-east profiles of House 6 are shown in Figure 7.8 (using the north and east baulk of each unit). These levels are described below.

Level 1 post-dates the Late Dorset occupation of House 6 and overlay the entire gridded area. Composed of active sod and loose brown humus, on average this layer was approximately 4 cm deep. A very small amount of faunal material was recovered during removal of the sod cover and remainder of this level; it is probable that the material relates to Neoeskimo activities.
Figure 7.7 Plan drawing of House 6.
Also post-dating the Late Dorset occupation of the structure is Level 2. As with Level 1, this deposit overlay the entire grid area. It can be characterised as darker in colour than Level 1, with less root activity and an increasingly peaty humic content. Averaging 7 cm in depth, it contained slightly higher numbers of faunal remains, and also produced cut or worked caribou antler, as well as several formal Neoeskimo artefacts.

Level 3 was more variable in terms of both its depth and composition throughout the excavated units. The uppermost part of the level, designated as Level 3a, appeared as a dark brown sod and peat deposit with abundant faunal and artefactual materials, all probably associated with Neoeskimo activities. As excavation of this level continued it gradually changed in appearance to a very dark brown colour, Level 3b, and became slightly oilier in texture. This dark and comparatively greasy deposit was only found within the interior of House 6; near the bottom of this level several rocks associated with the Late Dorset occupation of the dwelling were revealed. The lower part of this level produced faunal materials which were more darkly stained than those higher up, suggesting they had been encapsulated in the peat deposits for a longer period. Additionally, a small number of apparently in situ Late Dorset artefacts were also excavated. Unfortunately it was not possible to clearly distinguish between Level 3a, where both Thule and Dorset materials were located, and Level 3b, where in situ materials almost assuredly associated solely with the Late Dorset were found. For this reason Level 3 in its entirety is considered a culturally mixed deposit. This level was thickest near the peripheral walls, sometimes reaching 15 cm in depth, and was as little as 8 cm deep in the centre of the structure.

An almost pure Late Dorset occupation is associated with Level 4, where the majority of Late Dorset materials and structural features were recorded. This level was only associated with the dwelling’s interior and is characterised as a greasy and very dark brown or black stratum containing small water-worn pebbles (< 2 cm diameter). The depth of this level varied depending upon where in the dwelling interior the measure was made; the layer was thickest (15 cm) at the rear of the structure, while the shallowest deposits occurred closer to the front of dwelling and were less than 5 cm. The originally excavated depression defining the structure became very apparent in this level and a number of architecturally significant cobblestones, flagstones, postholes, artificially-placed sods, and discrete areas of tiered stones were present, in addition to
Figure 7.8: Stratigraphic profiles of House 6.
numerous diagnostic Late Dorset artefacts.

Level 5 was identified in a limited number of locations. As shown in Figure 7.8, this deposit most commonly occurred at the edges of the dwelling depression and normally appeared as a looser and less organically-rich version of Level 4. This stratum varied between 3 cm outside of the northern perimeter of the structure and 25 cm along the southern wall berm. Deposits identified as Level 5 contained a number of stones and gravel which were not *in situ*, although their origins (either natural or cultural) could not be absolutely determined. The deposit also included a small number of flakes, faunal bones, and other cultural materials, but no diagnostic objects were recovered that could be used to establish its cultural affiliation. Given its context, Level 5 is interpreted to be Late Dorset in origin and presumably represents remnants of an earlier structure. This apparent dwelling was largely eradicated by the architect-builders who cleaned and refurbished the location early in the creation process of the House 6 feature.

The final level identified during excavation is Level 6, a pre-occupational sterile substratum characterised by light brown beach sand, small stones, and gravel. It occurred in direct contact with either Level 5 (outside of the dwelling interior), or Level 4 (inside the feature depression). No cultural materials were present in the approximately 10 cm of deposit excavated.

7.5.6 Previous Archaeological Activity at House 6
As work proceeded it became apparent, based on close examination of matrix and stratigraphy, that parts of the northern interior near the peripheral wall, as well as some contiguous portions stretching into the structure’s interior, were not comparable with other parts of the dwelling. Comparison revealed that, despite containing small fragments of faunal material, flakes, and artefacts, the identified stratigraphic levels recognised elsewhere in the feature (see Section 7.5.5) could not be followed into these sections where the matrix presented as a looser and more mottled medium. The source of this disturbance was initially unclear because there had been no obvious or visible evidence of damage to the structure’s vegetated surface.

Careful examination of the field notes taken by William E. Taylor, Jr., James W. Helmer, and Jack W. Brink during their work along both sides of the Ekalluk River finally provided the clues needed to solve the mystery of this disturbance. In these notes are recorded the partial
excavation of a structure identified in 1988 as House 2. Prior to arriving at Iqaluktuuq I had read those notes and Taylor’s (1964a, 1967, 1972) publications on the area’s sites, assuming that the House 2 investigated in 1988 was the same House 2 identified by Taylor in his 1972 publication. Seemingly to confirm the veracity of this assumption is the fact that the House 2 marked on the 1972 site map is located in the same general area as one of the deep circular pits mentioned previously, a feature which bore evidence of archaeological activity in its interior. However, when I compared the field sketch of House 2 made in 1988 with the pattern of disturbance already identified within House 6, the two agreed. Armed with this knowledge, and using the sketch as a guide, activities first focused on delineating the edges of the 1988 units so that this disturbed fill could be removed (some areas of undisturbed deposit were identified in this process and left in situ, to be excavated in accordance with the rest of the structure).

The feature was then left with something of an identity crisis. As noted, Taylor had already designated a structure partly investigated in 1965 as House 2 (Taylor 1972), reusing that identifier for the Dorset feature tested in 1988. The reason for this mix-up will never be known with certainty, although it is likely that the 23 years which elapsed between site visits, in combination with a site sketch which indicated only basic information on feature locations, caused the 1965 House 2 to be confused with the one discussed in this dissertation. The exact location of the House 2 tested in 1965, which based on examination of collections housed at the Canadian Museum of Civilization was a Thule feature, remains to be determined.

In an effort to avoid added additional misunderstandings it was decided that the 2002 dwelling would be referred to as House 6, following the sequential numbering system employed at the site by Taylor and continued by Friesen. Mystery solved, work resumed on newly christened House 6.

7.5.7 Defining the Peripheral Boundaries of House 6
Prior to laying out an excavation grid and removing surface vegetation, a preliminary examination of House 6 indicated that the peripheral wall berms of the structure were largely indistinct. Only the northern long wall, which was built into the natural bank and terrace separating the main part of the Bell site from the river, had a clearly defined vertical relief, approximately 20 cm, between
‘inside’ and ‘outside’ areas. Conversely, the southern long wall was more diffuse, as were contiguous portions of the western and eastern walls, and it was at times difficult to trace inner and outer margins (Figures 7.7 and 7.8). A frost crack cutting through the southern wall and part of the south-eastern section of the structure’s interior, caused by an ice wedge located some 35 cm beneath the surface, further complicated delineation of the wall along this length before (and during) excavation.

Upon excavation, the southern wall and the southern half of the western wall proved to be composed of a banked amalgam of old beach material and peat that was first thrown aside during the original construction excavation of the dwelling’s depression before being later massed against the structure’s outer wall. Sod and fill were also used inside the dwelling, where displaced materials were piled along the inner edges of the boundary to presumably anchor the structure’s covering, as well as to provide added insulation. As described in Chapter 3.3.4, sod has a natural tendency to decay and lose form with time, resulting in greater deterioration of architectural elements made predominantly of this material. In House 6, this resulted in the ‘melting’ of the low berm marking the southern limit of the interior, which was formed primarily of sod with some gravel, as the sod flowed outward from its original location after the structure’s final abandonment. As a result of this normal process, the berms identified in 2002 were likely much wider and lower than they were when originally created. Stratigraphic analysis indicates that some of this material slumped into the interior of the house depression after the structure was abandoned, partially covering adjacent occupation deposits.

Conversely, the dwelling’s northern perimeter was most clearly defined. As indicated previously, this wall had been created as the house builders dug into the naturally sloping ground immediately north of House 6. While only approximately 2 m of this perimeter had been untouched by the 1988 work (field-notes hold little architectural information), enough of the section remained for our investigations in 2002 to establish that parts of the northern and western walls were created using techniques that were more complex than those employed elsewhere in the structure. These are discussed in the following sub-section.
7.5.8 Northwest Corner and Rear Wall Construction

Creation of the north-western ‘corner’ and rear wall of House 6 involved a comparatively greater architectural investment on the builders’ part in terms of time, care, and materials than was seen in any other part of the dwelling (Figure 7.9). As discussed in Section 7.5.10, the decision to combine building techniques and materials in a novel manner to produce these unique architectural elements appears to have been based upon functional and practical considerations.

From a construction perspective, the initial production step taken to create the north-western corner of House 6 involved the sharp down-cutting of the bank into which the northern part of the dwelling was set. Although, as noted earlier (Section 7.5.6), much of the northern dwelling perimeter had been removed previously, the intact section shows that this down-cutting created a north-western dwelling perimeter defined by a relatively acute angle as the newly created wall travelled downward to the floor (see B1 in Figure 7.8). While this action took advantage of a natural variance in site topography to create an effective divide between house interior and exterior, the occupants of House 6 appear to have been aware that the steeply-angled earth cut might unexpectedly slump while the structure was being occupied. For this reason, architects added a tiered section of small palm-sized flat stones and sods, both probably derived from construction excavation, along the northern wall where it intersects with the rear western wall; the addition measured approximately 90 cm in length, 30 cm in maximum height, and had a mean width of 25 cm (Figures 7.7 and 7.9). This area was in direct association with a somewhat recessed area of the structure that, as will be argued below (Section 7.5.10), was an activity area probably associated with food preparation activities.

Concerns regarding lateral pressure also appear to have directed the construction of two reinforced sections of the western rear wall (Figures 7.7 and 7.9). As a first step, seemingly meant to offset slumping concerns, a series of cribbing stones (with an average height of 15 cm - 20 cm) were placed in a line along the western perimeter of the excavated house depression for a length of about 80 cm (Figures 7.10a and 7.10b). This section of the western rear wall was further strengthened by the addition of a 90 cm long sod and stone tiered wall (refer to Figure 7.11). This construction was created by layering, in four alternating courses, small (<10 cm) horizontally placed flat stones and small blocks of peat, although this elaboration appears not to have been
Figure 7.9 Detail of the north-western corner and rear (western) wall of House 6.
associated with any other internal features or identifiable activity areas. The more southerly section of the rear wall was less carefully built, involving only the removal and repositioning of peat and gravel as the house depression itself was dug. Given the lack of obvious architectural distinctions, stratigraphy alone was used to separate natural matrix from artificial dwelling interior along much of the southern structural boundary.

7.5.9 The Entrance
A probable entrance was identified during initial surface inspection of House 6 based on a break in the front (eastern) wall of the structure. Although situated to one side of the front wall, rather than in its centre, the entry’s placement was otherwise characteristic of relatively poorly known Palaeoeskimo doors (see discussion in Chapter 10, also Appendix A) in that it provided its occupants with an immediate view of the water.

However, excavation of the entrance proved that this feature was more sophisticated than initially suspected, involving both a short (1.25 m) passageway extending from the main living area of the dwelling, as well as what is interpreted as a rudimentary cold trap. The passage portion
Figure 7.10b  Another view of the cribbing stones lining part of the rear alcove area in units N54W56 (foreground) and N55W56 (rear).
Figure 7.11 Section of the rear wall that was built up using layers of sod and small stones (the foreground floor area has already been taken to sterile subsoil).

of the entrance was created due to a choice on the builders’ part not to dig into a sterile raised hummock immediately in front of the front wall of House 6 (as shown in Figure 7.7), instead the dwelling’s entire front perimeter skirts this area and creates an irregular wall leading to the entrance. The mound was thus incorporated into the dwelling’s architecture as the northern perimeter of the entrance’s wall margin. The northern side of the entrance was further defined by the addition of seven medium-sized rocks along the lip of the entry depression. Interestingly, these rocks acted as a boundary marker, separating Level 4 cultural deposits within the dwelling and entrance from the sterile deposits (Level 6) immediately to the north. In contrast, the southern perimeter of the entrance was much less formally constructed, consisting of re-deposited fill likely derived from excavation of the dwelling’s pit. Despite this informal construction, however, the distinction between Level 4 cultural deposits within the house and the artefact-poor to sterile deposits outside of the southern wall of the entrance is clear (Figure 7.8).

Finally, the House 6 entrance is notable for its rudimentary cold trap, which is 10 cm
lower than the floor surface of the main living area (refer to Figure 7.8 ‘C’). As discussed in Chapter 6.3.5, cold traps are one means through which cold outer air (which sinks) can be kept out of a structure’s interior as people pass into and out of the dwelling. This design would also reduce the severity of drafts entering the structure through gaps in the door and is akin to one, also identified as a cold-trap, in Structure 1 at the Qeqertaaraq site in Greenland (Appelt and Gulløv 1999:8; Chapter 6.6.1). The addition of this form of entrance suggests rather strongly that, no matter how perfunctory it might seem, it was selected because the House 6 occupants intended to inhabit the dwelling for some part of the cold season.

7.5.10 Identifying the Living Surface and Activity Areas Inside the Structure
An activity area of uncertain function was identified in the north-western corner of the structure. This part of the dwelling had a somewhat concave expansion that extended outward approximately 25 cm beyond the rest of the western margin (Figures 7.7 and 7.9), creating a slightly recessed interior area. The extension seems to be associated with areas of more complex construction identified on the western and northern walls (see Section 7.5.8), as well as with a discontinuously paved area (the only instance where paving stones were used within House 6).

The cultural deposits within this alcove area were particularly thick and black, being greasy and pungent in composition. Adjacent units excavated in 1988 (falling within the 2002 grid units of E10 and E9) were similarly described (Taylor et al. 1988) and yielded three pieces of a soapstone vessel, probably from a context comparable to Level 4 (the main occupation layer). While no vessels or parts thereof were found in this area in 2002, the presence of the previously recovered pieces, in combination with the greasy matrix and small quantity of burned fat and bone, implies that some sort of cooking or food preparation activity likely occurred here.

In comparison, cultural deposits associated with the remaining floor area were comparatively thin, dry, and hard packed. While the floor of the dwelling was levelled and most rocks removed when the depression was excavated (before the main occupation appears to have occurred), it does not appear that the builders specifically ‘created’ or purposefully tamped down the living surface; the compaction noted during excavation most probably resulted from the day-to-day activities of the structure’s occupants as they went about their daily lives within the
dwelling. No localised activities could be identified in the dwelling’s central area, which yielded a comparatively meagre quantity of material culture and contained no special-purpose architectural features. The small amounts of occupational residue excavated from the central area may therefore be a reflection of periodic cleaning episodes (Schiffer 1987:58-71), which would remove or otherwise displace obvious or ‘in the way’ items. Binford (1983:177) also suggests that such activities can be recognised archaeologically through the “presence of a drop zone composed of debris biased toward the smallest bone splinters [which] indicates that regular cleaning of the area took place”.

However, when Howse (2008) examined bone refuse from four contexts within the structure (north-west corner, south-west corner, central floor area, and entrance), she noted a consistently low degree of bone fragmentation throughout the dwelling interior (Howse 2008: Table 2). It is hard to imagine that House 6 in its entirety was cleaned so meticulously that little fragmented faunal material remained, and the lack of differentiation suggests an alternate explanation: that some sort of floor covering, which limited the ability of bone and other materials to become incorporated into the floor deposits, was used inside House 6. The thin organic deposit (< 5 cm) encountered in the presumably intensively used central area suggests a covering is at least conceivable, although in the absence of more definitive proof, little further can be said concerning the effects of maintenance and floor covering on the assemblage.

Finally, Howse’s study found little in the faunal distribution to support the idea that the dwelling’s occupants carried out activities in a spatially discrete or localised manner. The lack of obvious patterning in the bone sample is not unsurprising given the relative lack of architectural differentiation or activity-specific loci within the dwelling (with the possible exception of the probable food preparation area in the north-western part of the structure, which yielded the highest NISP [Howse 2008: Table 1]).

7.5.11 House 6 Superstructure
Little remained to suggest how the architects of House 6 had designed and built the covering for their home and it was difficult to make inferences about the materials which groups in this region might have favoured given the lack of excavated Late Dorset domestic dwellings west of
Somerset Island. House 6 was obviously roofed – occupations of any length in the Arctic require some sort of covering, even if that consists of only the most basic bivouac. Three postholes were provisionally associated with House 6 and a 15 cm length of wood may be a fragment of a pole (refer to Figure 7.7 for their locations). The postholes (ranging between 5 cm and 10 cm in diameter and averaging 6 cm in depth) were all located within the inner boundaries of the structure and were set so they ran roughly parallel to the western rear wall. None was associated with supporting stones or other secondary braces. The possible post fragment was also located inside the dwelling, at the inner boundary of the southern perimeter wall. There can be no doubt that other posts were used to create a supporting framework for the superstructure (see various diagrams in Faegre [1979]), however no others were located 1988 or 2002.

Remains of a roof covering were not identified and there was no stratigraphic evidence for a roof fall, which typically occurs when sod is used in roof construction. However, a slightly deeper sod deposit was recognised along parts of the dwelling’s outer berms (Figure 7.8), suggesting peat was repositioned there once the superstructure was in place to help anchor the covering and / or provide additional insulation. The small amount of Level 5 material identified immediately outside of the north-western perimeter of the dwelling (refer to Figure 7.8) may be a remnant of such action. The bank into which House 6 was built is otherwise culturally sterile and Level 5 materials located there could only be deposited through human agency.

7.5.12 The Abandonment and Post-Occupation Life of House 6

There is no stratigraphic evidence that House 6 was reoccupied by the Late Dorset once it was abandoned and the recovered technologies contained in Level 4 are, unless otherwise noted, considered to be those manufactured and used by the dwelling’s inhabitants.

While little attention has been directed to the process by which Palaeoeskimos vacated dwellings, there is no reason to believe that they did not weigh the same basic sets of considerations as other groups when leaving a structure. Stevenson (1982) has proposed five general kinds of abandonment based on analysis of historic mining encampments and suggests that each can be identified archaeologically by examining the associated artefact assemblages. Abandonment categories include: 1) planned, where few objects in the process of use /
maintenance / manufacture are encountered; 2) unplanned, where high frequencies of artefacts and / or features in the process of use / maintenance / manufacture are located; 3) planned with intended return, when items are deposited in areas separated from where they were typically used; 4) unplanned with intended return, similar to the previous except items might be cached near where they were used; and 5) planned final, for which rare, valued, or personal items, as well as un-exhausted materials, are not left behind (excluding lost items). Abandonment that was planned and intended to be final might also include the discard of large amounts of food bone refuse and other detritus in concentrated areas as cleaning activities were curtailed.

Recognising the type of abandonment which occurred at a structure can help to establish not only the inhabitants’ intentions at the time of departure but can also inform on why some materials were left behind while others were not. While Stevenson’s argument is not without problems, as Binford’s (1981; see Chapter 1.2.6) commentary has indicated (see especially his discussion concerning the difficulty of distinguishing between successional and de facto deposits), the study remains a useful guide for investigating abandonment processes. Using Stevenson’s criteria, the abandonment of House 6 does not seem unplanned, for although there is evidence of tool manufacture in the form of flakes, worked antler, and bone fragments (see Section 7.6.2), the great majority represent minimally invested detritus or items that were lost, broken, or not worth transporting. House 6 also seems not to have been abandoned with the intent of return as there is no evidence that surplus materials were cached for later retrieval (although it is possible that items were stored outside the dwelling in undiscovered features).

It therefore appears likely that a planned or planned final abandonment strategy was implemented by the House 6 occupants, although it is unclear from the excavations which actually took place. Stenton and Park (1994:413) argue it is possible to distinguish between planned and planned final abandonment at Neoeskimo sites, suggesting that structures intended for reuse were not completely dismantled when vacated. However, Freuchen (1961:40) noted that Polar Inuit structures were “each spring ... left by the inhabitants and automatically become public property next fall”, demonstrating that the materials left behind when a dwelling was vacated could be claimed by others and were not held in trust until the original builders returned.

Freuchen’s observations suggest, at least in this one instance, that the degree to which a
dwellings were dismantled should not necessarily be viewed as a correlate of its occupants’ future intentions regarding refurbishment/reoccupation. Indeed, there are numerous reports throughout the Eastern Arctic of Neoeskimos mining older dwellings for building materials (e.g., McCartney 1979b; McGhee 1984a; Park 1988, 1997; Dawson 2001), indicating useable materials were frequently left behind and claimed by others. Considering the widespread nature of this behaviour, it seems probable that valuable materials were removed wherever possible, regardless of whether the dwelling was intended to be reoccupied, to ensure that they remained in the custody of the original builders. This may also have been true of the Late Dorset, or at least those who built House 6, where the only elements left in situ were those which were difficult to transport (e.g., sod), could be easily obtained elsewhere (e.g., stone), or were presumably otherwise judged non-essential.

After House 6 was abandoned by its Late Dorset occupants, stratigraphic and artefactual evidence indicates that the general area hosted undetermined but apparently non-intensive activities associated with the Thule Inuit. It is difficult to determine the length of time which elapsed between the Dorset and Neoeskimo uses of this area, although two scenarios can be suggested. One possibility involves Thule Inuit groups entering the Iqaluktuuq area and settling at Bell very shortly after the Late Dorset occupation of House 6 ended (there are no indications in the recovered assemblage of direct contact between the two groups, although, as discussed in Chapter 5.4, such signs would not necessarily be expected). However, the single radiocarbon date derived from House 6 (collected by William Taylor and calibrated to 2-sigma by Friesen [2004: Table 1]) of 1035±125 B.P. (S-3038) suggests a near overlap was unlikely. This is because the ancestors of the Inuit do not appear to have moved into the Eastern Arctic until between 950 B.P. and 750 B.P. (Park 1994; Morrison 1999; McGhee 2000), not settling south-eastern Victoria Island until after 750 B.P. (Friesen 2004: Figure 2). If the single radiocarbon assay from House 6 and the estimate of the Neoeskimo arrival in the area are both accurate, then the two periods of activity at House 6 were separated by over 250 years, precluding interaction.

The second possibility, and the one considered to be more likely, is that House 6 fell into disuse and sufficient time elapsed for a thin topsoil layer to develop before the site was occupied by Thule Inuit groups. How long this hiatus was required to last is uncertain as Forbes (1996) has
noted that it can take generations for vegetation to recolonise areas disturbed by human activities, while Kevan et al. (1999) remark that the most intensely vegetated areas are often those which have experienced some level of human occupation. Whatever the timeline involved, stratigraphic analysis indicates that the Late Dorset deposits were already covered by some depth of overburden when Neoeskimo activities, perhaps related to the large stone caches positioned directly north of the dwelling (see Figures 7.5 and 7.6), took place in the area. During this use of the locale, some Thule artefacts and associated faunal materials were incorporated onto and into the thin sod layer covering the in situ Dorset deposits, perhaps as a result of foot traffic or similar generally non-invasive activities, resulting in the formation of a culturally mixed Level 3 stratum.

7.5.13 Discussion
The preceding portion of this chapter was intended to provide a detailed description of the archaeological remains encountered during the excavation of House 6, as well as the physical setting in which the structure was found. As should be evident from this discussion, the Iqaluktuuq area is the scene of a biannual ecological explosion, mainly due to the spring and fall migration of caribou and char, but also from a range of secondary resources including numerous avian, terrestrial, and marine species. The abundance of predictable resources is undoubtedly the reason why the area has been occupied, at least intermittently, since Pre-Dorset groups first entered south-eastern Victoria Island.

Evaluation of the architectural technology employed to construct House 6 indicates that those who designed the dwelling considered their tenure at the site to be worth the investment of a certain amount of time, effort, and resources to create a shallowly semi-subterranean sod and earth-banked structure whose internal architecture was minimally elaborated. As will be discussed below, these remains indicate that House 6 was more than a simple tent dwelling, but that it was not as substantially built as some Late Dorset remains. It does not appear that the architectural elements left in House 6 when it was abandoned by its occupants were recycled or reclaimed during subsequent Dorset occupations. Consequently, keeping in mind the effects of various taphonomic processes, it appears likely that all of the architectural components not removed during dismantling and abandonment should be represented archaeologically.
Analysis of the architectural technology used to create House 6 points to a dwelling that was intended to have a relatively low cost, a strategic choice which undoubtedly led to the careful evaluation of construction and necessary maintenance expenses against the anticipated use(s) and length of occupation of the structure. Such planning resulted in what McGuire and Schiffer (1983:282) term a low-cost / high maintenance building strategy (see also Kent 1991; Kelly et al. 2005). The adoption of this technical approach meant that, as seen elsewhere in the Eastern Arctic (e.g. Park 1997; Dawson 2001), the Late Dorset may, at times, have opted for a minimalist architectural strategy that resulted in less elaborate architectural remains.

7.6 Making Sense of House 6
The previous sections of this chapter presented House 6 as it was found archaeologically, with little in the way of interpretation offered regarding questions including when it was occupied, for how long, and how its design and use might inform on Late Dorset social organisation. The following sections of this chapter will attempt to address some of these issues.

7.6.1 The House 6 Faunal Sample
Analysis of the House 6 faunal sample was undertaken by Lesley Howse (2005, 2008), who examined bone refuse from different areas of the structure’s interior and compared that assemblage with one excavated from a nearby midden deposit. She confirmed field observations which indicated that caribou and fish were key components of the occupants’ diet (Howse 2008: Table 1), and she also identified the presence of smaller quantities of fox and resident and migratory bird species. Marine resources, represented by ringed and bearded seals (each with an MNI of one), formed a very small component of the overall diet, although Howse (2008:30) notes seal bones were more common in the presumably associated midden. Within the structure there was little to indicate differential consumption / disposal of mammal, bird, or fish.

Howse also examined body part frequencies for caribou, the most common species, by both NISP and MNI inside House 6 (Howse 2008: Table 1), in order to establish whether economic practises may have influenced the distribution of various elements within the feature. She concludes there was little to suggest that caribou representations were impacted by food utility and transport, nor does she believe it likely that element distributions reflect differential
treatment of body parts (such as drying, although she notes it was possible that meat was dried on site but transported away for later consumption). Instead, Howse (2008:33-35) proposes that caribou element distributions within both House 6 and the midden were most likely a result of differential preservation, or density mediated attrition, where bones with greater structural density survive more often than do less dense (‘softer’) elements.

Based upon the faunal remains, Howse (2008:35) suggests House 6 was occupied during the late summer and fall period, when fish, birds, and caribou could all be found in great numbers near the site (see also Section 7.3). Speaking only of the House 6 assemblage (Howse 2008: Table 1), the second-ranked mammal after caribou was fox (MNI of three, NISP of 103), while ptarmigan (MNI three, MNI 11) are also present but rank below various summer resident goose and duck species. Fox and ptarmigan have been cited by various researchers in support of cold season occupation (e.g. Burch 1998; Murray 1999; Darwent 2001), and their presence in House 6 may support a view that the dwelling was occupied from the summer / fall period into some portion of the cold season (see Section 7.6.3).

7.6.2 The House 6 Artefact Assemblage

Only artefacts from the unmixed Level 4 deposit excavated in 2002 are included in Table 7.2. Of that assemblage, five artefacts (four harpoon heads and one needle) were excluded from these totals as they were identified as intrusive Early Dorset artefacts. Bearing in mind that three of these tools were found in close proximity to one another outside the western perimeter of the dwelling, it seems likely that they represent the in situ remnants of an Early Dorset deposit which was largely eradicated by the construction excavation of House 6. While it is possible that other non-diagnostic Early Dorset artefacts are included in Table 7.2, I believe this possibility is minor and unlikely to seriously influence interpretation of the Late Dorset occupation.

Examination of the artefact categories shown in Table 7.2 indicates that a major activity conducted inside House 6 appears to have been the initial processing of antler and terrestrial mammal (caribou) bone. As noted in Section 7.3.5, caribou do not normally shed their antler while on Victoria Island (see also Chapter 3.3.5) and any antler found in the House 6 assemblage was most probably obtained ‘on the hoof’ from successfully hunted animals. While swimming
caribou might have been taken by individual hunters operating from boats as the latter crossed the Ekalluk River / Ferguson Lake (M.S. Maxwell 1985:138), the most efficient way to capture large numbers of animals would be via a cooperative hunt. As evidence for watercraft is sporadic

<table>
<thead>
<tr>
<th>Artefact Category</th>
<th>Number Identified</th>
<th>Percentage of Total Assemblage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worked Antler</td>
<td>41</td>
<td>32.03</td>
</tr>
<tr>
<td>Needle</td>
<td>18</td>
<td>14.06</td>
</tr>
<tr>
<td>Microblade</td>
<td>18</td>
<td>14.06</td>
</tr>
<tr>
<td>Worked Bone</td>
<td>16</td>
<td>12.50</td>
</tr>
<tr>
<td>Antler Box Piece</td>
<td>4</td>
<td>3.13</td>
</tr>
<tr>
<td>Harpoon Head</td>
<td>4</td>
<td>3.13</td>
</tr>
<tr>
<td>Biface or Fragment</td>
<td>3</td>
<td>2.34</td>
</tr>
<tr>
<td>Unworked Copper</td>
<td>3</td>
<td>2.34</td>
</tr>
<tr>
<td>Chert Point</td>
<td>3</td>
<td>2.34</td>
</tr>
<tr>
<td>Vessel Fragment</td>
<td>2</td>
<td>1.56</td>
</tr>
<tr>
<td>Endblade</td>
<td>2</td>
<td>1.56</td>
</tr>
<tr>
<td>Ground Slate Fragment</td>
<td>2</td>
<td>1.56</td>
</tr>
<tr>
<td>Adze Socket</td>
<td>1</td>
<td>0.78</td>
</tr>
<tr>
<td>Antler Point</td>
<td>1</td>
<td>0.78</td>
</tr>
<tr>
<td>Barbed Point</td>
<td>1</td>
<td>0.78</td>
</tr>
<tr>
<td>Bone Shaving</td>
<td>1</td>
<td>0.78</td>
</tr>
<tr>
<td>Copper Endblade</td>
<td>1</td>
<td>0.78</td>
</tr>
<tr>
<td>Decorated Bone</td>
<td>1</td>
<td>0.78</td>
</tr>
<tr>
<td>Foreshaft</td>
<td>1</td>
<td>0.78</td>
</tr>
<tr>
<td>Handle</td>
<td>1</td>
<td>0.78</td>
</tr>
<tr>
<td>Microblade Core</td>
<td>1</td>
<td>0.78</td>
</tr>
<tr>
<td>Notched Point</td>
<td>1</td>
<td>0.78</td>
</tr>
<tr>
<td>Red Ochre</td>
<td>1</td>
<td>0.78</td>
</tr>
<tr>
<td>Worked Wood</td>
<td>1</td>
<td>0.78</td>
</tr>
<tr>
<td>Flakes</td>
<td>695*</td>
<td>n/a</td>
</tr>
<tr>
<td>Total</td>
<td>128</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Table 7.2  Artefacts from the Level 4 deposits inside House 6 (* flakes not included in artefact totals).
throughout the Palaeoeskimo period (e.g. M.S. Maxwell 1985:137; Grønnow 1996a), it is more probable that Dorset hunters speared caribou using the inuksuit drive systems located north of the Ekalluk River (refer to Figure 7.2). Taylor (1972:76), McGhee (1995:114-115), and Brink (2005) all suggest that the oldest parts of the Ekalluk systems date to the Dorset era, and a less elaborate drive system from Labrador (Fitzhugh 1981) indicates that such features were used by Dorset hunters elsewhere in the Eastern Arctic.

Cooperative hunts require comparatively large numbers of participants to succeed, and although it is currently impossible to assess contemporaneity between different dwelling features, the overall size of the Bell site Late Dorset occupation suggests that sufficient populations were at least periodically present in the area for such hunts to occur. As the largest Dorset living site at Iqaluktuuq, the Bell site was probably the region’s residential base and, as Binford (1980:343) has observed in such cases, functioned as “the hub of subsistence activities, and the locus out of which foraging parties originate, and where most processing, manufacturing, and maintenance activities take place”. The large amount of modified antler and bone identified in the House 6 assemblage can thus be taken as evidence of “direct relationships between the quantity of debris remaining from food consumption [predominantly caribou, see Section 7.6.1] and both the quantity of tools and the quantity of tool-making debris” (Binford 1977:35). The particular emphasis given to processing raw antler, preferred by Dorset for a range of tools and in optimal condition in the fall (LeMoine 2005:136-137, Figure 2), implies that the House 6 occupants were “gearing-up” (Whitridge 2001:37), producing complex and frequently curated tools in anticipation of future use. That the vast majority of antler recovered from House 6 is detritus indicates processing was mainly primary as craftspeople began to reduce recently procured antler into more readily useable blanks and preforms, most of which appear to have been removed when the dwelling was abandoned.

Also well represented in the assemblage are microblades and needles, implements which have been associated with the preparation of skin clothing. M.S. Maxwell (1985:90) alludes to several studies that have established a positive correlation between the occurrence of microblades, which he believes were used to cut skin patterns for clothing, and the bone needles used to sew the pieces together (see also McGhee 1980:445). The advantages of caribou skin clothing were
well known to the historic Inuit, who had a variety of techniques for processing skins depending upon the specific use for which they were intended (e.g. Balikci 1970:8-10). As reported by Balikci (1970:52), Inuit seamstresses preferred to use fall skins when making clothing as the animal’s hair had not grown too thick and long, and it is probable that a similar preference was shared by the Dorset. Amongst the Inuit, all clothing was produced in the fall from land-based camps before groups moved onto the sea ice (refer to McGhee [1977] for discussion of taboos concerning land and sea-based animal products); although it is unclear if similar considerations operated amongst Dorset populations.

Other artefacts appear in lesser quantities. Notable amongst this more diverse group are pieces of unworked native copper, presumably obtained from sources on either western Victoria Island or the Coppermine River (Jenness 1922:19, 41, 52; see Morrison [1987], who suggests such nuggets were carefully curated by Neoeskimos, accounting for their rarity in assemblages of that era). Also represented are sherds of soapstone from two, or perhaps three, vessels.

Not included in Table 7.2 are a whale bone sledge shoe and an antler snow knife. Both are Dorset in style and form but were recovered from the lower part of Level 3 (Level 3b, refer to Section 7.5.5), the mixed Dorset – Thule Inuit deposit directly above the main Dorset layer (Level 4). Soapstone vessels, snow knives, and sledge shoes are all usually associated with occupation during colder seasons (e.g. M.S. Maxwell 1985).

7.6.3 Suggested Season of Occupation
While no one indicator can be used to definitively identify a season(s) of occupation for House 6, a number of clues suggest the late summer – fall – early winter period as the time when the structure was built and occupied.

Looking first at the architectural remains, arctic archaeologists have traditionally correlated semi-subterranean structures with cold weather occupations and surface structures with warmer seasons (e.g. M.S. Maxwell 1985; Reinhardt 1986). Such an a priori assumption rests on the principle that larger and more substantial architectural remains are associated with longer occupations during more challenging parts of the year (e.g. Reinhardt 1986). However, this relationship can be overly-simplistic, particularly when one considers the snow structure or igloo,
the quintessential arctic winter dwelling which will appear archaeologically as a surface structure (relative to the underlying ground surface, although they were built into the snow’s surface) and built using a material (snow) that leave little or no trace and hence appears quite insubstantial archaeologically (Savelle 1984; Ramsden and Murray 1995; Labrèche 2005).

The cold / warm season dichotomy runs into further trouble when one bears in mind that the historic Inuit sometimes occupied robust semi-subterranean structures throughout the warm season (Park 1988; Nagy 1994b), while the Early Palaeoeskimos typically lived in insubstantial surface structures throughout the year (Appendix A). As noted by Park, associating winter occupations only with deep, elaborately constructed, and complex structures excludes the qarmat from consideration and downplays the architectural variation that is actually present within and between sites. As discussed in Chapter 6.3.6, qarmat were often used by the Inuit and are usually equated with the time between seasons when it was too cold for skin tents but there was insufficient snow to build snow structures, or in the spring when it became impractical to use snow dwellings. However, Park (1988) cites several ethnographic and historic accounts which indicate that qarmat could be used throughout the winter months and not only at transitional season sites as has often been suggested. These findings not only highlight the fact that shallowly semi-subterranean qarmat and deeply semi-subterranean pit structures can be used at times other than expected, but also indicate that more variation exists amongst dwelling remains than may have been supposed.

Moving to the Late Dorset period, the idea of mutually exclusive summer and winter structures is further questioned by House 6 itself, a dwelling that, while semi-subterranean, is more shallowly excavated than other Late Dorset structures; including some probable Late Dorset features at the Bell site (see Section 7.5.1). That House 6 is semi-subterranean to any degree indicates that its occupants were present at the site during the latter part of the warm season, when permafrost was low enough to permit builders to excavate into the ground. Habitation extending into the cold season is indicated by the occupant-architect’s decision to create a ‘porch’ and simple cold-trap entrance, indicating they were concerned with reducing the flow of outside air into the living space. Further, the use of thermally efficient sod in wall construction suggests that the builders may have expected a significant temperature difference between the inside and
outside worlds. The inference that some sort of floor covering was used in the central parts of the dwelling also tends to reinforce the idea that House 6’s occupants were concerned with the overall thermal efficiency of their home.

Faunal remains associated with House 6 are highly biased towards taxa that are available at seasonally specific points in time. As indicated in Section 7.3, char, caribou, and migratory birds are species that are present at Iqaluktuuq in great numbers twice yearly in the spring and fall. While some caribou may remain resident in the general area throughout the year, Dorset, who lacked bow and arrow technology, were probably only able to take large numbers of animals when they were concentrated for migration. Similarly, although char (and lake trout) could be caught through the ice, there is no evidence that this was done anywhere in the Late Dorset realm. It is therefore likely that most of the animals represented in the faunal assemblage from House 6 were killed during the spring and / or fall migration period, although analysis to determine a more precise season of death has not been conducted (Howse [2008] suggests a fall hunt / fishery). The small amount of ringed and bearded seal bone in the faunal assemblage can be interpreted in support of an early winter hunt on newly-formed land-fast ice by hunters based in House 6, although assignation of a precise season of death has not been attempted.

The artefact assemblage recovered from House 6 provides subtle hints consistent with the suggested seasons of occupation. As discussed in Section 7.6.2, the abundance of minimally processed antler suggests dwelling occupants had a plentiful supply of this material, a finding that is consistent with the fall migration period (refer to discussion of antler development in Section 7.3). As noted previously, the presence of numerous needles, combined with an abundance of multi-purpose microblades, suggests that sewing was a key activity within House 6 and one that could only be accomplished on a larger scale after sufficient skins had been acquired and processed (such work was a major fall preoccupation of Inuit seamstresses). Finally, the presence of vessel fragments and the diagnostically Dorset sled shoe and snow knife (both from the mixed Level 3 deposit) are consistent with an occupation during the cold season.

Based on these interlinked sources, it is argued that the House 6 occupation began in the late summer and continued into the fall period, coinciding with the arrival of large numbers of caribou and char in the area. Several lines of evidence indicate that the House 6 occupation
continued into some part of the cold season. It seems probable that this structure functioned similarly to a *qarmat*, an interpretation also made for Dorset dwellings on south-eastern Ellesmere Island (Helmer, in Taylor *et al.* 1988), southern Baffin Island (Odess 1996:175), and northern Labrador (Fitzhugh 1994:258). Where Late Dorset went when the *qarmat*-like structures were abandoned is unclear, although a move onto the sea ice is possible (see Chapter 5.3.3).

### 7.6.4 Suggested Length of Occupation

Stratigraphic evidence indicates that the area in which House 6 was located was occupied on at least three separate occasions. The earliest occupation involved an Early Dorset component of unknown size and extent, as evidenced by the diagnostic artefacts found *in situ* immediately beyond House 6’s western perimeter (see Section 7.6.2). Based on available evidence, it would appear that this occupation was largely destroyed by the construction of House 6 and little more can be said concerning this period (Taylor [1967:223] also identified evidence for an Early Dorset presence at several locations at the Bell site).

The presence of a sporadic culture-bearing Level 5 deposit underneath some parts of the main House 6 occupation (as represented by Level 4) suggests an earlier Late Dorset use of the House 6 location. These deposits were most commonly identified at the edges of the House 6 depression where they typically extended from Level 4 into sterile Level 6 substrate and appeared as a less organic version of the former. Although no diagnostic materials were recovered from Level 5 (the level did contain some faunal and lithic matter; see Section 7.5.5), its position between Levels 4 and 6 and occurrence at points along the edges of the dwelling depression suggest the deposit represents the remnants of an earlier habitation which was largely eradicated by refurbishment activities associated with the Level 4 occupation. The best preserved use of the House 6 area is associated with the Level 4 deposits, within which are contained all architectural elements and most cultural materials. This occupation is the one discussed throughout this chapter and its duration is considered below.

From an architectural standpoint, the amount of time and energy invested in the construction of House 6 was not extensive and it is obvious that it was planned and constructed using a low cost building strategy. This is evidenced by a number of factors including a decision to
skirt the raised natural hillock in the front wall of the structure instead of removing it, a choice which resulted in a rather atypically placed asymmetric entrance. Minimal architectural investment is also indicated by the lack of a formal floor paving or other internal structural features, aside from the activity area associated with the more invested north-western corner construction. Such behaviours strongly suggest that the Late Dorset who planned and built the structure expected their tenure to be a short to moderate one, a belief reflected in the architecture.

Stratigraphy further supports the interpretation of a late summer – early winter timeline. As Kent (1991) and Kent and Vierich (1989) note, occupation of a low-cost structure can still be proportionally lengthy, despite the occupants’ original intentions, if other factors work to make a more extensive stay possible or necessary. Even considering the probable use of a floor cover, the dwelling’s floor deposits are thin and support the view that the actual length of occupation matched the planned tenancy. The comparatively small number of recovered artefacts (Table 7.2) further indicates that the dwelling was not used long enough for additional cultural debris to accumulate. Food bone inside the structure implies that the house occupants subsisted primarily on resources harvested in the fall, with additional sources (e.g. fox and seal) supplementing the focal species. At the same time, if the occupation had extended into a significant part of the cold season, the faunal assemblage might be expected to show a greater reliance on animals other than caribou and char (which it does not).

Taken together, these four lines of evidence (architecture, stratigraphy, artefact assemblage, and faunal remains) indicate that the occupation of House 6 was relatively limited. It is impossible to say exactly when the decision to abandon the structure and move elsewhere was made; however, I believe abandonment occurred early in the winter when a stable sea ice platform had developed.

7.7 Summary
House 6 was planned, built, occupied, and abandoned by a group of Late Dorset who came to the Iqaluktuuq area to exploit the area’s seasonally abundant fall resources. As such, they travelled into the area armed with an idea of how the structure they intended to build ‘should’ look, several architectural elements (i.e. tent poles) which they knew were unavailable in the area, and
knowledge of both what Iqaluktuuq could offer and how they could exploit those offerings. The Bell site was undoubtedly selected for a number of reasons, not the least of which involved the availability of abundant building materials, as well as its strategic position on the Ferguson Lake – Ekalluk River bottleneck.

The Bell site dwellings were positioned to take advantage of the southern exposure along the northern rim of the vale descending to Ferguson Lake, an especially important consideration as daylight waned and average daily temperatures approached and then slipped below the freezing mark. In anticipation of this development, architects selected a location for their dwelling which reduced the amount of effort required to create a semi-subterranean floor, sheltered them from the predominant wind, and also minimised the dwelling’s (and camps) visibility to observers located on the north side of the river.

The architectural remains represent the strongest and most persuasive evidence for a habitation that was not intended to be long-term or particularly intensive. If, as suggested, occupation of House 6 began in the late summer just prior to the arrival of caribou and char, occupants would have been anticipating the start of an intense period of work related to the procurement and processing of large numbers of animals for food, clothing, and tools before those resources passed through Iqaluktuuq and became unavailable. Given the likely pre-eminence given to these tasks, it is unsurprising that the House 6 architects appear to have been largely uninterested in creating an elaborate or technically impressive dwelling. Rather, all signals point to a habitation feature which was intended to be functionally capable of sheltering its occupants through the last part of the warm season, into the cooling fall period, and probably into some portion of the cold season. Abandonment likely occurred at some point during the early winter.
CHAPTER 8 – CASE STUDY 2 – N72, NUNGUVIK (PgHb-1), NAVY BOARD INLET, NORTHERN BAFFIN ISLAND

8.1 Introduction
Structure N72 at the Nunguvik site (NiNg-2) forms the subject of the second case study. Nunguvik is located on the eastern coast of Baffin Island’s Borden Peninsula, on the western shore of Navy Board Inlet, a narrow (approximately 11 km) strait separating Baffin Island from Bylot Island (Figure 8.1). While published coordinates for Nunguvik (e.g. Mary-Rousselière 2002:17) place the site at 73°01’30" N 80°38’ W, these appear well to the southwest of the site’s actual location which is closer to 73°05’ N 80°30’ W. Structure N72 had been previously tested by Father Guy Mary-Rousselière (n.d. a-d), and the remainder was excavated during August 2000 and July 2001 by the Helluland Archaeology Project, based at the Canadian Museum of Civilization and directed by Dr. Patricia D. Sutherland. Dr. Sutherland kindly granted permission to use the data gathered as a result of that work in this dissertation.

8.2 The Physical Environment of North-Eastern Baffin Island
As the largest island in the Canadian Arctic Archipelago, Baffin Island presents a number of disparate environments whose conditions, in terms of comparative severity or mildness, can be roughly equated with their latitude, although the distribution of landforms and marine water-bodies (especially proximity to polynyas) play a major mitigating role (Stager and McSkimming 1984:29). The presence of large cold water-bodies on all sides of this relatively long and narrow island (1600 km in length, versus a maximum of only 675 km in width, see Soper [1928:2]) further means that Baffin Island experiences long-term climatic and shorter-term weather conditions that are generally much more dynamic than those evidenced elsewhere in the Canadian Arctic where a more continental climate predominates (J.B. Maxwell 1981).

Baffin Island is traditionally divided into northern and southern areas at 66° 32’ N latitude (e.g. Polunin 1948:131), the approximate position of the Arctic Circle. This line crosses Nettilling Lake, the largest lake on Baffin Island, as well as the Great Plain of the Koukdjuak, a low-lying marshland between Nettilling Lake and Foxe Basin (Figure 8.1). Unlike much of southern Baffin Island, which can be classed as low-lying and relatively sheltered (refer to Chapter 9.2), the
Figure 8.1 Map of Baffin Island showing locations mentioned in the text.
The convoluted eastern coast of Baffin Island immediately north of the Great Plain of the Koukdjuak-Nettilling Lake-Cumberland Sound region is part of the Arctic Cordillera mountain chain and is fully exposed to Davis Strait and Baffin Bay. This landscape is typified by rugged and often ice-capped 2000+ m asl mountains, deeply incised fjords, areas of sheer coastline, and inter-montane glaciers (Figure 8.1). This topography not only limits areas where comfortable habitation is possible but can also cause very rapid and significant weather changes along the entire east coast (J.B. Maxwell 1982:389-390). While Navy Board Inlet (and Nunguvik) is not immune to the effects of severe systems travelling up the Davis Strait-Baffin Bay channel, the high mountains of adjacent Bylot Island do tend to afford the area some shelter (J.B. Maxwell 1981:233).

Nunguvik is located at the juncture of two climatic sub-regions (IV-a and IV-b) as defined by J.B. Maxwell (1982:232, Figure 7). North Baffin-Lancaster Sound (IV-a), because of its proximity to both the permanently open North Water polynya (refer to Figure 8.2) and Lancaster Sound (whose ice is late to form and early to break), is considered to be more maritime in its climate composition than other arctic localities at similar latitude (J.B. Maxwell 1981:232; although, as shown in Table 8.1, the mean annual temperature range is great at approximately 40° Celsius). The cyclonic systems which regularly push into this region from Davis Strait can also introduce warm and moist southerly air to the area, resulting in abundant precipitation in some locations. The Gulf of Boothia-Foxe Basin-Western Interior Baffin Island sub-region (IV-b) is characterised by fog and low-cloud in the summer, but is shielded from the Baffin Bay-Davis Strait storm belt and otherwise has generally good weather by arctic standards (J.B. Maxwell 1981:232). As a result of its intermediate location between these two climatic zones, western Navy Board Inlet and Nunguvik usually experience climatic elements characterising one or both of the sub-regions defined by J.B. Maxwell (1981). Particularly noteworthy features are the area’s relatively high precipitation (especially during the open-water period) and semi-frequent storm conditions, although the latter is not as pronounced as in less sheltered areas immediately to the east and north.

As described by Jackson and Berman (2000: Figures 1 and 3), the Navy Board Inlet area of Baffin Island and adjacent Bylot Island falls within a geological block referred to as the Committee Belt (2.9 - 2.5 billion years ago), itself part of the Archean eon (3.8 - 2.5 billion years.
Figure 8.2 Location of the May floe edge along eastern Lancaster Sound and northern Baffin Island (from regional ice charts, Canadian Ice Service n.d. a).

ago). These deposits are dominated by metamorphosed rocks (predominantly granites, as well as greenstones and some gneiss), although isolated areas of chert-bearing sedimentary deposits are also present (Jackson and Berman 2000: Figure 2). While much of this landscape (particularly nearer to the coast) has been extensively sculpted by glacial activity into deep valleys and high-sided slopes (Figure 8.3), the near interior of Baffin Island (immediately west of, or behind, Nunguvik) presents a less dramatic sloping plateau-like terrain averaging 200 - 300 m asl (Figure 8.4). Limestone predominates here, and within this matrix are nodules of iron pyrites and high quality chert (Mathiassen 1928:9). My inspection of extant lithic assemblages from Nunguvik and nearby sites indicates that lustrous and fine-grained cherts, presumably from these local sources, were consistently favoured by resident Palaeoeskimo groups.

Vegetation in and around Nunguvik consists of fairly typical arctic heathers, willows, and
mosses. As with its position at the juncture of two climatic zones, Nunguvik is located near the boundary of two vegetation zones. Central Navy Board Inlet falls within the Mid Arctic zone, but is very near to the southern limit of where High Arctic vegetation begins (refer to Polunin 1951; also Porsild 1964; Edlund 1984). Polunin (1951) characterises the Mid Arctic zone as having less species diversity than found in the Low Arctic but more than is found further north (see also Edlund 1984). Diverse species of grasses, sedges, and herbaceous tundra plants dominate. Woody shrubs, especially *Salix* and *Ericaceae*, occur near their northern limit in this area, particularly where there are pockets of better developed soils (Porsild 1964). The High Arctic vegetation zone begins immediately north of Nunguvik where polar deserts typified by bare rock or lichen and moss cover predominate (Bliss and Matveyeva 1992). Woody shrubs include species of willow (*e.g.* *Salix herbacea*, *S. arctica*, and *S. reticulata*) and heather (*e.g.* *Cassiope* tetragona and *Rhododendron lapponicum*), and occur only in protected areas with deeper soil accumulation, although they seldom surpass 10 cm in height (Aiken *et al.* 2003).

**Figure 8.3** Mountainous north Baffin Island terrain.
At 73°05' N, Nunguvik is located approximately 650 km north of the Arctic Circle (66° 32' N), the latitude above which seasonally continuous daylight and darkness exists. Because of its comparatively high latitude, this area of Baffin Island experiences marked seasons of prolonged or continuous daylight and darkness, including 11 days of true Polar Night when the sun does not rise (Table 8.1). Such extreme conditions must have impacted the day-to-day activities of the Late Dorset as much as they have the Inuit (e.g. Boas 1888; Steensby 1910).

![Figure 8.4](image)

**Figure 8.4** Broad inland plain stretching westward away from the coast and the Nunguvik site.

### 8.3 Potential Range of Resources Near Nunguvik
Ethnographic observations of early historic Inuit adaptations in the Arctic are quite useful as a means to understand one way in which people adapted to their local surroundings (with the caveats noted in Chapter 7.3 applying here equally well). Excellent ethnographic information exists portraying late 19th and early 20th century Inuit life-ways on Coronation Gulf (Chapter 7.3) and along the southern coast of Baffin Island (Chapter 9.3). Ethnographic and historical information pertaining to the Iglulingmiut (the Inuit of the eastern Foxe Basin and north coast of Baffin Island) is also relatively extensive (e.g. Lyon 1824; Parry 1824; Steensby 1910; Mathiassen
1928), although it is fairly sparse for the northern limit of their range in the Navy Board Inlet-Pond Inlet area of north-eastern Baffin Island (where they referred to themselves as Igluamiut; see Mary-Rousselière [1984b:446]). This is because the European ships which visited northern Baffin Island were primarily occupied with searching for either the Northwest Passage or signs of the lost Franklin expedition (Berton 1988) and rarely interacted with local Inuit populations. For this reason, Mathiassen (1928:5) notes that the surviving logs and journals of such voyages contain little useful information on the Inuit living in and around Pond Inlet.

Considering the limited specifics available on the Inuit of this area of Baffin Island it is not a direct process to present particulars of the Inuit adaptation here, as it was for the other two cases studies (Chapters 7 and 9). Nevertheless, below is information on the modern Navy Board Inlet environment and its resources, as well as accounts concerning how the historically-known Inuit (who appear to have been little impacted by extra-cultural contacts at the time these observations were made, see Wordie [1935:312-313] and Mary-Rousselière [1984:443]) adapted to the dynamic resource base of this area of the eastern Canadian Arctic. As noted by Wylie (2002:137), analogical inferences between modern and prehistoric populations “can play a legitimate, constructive role in archaeological inquiry within certain guidelines”. Keeping in mind the limitation of such inferences, Inuit practices can serve as a useful analogy for reconstructing one way in which the local environment and its resources could be exploited.

The seasonal round typically pursued by the Igluamiut has been described by both Mathiassen (1928:23-36, 53) and Mary-Rousselière (1984b:432-433). Mathiassen noted that before a trading post was set up at Pond Inlet, many Inuit (especially young married families) were very mobile in the summer, travelling inland to hunt caribou and fish for char until autumn, although he remarked that at the time of his observations increasing numbers were settling at the post during the open-water season to hunt seals and narwhals. As the weather began to cool, north Baffin Inuit (like those in several other Arctic regions, e.g. Jenness [1922:142]; Taylor [1974:52]) gathered in sewing camps near the shore to prepare equipment for the winter period while awaiting the formation of a stable sea-ice platform. Mathiassen (1928:13) notes that the Iglulingmiut, like their Thule forbearers (McGhee 1977), maintained careful taboos restricting the intermixing of land and sea products at this time. As the cold season progressed, villages of snow
<table>
<thead>
<tr>
<th></th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Daily Average Temperature (°C)</strong></td>
<td>-32.4</td>
<td>-34.1</td>
<td>-30.3</td>
<td>-22.1</td>
<td>-9.9</td>
<td>1.8</td>
<td>6</td>
<td>4.2</td>
<td>-1.4</td>
<td>-11.4</td>
<td>-22.4</td>
<td>-28.3</td>
</tr>
<tr>
<td><strong>Days Below 0°C (Maximum)</strong></td>
<td>30.9</td>
<td>28.3</td>
<td>31</td>
<td>29.9</td>
<td>26.4</td>
<td>2.9</td>
<td>0</td>
<td>0.11</td>
<td>11.4</td>
<td>29.6</td>
<td>30</td>
<td>31</td>
</tr>
<tr>
<td><strong>Days Above 0°C (Maximum)</strong></td>
<td>0.13</td>
<td>0.05</td>
<td>0.04</td>
<td>0.14</td>
<td>4.7</td>
<td>27.1</td>
<td>31</td>
<td>30.9</td>
<td>18.6</td>
<td>1.5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total Precipitation (mm)</strong></td>
<td>5.7</td>
<td>4.3</td>
<td>8</td>
<td>10.7</td>
<td>9.6</td>
<td>15.8</td>
<td>31.1</td>
<td>36.9</td>
<td>20.8</td>
<td>23.4</td>
<td>16.1</td>
<td>8.4</td>
</tr>
<tr>
<td><strong>Total Rainfall Amount (mm)</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.2</td>
<td>11.7</td>
<td>30.5</td>
<td>32.9</td>
<td>8.4</td>
<td>1.3</td>
<td>0.4</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total Snowfall Amount (cm)</strong></td>
<td>7.3</td>
<td>5.6</td>
<td>10.1</td>
<td>13.9</td>
<td>14.2</td>
<td>5.3</td>
<td>0.5</td>
<td>3.9</td>
<td>16.7</td>
<td>32.8</td>
<td>22.4</td>
<td>11.8</td>
</tr>
<tr>
<td><strong>Average Snow Depth (cm)</strong></td>
<td>19</td>
<td>18</td>
<td>20</td>
<td>22</td>
<td>23</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>10</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td><strong>Days with Snow Depth Greater Than 10cm</strong></td>
<td>27.5</td>
<td>26.3</td>
<td>28.1</td>
<td>27.5</td>
<td>29.5</td>
<td>8.2</td>
<td>0</td>
<td>0</td>
<td>1.3</td>
<td>13.1</td>
<td>21.9</td>
<td>25.5</td>
</tr>
<tr>
<td><strong>Snow Depth at Month End (cm)</strong></td>
<td>20</td>
<td>19</td>
<td>21</td>
<td>24</td>
<td>22</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>15</td>
<td>20</td>
<td>18</td>
</tr>
<tr>
<td><strong>Average Wind Speed (km/h)</strong></td>
<td>7.1</td>
<td>6.4</td>
<td>7.1</td>
<td>7.8</td>
<td>8.6</td>
<td>8.6</td>
<td>9.7</td>
<td>10.3</td>
<td>11.7</td>
<td>13.8</td>
<td>9.5</td>
<td>7.8</td>
</tr>
<tr>
<td><strong>Predominant Wind Direction</strong></td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>SW</td>
<td>NE</td>
<td>NE</td>
<td>SE</td>
<td>SE</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td><strong>Maximum Wind Speed (km/h)</strong></td>
<td>76</td>
<td>70</td>
<td>65</td>
<td>74</td>
<td>70</td>
<td>63</td>
<td>70</td>
<td>74</td>
<td>91</td>
<td>93</td>
<td>100</td>
<td>90</td>
</tr>
<tr>
<td><strong>Wind Direction</strong></td>
<td>W</td>
<td>N</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>SW</td>
<td>NE</td>
<td>W</td>
<td>NE</td>
</tr>
<tr>
<td><strong>Ice Coverage Out of 10, Weekly</strong></td>
<td>10, 10, 10, 10, 10</td>
<td>10, 10, 10, 10</td>
<td>10, 10, 10, 10</td>
<td>10, 10, 10, 10</td>
<td>10, 10, 10, 10</td>
<td>10, 10, 10, 10</td>
<td>10, 10, 10, 10</td>
<td>0-1, 0-1, 0-1, 0-1</td>
<td>0-1, 0-1, 0-1, 0-1</td>
<td>1-3, 9-9+, 9-9+, 9-9+, 10</td>
<td>10, 10, 10, 10</td>
<td>10, 10, 10, 10</td>
</tr>
</tbody>
</table>


Days Without a Sunrise: November 15 - January 28 (n = 75) ---- Days of 24-hour Polar Night: December 17 - December 27 (n=11)
structures were established both on the sea ice and at land-based sites like Qilalukan (PeFs-1), just west of Pond Inlet. With regards to the use of snow dwellings, it is interesting to remember Mathiassen’s (1928:24) comment regarding those he visited in this area. In his experience, Mathiassen discovered that such dwellings were quite difficult to re-locate almost immediately after they were abandoned and melted, despite the fact that some had been used for significant periods of time. While methods to locate archaeological signs of these widely used structures have subsequently been offered (e.g. Savelle 1984; see also Chapter 6.3.7), their lack of visibility will continue to pose problems for researchers interested in reconstructing the full seasonal round of the Thule and Inuit, as well those Palaeoeskimo groups who also appear to have used snow as a building material.

The advent of spring, with its slow rise in temperature, caused aggregated Inuit groups to disperse as hunters and their families (either individually or in small groups) increasingly relied on the stalking of basking seals. Some groups also gathered along the *sina* edge at sites such as Sannirut / Button Point (PfFm-1, on western Bylot Island) to exploit the variety of marine and avian species feeding in the newly open waters. The lengthening days and excellent snow and ice conditions of early spring were also when short and large scale migrations occurred, with some families occasionally crossing Lancaster Sound to Devon Island in order to hunt polar bear (*Ursus maritimus*) and musk oxen (*Ovibus moschatus*) (Mary-Rousselière 1976:55).

### 8.3.1 Terrestrial Resources
Banfield (1974:413) reports that there is no evidence to support the presence of musk oxen on Baffin Island. However, a small and isolated population may have been formerly present on the western Foxe Basin coast as suggested by Hone (1934:133; see also Jacobs [1989] and Urquhart [1982]). Mary-Rousselière (2002:100) has more recently suggested the species’ range may have extended to northern Baffin Island following the identification of hairs excavated from structure N46 at Nunguvik as musk ox, stating that

> *il importe de noter que, si la présence du boeuf musqué n'a pas été historiquement constatée sur la Terre de Baffin, on ne peut par contre en conclure qu'il n'y a jamais été présent ... deux anciens dignes de foi nous ont affirmé avoir trouvé chacun un crâne de beouf musqué à deux endroits très éloignés l'un de l'autre sur la Péninsule de Borden ... Un*
Discounting for the moment these claims, the barren ground caribou (*Rangifer tarandus groenlandicus*) is currently the only large-bodied terrestrial mammal on Baffin Island and their range and population density are determined mainly by the availability of adequate forage (Kelsall 1968:67-79; Banfield 1974:385-386). Unlike caribou populations along southern Baffin Island, which are usually found along the coast in the summer and at higher inland locations in the winter (Soper 1928:63), caribou in the more mountainous areas of north-eastern Baffin Island and nearby Bylot Island reverse this pattern, moving to interior elevated areas during the summer and returning to low-lying coastal zones in the winter (Banfield 1974:385).

Outside of the migratory periods, caribou generally occur in small and highly mobile groups. No caribou were observed at Nunguvik during the excavation period, although the large numbers of shed antlers behind the site indicate caribou can be found here at least seasonally (males shed their antlers between early November and February, females soon after they calve in mid-May [Banfield 1974:384-386]). Mary-Rousselière (2002:10) reports caribou were formerly more abundant in the vicinity and may have occupied both coasts of Navy Board Inlet for more protracted periods than currently evidenced (Miller [1955] notes the resident Bylot Island herd was extirpated in the mid-1940s). Mathiassen (1928:34) also identified a major open water crossing point between Baffin and Bylot islands several kilometres northwest of Nunguvik, at what is probably Nallua / Nadlua (PgHb-6). Although Mary-Rousselière (1976:54) questions whether caribou crossed Navy Board Inlet here during the open water period, he translates the site’s name as “the place where caribou swim across” (Mary-Rousselière 2002:10; see also Mary-Rousselière 1984a). He (1976:48) describes the site as having been used by both Thule and historic Inuit hunting parties, and probably also by Dorset who may have lived in a small number of shallow semi-subterranean dwellings near the larger Thule and Inuit sod features.

The other main terrestrial species in this area are the arctic fox (*Alopex lagopus*) and arctic hare (*Lepus arcticus*). Arctic foxes can be particularly common (and active) in the area

---

1 it is important to note that, if musk ox were not historically recorded on Baffinland, one cannot conclude that they were never present ... two trustworthy elders asserted to us that they had each found musk ox skulls in two very distant places on the Borden Peninsula ... The location of a third skull was indicated south of Eclipse Sound
throughout the year and are considered a resident species. Foxes are especially abundant around
the greater snow goose (*Chen caerulescens atlantica*) breeding grounds on western Bylot Island
(see Section 8.3.2) where they prey on moulting adults, flightless sub-adults, and eggs (Bêty *et al.*
2002). Fox populations fluctuate in direct relation to those of lemmings (*Lemmus sibiricus*
[brown] and *Dicrostonyx torquatus* [collared]) and other prey species (Banfield 1974:185, 196,
296), and are known to form a significant proportion of the bone in some High Arctic Late Dorset
middens (Schledermann 1990:223; Bendix 2000; Darwent 2001:115, 129). However, in general it
appears that foxes were not a major prey species for any Palaeoeskimo group (M.S. Maxwell
1985:131, Table 6.1). Arctic hares are also resident to this area and, as with arctic foxes, can
appear in some frequency in Late Dorset middens (Darwent 2001). *Lepus arcticus arcticus*
(found primarily on northern Baffin Island; refer to Banfield [1974: Map 39]) can be gregarious
and may be found in groups exceeding 100 in number (Banfield 1974:86). They do not migrate,
maintaining the same range throughout the year.

**8.3.2 Avian Resources**
There is a great diversity of bird species along Navy Board Inlet (*e.g.* LePage *et al.* 1998; Mary-
Rousselière 2002:10), especially on the western coast of Bylot Island. The Bylot Island Bird
Sanctuary contains the best studied breeding and nesting colonies (*e.g.* van Tyne and Drury 1954;
Tuck and Lemieux 1959; Kempf *et al.* 1978) and include vast numbers of greater snow geese
(*Chen caerulescens atlantica*) and thick-billed murres (*Uria lomvia*), amongst others. Snow
geese are particularly vulnerable to predation from early/mid-June through early/mid August,
when adults not only lay and hatch their eggs but become flightless as they undergo their yearly
moult (Soper 1928:91-95). The southbound migration of adults and newly fledged individuals
begins early in September.

Although birds seem to have fulfilled a minor dietary role for the historic Iglulingmiut
(Mathiassen 1928:37, 48, 64), migratory waterfowl have been targeted by populations in other
areas and periods during the late spring and summer (*e.g.* Milne and Donnelly 2004). At
Nunguvik, small numbers of flightless Bylot Island geese crossed the still frozen Navy Board Inlet
to the site while we were present and 36% of the faunal assemblage from Dorset structure N71
was avian (Mary-Rousselière 2002: Table 7), prompting Mary-Rousselière (2002:75) to suggest
that this dwelling was occupied in the warm season.

8.3.3 Lacustrine and Riverine Resources
The somewhat misleading-named Salmon River, near the community of Pond Inlet (Figure 8.1), was a historically important char (Salvelinus alpinus) fishing area (Mathiassen 1928) and some of the rivers of Eclipse Sound also support char runs (e.g. Munn 1922:270). However, there are no large or small lakes on the eastern drainage of Baffin Island and adjacent Bylot Island, meaning that many of the region’s waterways (e.g. the Mala River, approximately 10 km south of Nunguvik) are glacially sourced and cannot act as char hatcheries. The only major char stream near Nunguvik is at Saatut (PeHa-1; 35 – 40 km to the south), where some local Dorset groups settled in the summer and autumn months (Mary-Rousselière 2002). Limited excavation at this rapidly eroding site located a shallow semi-subterranean structure and an associated midden with a faunal assemblage dominated by seal, with smaller quantities of caribou and various bird species (Mary-Rousselière 2002: Table 9).

While fish accounted for less than 1% of the excavated bone, Mary-Rousselière (2002:79) felt fishing was an important activity at the site and based this opinion partially on the fact that the presumed front of the dwelling was oriented to an old river channel running perpendicular to the shoreline. The lack of char bones in the excavated midden and dwelling might therefore be explained by suggesting Dorset, like the historic Inuit (e.g. Boas 1888:577), processed fish at or near the river bank so that few bones were available to be incorporated into the site’s deposits (although this was certainly not the case for House 6 at the Bell site, refer to Chapter 7.6.1). An alternate explanation for the absence of small bones from Mary-Rousselière’s excavation considers a variety of taphonomic factors, in combination with excavation techniques which did not include screening procedures (Cannon 1999; Zohar and Belmaker 2005).

As the closest char river to Nunguvik, Mary-Rousselière (2002:85) considered it plausible that some of the same people who lived at Saatut in the summer and fall sealing, fishing, and probably sewing winter clothes moved north to settle at Nunguvik during the cold season.

8.3.4 Marine Resources
Mathiassen (1928:11) notes that sea ice along the northern coast of Baffin Island is generally flat
and there are few, if any, of the exceptionally rough pressure ridges that form in other areas where tides and currents are more pronounced. The smooth single-year ice presents excellent conditions for sympagic ringed seals (Phoca hispida), which the Inuit either harpooned at their breathing holes or stalked while basking on the ice in the increasing temperatures of late winter and early spring. Ringed seals (and their breathing holes) were clearly visible from the air as we travelled across Navy Board Inlet to Nunguvik in early July, and numerous individuals could be seen from the site basking in the sunlight until the ice broke later that month.

The solitary and non-migratory bearded seal (Erignathus barbatus) is found throughout the waters adjacent to Baffin Island where it is closely associated with moving pack ice (Miller 1955: Table 3; Banfield 1974:366). Bearded seals are capable of making and maintaining breathing holes, however in contrast to the ringed seal, bearded seals prefer the broken or loose ice that tends to be located in less protected areas (e.g. Reeves et al. 2002:116; Bengtson et al. 2005). It is for this reason that bearded seals are found in very low numbers (if at all) along Navy Board Inlet during the period when it is covered in consolidated land-fast ice (generally early-mid October until mid-late July, see Table 8.1). Instead, the larger part of the north-eastern Baffin Island population occurs along the floe edge and within the moving pack ice of Lancaster Sound to the north of Navy Board Inlet (Miller 1955:172; refer also to Figure 8.2).

Narwhals were, and continue to be, very economically important to Inuit groups on northern Baffin Island (Mathiassen 1928:50). As Miller (1955:175, Table 3) and Banfield (1974:255) note, narwhals penetrate northward as soon as ice conditions permit, utilising newly opened leads and smaller cracks in the otherwise solid ice. Narwhals first appear along north-eastern Baffin Island in the North Water polynya (e.g. Dietz et al. 2001), which clears ice from the Bylot Island coast (and therefore both northern Navy Board Inlet and eastern Pond Inlet) in late winter (Figure 8.2). During 2001, large pods of narwhal swam north and south along Navy Board Inlet soon after the ice broke and some were taken by hunters operating at Nallua. Several skeletons, probably from narwhals killed but not recovered by those hunters in previous years, had stranded along the shoreline immediately in front of Nunguvik. It seems likely that this shore, which projects slightly into Navy Board Inlet, functions as a natural strand point for narwhals and other dead and drifting sea mammals (as well as possibly driftwood).
At least one bowhead whale (*Balaena mysticetus*) also passed by the site while we were excavating, although they would have been much more common in the region prior to the advent of large-scale European commercial hunts beginning early in the 1820s. As discussed in Chapter 5.3.3, researchers do not agree on whether any Palaeoeskimo group hunted large whales, although Mary-Rousselière (1976:54-56) has suggested, based on the presence of bowhead baleen in some Dorset structures at Nunguvik, that Late Dorset at this site were at least exploiting dead animals if not hunting them outright. However, other than the baleen, no bowhead products have been located in Dorset contexts at Nunguvik, in marked contrast to the nearby Thule Inuit structures where copious amounts of whale bone (both structural and artefactual) have been located. It therefore seems that the absence of bowhead whale bone from the Dorset features had less to do with availability of the former and more to do with other socioeconomic factors.

Other large-bodied sea mammals available in Navy Board Inlet include the walrus (*Odobenus rosmarus*) (Banfield 1974: Map 158). Like bearded seals, walrus are most commonly associated with moving pack ice (Mansfield 1967), and the recovery of walrus in geological contexts from numerous locations around Lancaster Sound indicates walrus have occurred here in large numbers since the last glacial maximum (Dyke et al. 1999). However, Dyke et al. (1999:165) make specific mention of the fact that walrus remains from non-archaeological contexts are exceptionally rare in both Navy Board Inlet and neighbouring Admiralty Inlet. While they do not present reasons to account for this distribution, it is probable that ice conditions in both areas (presently covered by consolidated land-fast ice for much of the year, see Table 8.1) preclude the presence of species which do not habitually make and maintain breathing holes.

The final large-bodied marine mammal found in the area is the polar bear, which Mathiassen (1928:13, 61) notes was common only in the Lancaster Sound area and was taken historically using dogs and spears (Mathiassen 1928:61-62). From this account it seems likely that bears would only be reasonably common for most of the year near the northern end of Navy Board Inlet, where it opens onto Lancaster Sound and where the floe edge and unconsolidated ice it favours for hunting are located (Figure 8.2).

**8.3.5 Organic and Inorganic Materials Suitable for Architectural Purposes**

The eight materials previously identified in Chapter 3.3 as being useful in construction are snow,
sod, antler, ivory, whale bone, wood, stone, and skin. All of these materials are available in Navy Board Inlet today, although their present and past accessibility and quantity are determined largely by short and long term weather and climate conditions.

J.B. Maxwell (1980:141) has identified the Davis Strait-Baffin Bay area as a region that experiences a high level of cyclonic activity, which permits warm and moist air from the south to penetrate far into the north. As discussed in Chapter 3.2.5, this circulation pattern is partly responsible for the North Water polynya, which, along with wave and wind patterns, helps account for the area’s extensive open water, thin ice, and early break-up. The polynya’s presence puts additional moisture into the air and results in the region’s moderate level of precipitation, although the Pond Inlet climatic station records far less rain and snow fall than does the Cape Dorset-Kimmirut station on Baffin Island’s south-eastern coast (compare Tables 8.1 and 9.1). Climatic records kept by Environment Canada (Table 8.1) for a 30 year period between 1971 and 2000 at Pond Inlet indicate that while snow can occur in any month, most falls in the period between October and May. On average there is greater than 10 cm of snow on the ground for eight months of the year (mid-October until the end of May), an amount sufficient for its potential incorporation into dwelling structures. The melt occurs very rapidly during June, no doubt making dwellings made with substantial quantities of snow unattractive, and no snow remains in most exposed locations by the end of this month (Table 8.1).

Sod or peat is available in abundance at Nunguvik’s lower elevations and was extensively used for dwelling construction by the Thule Inuit (see Figure 8.5). Palaeoeskimos also used this resource in construction, as evidenced by the low sod berms which outline some of their unexcavated dwellings at the site, as well as N72 (Figure 8.9). As noted by Noble (1983-84:76-80; also Chapter 3.3.4), sod can be labour-intensive to gather and can only be fruitfully collected once it has sufficiently thawed in the warm season. Speaking in practical terms, any person wishing to use sod for construction purposes would have to insure they were in the location where this material was at a time when it could be harvested (i.e. while it was unfrozen) and while a living surface, if semi-subterranean, could be excavated. This is because large quantities of sod are required for building, even for structures that only have lower walls composed of sod, and it is both time and energy-consuming to move about (Chapter 3.3.4). This would be a particular
Figure 8.5 Typical Thule Inuit semi-subterranean structure at Nunguvik (note bowhead whale crania inside the house and outside the wall berms).

consideration for the Dorset, who appear to have had a limited range of transportation options at their disposal (see Chapter 5) and who would surely prefer to temporarily stockpile sod for construction purposes near where a dwelling was intended to be built. For these reasons, any group planning on building with sod, or willing to incorporate it into their design, would have viewed the abundance of this resource at Nunguvik as an attractive incentive for settlement.

The use of antler in the construction of dwellings was previously detailed in Chapter 3.3.5 and may have been one option available to the inhabitants of Nunguvik given the seasonally high concentrations of caribou in the vicinity. Historically, the Sadlermiut and Caribou Inuit were both known to straighten antler via steaming for many purposes, including use in architecture (e.g. Lee and Reinhardt 2003:47, 56). Although there is no evidence that Dorset groups at Nunguvik did the same, there is no reason to suppose that they could not have prepared antler in this way. Similarly, long straight ivory narwhal tusks or segments may have provided Dorset groups with an alternate material with which to create a superstructure, as was the case amongst the Polar Inuit
(Peary 1894:44; Rasmussen 1927:168). A wide range of antler and ivory artefacts (including sled shoes, ice creepers, harpoon heads, and lances) have been excavated from Early and Late Dorset structures at Nunguvik (see Mary-Rousselière 2002), indicating both materials were procurable and that artisans were very familiar with their properties. None, however, has been found in a context indicative of its use in dwelling construction.

The bone from bowhead whales was used extensively by many Inuit groups in the Eastern Arctic to construct their cold season structures (e.g. McCartney 1979b; Savelle 1997; Dawson 2001; Savelle and Habu 2004), and, as noted previously, was theoretically available to Late Dorset groups living along Navy Board Inlet. Mary-Rousselière (1979a) entertained the possibility that some Dorset at Nunguvik hunted bowheads, noting they were probably safer to hunt than the more aggressive walrus. However, there is no evidence that their bones, whether derived from hunted or scavenged whales, were used for architectural purposes at this site. In only one instance has bowhead bone been confirmed as a structural element in a Late Dorset structure anywhere in the Eastern Arctic (LeMoine et al. 2003: Figure 15), although the use of bones from large whales in architecture has been inferred for earlier Dorset (Renouf 1993a:200).

Driftwood is a valuable commodity anywhere north of the tree-line and ethnographers report that the historic Inuit were very judicious in their use of structural wood and carefully recycled it from structure to structure (refer to Steensby 1910; Jenness 1922; Rasmussen 1931). The amount of driftwood entering the Canadian Arctic Archipelago has varied with time (Blake 1975) and is very irregular in terms of its distribution within and between regions. For example, Dyke et al. (1997) note that ancient wood is quite common on the shores of Wellington Channel and Barrow Strait but is much rarer in nearby Prince Regent Inlet (immediately west of Baffin Island’s Borden Peninsula). As detailed by Blake (1972), the amount of wood that becomes stranded on a specific shoreline is determined by a number of local factors including direction of ocean currents, the orientation of a particular beach, and perhaps most critically, the amount and duration of land-fast ice adjacent to a given locale (see Chapter 3.3.2).

Ice coverage at Pond Inlet (the closest location to Nunguvik for which records have been kept, see Table 8.1) is greater than 70% for 43 weeks of the year. Ice coverage in the centre of the Inlet is even greater as ice must first move from Lancaster Sound and / or Eclipse Sound-Pond
Inlet before it can clear off of the site. The likelihood of driftwood penetrating this far into Navy Board Inlet is thus greatly reduced although, perhaps counter-intuitively, too little ice during the warmer than present Late Dorset period (see Chapter 3.4) would have had a similar effect (Dyke et al. 1997). While a direct relationship between ice extent and driftwood penetration cannot be irrefutably established (see Dyke et al. 1997), it is apparent that too little ice is bad for driftwood distributions because in such conditions the wood entering the Arctic Ocean or neighbouring water-bodies becomes waterlogged and either sinks or become unusable before travelling to most shores (refer to Haggblom [1982], also Chapter 3.3.2). Given this situation, local sources of driftwood of suitable size and durability for use in architecture should generally be expected to have become increasingly uncommon throughout the Dorset era as the climate warmed and sea ice diminished. The availability of suitable pieces of wood was a major constraint for the Iglulingmiut, who altered the design of their dwellings based largely on the amount of wood on-hand (Mathiassen 1928:133). A similar situation must have influenced Dorset construction.

Stone is rarely difficult to locate in most arctic environments, although stones of the right size and shape for architectural purposes can sometimes be more difficult to find. While much of the Nunguvik site area is presently covered with sod and tundra vegetation to varying degrees of thickness, stone is available both from the water’s edge immediately in front of N72 and from old beach terraces located behind the site. Stone might also be taken from abandoned structures (e.g. Park 1997). Additionally, a 12 m asl rocky ridge running perpendicular to the shoreline, and approximately 150 m from N72 (Figure 8.7), is an excellent source of stone. Considering the relative ease with which architecturally suitable stone could be procured, the decision to use it in construction was likely not based solely on its availability and ease of procurement.

Animal skin is the final material that could reasonably have been expected to be used by Late Dorset when planning and building their structures. Historically, north Baffin Island Inuit used seal skin to cover their homes, sacrificing the greater insulating warmth of caribou skin for the increased durability of the seal (Mathiassen 1928:135). Indeed, seal skin appears to have been the favoured material for covering shelters throughout the historic Arctic, although the hides from a range of other species were sometimes used by modern populations (see Chapter 3.3.8). Some variation in the frequency with which specific species were used is expected given seasonal
variations in the quality of the pelt, as well as the overall availability of animals and the time required to process their skins into coverings. The presence of large and small seals, as well as large quantities of caribou in the N72 faunal assemblage, suggests that a range of species were available as candidates for tent coverings.

8.3.6 Summary and Discussion of Available Resources
Eustatic and / or isostatic fluctuations are evident south of Nunguvik, where sites such as Saatut are being actively eroded at a rate of about 65 cm per year (Mary-Rousselière 1987, 2002: Figure 7). However, Mary-Rousselière (1979b:55, 2002:17) reports that there has been no notable change in the sea level around Nunguvik since at least the beginning of the Thule period, and probably not since the middle part of the Dorset era (circa 2000 B.P.). Given this, it appears that the area’s resources would have been virtually the same between the Late Dorset and Thule Inuit periods, with open water probably occurring for somewhat longer periods than in the 20th century due to the warmer than present temperatures (see Chapter 3.4).

Despite the reduced duration of ice coverage, the sheltered waters off of the site would provide excellent habitat for ringed seals and must have attracted groups of Late Dorset who, by the latter part of the period, were increasingly focussed on exploiting sea ice environments (Fitzhugh 1980b:600; M.S. Maxwell 1980a:514-515, 1985:110). Whether part of this adaptation involved breathing hole hunting remains unclear (e.g., M.S. Maxwell 1985:223; Spiess 1978; Cox and Spiess 1980; Murray 2005) given the apparent absence of efficient toggling harpoon technology (M.S. Maxwell 1985:132-133). The proximity of Nunguvik to the major caribou crossing at Nallua, combined with the frequency with which caribou is found in the Nunguvik middens (Section 8.4.2), further indicates prehistoric hunters focussed successfully on caribou, similarly to the historically known Iglulingmiut (Mathiassen 1928:55). The long-term stability of the Nunguvik environment in combination with a resource base whose structure may have allowed some measure of diversification in situations when the intense procurement of primary species was not viable (refer to Morrison 1994), stands in contrast to the Bell site (Chapter 7), but is similar to conditions on southern Baffin Island (Chapter 9).

Because of this broadly-based resource structure (see preceding sections), a perception of the site area as dependable, predictable, and productive may have developed. The sheer size of
Nunguvik, and the intensity of the occupations there (see Section 8.4.2), strongly indicates that the area consistently attracted human groups for multiple generations. The area’s diversity must at times have pulled human groups to the area, similarly to the historic era when Inuit groups often strategically selected settlement locations that offered fall-back options if target species did not appear (*e.g.* Gubser 1965). The non-food resources present at the site, particularly those which could be incorporated into dwellings, was an obvious plus in addition to the food resources found along this area of Navy Board Inlet.

### 8.4 Nunguvik (PgHb-1)

The name ‘Nunguvik’ translates as either ‘the place at the end’ or ‘the place where it all ends’, and refers to an oral tradition account of an old woman who cursed the site’s inhabitants (Mary-Rousselière 2002:17). The curse was apparently successful, for despite the large Thule presence evidenced at the site, Neo-Eskimos ceased using it in the late prehistoric period and Nunguvik continued to be shunned by Inuit throughout the early historic era. Instead, groups settled at sites to the north and south of Nunguvik, including Nallua and Saatut, as well as large Thule and Inuit sites closer to or in the modern community of Pond Inlet including Mittimalik (PeFr-1). At Nunguvik itself, more recent Inuit use is limited to small stone food caches placed immediately above the high tide mark (Figure 8.6).

Nunguvik was first reported in 1927 by Therkel Mathiassen (1927:199, 203), who was shown the site by local Inuit when he visited north-eastern Baffin Island during the Danish Fifth Thule Expedition. It was reassessed in 1965 by Father Guy Mary-Rousselière, who travelled to the site with Inuit living at Pond Inlet where he ran a mission. He spent 19 summers excavating Dorset and Thule features (Mary-Rousselière 1976, 1979a, 1979b, 1984, 2002), although many of his excavation notes and other records (as well as transcripts and recordings of the area’s oral history) were lost in the same late-night fire which took his life in Pond Inlet in 1994. Despite this loss, the artefacts he excavated (and previously shipped to the Canadian Museum of Civilization) point to a diverse and long-standing occupation of the site by Palaeoeskimo and Neoskimo inhabitants, and also suggest ties with other northern populations (see Section 8.4.2). Interestingly, based on the diverse assemblages he studied near Igloolik (where he earlier ran a...
mission) and Pond Inlet, Mary-Rousselière (2002:ix, 1-2) tried unsuccessfully to involve Andre Leroi-Gourhan in arctic archaeology. While this did not occur, Leroi-Gourhan did write the preface to Mary-Rousselière’s (1980) book recounting the mid-19th century migration of an Inuit shaman (Qitdlarssuaq) and his followers from Baffin Island to northern Greenland.

8.4.1 Physical Setting
Nunguvik, located approximately 100 km northwest of the modern town of Pond Inlet, is situated on the eastern side of the Borden Peninsula, separated from adjacent Bylot Island by Navy Board Inlet (Figure 8.1). The site runs along a slightly projected head of land which commands an excellent view both north and south along the inlet. The land begins to rise in a series of vegetated beach terraces within and immediately behind the area of occupation, ultimately leading to an inland plateau with average heights of 700 m - 800 m asl. This plateau extends westward across the Borden Peninsula, eventually meeting the Borden Basin, which continues north-westward to Admiralty Inlet (Jackson and Morgan 1978).

Climatic records kept by Environment Canada (n.d. a) between 1971 and 2000 for Pond
Inlet, the closest recording station, are used to approximate conditions at Nunguvik during the Late Dorset period (Table 8.1). This modern information cannot be expected to mirror the circumstances prevalent during the Late Dorset era when the climate was warmer than at present (Chapter 3.4), although presumably the availability and distribution of some animal and plant resources were affected. However, in the absence of more detailed palaeoclimatic reconstructions for the site area (refer to Barry et al. 1977:200), the modern record is taken as the best available source of proxy information for conditions between 1500 B.P. and 500 B.P.

The data compiled by Environment Canada indicate that the mean monthly temperature at Pond Inlet remains below 0°C Celsius for nine months of the year, only approaching the melting point at the end of May. The annual temperature range is 40°C Celsius, with the lowest recorded marks typically occurring during January and February and the highest average daily temperatures during July (Table 8.1). Late May and early June can best be considered the spring period (although there are other factors besides air temperature that determine this transition), while early-mid September marks the shift back to the cold season. On average, late June through the beginning of September constitute the warm season, when average temperatures remain above 0°C Celsius. At Nunguvik, water released from snow banks and permafrost collected in several small melt-water ponds on terraces immediately above the site as the ground warmed, although these had shrunk markedly by the end of July.

Northern Baffin Island experiences its highest average precipitation during the open-water period, which runs from late July through early October (Table 8.1). At this time winds are consistently blowing onto northern Baffin Island from either the northeast or southeast, bringing with them high levels of moisture picked up from Baffin Bay. The months of lowest average precipitation are January and February when air temperatures reach their coldest point and the atmosphere is least able to carry substantial moisture. This pattern conforms to that described by J.B. Maxwell (see Chapter 3.2.3), who has noted that the extent and duration of ice cover, in combination with air temperatures, directly impacts the amount of precipitation that a specific region can be expected to receive, as well as when it falls. Snow does not accumulate to any significant depth around Pond Inlet until mid-October, with greater than 10 cm of snow remaining on the ground until at least the middle/end of May (Table 8.1). Depth in any area is, however,
determined by a number of factors extraneous to the actual amount of fallen snow. Chief amongst these are wind speed and direction, topography, and vegetation cover (J.B. Maxwell 1980:355, 359). These conditions also determine the character of the fallen snow so that, as recorded amongst the historic Inuit (refer to Chapter 3.3.1), a great deal of time might be required to locate snow that was of an appropriate depth and neither too hard nor too soft to be used in construction.

Table 8.1 shows that, over the course of a year, the predominant wind direction at Pond Inlet is from the south, funnelled into the area by the region’s narrow mountain-lined inlets. Monthly average wind speeds of 13.8 km/h at Pond Inlet appear low when compared with Cambridge Bay and Cape Dorset / Kimmirut (Tables 7.1 and 9.1), perhaps erroneously implying that wind conditions would be less of a consideration at Nunguvik. However, this is incorrect because, as noted by J.B. Maxwell (1980:150, 159), average monthly speeds take into account both conditions where there is little or no wind, as well as days when winds in excess of 25 km/h occur. Wind speeds are especially perilous in the cold season when the effects of already frigid still air can be exacerbated by even minimal winds, leading to increased physiological stress from wind chill (see Chapter 3.2.2). Considering that winds greater than 60 km/h have been noted for all months in the region, the residents of Nunguvik must always have been aware of, and planned for, the potential of high and damaging winds when designing their homes. Given the nature of arctic winds, N72 and its neighbours may have been located at such a low elevation and north of a raised boulder crest (see Figure 8.7) because this area offered some protection from the predominant southerly winds.

N72 was constructed in an area of the site which faces northeast up Navy Board Inlet, immediately behind the site are a series of beach terraces extending inland towards a stony hill slightly over 20 m asl in height (Figure 8.7). Except for the elevated rocky ridge which travels perpendicularly away from the shoreline and divides Nunguvik into two large components, the site and its hinterland are covered by virtually continuous tundra vegetation (Figures 8.3 and 8.4). The boulder ridge interrupts the north-south line of sight so that the more northerly concentration of semi-subterranean structures, in which N72 is included, cannot be seen south of the rise (and vice versa). However, both areas have excellent and unrestricted views of the water and shoreline.
Figure 8.7 Nunguvik site map (adapted from Mary-Rousselière 1976: Figure 3).
looking away from the ridge to the north and south, respectively. As ground height increases landward, visibility becomes unfettered up and down the inlet. The 20 m asl hill half a kilometre inland from N72 offers an excellent view of the inlet and inland plain for several kilometres.

As shown in Figure 8.7, most of the identified Palaeoeskimo structures at Nunguvik are located at or below 5 m asl. At this level, and stretching to the current high tide mark, the site is solidly vegetated by low-lying ground cover that does not surpass 10 cm in total height. Species of grasses, mosses, and sedges predominate, as well as some stunted arctic willow (*Salix arctica*) and heather (*Cassiope tetragona*). Unlike the other two case studies, no berry producers (*e.g.* arctic cranberry [*Empetrum nigrum*] or partridgeberry [*Vassimium vitis-idaea*]) were observed around N72. N72 and its neighbouring structures were not discernibly greener or more vegetated than seemingly uninhabited areas of the site, a situation somewhat at odds with that described by Kevan *et al.* (1999) who note that archaeological features in the Arctic are usually pinpointed by more verdant plant growth (due to the underlying nitrate-rich cultural deposits). It is unclear why N72 and adjacent structures did not support notably heavier vegetation, although the pseudo High Arctic environment, in combination with the comparatively recent stabilisation of this area of the site, which at 0.5 - 1.5 m asl is quite close to the water (seaweed strandlines indicate the highest tides reach to and within recent stone caches built 5 - 8 m shoreward of N72), may be factors.

Locating N72 near the active beach assured its occupants immediate and easy access to the shoreline, but the structure’s down-slope placement also meant that ground moisture would be a consideration outside of the cold season. Certainly the interior and adjacent exterior terrain of N72 could be quite wet while excavations were ongoing, especially after precipitation had fallen. Even when it had not rained, the seasonal melting of permafrost and snow cover up-slope of the structure meant that the surface vegetation and underlying matrix within and outside N72 felt spongy and quite moist. This often made the area uncomfortably damp and certainly suggested an unappealing warm season campsite, although such conditions do favour damp-loving plants (especially mosses) and resultant peat deposits. Thus, while the area might seem an unattractive living site when not frozen (explaining the lack of recognised warm season features), the well-developed sod deposits may have made it a more appealing cold season location.
8.4.2 Cultural Setting

Nunguvik has been settled intermittently since at least the Early Dorset period (*circa* 2500 - 2000 B.P.) and appears, based on radiocarbon dates and artefact styles, to have been one of the earliest sites established by the Thule Inuit when they moved into this area of Baffin Island (Mary-Rousselière 1979b:55-56; CARD). Mary-Rousselière (2002:26) notes that an earlier Pre-Dorset occupation, suggested by the occurrence of mini-burins in N46, is also possible although no other *in situ* evidence has been found to support an Early Palaeoeskimo presence.

Nunguvik is one of the largest prehistoric sites in the Eastern Arctic, running over 1 km in length and containing a minimum of 80 dwelling features, of which at least 50 are Thule (Mary-Rousselière 1976:42, 1979b:55, 2002:17). The site, as noted in the previous section, can be divided into two zones of occupation partitioned by a raised rocky outcrop or ridge that runs through the site from the coast inland (refer to Mary-Rousselière 1979b: Figure 2; Figure 8.7). North of the outcrop, the structural depressions which have been identified to culture are predominantly Palaeoeskimo (only N52 and N56 are Neoeskimo), while south of the rocky area the structures are mainly Thule. Mary-Rousselière conducted extensive excavations in both the Thule and Dorset features, with much of his latter work concentrating on N71, N72, and N73.

The majority of Dorset structures are located at lower elevations (*i.e.* closer to the active shoreline) than later Thule Inuit features (Mary-Rousselière 1976:42, 1979b:55); the earliest Thule dwellings are at 11 m asl while those of the latest Dorset at or below 1.5 m asl. Two overlapping radiocarbon dates, one each from a Dorset and Thule structure (see Section 8.4.3.4), were used by Mary-Rousselière (1979b:55-56) to suggest Dorset were still present on the site when the Thule arrived. The discovery of several Dorset artefacts in other Thule structures might also be taken as a sign of interaction (refer to Chapter 5.4), although Mary-Rousselière (1979b:56) notes their presence was probably not due to Dorset-Thule interaction. Aside from the two radiocarbon dates, there is no other evidence to indicate co-habitation of the site.

However, while evidence of direct contact between Dorset and Thule groups at Nunguvik is lacking, Inuit stories of a Tunit occupation at the site survive in oral tradition. Despite the fact that researchers are divided on who exactly the Tunit were (see overview in Rowley [1994]), Dorset are often proffered as a leading candidate (Chapter 5.4.1). Direct contact with Dorset populations would not even have been necessary in order for Thule Inuit groups to develop
stories about a mysterious non-Inuit people in view of the fact that signs of earlier habitation would have been visible virtually everywhere the Neoeskimos ventured, including Nunguvik.

Such evocative signs of past human life remain at Nunguvik and no doubt inspired Tunit tales. Near the site’s northern extreme are a series of human footprints, impressed into the tundra at a time when the ground was soft enough for a person to sink with each step. According to Cornelius Nutarak and Samuel Arnakallak, two elders from Pond Inlet who visited Nunguvik while excavations were proceeding, the imprints were left by a Tunit hunter who was returning to the site and his waiting wife while single-handedly carrying a walrus or narwhal. The hunter, though very strong and capable of bearing the carcass’s great weight by himself, grew tired as he approached his home (the tracks appear to suggest the person stumbled) but, compelled by love of his wife, was able to continue to her with his burden. This account echoes those told elsewhere which portray Tunit as very strong and possessing great love for their wives (Rowley 1994:370).

In terms of recent disturbance at the site, Nunguvik has suffered relatively little damage as compared to some other sites situated near modern communities. The pilfering of whale bone from the site’s large Thule winter houses, a problem which has become very widespread at some locations (McCartney 1979a; McCartney and Savelle 1985), is minimal here. Similarly, the investigation of abandoned ruins by early historic Inuit in search of tools, particularly valuable items such as soapstone lamps and cooking pots that could be reused, appears slight (Mary-Rousselière 2002:17), perhaps due to the site’s widely known curse (Section 8.4). The Dorset structures at Nunguvik have further benefited from their near-invisibility to the untrained eye and have not been obviously disturbed since being vacated by their owners, although it is possible that some building materials (e.g. flagstones and sods) were removed and recycled after they were deserted, a post-abandonment activity that can only be identified via excavation.

The recognised Dorset structures range in elevation from approximately 1.5 to 11 m asl, although proximity to the shoreline cannot be considered a reliable indicator of relative age considering most Thule houses are located above the Palaeoeskimo features (Figure 8.7), presenting “another apparent example of aboriginal disregard for cherished modern notions about beachridge dating” (Harp 1976:120).
8.4.3 Dorset Architectural Forms Identified at Nunguvik
Mary-Rousselière (1976, 1979a, 1984a, 1987, 2002) reports on four Early to Late Dorset structures which he partially or completely excavated at Nunguvik. Based on the incomplete nature of its description, a fifth structure, N73, currently falls outside of the range of known Palaeoeskimo architectural remains (Ryan 2003a) and is discussed in more detail in Section 8.4.4. The four demonstrably Dorset structures are N46 (Early Dorset), N71 (Late Dorset), N72 (Late Dorset), N76 (Early Dorset?), and N82 (Dorset). Their positions are shown in Figure 8.7 and architectural descriptions are presented below in an order approximating their believed period of construction and occupation. Radiocarbon dates are listed in Table 8.2.

8.4.3.1 Structure N46 (Early Dorset)
The earliest dated structure, N46, is located at 11 m asl (Mary-Rousselière 1976; 2002:21-26). Prior to excavation it appeared as a shallow rectangular depression measuring 5 m by 4.5 m and was covered by moss and other thin vegetation (Figure 8.8). Mary-Rousselière (2002: Table 2) obtained four dates on samples from the structure but rejected the oldest (S-672, 2815±80 B.P., from sea mammal bone) and youngest (S-1207, 1360±65 B.P., from outside the structure) results. The two other dates (S-880, 1960±90 B.P. and S-1613, 2400±55 B.P.) are both on caribou bone and suggest the structure was occupied on at least two occasions, although there were no clear stratigraphic separations. Deposits within the feature generally varied in depth between 10 cm and 25 cm, but reached 35 cm in some places. Sections of small flagstones, interpreted as the remains of paved areas, were located at two separate depths and traces of fire were variously identified inside the structure, mostly against the perimeter walls (Mary-Rousselière 1976:42-43). Based on his discussions of artefact positions, it is seems that the entrance faced the water. The occurrence of spalled burins in the excavated assemblage, chiefly from the feature’s lower levels and / or outside its perimeters (see Mary-Rousselière 1976: 43, Figure 4), led Mary-Rousselière (2002:26) to conclude that the architect builders of N46 had dug their dwelling into an earlier in situ Early Palaeoeskimo occupation, largely eradicating the latter.

Bone and baleen were found throughout the matrix, although bones sufficiently preserved for analysis were largely confined to areas under the sod wall berms. Almost 55% of the identified faunal assemblage is caribou (caribou dominates all middens from Early Dorset to Thule times
<table>
<thead>
<tr>
<th>Feature</th>
<th>Cultural Affiliation</th>
<th>Lab Number</th>
<th>Material</th>
<th>Dated</th>
<th>Estimated Date (B.P.)</th>
<th>Normalized Date (B.P.)</th>
<th>Calibrated Age (2δ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N46</td>
<td>Dorset (Early)</td>
<td>S-672</td>
<td>sea mammal collagen</td>
<td>2700 - 2600</td>
<td>2815 ± 80</td>
<td>3158-2762</td>
<td></td>
</tr>
<tr>
<td>N71</td>
<td>Dorset</td>
<td>S-767</td>
<td>bone</td>
<td>1600</td>
<td>2360 ± 90</td>
<td>2741-2156</td>
<td></td>
</tr>
<tr>
<td>N46</td>
<td>Dorset (Early)</td>
<td>S-1613</td>
<td>caribou collagen</td>
<td>2300</td>
<td>2400 ± 55</td>
<td>2702-2340</td>
<td></td>
</tr>
<tr>
<td>N76</td>
<td>Dorset (Middle)</td>
<td>S-1202</td>
<td>charcoal</td>
<td>1300 - 1250</td>
<td>2090 ± 50</td>
<td>2299-1927</td>
<td></td>
</tr>
<tr>
<td>N73</td>
<td>Dorset / Other</td>
<td>S-1444</td>
<td>caribou antler</td>
<td>2000</td>
<td>1940 ± 120</td>
<td>2295-1569</td>
<td></td>
</tr>
<tr>
<td>N46</td>
<td>Dorset (Early)</td>
<td>S-880</td>
<td>caribou collagen</td>
<td>2350</td>
<td>1960 ± 90</td>
<td>2143-1705</td>
<td></td>
</tr>
<tr>
<td>N73</td>
<td>Dorset / Other</td>
<td>S-1203</td>
<td>willow &amp; heather</td>
<td>1550</td>
<td>1940 ± 100</td>
<td>2143-1625</td>
<td></td>
</tr>
<tr>
<td>N82</td>
<td>Dorset (Middle?)</td>
<td>S-847</td>
<td>caribou collagen</td>
<td>2200</td>
<td>1770 ± 150</td>
<td>2036-1350</td>
<td></td>
</tr>
<tr>
<td>N73</td>
<td>Dorset / Other</td>
<td>S-1614</td>
<td>plant remains</td>
<td>1500</td>
<td>1740 ± 130</td>
<td>1945-1371</td>
<td></td>
</tr>
<tr>
<td>N73</td>
<td>Dorset / Other</td>
<td>S-1445</td>
<td>plant remains</td>
<td>1800</td>
<td>1770 ± 100</td>
<td>1922-1418</td>
<td></td>
</tr>
<tr>
<td>N71</td>
<td>Dorset (Late)</td>
<td>S-848</td>
<td>caribou collagen</td>
<td>1500</td>
<td>1670 ± 100</td>
<td>1818-1368</td>
<td></td>
</tr>
<tr>
<td>N76</td>
<td>Dorset (Middle)</td>
<td>S-849</td>
<td>caribou collagen</td>
<td>2300</td>
<td>1600 ± 75</td>
<td>1692-1342</td>
<td></td>
</tr>
<tr>
<td>N76</td>
<td>Dorset (Middle)</td>
<td>S-883</td>
<td>heather</td>
<td>2000 - 1900</td>
<td>1530 ± 100</td>
<td>1691-1279</td>
<td></td>
</tr>
<tr>
<td>N73</td>
<td>Dorset / Other</td>
<td>S-1204</td>
<td>willow &amp; heather</td>
<td>1500</td>
<td>1470 ± 90</td>
<td>1555-1184</td>
<td></td>
</tr>
<tr>
<td>N73</td>
<td>Dorset / Other</td>
<td>S-1206</td>
<td>heather</td>
<td>1550</td>
<td>1550 ± 60</td>
<td>1551-1316</td>
<td></td>
</tr>
<tr>
<td>N73</td>
<td>Dorset / Other</td>
<td>S-1443</td>
<td>plant remains</td>
<td>1600</td>
<td>1510 ± 70</td>
<td>1534-1298</td>
<td></td>
</tr>
<tr>
<td>N73</td>
<td>Dorset / Other</td>
<td>S-1940</td>
<td>plant remains</td>
<td>1500</td>
<td>1440 ± 90</td>
<td>1531-1178</td>
<td></td>
</tr>
<tr>
<td>N71</td>
<td>Dorset (Late)</td>
<td>GaK-2339</td>
<td>burned bone collagen</td>
<td>1200 - 1000</td>
<td>1370 ± 120</td>
<td>1527-1006</td>
<td></td>
</tr>
<tr>
<td>N73</td>
<td>Dorset / Other</td>
<td>S-846</td>
<td>heather</td>
<td>800</td>
<td>1490 ± 70</td>
<td>1525-1293</td>
<td></td>
</tr>
<tr>
<td>N73</td>
<td>Dorset / Other</td>
<td>S-879</td>
<td>caribou collagen</td>
<td>1500</td>
<td>1400 ± 90</td>
<td>1521-1094</td>
<td></td>
</tr>
<tr>
<td>N72</td>
<td>Dorset (Late)</td>
<td>S-478</td>
<td>sea mammal collagen</td>
<td>1200 - 1000</td>
<td>1380 ± 95</td>
<td>1514-1070</td>
<td></td>
</tr>
<tr>
<td>N52</td>
<td>Thule Inuit</td>
<td>S-673</td>
<td>bone collagen</td>
<td>800</td>
<td>1260 ±135</td>
<td>1477-914</td>
<td></td>
</tr>
<tr>
<td>N46</td>
<td>Dorset (Early)</td>
<td>S-1207</td>
<td>caribou collagen</td>
<td>2200</td>
<td>1360 ± 65</td>
<td>1399-1099</td>
<td></td>
</tr>
<tr>
<td>N76</td>
<td>Dorset (Middle)</td>
<td>S-845</td>
<td>heather / plant</td>
<td>1900</td>
<td>1310 ± 90</td>
<td>1382-1005</td>
<td></td>
</tr>
<tr>
<td>N73</td>
<td>Dorset / Other</td>
<td>S-1941</td>
<td>willow twigs</td>
<td>1700</td>
<td>1320 ± 80</td>
<td>1370-1060</td>
<td></td>
</tr>
<tr>
<td>N73</td>
<td>Dorset / Other</td>
<td>S-1205</td>
<td>caribou collagen</td>
<td>1200 - 1250</td>
<td>1170 ± 90</td>
<td>1273-934</td>
<td></td>
</tr>
<tr>
<td>N52</td>
<td>Thule Inuit</td>
<td>S-882</td>
<td>caribou collagen</td>
<td>625</td>
<td>930 ± 100</td>
<td>1052-676</td>
<td></td>
</tr>
<tr>
<td>N42</td>
<td>Thule Inuit</td>
<td>S-477</td>
<td>plant remains</td>
<td>800-600</td>
<td>860 ± 90</td>
<td>935-662</td>
<td></td>
</tr>
<tr>
<td>N71</td>
<td>Dorset (Late)</td>
<td>S-766</td>
<td>plant remains</td>
<td>750</td>
<td>860 ± 70</td>
<td>917-681</td>
<td></td>
</tr>
<tr>
<td>N42</td>
<td>Thule Inuit</td>
<td>S-516</td>
<td>plant remains</td>
<td>800-600</td>
<td>715 ± 60</td>
<td>740-552</td>
<td></td>
</tr>
</tbody>
</table>

**Table 8.2** Dorset and early Thule radiocarbon dates from Nunguvik (calibrated using CALIB 5.02).

[Mary-Rousselière 2002:25], excepting Thule N42 [Mary-Rousselière 1979b:59]), followed by small seals, walrus, and bearded seal (Mary-Rousselière 2002: Table 1). The placement of a caribou skull, some of whose antler tines were symmetrically removed, in a side wall of N46 was particularly significant to Mary-Rousselière, who proposed that it “may have been used for hunting or ceremonial purposes” (1976:43). Mary-Rousselière considered narwhal (4.4%) to be
underrepresented in the faunal assemblage, postulating that most bone remained at the shoreline where carcasses were butchered (Inuit groups followed a similar processing strategy, e.g. Hall [1866:500]).

8.4.3.2 Structure N76 (Early Dorset?)
The next dwelling occupied at Nunguvik appears to be N76, located 6 m asl and 110 m east of N46 (Figure 8.7). Mary-Rousselière (2002:36) has suggested that the structure was occupied at least twice based upon an apparent hiatus in the radiocarbon dates, although a corroborating stratigraphic break was not identified. The dating of this feature has proven to be problematic as three of four radiocarbon assays (1600±75 B.P., S-849, on caribou bone; 1530±100 B.P., S-883, on heather; and 1310±90 B.P., S-845, on heather) suggest an occupation late in the Dorset period, results which are at odds with the associated artefacts. Included in the excavated assemblage are typologically diagnostic objects such as sliced harpoon heads, bipointed needles, polished slate knives, and angular soapstone vessels, all of which suggest an Early Dorset occupation ending before 2000 B.P. (Mary-Rousselière 2002:35-36; also Chapter 4.5.1). While the fourth date, 2090±50 B.P. (S-1202, on wood), better fits with the style of the artefacts, even this estimate appears centuries more recent than comparable Early Dorset sites further to the south including Tyara (KbFk-1) and T-1 (KkHh-1) (Mary-Rousselière 2002:36).

Moving from the issue of N76’s cultural placement to the feature’s appearance, Mary-Rousselière (2002:27) reports that there were no surface indications that a buried structure was present at the location. Instead, N76 was found by testing what appeared to be a promising location. The dwelling’s perimeter boundaries could not be identified during excavation, and while the long axis of the structure was initially assumed to run north-south (entrance pointing south down Navy Board Inlet), a paved surface 35 cm below ground surface was discovered indicating that the feature was actually oriented northwest-southeast (with a view up the inlet). This pavement is described as “une large surface dallée oblongue bordée de pierres et portant des traces de carbonisation; orientée dans un axe nord-ouest – sud-est, elle se trouvait apparemment dans la partie postérieure de la maison dont, malheureusement les limites demeurent..."
incertaines"² (Mary-Rousselière 2002:27).

The majority of the associated Dorset deposit was above this feature (to within 10 cm of the surface) and occurred as thin layers of fine gravel and organic material; typologically earlier materials were found below the paved stone feature, between glacial erratics and rough bedrock that formed the original surface. Faunal remains associated with N76 are dominated by caribou, in this case accounting for almost 75% of the identified bone (Mary-Rousselière 2002: Table 3). An unusual caribou bone industry (Mary-Rousselière 1984a), currently identified at only Saatut and Nunguvik, as well as in some sites in the Foxe Basin and Hudson Strait (including Abverdjar [Rowley 1940:192, Figure 1f] and Tyara [Taylor 1968:55, Figure 23m]), is well represented in the N76 assemblage (Mary-Rousselière 2002:31). Mary-Rousselière (1984a:42) refers to this tool technology as “l’instrument en métatarses de caribou” or IMC, noting it is characterised by longitudinally cut caribou metatarsal bones which he suggests functioned as daggers or foreshafts. This industry was also recognised in N71 and N73.

8.4.3.3 Structure N82 (Dorset)
N82, which appeared as a faint depression in the sod cover, is located 2.4 m asl (Figure 8.7) and is in an area of the site that is more prone to flooding/wet conditions than other locations, particularly after periods of rain (Mary-Rousselière 2002:39). The feature in fact became so wet during the 1977 field season that excavations were abandoned partway through and were never resumed so that only 6.5m² were investigated over the course of two seasons (1973 and 1977). All of the recovered artefacts, including the harpoon heads, indicate the feature best fits within the Early Dorset period. However, the single radiocarbon date from the feature (erroneously reported as being from N76 on CARD) of 1770±150 (S-847, on caribou bone) is, as with N76, too recent for such a cultural ascription. Faced again with the dilemma of contradictory artefact styles and radiometric assessments, Mary-Rousselière (1976:54, 2002:41) suggested that perhaps northern Baffin Island Dorset groups persisted in using some artefact styles and forms far longer than did groups to the south. Such a delay or ‘lag’ in adopting new styles might account for the

² a broad paved surface edged with stones and bearing traces of burning; oriented north-west – south-east, it was apparently located in the rear part of the house whose borders, unfortunately, remain unclear
discrepancy between the absolute and relative assessments for N82 (and N76), although this possibility must be investigated more fully.

There is little information available about the architectural technology used at N82. This area of the site has been used relatively intensively, as indicated by a 50 cm thick cultural deposit whose stratigraphy indicates few interruptions in occupation. While dwellings of some kind were presumably associated with these usages, Mary-Rousselière (2002:39) describes only one architectural feature, “Une surface dallée assez importante fut découverte à une profondeur de 24 cm”\(^3\). Little else can be said concerning the occupation of N82.

### 8.4.3.4 Structure N71 (Late Dorset)

When first identified, N71 presented as a rectangular depression with rounded corners. Two probable caches appear to be associated with it: a 2 m diameter cache about 1 m outside the north perimeter wall; and a second feature slightly further back from the western perimeter wall (Mary-Rousselière 1976:44). When the main depression was excavated it was discovered that two semi-subterranean features had actually been constructed at the location (Figure 8.8). The more recent dwelling measured 5.5 m by 4.5 m, while the earlier structure (also rectangular with rounded corners) measured about 1 m more in length (Mary-Rousselière 1976: Figure 7, 2002:71-77). Both features also seem to have had their long axes oriented to the sea in a west-north-west – east-south-east direction. The entrance was placed in the short wall facing the water.

With the exception of the front (seaward) portion, the earlier structure’s footprint could easily be traced by the presence of a culturally derived gravel layer which had been spread over the natural ground surface at the time of construction or shortly thereafter (Mary-Rousselière 1976:44). The later structure’s boundary was defined by its bilateral flagstone paving (interpreted as probable sleeping areas) and low perimeter wall (Mary-Rousselière 1976: Figure 7), the latter being less apparent on the south-eastern side where the entrance was identified (refer to Figure 8.8). The south-eastern pavement measured approximately 1.5 m in width and 4.25 m in length while the north-western pavement was more discontinuous, with two distinct paved areas (each measuring 1 m x 1m) occurring at two different depths. It is possible that the lower paved areas

---

\(^3\) An important paved surface was discovered 24 cm below surface
were associated with the earlier structure (Mary-Rousselière 1976:44). Each of these paved areas was built over a base of gravel and subsequently covered with a ‘mattress’ of gravel and (in places) heather and others plant materials, as well as wood chips.

Two possible hearth areas were also identified. A deeper one, found between the entrance and pavement (but below the latter) is presumably associated with the older of the two structures. The second potential hearth area was located about 2 m inside of the entrance, along and within the northern wall berm of the later structure. Also located in N71, just south of its centre, was a deep pit whose bottom is recorded as being 40 cm below floor level (most likely referring to the more recent floor), or 90 cm below the wall berm (Mary-Rousselière 1976:44; Figure 8.8). It contained a mix of bone, artefacts, gravel, and other cultural materials. Mary-Rousselière stated that the pit might predate the structure, although it is unclear if he meant only the more recent (upper) structure, or both occupations. A second deep cache pit, smaller than the first, was built into the north side wall and was contemporaneous with the latest use of the structure.

The majority of artefacts were found at the rear of the dwelling where the deepest cultural
deposits occurred (Mary-Rousslière [1976:45] notes that the floor was only 10 cm below ground surface at the front). Most of the diagnostic artefacts reflect a Late Dorset origin, although several finds indicate an earlier Palaeoeskimo presence as well (Mary-Rousselière 1976:45-47). Mary-Rousselière viewed the dwelling’s semi-subterranean nature as a sign it was used in the cold season, although he notes it also appears to have extended into part of the warm period (1976:48). His belief in an extended warm season occupation was based on the presence of large amounts of bird bone (36.2%), as well as harp seals (Mary-Rousselière 2002: Table 7).

Four radiocarbon dates were obtained from N71: the earliest date of 2360±90 B.P. (S-767, on bone collagen) was from the base of the deep pit and appears to predate the main occupation. A second date of 1670 ±100 (S-848, on caribou collagen) was also earlier than expected. The two remaining dates, 1370 ±120 B.P. (GaK-2339, burned bone collagen) and 860 ±70 B.P. (S-766, plant material from the ‘mattress’), fall within the Late Dorset period. The latest result, S-766, overlaps with an assay of 860±90 B.P. (S-477, on plant remains) from Thule Inuit structure N42 (refer to Figure 8.7), prompting Mary-Rousselière (2002:76) to suggest the site may have been occupied for a time by both populations. However, N42 was built on an area of the site which had previously seen Dorset occupation (Mary-Rousselière 1979b:55) and it is conceivable that this date was contaminated by the earlier Dorset occupation. A single diagnostic Thule artefact (a wooden fire drill) from N71 (Mary-Rousselière 2002:75) also suggests the possibility that the area in which N71 was located may have been used in some fashion by the Neoeskimos. Finally, while M.S. Maxwell (1985:241) says that there was a “paved tunnel entryway” associated with N71, referencing Mary-Rousselière (1979a), such a feature is never mentioned in that or any of Mary-Rousselière’s published works.

8.4.3.5 Structure N72 (Late Dorset)

N72 forms the main focus of this chapter and the majority of the structure was excavated in 2001 as part of the Helluland Archaeology Project. Mary-Rousselière (n.d. a) had initially tested N72 in 1969 in order to investigate any relationship between it and the adjacent N73 complex (Section 8.4.4). At that time, one 1 m x 75 cm unit was excavated just south of the structure’s centre and a smaller 25 cm x 25 cm unit was placed in the southern corner of the dwelling against and into the berm. (The smaller unit was significantly larger when recorded in 2001, probably because it was
left open and was host to at least one lemming tunnel). More substantial excavations in the north-western part of N72 were conducted in the mid-1980s as part of Mary-Rousselière’s focussed work on N73. In 2000, three additional areas in the western half of the structure were tested by the Helluland Archaeology Project (one 1 m x 1 m unit, one 50 cm x 50 cm unit, and one 1 m x 50 cm unit). The remainder of the structure was excavated in 2001.

Like N71, N72 is rectangular with rounded corners and is defined by low earthen berms averaging 1 m in width (Figure 8.9). One date of 1380±95 B.P. (S-478, on carbonised bone) from a “fireplace” in the small southern corner unit was reported (calibration to δ14C [using CALIB 5.0.1] gives a date range of 1540 – 1070 B.P.). While the single radiocarbon assessment agrees with the Late Dorset ascription of the feature and post-dates the majority of dates from the underlying N73 feature (Table 8.2 and Section 8.5), the date is on sea mammal bone (Mary-Rousselière n.d. d) and should be viewed as several centuries too early. Mary-Rousselière

**Figure 8.9** View of N72 under excavation looking southwest (open N71 excavations visible at top of picture, N73 excavations in right forefront). White line indicates raised outer edge of perimeter wall berm, inner wall slope visible in unit in the centre of the picture.
(2002:68) applied a correction factor of 400 years to the original result (following Tuck and McGhee 1976), suggesting an occupation *circa* A.D. 970 (980 B.P.) as appropriate. If correct, the calibrated date for N72 is very close in time to Late Dorset N71 and Thule N42 and N52 (Table 8.2). Mary-Rousselière (2002:44, 68) suggested N72 was built a lengthy period after N73 was abandoned and thought it was used for a short time (an opinion probably based on stratigraphy).

### 8.4.4 Unusual Artefacts and Architectural Features at Nunguvik

Aspects of the artefact assemblage and architectural remains found at Nunguvik have been used to suggest extra-cultural interaction between Late Dorset populations and both the Thule Inuit and mediaeval Norse (Mary-Rousselière 1979a, 2002; Sutherland 2000a, 2000b, 2002). However, it has proven difficult to fully evaluate and reconcile these discoveries as most of the field documentation relating to Mary-Rousselière’s excavations was lost in the same fire that claimed his life in Pond Inlet in 1994. Given this situation, the following discussion must rely heavily on Mary-Rousselière’s published reports, as well as more recent research.

Based on his surviving work, it is clear that Mary-Rousselière suspected at least some of the artefacts and related technologies he was unearthing at Nunguvik might not have originated with the Dorset. Pieces he thought were especially indicative of interaction between Dorset and Thule groups included a wooden fire drill discovered in structure N71 (see Mary-Rousselière 1979a). The drill, which has been scorched on one end and could have been turned either by hand or with the assistance of a bow drill, was presumably used in tandem with a fire board (although none was located). As previously noted, the N71 dwelling has produced one date indicating chronological overlap between the two groups at Nunguvik was possible, meaning that contact and cultural transmission was theoretically possible. As there is no known analogue to the fire drill in other Dorset assemblages, Mary-Rousselière (1979a:26) proposed the piece originated with the Thule and was either given to or scavenged by the Dorset occupants of N71.

Mary-Rousselière saw suggestions of Dorset-to-Thule technological transfers amongst additional components of the site’s wood assemblage, including a 40 cm long sled runner fragment (Mary-Rousselière 1979a: 24-25, Figure 2) from N73, which he noted was akin to the modern Inuit *qamutik* (komatik). On a smaller scale, structures N71 and N76 yielded a number of
bent or otherwise shaped pieces of wood interpreted as parts of a model kayak or umiak (Mary-Rousselière 1979a: Figures 4-6) of a style similar to that made by historic northern Baffin Island Inuit. These parallels were, in Mary-Rousselière’s view, significant because they indicated a level of diffusion suggesting that “more traits inherited by the modern Eskimo culture were already present in the Dorset culture than was hitherto known” (1979a:26).

The Nunguvik excavations have also produced materials which hint at Dorset interaction with another group, the Norse. The N73 complex, an enigmatic and artefact-rich feature partially underlying N72, has yielded six wooden models that Mary-Rousselière (1979a: 26-28, Figures 7 and 8; 2002: 62, Figure 14c) convincingly argued were fashioned after Scandinavian-style skis. If these pieces were intended to represent skis then they are the only evidence indicating that the Palaeoeskimos were aware of this equipment, although Palaeoeskimo transportation technology is quite poorly known (M.S. Maxwell 1985:152-153). As Mary-Rousselière (1979a:28, 2002:62) remarks, the nearest geographic location where skis were used prehistorically is northern Scandinavia, where 3500 year old examples associated with the Saami have been found (a comparable form was also used in Eurasia). While Mary-Rousselière (1979a:28) notes that a basic similarity exists between the Nunguvik specimens and full-sized Inuit snow shoes from the Keewatin and Coronation Gulf areas (as well as Amerindian examples from the Great Lakes and eastward), he contends that the models are most similar to Scandinavian forms. How and why this form of ski came to be depicted by Dorset groups on northern Baffin Island is unclear. As Mary-Rousselière points out, both absolute and relative dates from contexts in close association with the wooden pieces indicate they were deposited before it is conventionally thought that the Norse (the most obvious source for Scandinavian-style skis) began to visit the Eastern Arctic.

Two pieces of cut wood with what appear to be nail holes were also found in N73. These were located approximately 55 cm deep at the bottom of a north-south running frost crack which developed after the feature was abandoned (Figure 8.10). While Park (2004, 2008) has suggested these fell into the crack and actually post-date the feature, Mary-Rousselière (2002:105) was quite explicit that the two pieces were found under a large in situ rock. If this is correct, the wood in question should be in primary context and is not intrusive. Mary-Rousselière directly dated one piece, which yielded a date of 670±50 B.P. (S-1615), and also analysed traces of red residue
Figure 8.10 Field sketch of N72 and N73 compiled from illustrations made after the 1984 and 1987 field seasons at Nunguvik (adapted from Mary-Rousselière n.d.a and n.d.d).

KEY:
A: Main paved area (heavy stone structures are shown in thick dotted lines)
B: Main fire place
C: Fissure across the house complex
D: Areas excavated in 1969 (the apparent walls of house 72 are indicated in dotted lines)
E: Fire place excavated in 1969 (uncorrected C14 date on charred bones: AD 570)
observed within and around a small perforation on one end (Mary-Rouseelière 2002:105). The residuum was found to have traces of lead and iron, suggesting the perforation was in fact a hole made by a smelted metal nail.

This piece, plus two others in close association, was further identified as white pine (either *Pinus strobus* [eastern white pine] or *P. cembra* [Arolla or Swiss stone pine]) (see Mary-Rousselière 2002:105). Most *Pinus sp.* grows in Siberia and western Russia and is relatively uncommon in the driftwood of Baffin Bay, with Scotch pine (*Pinus sylvestris*) comprising most of what can be identified to species (Eggertsson and Laeyendecker 1995:183-184, Table 1). Given both the metal residue and the rarity of *Pinus* in the area, Mary-Rousselière (2002:105) concludes “Il semble donc que la probabilité soit très forte que les morceaux de bois trouvés à N73 soient d’origine européenne et vraisemblablement viking”

Extra-Palaeoeskimo contact has also been inferred based on the methods of craftsmanship observed on some of the worked wood from the N73 complex. Mary-Rousselière (1979a) had previously recognised that the feature yielded a notable amount of worked and unworked wood, which he credited to excellent on-site preservation conditions. Re-examination of several of the pieces (Sutherland 2000a, 2000b) has shown they were shaped by employing techniques (*e.g.* mortise and tenon joinery, scarfing, and the aforementioned use of metal nails) not reported by Grønnow (1996a) at the Qeqertasussuk site in Disko Bay, Greenland, the only other Palaeoeskimo site whose wood industry has been analysed and reported in detail. Additionally, the recovery of several wooden sculptures depicting people with a “distinctive long and narrow face with a prominent straight nose” (Sutherland 2000a:163) has been suggested to represent Europeans observed by Dorset (see Chapter 5.4.7).

N73 also produced two lengths of spun cordage or yarn, the longer measuring 3 m, made from arctic hare fur (Mary-Rousselière 2002:67, 100, Plate 21). The biggest piece was recovered in 1984 from a square where deeper N73 deposits were overlain by the north-western section of the N72 feature (this area of N72 was excavated at that time). Analysis of part of the 3 m length, which was spun using a technique comparable to that found at the Norse West Settlement site of Gården Under Sandet (GUS) in Greenland, identified goat hairs on its outer surface (Sutherland

---

4 It therefore seems highly probable that the wooden pieces found in N73 are European, and probably Viking in origin.
Sutherland (2001a) drew a second similarity between the Baffin Island and Greenland textiles, namely that two pieces from the final occupation phase at GUS (late 13th to mid 14th century AD), like the Nunguvik examples, were made from either arctic hare fur or a combination of arctic hare fur and goat hair (Østergård 1998). Sutherland (2000a, 2000b) attaches special significance to the presence of cordage in N73, proposing that textiles, unlike other Norse materials (refer to Chapter 5.4.7), would have held little utilitarian interest for the Dorset, who may have acquired pieces as a novelty. Further, she argues (2000a:161) that spun fibres are comparatively fragile and that the lengths from Nunguvik could only have arrived there through direct contact between Dorset and Norse at or close to where they were deposited.

In addition to the unusual artefact assemblage from Nunguvik are architectural elements identified in the N73 feature which do not easily fit within the range of Palaeoeskimo architectural technology reported elsewhere in the Eastern Arctic (Andreasen 2003; Renouf 2003; Ryan 2003a; Sutherland 2003). As with the artefacts, it has proven difficult to contextualise the architectural elements in order to better understand their significance for Eastern Arctic prehistory given the destruction of most of Mary-Rousselière’s fieldnotes and photographs. Despite this loss however, it is apparent from the surviving descriptions that this feature appeared quite unusual even before it was tested, appearing as a confused grouping of depressions and trenches overlain by a layer of active sod and turf (Mary-Rousselière 2002:43, Figure 3).

N73 became a major excavation focus near the end of Mary-Rousselière’s career at Nunguvik (Mary-Rousselière 2002:43), and a total of 133 m² were excavated. The central part of the feature consisted of a large ‘room’ whose middle area was slightly depressed and left open (Mary-Rousselière 2002:43-69). In this open area the cultural deposits were thin (12 cm) and lay on top of a 25 cm layer of fine gravel that contained discontinuous lines of humus and cultural debris suggestive of past occupation. Given the feature’s elevation only 1 m asl, this gravel layer was initially interpreted to have been laid down through natural processes such as storm or wave actions, although Mary-Rousselière (2002:68) subsequently reconsidered this opinion and concluded it was laid down intentionally by the feature’s builders. Surrounding the open central area were much deeper cultural deposits testifying to an intensive use of this zone through some length of time. Included in these deposits were layers of willow or heather branches, earth that
was either packed or skin-covered, and abundant instances of clumped animal hair or fur. Near to the central area was a paved and rock-lined feature that was originally interpreted as the remains of a semi-subterranean entrance based on surface examination (Mary-Rousselière [1979a:24]; see Figure 8.10, “A” in lower middle of N73 excavations). Additional work indicated the feature, which also contained several signs of fire, more probably functioned as a larder or food preparation area. Three similarly constructed structures were subsequently uncovered (presumably near the first) and may also have functioned as food preparatory areas (Figure 8.10).

A more precise idea of the size and shape of N73 could not be established during Mary-Rousselière’s excavation and the form (or forms) of the complex during its use life remains a mystery. Variously-sized pieces of wood were quite abundant in the feature, although no post moulds or other organic structural supports were recognised. Similarly, while certain elements of the stone architecture were relatively robust (e.g. the stone-lined larders), their relation to one another and to the overall design of the complex were not clear. Given the depth of the deposits in parts of N73, Mary-Rousselière interpreted the structure as having been used discontinuously over several centuries, probably with multiple modifications, by several Dorset families. However, if N73 was a communal Dorset structure, it is quite different from multi-family and communal structures known from other locations (e.g. Damkjar 2000, 2003, 2005; Ryan 2003a).

Both relative dating techniques (primarily using the changing form of various harpoon heads) and 13 radiocarbon dates (refer to Table 8.2) support Mary-Rousselière’s interpretation of a lengthy occupation extending throughout the Middle and Late Dorset eras, or between circa 2000 - 1000 / 500 B.P. (one date indicates the complex might also have been used in the 14th century AD). At some unknown period post-occupation, the frost crack mentioned previously developed in N73, travelling north-south and disturbing or destroying a number of small secondary structures constructed within the feature (Mary-Rousselière 2002:44).

The final use of the N73 area occurred at some lengthy time after the feature fell into disuse, when a square to rectangular semi-subterranean structure designated as N72 was constructed near and over the southern edge of the larger complex (Mary-Rousselière 2002:44). As noted in Section 8.4.3.5 (also Section 8.5), Mary-Rousselière felt N72 was occupied for a relatively brief period several centuries following the abandonment of N73.
8.5 Excavation of N72
Mary-Rousselière first visited Nunguvik in 1965 (Mary-Rousselière n.d. e) and both N72 and N73 are clearly visible in an aerial photograph taken in 1969 (Mary-Rousselière 2002: Figure 3). Measurements of the surviving part of N72 indicate the complete feature was approximately 5.8 m by 6 m from outside berm to outside berm. Measures taken from the interior walls, more accurately reflecting the amount of actual living space within the feature, were 4.2 m by 3.5 m, providing approximately 15 m² of interior space. Mary-Rousselière’s (n.d. b) field sketch indicates his maximum exterior measurement was 5.75 m by 5.25 m, with an interior measure of 5.1 m by 4.5 m (total liveable space of approximately 23 m²). The discrepancy between his measurements (calculated from his field sketch) and those made for this analysis are likely the result of differences in how the wall berms were defined, as well as the less exact nature of the earlier sketch. Roughly 3.75 m² of the interior was removed by Mary-Rousselière (Figure 8.10).

8.5.1 Identification and Context of N72
Features at Nunguvik were numbered sequentially by Mary-Rousselière from south to north through the site. North of the rocky ridge dividing the site into southern and northern parts (Figure 8.7) structures were recorded from the 11 m asl beach ridge down to the shoreline. N72 is positioned approximately 1 m asl.

The 1969 aerial photo of Nunguvik shows N71, N72, and N73 prior to excavation (Mary-Rousselière 2002: Figure 3) and N72’s squarish depression and raised perimeter wall berms are unmistakable. Using the photograph’s scale bar as a guide, the north-western part of N72 (subsequently removed by Mary-Rousselière) was separated by about 6 m from the above-ground limits of N73; a more deeply buried part of the feature apparently continued to and below the north-western part of N72 (Mary-Rousselière 2002:68), although detailed stratigraphic descriptions are not available. What can be discerned from unpublished site reports is that two culture-bearing deposits were recognised during excavations in 1969 and the 1980s, leading Mary-Rousselière to conclude on this basis that “house N72 was dug into the remains of the older house [N73], as indicated by a difference of about 25 cm” (Mary-Rousselière n.d. c:2). He also noted that the later occupation was thin and relatively artefact poor and that most cultural material came from N72’s walls or below the floor. Mary-Rousselière concluded on this basis that
N72 had not been occupied for long and that the artefacts he found in the wall berms were probably in secondary position [possibly due to dwelling refurbishment].

In 2001, two discrete occupation zones broadly similar to those described by Mary-Rousselière were sporadically recognised where an intervening thin sandy sterile layer was present (refer to Section 8.5.4). However, the absence of a sterile stratum in some units, particularly those in the northern part of the gird, frequently made it impossible to identify or differentiate strata within the thick culture-bearing deposit. A third deeply buried but discontinuous humus, containing scattered artefacts and faunal material, was also located in 2001 and is thought to represent an earlier use of the dwelling area (Section 8.5.4).

8.5.2 Appearance of the Structure Prior to Excavation
N72 and its vicinity are today dominated by the open excavations of Mary-Rousselière, who previously removed 133 m² of deposits during his investigation of N73 (Mary-Rousselière 2002:43). Part of the north-western berm and interior of N72 were also removed, however, Mary-Rousselière’s published opinions on the feature are restricted to contexts where he is discussing the larger and more complex N73 feature (Mary-Rousselière 2002:68):

Quant à la petite maison dorsétienne (N72) construite plus tarde sur les ruines de la structure [N73], un échantillon d’os carbonisés nous donne une date de 570 de notre ère (S-478:1380±95) à laquelle il faut presque certainement ajouter la correction de 400 ans pour les ossements de mammifères marins; l’année 970 la place toute proche dans le temps de N71. Elle ne semble pas avoir été occupée longtemps.5

Comparing Mary-Rousselière’s descriptions of the various Dorset features at Nunguvik, it is evident that N72’s surface appearance was different from neighbouring N71 and N73 in that the former’s footprint could not be identified before excavation, while N73 was unusual in that “ne se présentait nullement comme une maison dorsétienne classique, c’est-à-dire de forme rectangulaire”6 (Mary-Rousselière 2002:43). In contrast, N72 was defined by a semi-subterranean interior bounded by a low broad perimeter berm indicating a square form with

---

5 As for the small Dorset house (N72) constructed later on the ruins of the structure [N73], a sample of charred bones gives a date of 570 A.D., to which it is necessary to add a correction of 400 years due to the marine mammals; the year 970 [A.D.] is very close in time to N71. It does not seem to have been occupied for a long time.
somewhat rounded corners. The berm was better defined on the inside of the structure (due to the latter’s semi-subterranean nature) than on its external edges, making a precise distinction between external berm edge and outlying surface matrix somewhat variable. The N72 berm averaged about 1 m in width (Figure 8.11), except on the side facing the water (northeast), where the berm widened to almost 2 m immediately before a narrow interruption which probably represents the entrance. No other architectural features were immediately apparent through the overburden and vegetation (comprised of grasses, sedges, mosses, and willows).

8.5.3 Excavation Strategy and Methodology
Unlike the other two case studies, N72 was not excavated specifically for inclusion in this dissertation. Instead, this feature was selected by Dr. Patricia Sutherland (director of the Helluland Archaeology Project) as a part of her ongoing work regarding potential European–Dorset interaction in the Eastern Arctic (Sutherland 2000a, 2000b). Descriptions of what appeared to be unusual architectural features and categories of artefacts (see Section 8.4.4) led her to identify Nunguvik, and specifically N73, as one location where a meeting or meetings might have taken place. As the site had not been inspected by archaeologists since Mary-Rousselière’s final visit in 1992, limited excavations were done in 2000 to assess the integrity of the N73 area. While surface examination indicated the main part of N73 was largely exhausted (though remnants do continue north and south of Mary-Rousselière’s grid), N72 was surprisingly intact and was tested in a limited fashion to determine the extent and cohesiveness of surviving deposits. Finding the matrix to be undisturbed, she returned in 2001 to completely excavate the remainder of the feature. I was a member of the 2001 field crew and Dr. Sutherland offered me the data garnered from these two seasons of excavation for use in this dissertation.

Before excavation began, a grid consisting of 36 1 m² units was established overtop of and slightly beyond the visible remains of N72 as indicated by the outer boundary of the raised perimeter berm. Because the intact part of N72 abutted or was very close to the edge of Mary-Rousselière’s open excavations, parts of this grid overlay previously excavated areas (refer to Figures 8.10 and 8.11). An attempt was made to orient our grid so that its northern perimeter

6 it by no means presented in the form of a traditional Dorset house, that is to say a rectangular form
Figure 8.11  Surface appearance of N72 in 2000 (based on sketch by Martin Appelt). Mary-Rousselière’s excavations in N72 and N73 are shown. Inset picture (Mary-Rousselière 2002: Figure 4) with N72 (approximate centre of photo) in relation to N73 and N71.
followed the edge of the open excavation; however, the somewhat irregular nature of the latter meant that it was impossible to make the two grids match completely. In 2001, grid north was chosen as the side of the excavation facing inland (geographic west), and both the field notes and associated catalogue use this bearing when describing/ recording artefact and feature locations. However, this orientation immediately becomes problematic when one attempts to describe N72 within the context of the larger site, a result of the fact that both Mary-Rousselière and the 2000 Helluland Archaeology Project had previously used geographic north (‘up’ the inlet) as grid north. Given this discrepancy and its inconsistency with previous work on the site, all discussion of direction as it relates to both the site and N72 has and will continue to use geographic north as the orientation.

Once excavation began, activities were focussed on those units located within the interior of the structure (as defined by the perimeter berms) and grid units falling outside of the berm were, with one exception, not excavated. In each unit, 10 cm baulks were left in place until sterile substrate was reached, at which point wall profiles were drawn and the baulks also excavated. The provenience of artefacts was measured using each unit’s southwest corner peg (northwest in the field notes), while flakes and faunal remains were collected by level (these were not piece-plotted). Although none of the excavated deposits were screened, this is not expected to have detrimentally impacted recording and interpretation of the preserved architectural information.

A 1:10 cm excavation plan was kept for each 5 cm artificial level in each excavated unit. Formal and informal artefacts, as well as pieces of unworked baleen and wood, were recorded in three dimensions. Elements relating to N72’s architecture, including stones, sod berms, and other attributes were noted in level descriptions and drawn onto the level plan; incompletely exposed objects were drawn using a broken line to indicate they had not been completely revealed in that level. In situ stones and other features were left in position as long as was feasible to establish their structural role, these were removed only after they had been fully exposed and drawn onto the excavation plan. All excavators recorded a short description in their field book of each 5 cm level as it was finished and were instructed to particularly note information regarding unit contents and matrix characteristics.

In terms of the actual excavation of N72, there was one main difference in comparison to
Bell House 6 (Chapter 7) and KdDq-7-4 in the Tanfield Valley (Chapter 9). While the two latter features were excavated following natural stratigraphic levels, N72 was excavated using artificially defined ones. While extensive discussion of the advantages and disadvantages of using arbitrary versus natural levels is beyond the scope of this chapter, brief discussion of these two methodological techniques is warranted.

As discussed by multiple authors (see, amongst many others, Fladmark [1978]; Barker [1982]; Hester et al. [1987]; Roskam [2001]), there are several reasons why one excavation strategy might be adopted over the other. Excavating by natural stratigraphic level requires that deposits be clearly distinguishable on a consistent basis and that excavators dig, from start to finish, a single deposit in its entirety before moving to a new stratigraphic level. Each layer is usually defined visually, most commonly on the basis of colour or texture changes, and all encapsulated cultural materials are associated with that level, creating assemblages which are assumed to share some sort of relationship (cultural, temporal, activity, etc.). This is generally viewed as the preferable strategy as it precludes all of the disadvantages associated with arbitrary level excavation, outlined below. However, such a strategy relies on the excavator’s experience and ability to distinguish sometimes subtle changes in the matrix, as well as requiring relatively stable post-depositional conditions where actions such as solifluction and cryoturbation are minimal (refer to Schiffer 1987). Even the most skilled excavator requires that strata be consistently differentiated for a natural approach to be feasible.

Excavation using arbitrarily defined levels is often selected when natural strata cannot be discerned, and / or when deposits are the result of either multiple activity episodes or have accumulated over long periods. Arbitrary levels can be measured using one of two protocols, often referred to as simple and contoured strategies. In the first, depths are measured from the site or feature datum (itself an arbitrary marker) regardless of site topography, layout, or features. Using the datum as the marker from which to measure depth, all excavated strata are correlated to the same base measure and there is little consideration given to on-site conditions or depositional contexts. Not surprisingly, this technique typically results in a very artificial-looking appearance as all levels in all units start and end at the same depth, no matter their site position.

A better alternative is the contoured arbitrary approach, which uses the contour of the
ground surface as the baseline measurement for defining a level of pre-determined depth. Following this method, depth is measured down from the contemporary ground surface with the top of each stratum mirroring the ground surface at the time excavation began. Unlike the simple strategy outlined above, contoured levels at least generally preserve the natural process through which deposits on the site were laid down so that high and low points (e.g. walls and ditches) apparent on the surface are maintained throughout the ensuing excavation. As levels are removed, they should approximate, in reverse, the manner by which the archaeological deposits were originally covered (note that this technique will fail when natural and / or man-made features have been obscured by overburden and no topographic traces remain on the surface).

Both arbitrary approaches can be beneficial at sites where natural or human agents have complicated stratigraphic integrity so that cultural deposits are no longer clearly distinguished. Arbitrary levels may also be used in combination with natural stratigraphic layers when those layers are thick in order to provide additional vertical control. Further, use of an arbitrary measure is very beneficial when excavators lack the experience necessary to trace natural strata across a unit, feature, or site, or when strata cannot be visually fixed. There are, however, some negative aspects to using arbitrary levels which makes this approach less than ideal in all situations. If, for example, a site consists of a palimpsest of shallow or thin cultural deposits, discrete occupation or activity episodes such as reuse or reclamation may be missed or obscured when these traces are combined within a larger single arbitrary level. The creation of artificial strata that do not necessarily relate to a site or feature’s life history may also mislead analysts examining the artefacts excavated using such a strategy. This is because the use of arbitrary levels can group cultural materials away from features that they should actually be associated with, or associate artefacts with structures to which they have little or no relation.

Finally, as a relevant example, using artificial or arbitrary levels rather than following natural stratigraphy can complicate interpretation of a site when the defined levels cross-cut features, such as wall and floor deposits, and subdivide them unnaturally. As will be seen in the following section, this occurred in N72 as we sliced away deposits in 5 cm intervals so that several of the arbitrarily defined levels actually comprise an amalgam of one or more cultural deposits, overburden, and / or substratum. Given these complications, and as further discussed in
Section 8.5.4, the arbitrary levels defined during excavation are not used to interpret the dwelling (in contrast to Chapters 7.5.4 and 9.5.4, when levels were recognised and described with specific attention to the structure’s life history). Instead, an interpretation of the stratigraphy is presented in which artificial levels are amalgamated or divided as appropriate in order to create ‘phases’ of use and disuse so that a more realistic sequence of events at N72 can be presented.

The decision to dig N72 using contoured arbitrary 5 cm levels depths, rather than following each natural stratum, was made for one key reason. The 2001 field crew consisted of a mix of experienced excavators as well as those for whom N72 was their first archaeological work. By defining levels at 5 cm intervals, it could be insured that some measure of stratigraphic control was maintained in case interpretative errors were made while excavation was ongoing. Accordingly, before excavation began, five interrelated surface measurements were taken for each unit (four corners and centre) using the grid’s northwest pin (geographic southwest) to determine depth below ground surface (bgs). Five centimetre contoured levels were then removed from each unit using hand trowels.

8.5.4 Identification of Occupation and Hiatus Periods
Because N72 was excavated using contoured arbitrary levels, each layer was defined solely upon its depth below contemporary ground surface and not by using the sorts of matrix changes that generally indicate when a feature was being used in a different way. Considering that these levels were not defined based upon context and characteristics; they are not considered to relate directly to the sequence of occupation and abandonment of the N72 area and cannot be automatically used to investigate N72’s use history. This is because, as noted, multiple horizons sometimes occurred within the same preordained 5 cm deposit but were recorded as one stratum due to the selected excavation strategy. Alternately, a single discrete natural deposit that continued into two or more arbitrary levels, given the latter’s relation to the modern ground surface (e.g. depth and degree of undulation), had to be unnaturally divided into multiple levels. Given this variability, the characteristics of the identified artificial levels can and do vary markedly across the excavated area, as well as between individual units, making it impossible to create a comprehensive and meaningful excavation-wide review of each.

For this reason, stratigraphic levels are not defined or discussed individually, as they are
for the naturally excavated Bell House 6 (Chapter 7.5.5) and KdDq-7-4 (Chapter 9.5.4), whose levels correspond to those feature’s histories of use. Instead, the following sub-section uses the arbitrary levels as an interpretive base from which to create a phased sequence of occupations and hiatuses. This was accomplished by analysing and comparing individual unit excavation notes and descriptions of matrices and contents, and coupling that information with data relating to the natural strata as recognised using baulk profiles (each square’s west and south baulk face was recorded and north-south and west-east cross-sections of the dwelling are shown in Figures 8.12 and 8.13). The artefact assemblage was similarly treated; catalogued pieces were first sorted by individual unit and then by level within that unit. Section drawings were subsequently used to correlate deposits and their contents with one of the identified occupation periods.

8.5.4.1 N72 Description of Depositional Phases
Seven phases (including three probable occupation episodes) can be distinguished based on stratigraphic analysis and examination of the various architectural elements located within N72. The profile drawings shown in Figures 8.12 through 8.14 indicate the natural levels recorded from the unit baulk faces, and specific discussion of matrices are included where appropriate as each phase is defined below. Figure 8.15 presents a schematic diagram of occupations and hiatuses at N72 (this is intended to clarify the phases described below and is not to scale).

Phase 1: Sterile Substrate
Beige and brown sand, pea and larger gravel underlay the entire excavation (and presumably much of the site). The deposit was predominantly water-lain, typically frozen in permafrost when first revealed, and was quite damp when thawed. This pre-occupancy deposit was as high as 25 cm below ground surface in some places (typically in the eastern grid units), or as deeply buried as 50 cm below ground surface (as amongst several western units). It was culturally sterile.

Phase 2: Occupation 1
The earliest identifiable occupation episode at N72, labelled Occupation 1, was deeply buried. It consisted of a non-continuous thin black organic deposit that varied between 1 cm and 4 cm in thickness and rested on top of a gravel and stone matrix (Phase 1). This substrate caused the
Figures 8.12 (left) and 8.13 (right). Figures 8.12 shows a south to north cross-section of the naturally defined levels present in N72. Figure 8.13 presents an east to west cross-section of the natural levels.
Figure 8.14 Unit D2 (east-facing wall) and unit F5 (north facing wall) showing cultural deposits at different depths.
Occupation 1 deposit to be uneven, undulating between approximately 35 cm and 45 cm below ground surface (Figures 8.12 and 8.13). The black organic level yielded only seven undiagnostic artefacts and a small number of flakes (Table 8.3), indicating that the occupation was relatively short-lived and ephemeral. Twelve additional artefacts were located at comparable depths in other squares (Table 8.3), however little or no organic residue appears to have been associated with them (although the absence of an identified deposit may reflect excavator inexperience). Despite the lack of a clear stratigraphic relationship, it seems probable that 11 of the artefacts (all non-diagnostic) were incorporated into the N72 area contemporaneously with the black Occupation 1 matrix because they share a similar depth and were both located beneath intact sterile deposits (Phases 3 and / or 5).

The twelfth artefact, and the only diagnostic one from this depth, is a concave-based Late Dorset endblade from unit E3. However, the endblade, one of the 12 not associated with an organic deposit, is considered to be out of context for several reasons. It was the only artefact found at this depth in square E3 (where a cultural layer relatable to Occupation 1 was absent), and was located on the baulk’s face as it was being removed by an experienced excavator. The endblade was also separated from the only confirmed Late Dorset occupation deposit (Phase 6: Occupation 3, discussed below) by a sealed sterile deposit (Phase 3: Sterile I) whose presence required the endblade to have been deposited before the sterile layer began to form. These factors suggest that the endblade was in secondary context when it was collected, probably having fallen unnoticed from an upper Late Dorset stratum, after which it was integrated into the baulk.

No radiocarbon dates have been run on materials from Occupation 1 and it is not possible to date the deposit relatively. However, the depth at which the earliest occupation was buried suggests that it may be related to the deeper parts of the neighbouring N73 complex, which reached 85 cm below ground surface (bgs) in some areas (Mary-Rousselière 2002:43).

Phase 3: Sterile I
Sterile I and Sterile II (below) were culturally barren deposits that separated different occupation layers. Sterile I, consisting of beige sand, pea gravel, and small rocks, overlay Occupation 1 everywhere in the excavated area and formed the surface on which the subsequent habitation stratum rested. The thickness of this unproductive level depth varied depending upon whether an
Occupation 2 level was present: where Occupation 2 could be recognised, the Sterile I layer was slightly more than 5 cm thick; when an Occupation 2 deposit was not present, the sterile deposit could be greater than 25 cm and contacted the Occupation 3 matrix (Figures 8.14 and 8.16).

Phase 4: Occupation 2
At the time of excavation, the deposits now associated with a second use of the N72 area were only identified between 15 cm and 20 cm below ground surface in unit F5. The Occupation 2 deposit in this square was thin (generally less than 5 cm) and contained no identifiable architectural features or diagnostic artefacts. However, examination of baulk walls near the close of excavation revealed that the Occupation 2 deposit was more extensive than previously thought and had been present in other squares (where it was apparently overlooked by unit excavators). It was possible to associate a limited number of artefacts with Occupation 2 post-excavation by matching recorded arbitrary levels with the natural levels recorded in unit profile drawings, although the context of a number of artefacts and flakes remain uncertain (Table 8.3). As shown in Figures 8.12 – 8.14, the Occupation 2 stratum was more substantial than Occupation 1.

Although it is impossible to fully assess the continuity of this occupation across the excavated area, it appears, based upon presence / absence in the baulk faces, to have been a discontinuous and somewhat amorphous stratum. Its proximity to the overlying Occupation 3 horizon (refer to Figures 8.12 – 8.14) suggests that not a great amount of time had elapsed between the occupation events represented by the two distinct culture-bearing layers, although the intervening sterile layer indicates occupations were not immediately sequential. While the Occupation 2 deposit has not been dated, it appears to have been associated with an earlier use of the N72 area, perhaps representing the first occupation of the dwelling proper. If correct, the Occupation 2 deposit is best interpreted as a remnant of an earlier Late Dorset occupation of N72 whose traces were incompletely removed during the dwelling’s subsequent refurbishment.

Phase 5: Sterile II
This phase involved a thin (< 2 cm to 6 cm) naturally deposited layer of small-grained sand granules sandwiched between Occupation 2 and 3 strata. Sterile II was only isolated from Sterile I where an intervening Occupation 2 layer was present. If Occupation 2 was not distinguished,
Sterile II was not defined (Sterile I continuing uninterrupted from Occupation 1 to Occupation 3).

**Phase 6: Occupation 3**

Occupation 3 represents the main and most recent use of the N72 dwelling. The matrix associated with this phase is the most substantial of the three which were recognised in the course of excavation and contains all of the architectural remains described in Sections 8.5.5 - 8.5.10. Characterised as a black and greasy matrix with abundant artefacts and faunal materials (Table 8.3), the Occupation 3 horizon was demarcated by a broad u-shaped cavity (the semi-subterranean dwelling depression) and varied between 10 cm and just under 30 cm below modern ground surface. It was approximately 15 cm thick, although the depth of the deposit did fluctuate based upon position within the feature. For example, it was often difficult to distinguish between ‘wall’ and ‘floor’ deposits along the interior perimeter wall margins, most probably due to sod slumping which occurred during and after abandonment. As a result of this process, primary floor and secondary wall materials were sometimes superimposed in a way that was impossible to separate stratigraphically. For this reason, some localised areas within the dwelling structure contained somewhat thicker Occupation 3 deposits (e.g. Figure 8.14).

Although Occupations 2 and 3 were generally not distinguished during excavation, the thin and less continuous nature of the Occupation 2 deposit (as reconstructed from baulk faces) strongly implies that most recovered material culture derived from the Occupation 3 stratum. Stratigraphic analysis supports this belief (refer to Table 8.3).

**Phase 7: Post-Occupancy**

There are signs that N72 may have been minimally disturbed shortly after its final abandonment. Such post-abandonment disturbance (explored more fully in Section 8.5.10) seems to be restricted to the possible removal of paving stones from the central area of the structure, where one or more stones appear to be ‘missing’ from the northern part of unit D4 (refer to Figures 8.16 and 8.17). While the disturbance of D4’s northern area does not appear substantial (because the modern sod overburden otherwise appeared uninterrupted), a small amount of stratigraphic mixing may have occurred considering only one occupation layer was identifiable in the unit’s north baulk wall. This contrasts with neighbouring baulks, where two discrete habitation levels, separated by an
intervening sterile deposit (Sterile II), could be seen.

Near where paving stones appear to have been taken is a break in a line of small stacked rocks forming the dwelling’s central feature (Section 8.5.5). These stones may have been removed and recycled in another dwelling feature, or were simply displaced when the adjoining paving stones were taken. Such disturbance must have occurred relatively shortly after final abandonment as the feature’s vegetative overburden was not obviously impacted.

**Figure 8.15** Schematic representation of occupations and presumed hiatuses at N72 (not to scale).

### 8.5.5 Central Feature
Analysis of N72's interior organisation must always remain somewhat incomplete given the prior removal of much of the north-western part of the structure by Mary-Rousselière, a situation exacerbated by the subsequent destruction of most associated field notes and related materials (Sections 8.4 and 8.5.2). Fortunately, the majority of the interior was not affected by this activity and many clues regarding the dwelling’s internal architectural organisation remain.

The most obvious structural feature inside N72 is the concentration of rocks and flagstones in the approximate centre of the interior that marks the dwelling’s central feature (Figures 8.16 and 8.17; see Chapter 6.3.2 for discussion of this architectural element). Although parts of the northern edge of the feature may have been adversely affected by Mary-Rousselière’s
prior work, most of the central feature appears to have been untouched. As uncovered, the central feature was created using stacked stones and lesser quantities of sod; the feature appears to be associated with a small number of paving stones located under and adjacent to it (Figure 8.17). The stones making up the feature are generally small (10 cm or less in length) but some were quite thick (approaching 15 cm). These were stacked one on top of the other, sometimes with a thin sod layer juxtaposed between, to a maximum of three tiers. None of the stones used to create the central feature were slabs (i.e. evenly shaped with smooth surfaces), even though such stones were available in the vicinity of the structure and were employed for other functions (e.g. as flagstones). Rather, those used to construct the central feature were generally angular, a trait which apparently necessitated the use of sod as a stabilising medium between the tiers of stones.

The alignment seems to have cross-cut the dwelling’s interior, probably running from west to east across the shorter of the structure’s two axes, and ended approximately one metre before the wall berms (Figure 8.16). However, as the northwest section of the structure was previously excavated, an absolute determination of orientation is impossible and it is conceivable that a bearing other than west to east is possible, although that alignment seems most probable. Such an arrangement would divide the dwelling interior into almost equal halves with the entrance (Section 8.5.8) falling north of the feature. This design is consistent with that recorded in the majority of other Palaeoeskimo dwellings, from the earliest period (e.g. Knuth 1967a, 1967b) until late in Late Dorset (e.g. LeMoine et al. 2003; information on Early Palaeoeskimo – Middle Dorset is shown in Appendix A). Other than a linear arrangement, it is difficult to determine how the central feature was originally designed as it is fairly unstructured and there may be a minor amount of post-abandonment disturbance (Section 8.5.10).

The matrix associated with this area of the dwelling was generally thick and greasy, except for directly overtop the associated flagstones where a shallow layer of sand and fine gravel had been laid just prior to occupation (culturally-associated humus accumulated overtop of that this area was more intensively used than other loci where deposits were thinner. Signs of fire were present amongst and around the stones constituting the feature, including excavation units D3, E3, D4, and E4 (Figure 8.17), where numerous burnt or charred wood fragments and the sand layer but was not found below). The thicker matrix around the central feature suggests
Figure 8.16 Plan of N72 architecture.
shavings, burnt fat, a small amount of charcoal, and soapstone vessel fragments were discovered. A worked wooden stick with charring on one end was recovered in 2000 from test unit HAP 2-00, which borders the northern part of the central feature (Figures 8.16 and 8.17). This object was interpreted as a wick trimmer for adjusting an oil lamp’s flame. It is almost certainly associated with the central feature, and probably also with joinable sherds from at least one soapstone vessel found less than a metre away in the middle of the feature. The vessel fragments were found on top of a deposit of fat-cemented sand which, together with nearby burnt materials and the aforementioned wick trimmer indicates the presence of at least one centrally positioned but architecturally amorphous hearth area (Figure 8.17). The decision not to build a more formal feature is in keeping with M.S. Maxwell’s (1985:149) observation that structured hearths were not typical of Dorset dwellings on Baffin Island. Certainly the low visibility of the N72 hearth area resulted from a decision not to create a more ‘built’ feature; it was not obfuscated by a variety of day-to-day activities or post-abandonment disturbances (Sergant et al. 2006).

The excavation units containing the central feature (Figure 8.17) also yielded large quantities of primary debris consisting mostly of worked and unworked wood (excavators noted wood was often far more common than other materials), but also lithic reduction flakes and baleen. Some of the wood found near the central feature was burnt and / or scorched, possibly a result of manufacturing techniques, including fire-hardening, used to create wooden tools. The rate at which wood manufacturing detritus occurs is quite high in relation to finished / formal tools and suggests that finished implements were curated or cached outside of the dwelling feature at abandonment (see Table 8.4 and Sections 8.5.10 and 8.6).

From a pragmatic perspective, the apparent concentration of wood and lithic production activities in the immediate vicinity of the central feature makes sense considering the limited amount of heat and light that a small oil lamp could provide. The central feature and its lamp would naturally function as a focal point for dwelling inhabitants considering the availability of adequate light is a controlling factor for many domestic activities, a situation recently investigated by Dawson et al. (2007). They note that oil lamps actually produce a very restricted

---

7 As discussed in Section 8.6.2, this artefact is not included in Table 8.4, nor is it included in discussion of the N72 artefact assemblage because it proved impossible to reliably reconcile the natural levels defined during the 2000 test excavations with the artificial levels used in 2001.
Figure 8.17 Detail of N72 interior showing central feature and associated items of material culture.
amount of useable light: a lamp measuring 30 cm in length produced as much light as an 11-watt light bulb, while a 60 cm lamp was equal to a 15-watt bulb (Dawson et al. 2007:24). Dorset lamps, which according to M.S. Maxwell (1985:149) range between 8 cm and 50 cm in length (with most falling towards the lower end), would provide much less light than the replicas used in Dawson et al.’s experiments.

Dawson et al. (2007) concluded that activities requiring visual acuity ought to occur within range of a lamp’s light (a few feet for the larger lamp), creating a tightly constrained activity area that should be reflected archaeologically. The decreased light potency of Dorset lamps make Dawson et al.’s implicit link between intensity / range of activity and density / variety of material culture remains all the more potent for investigating internal dwelling organisation. In a dwelling lit by a small lamp capable of throwing a very restricted amount of useable light, it stands to reason that many household tasks would occur within that narrow radius. Under such conditions, it is expected that (precluding total removal via cleaning actions) there should be a marked concentration of cultural debris near the light source, located in the central feature. Other researchers have reached similar conclusions regarding the axial / central feature as dwelling focal point (e.g. McGhee 1990:68) and excavations inside N72 confirm this. Here, the units containing the central feature (primarily D3, D4, E3, and E4) produced 113 of the 270 total artefacts excavated from Occupation 3/2 (or 41.85% of the total, see Table 8.3). These same units yielded 39.47% of all flakes collected (178 of 451 flakes, see Table 8.3).

**8.5.6 Internal Organisation and Living Surface**

In addition to the hearth area identified in the central feature, a second hearth area may have been present in the south-eastern section of the structure in the smaller of the two test pits excavated by Mary-Rousselière in 1969 (labelled “E” in Figure 8.10). This test unit, falling within units B6 and C6 (Figure 8.16), was purposefully placed where the wall berm and living floor met as Mary-Rousselière (n.d. d:2) considered it to be a likely location for a hearth feature. While descriptions of the stratigraphy and architectural features encountered during the 1969 work have not survived (and no architectural traces were located in 2001), he remarked that charred (sea mammal) bones were collected from a “fireplace” located 25 cm deep (Section 8.4.3.5); these bones provided the single radiocarbon date on the structure (Table 8.2). Possibly associated with this fireplace or
hearth were three soapstone vessel fragments listed in the 1969 artefact catalogue (regrettably it is not specified from which of the two test units they derive). A metal nodule, apparently an iron pyrite common to the area’s bedrock (Section 8.2), was collected in 2001 from unit C5. It may have been part of a fire-starting kit and could be associated with the potential subsidiary hearth encountered by Mary-Rousselière.

Aside from the central feature and associated flagstones described in the previous section, the interior of N72 is relatively open and free of stones, particularly to the rear (south) of the dwelling and near the entrance in the northeast (Section 8.5.8). The lack of rocks at the rear of the dwelling, farthest from the drafty entranceway, indicates that this area might have functioned as a sleeping area (Faegre [1979:7-8] also notes this is a place of honour amongst many cultures given its sheltered location). If the structure’s sleeping area was located at the dwelling’s rear, the possible hearth identified in 1969 may have functioned as a bedside lamp of the sort commonly maintained by the Inuit in winter structures (e.g. Boas 1888:134; Birket-Smith 1924:149-150; de Poncins 1943:78; Saladin d’Anglure 1967: Figure 4.2 - 4.5), although the N72 example would have been located at the rear of the sleeping area and not the front as with the Inuit.

If N72 was organised so that the sleeping area was to the rear, this arrangement differs from nearby Late Dorset N71 (Section 8.4.3.4), where Mary-Rousselière identified lateral sleeping pavements. Given the lack of formality in their construction, it is difficult to suggest how large a space in N72 was devoted to this purpose, although the paving stones in units D4 and D5 may be a guide to its outer limit. Measuring from the inner edge of the southern (rear) wall berm northward to the edge of the D4/D5 paving stones produces a width of approximately 1.5 m; using the inner edges of the western and eastern wall berms yields a length of about 4 m. These numbers produce an overall size that is analogous with the sleeping areas reported from nearby N71 (Figure 8.8). Cultural deposits in the rear area of N72 are relatively shallow (less than 10 cm), implying that the area was used predominantly for activities which did not produce many material by-products, although some varied work was undertaken. The apparent lack of an interior area used exclusively for sleeping is consistent with how some modern hunter-gatherers arrange their dwellings in order to maximise space usage (e.g. Binford 1983:163).

It is unclear if a symmetrically placed sleeping area was present on the opposite
(northwest) side of the house given its earlier removal by Mary-Rousselière (as discussed in Chapter 10.2.1, unilateral and bilateral sleeping areas are a variable element in Late Dorset domestic architecture). Also uncertain is the prevalence of paving in N72's interior given the now isolated nature of the flagstones in unit E5 (Figure 8.16). It seems possible that these stones may have been part of a larger paved area involving the central part of the dwelling, unfortunately the larger test unit excavated by Mary-Rousselière in 1969 (“D” in Figure 8.10) has eliminated the possibility of establishing their relationship (if indeed there was one).

Other than the flagstones found in 2001, there are no obvious signs that the living floor was specially prepared for use. No storage facilities were identified inside N72, although a possible cache represented by five closely associated objects (unworked wood, flake knife, burin, concave base endblade, and biface) was tentatively identified in unit E3 (Figure 8.17).

8.5.7 Perimeter Wall Berms
N72 could be easily identified on the surface due to its semi-subterranean interior and low sod berms. However, parts of the wall boundary, especially along the western perimeter, were somewhat difficult to clearly distinguish from the neighbouring natural ground surface. This blurring was most apparent on the outer berm edges and in all probability resulted from several factors including the partial dismantlement of the piled sods at abandonment in order to facilitate removal of the superstructure, as well as post-abandonment ‘melting’ of the turf walls onto adjacent turf-covered areas (Chapter 3.3.4). Given these processes, the berm dimensions recorded in 2001 (Figures 8.11 and 8.16) undoubtedly vary somewhat from their original position when the dwelling was in use. However, the occasional inability to absolutely distinguish the outer perimeter berm does not significantly obscure the feature’s true shape or interior size because the inner wall margins, more important for determining both dwelling characteristics, were much clearer. These inner edges may have maintained a more cohesive structure at least partially because of the manner in which the architect-inhabitants of N72 dismantled their dwelling: surface and sub-surface examination of the berms indicates that wall sods were displaced outward during deconstruction, rather than being thrown or pushed inside the dwelling (thus preserving the inner wall margins).

The berms themselves were expediently created largely by using materials removed from
the dwelling interior as the semi-subterranean floor was re-excavated (it appears that an earlier use of the dwelling, correlated with Occupation 2, also involved a semi-subterranean floor). As part of this large-scale refurbishment, the underlying in situ Occupation 2 deposits were largely displaced to the dwelling’s outer margins, from which they were presumably moved again when some of this material was re-positioned to help anchor the structure’s covering to the ground. Signs of this process could be identified in the feature’s stratigraphy, where perimeter berms were typically comprised of unconsolidated black cultural soils with occasional sterile lenses and un-humified vegetation (refer Section 8.5.4.1). A final but less extensive mixing of deposits, almost certainly involving secondary materials in the berms and primary materials from the interior dwelling, likely occurred at abandonment when the anchoring wall sods were repositioned as the superstructure was dismantled.

Measuring from the defined inner wall boundaries, and extrapolating the size and shape of the berm in the missing north-western section, there would have been approximately 15 m² of liveable space inside N72, dimensions which fall within the average size for Late Dorset dwellings reported elsewhere in the Eastern Arctic (refer to Chapter 6, also Chapter 10.2.1). No signs of hold-down stones or anchors for guy wires were identified, although these were probably placed beyond the excavation limits.

8.5.8 Entrance
The entrance was placed near the north-eastern corner of the structure, where a 25 cm wide break in the wall berm was visible prior to excavation (Figure 8.16). The entry was probably wider when the dwelling was inhabited; however it appears that its breadth was subsequently diminished due to decomposition and slumping of the sod perimeter walls after abandonment. As was characteristic of both Palaeoeskimo and Neoeskimo dwellings (e.g. Boas 1888:134; McGhee 1984a; Fitzhugh 1994; refer also to Chapter 10.2.1 and Appendix A), the N72 entrance was positioned on the dwelling’s north-eastern side so that it opened onto the shoreline.

In addition to providing a water view, the entryway to N72 appears to have been situated with some reference to the region’s dominant winds, which blow from the south (Table 8.1, also Section 8.2). A southerly wind direction means that the dwelling’s southern face is the windward side, the surface that experiences the greatest wind loads and velocity; in contrast, the northern
part of the dwelling is classified as the lee side and should typically receive the smallest wind loads. Because wind is a critical consideration for structural performance and durability in the Arctic (see Chapter 3.2.2), it is reasonable to assume that Late Dorset architects knew of its potential affects when designing dwellings. Certainly both Rapoport (1969:98-99) and Strub (1996:110-111) observed that, where entryways are concerned, builders are keenly aware of position in relation to the wind as poorly located windward entryways are often excessively drafty and allow snow to enter whenever the door is opened. Conversely, leeward access points can be equally problematic as lee winds tend to slow and drop their snow-load, with the result that entrances can be frequently snowed-in. Given these concerns, both authors conclude the best place to locate a door is where a crosswind occurs as such winds will sweep away snow before it can accumulate, without blowing it directly into a dwelling’s interior.

The prevailing wind direction at Nunguvik means that crosswinds would only regularly occur along N72’s north-western and north-eastern sides. Bearing in mind the Palaeoeskimo preference for entrances with a water view (Appendix A), the Late Dorset architect-inhabitants of N72 may have thought that they had no real option in situating their entrance, other than placing it on the northeast side, if they wished to satisfy both concerns. It is also clear that the builders understood that architectural allowances had to be made in order for the door to function satisfactorily and not compromise the dwelling’s overall building envelope by unnecessarily placing undue stress on the dwelling’s components as the entranceway was repeatedly accessed.

This awareness can most clearly be seen when the perimeter berms approaching and contacting the entrance are examined. Windward of the entrance, the perimeter wall berm is quite substantial, measuring between 1.25 m and 1.5 m in width, while in contrast the leeward berm averages approximately 75 cm (compare in Figure 8.16). The markedly bigger berm south of the entrance cannot simply be explained as happenstance or due to the repositioning of sod during the partial or complete dismantling of the dwelling, particularly since the southern sod berm is a cohesive unit and not the sort of helter-skelter deposit one would expect to result from post-abandonment processes. Instead, the most rationale explanation sees the differently sized berms as the result of behaviours carried out by builders who were active and knowledgeable about their environment and the technologies best suited to their particular situation. Anticipating the
conditions that the dwelling would likely experience, the architects planned accordingly by purposefully employing a technology which was able to meet the demands of their surroundings.

Equipped with knowledge of the area’s predominant wind direction, and understanding the repercussions of a poorly-placed entrance, the architects of N72 employed a design strategy which not only insured that the entry was properly placed, but also invested greater effort and materials in adjacent areas of the dwelling so that the dwelling was better able to withstand potentially volatile wind conditions. Whether the entrance was further augmented by a cold-trap (Chapter 6.3.5) or walled and / or roofed snow passage (as was sometimes done historically, e.g. Boas [1888:550]) is unclear and requires additional excavation beyond the 2001 grid limits.

8.5.9 Superstructure

No signs of the framework used to support N72’s cover were located. This is not surprising as most excavated Palaeoeskimo structures contain little direct evidence reflecting how they were roofed. Even researchers investigating Thule Inuit structures, which often contain much more robust traces of the roof structure, disagree on how those dwellings were covered (e.g. McGhee 1984a; M.S. Maxwell 1985; Le Mouël and Le Mouël 2002). At some Thule sites, the absence of moveable roofing elements may be explained by processes such as that recorded by Freuchen (1961:40), who described how all materials, including structural elements, become public property and could be freely taken when a dwelling was abandoned. A similar situation might have governed the Dorset use (and reuse) of old structures so that valuable and transportable items such as tent poles and other roofing materials were carefully curated from site to site.

Sod does not appear to have been used to create or supplement the N72 roof as the vegetation overburden was too thin. There are also no stratigraphic signs that a double-walled cover with a heather or willow branch fill, of the sort sometimes used amongst the historic Inuit (e.g. Boas 1888:549), was employed, although essentially unaltered branches thrown away from the interior during disassembly would be difficult to identify archaeologically. Snow may have been used to insulate the base of the structure and could also have been stacked or piled to some undetermined height on the outside of the walls. However, snow was likely not used exclusively to roof N72 as insufficient amounts would have been available when it was still warm enough to dig the semi-subterranean floor (see Table 8.1). Further, all known snow structures were
associated with surface (not semi-subterranean) floors (Chapter 3.3.1). In the absence of other possibilities, N72 was most probably covered with sewn skins.

No post-moulds or braces useful for determining the shape and design of the roof were identified in the interior of N72. It is possible that some associated roofing elements (e.g. stays for guy lines) were used but lie beyond the excavation grid as anchor points set further out from the dwelling are better able to handle sudden and / or strong winds (Faegre 1979:20).

8.5.10 Abandonment and Post-Use Life
As noted in Chapter 7.5.12, Stevenson (1982) proposed five types of abandonment behaviour (planned, unplanned, planned with intended return, unplanned with intended return, and planned final) which provide a useful framework against which to compare the N72 assemblage. Using these observations to guide interpretations, it is possible to suggest that the abandonment of N72 was planned (and probably intended to be final) and was directed to minimise negative repercussions for its inhabitants. Supporting evidence for this interpretation is derived from the number and kinds of material culture left in the feature, the distribution of faunal remains, and the state of the architectural features. These are investigated in the remainder of this section.

Examination of the artefacts excavated in 2001 and associated with Occupation 3 reveal that the N72 assemblage was dominated by objects that held little utilitarian value or had otherwise reached the end of their practical use life (refer to Section 8.6.2.2). The wooden material exemplifies this point. Unworked and worked wood fragments (the latter typically bearing basic signs of craftsmanship including grooving and cut marks) are the most common artefact categories and represent, respectively, 41.11% and 10.74% of the total assemblage (Table 8.4). As more fully detailed in Section 8.6.2.2, the majority of this wood is interpreted as a by-product of manufacturing or maintenance activities and contrasts sharply with the small number of formal or recognisable wooden objects located (totalling only three, or 1.11%: a handle, a handle preform, and a small human figurine).

The difference between the amount of essentially worthless wood detritus and formed objects retaining some value is significant and suggests that virtually all items made, rejuvenated, or not completely exhausted were carefully collected and removed from the dwelling before it was abandoned. The small quantity of remaining de facto material (Schiffer 1972:160) is notable
because it indicates the inhabitants of N72 did not leave the dwelling in a sudden or unexpected manner, as would be more likely were the departure unplanned (Stevenson 1982:241). Instead, occupants had sufficient time to gather their belongings and ensure that little of importance was overlooked. Following Binford (1977, 1979; also Whitridge 2001), the prevalence of processing debris and the dearth of usable tools further implies that people were producing and stockpiling items (removed at abandonment) that may not have been immediately required but whose need could be foreseen in the near future. The fact that the inhabitants of N72 appear to have been altering their behaviours and adjusting their toolkits strongly suggests that they had been anticipating a move from the dwelling for an unknown period, and that this move was planned.

Further, there is little to suggest that a return to N72 was intended. As discussed by Stevenson (1982:252-255), people planning to return to a location often cache valuable but not immediately necessary items in areas where they can be easily relocated (see for example Jordan [1980:613]). The only evidence for this behaviour at N72 is somewhat dubious and involves the discovery of five closely associated but random artefacts near the central feature (Figure 8.17 and Section 8.5.6). These may or may not represent a true caching episode.

Although the faunal remains from N72 have not been analysed in depth (Section 8.6.1), they too suggest that abandonment of the structure was expected. Much of the bone from inside the dwelling came from the western half of unit F5, which lies near both the central feature and the entrance (Figures 8.16 and 8.17). Given its convenient location near the central feature’s hearth area (a presumed food preparation locus) and the door, it appears that the area may have become a convenient repository for food refuse that was awaiting removal to an outside midden. Similar behaviours have been reported amongst the Inuit (e.g. Boas 1888:156; Stefansson 1914:130; Birket-Smith 1924:150; Mathiassen 1928:130), although areas of lower traffic are usually chosen (Schiffer 1987:63, 65). In the case of N72, abandonment may have followed so closely upon the heels of this deposition event(s) that Dorset occupants were insufficiently inconvenienced by its presence to transport the material outside.

Alternately, it is possible that the debris left near the central feature represents a temporary storage solution for materials whose worth had not been fully determined. Ethnoarchaeological work by Hayden and Cannon (1983) found that materials of uncertain value can be provisionally
kept until a final decision regarding its fate has been made. However, it seems that animal bones stripped of edible materials (and which cannot easily be transformed into tools) would have no real value and do not fit Hayden and Cannon’s criteria. The material in this area is therefore probably best viewed as the result of a general relaxation and cessation of cleaning activities preceding the close of occupation (Stevenson 1982:246). Called abandonment stage refuse by Schiffer (1987:98), the debris left in the central part of the dwelling may represent the last meals consumed in N72 (e.g. Stenton and Park 1994:413).

A similar breakdown in cleaning protocols is indicated by the failure to remove sections of a soapstone vessel which appears to have shattered during use in the central feature (Figure 8.17). As the main source of heat and light in the dwelling, it would be logical to assume that great care would be devoted to the smooth operation of the lamp and the more general hearth area. Broken pieces of a vessel left in the middle of the central feature must have compromised the utility of the immediate area and would need to be removed before the hearth area could be used again. The in situ vessel shatter suggests either a new short-term hearth area was created elsewhere (perhaps the secondary hearth discussed in Section 8.5.6), or that abandonment of the dwelling occurred close to when the vessel broke, making cleanup unnecessary.

In summary, several lines of evidence suggest that the abandonment of N72 was a known and planned event. The lack of cached items further suggests that abandonment was intended to be final, although it is possible that objects were stored beyond our excavation limits, or recovered without reoccupation.

8.5.11 Summary
Section 8.5 presented a detailed description and overview of the physical environment in which Nunguvik is located and also attempted to place the N72 dwelling within the context of both the site and its larger ecological setting. However, the palaeo-environment of Navy Board Inlet contemporary with the Late Dorset occupation is not as well known as for the other case studies (Chapters 7 and 9) and this lack of specific information may make the picture of how N72 fit within the larger north Baffin Island Late Dorset world less clear in comparison.

Our current understanding of the past environment indicates Nunguvik did not host the same sort of seasonal economic bonanza which occurred elsewhere in the Arctic (e.g.
Iqaluktuuq); instead it seems Nunguvik was periodically reoccupied because of the variety of resources that could be exploited from the site (Section 8.3). Probably included as part of this resource hinterland was the floe edge at the head of Navy Board Inlet (Figure 8.2), accessible by either special hunting trips or via large-scale move to the sina if and when stored and local foods became scarce. While our somewhat ill-defined understanding of the region’s past resource base may make it more difficult to understand why Nunguvik itself became such an important long-term occupation location, the rationale underlying decisions regarding the design and creation of N72 are more easily identifiable and are discussed in Sections 8.6 and 8.7, as well as Chapter 10.

The N72 feature itself is unquestionably Late Dorset. All diagnostic artefacts from Occupation 3 point to this cultural affiliation and demonstrate that the dwelling was last used and occupied at some point during that period (Section 8.6.2.2). The single radiocarbon date on the structure (Table 8.2), although on sea mammal material and hence too old, still falls within the Late Dorset range. The structure was probably located where it was on the site because of the rich and plentiful sod deposits resulting from the large N73 complex immediately adjacent to N72 (Figures 8.10 and 8.11). The practise of selecting well-vegetated locations for house construction is well known from the later Thule Inuit period (e.g. Collins 1952:51-52; McGhee 1983a:26; M.S. Maxwell 1985:241) and sod was clearly use in N72 for construction of the perimeter wall berms, as well as in the central feature which formed the active heart of the dwelling.

The following section presents details of the recovered faunal and artefact assemblages and uses these to further interpret the feature.

8.6 Interpreting N72
Some basic interpretation of N72 has been presented in previous sections during description of the architectural features. I will now address additional points relevant to the occupation of N72 including its season and duration of use. The answers suggested in the following section are useful for further locating the N72 building and its occupants within the general Late Dorset cultural and economic sphere.

8.6.1 The Faunal Sample
Faunal remains from N72 await detailed analysis and the following discussion reflects general field
observations made as the assemblage was being collected.

Excluding deposits near Mary-Rousselière’s open N73 excavations, where protective permafrost was severely limited, organic preservation inside N72 was generally excellent. Mammal bone dominated the assemblage, with caribou forming the majority of that class, although small and large pinnipeds were also represented. The dominance of caribou in N72 was unsurprising considering it was the most commonly reported species in all Palaeoeskimo and Neoeskimo features at Nunguvik, with the exception of Thule structure N42 (refer to Section 8.4.3). Other taxa from N72 include bird, what is probably fox, and pieces of variously sized baleen from a limited number of units (how the latter was acquired is unclear).

Although greater analysis of the faunal material is needed before it can be better used to help establish the structure’s season(s) of occupation, some basic information can be gleaned from the field observations. As discussed in Section 8.3.1, caribou on northern Baffin Island spend most of the late fall and winter periods near the coast, meaning that they should be accessible to hunters based in that area. While caribou are not especially common in the region today, they appear to have been much more abundant in the past (Mary-Rousselière 2002:10) and may have crossed Navy Board Inlet between Bylot and Baffin islands near Nallua (Mathiassen 1928:34; contra Mary-Rousselière 1976:54), north of the Nunguvik site (Figure 8.1). If this crossing was used prehistorically, it is reasonable to assume caribou would have been present in more concentrated numbers near Nunguvik during the spring and fall migratory periods (and in lesser numbers throughout the cold season). As noted in Chapter 7.3.1, Inuit preferred to hunt caribou during the fall, when hides and meat were in optimal condition (e.g. Stenton 1991a), and it is likely that Dorset shared this preference for similar reasons.

The predominance of caribou indicates groups at Nunguvik were taking animals in significant numbers, suggestive of migration period hunting, perhaps by hunters newly returned from warm season locations such as Saatut (Mary-Rousselière 2002:85). However, while it seems likely that the caribou consumed at N72 were killed in the fall, the probability that at least some were killed in other seasons and/or stored for later consumption (i.e. Binford 1978b) cannot be ignored and limits the usefulness of the species for more accurate determinations of seasonality. Other taxa present in the food bone assemblage are equally ambiguous as seal and fox, while
perhaps more easily or likely to be taken in the cold period (refer to Chapter 5.3.3), could have been procured throughout the year. Similarly, while a moderate amount of bird bone was excavated from N72, it has not been identified to species and thus represents an unknown percentage of presumably migratory and resident species. No fish bone was recovered.

8.6.2 The Artefact Assemblage

Only artefacts excavated in 2001 are discussed in this section. Issues of stratigraphic control and uncertainty regarding the materials recovered by Mary-Rousselière make comparisons between his artefacts and those excavated in 2001 foolhardy, especially given the three distinct periods of occupation now identified in the N72 area. Material derived from the 2000 field season of the Helluland Archaeology Project is also excluded because it has proven difficult to fully reconcile the natural levels recorded in that season with the artificial ones used in 2001. Additional issues (e.g. the lack of profile drawings for two of three test units and the use of differing grid orientations) have confused attempts to harmonise descriptions and amalgamate the two catalogues, make it prudent to exclude all material from the earlier work. However, a very small number of artefacts recovered in 2000 are mentioned where warranted (specific note is made in each instance, and those objects do not appear in Tables 8.3 and 8.4). Unit D1, excavated in 2001, is also omitted from consideration as it fell completely outside N72 perimeter’s berm.

Discounting the materials excluded for the aforementioned reasons, 270 artefacts excavated in 2001 and of certain unit and level provenience are shown in Tables 8.3 and 8.4. Table 8.3 presents gross artefact and flake numbers by unit, level, and occupation phase. Table 8.4 shows the artefacts by category; the table is divided to indicate a smaller collection (n = 19) associated with Occupation 1 and a much larger collection (n = 270) derived from Occupation 3.

8.6.2.1 Occupation 1

Only 19 artefacts were firmly associated with the earliest and deepest use of the N72 area (two lithic flakes were also collected). The greater majority of that total, 78.95%, are composed of pieces of worked (n= 7, or 36.84%) and unworked (n=8, 42.11%) wood. Three microblades and one endblade (viewed as intrusive and out of primary context, see Section 8.5.4.1) round out the
Table 8.3 Artefacts arranged by occupation phase (L = lithics, WW/O = worked wood or organics, UW = unworked wood).

<table>
<thead>
<tr>
<th>Occupation 1, Artifacts</th>
<th>Occupation 1, flakes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupation 2 or 3, Artifacts</td>
<td>Occupation 3, flakes</td>
</tr>
</tbody>
</table>

The phases previously described. Because of this, use phases were defined to better represent the dwelling's history and this table follows.

As noted in Section 8.5.4, excavation levels were arbitrary and do not match events preserved in the dwelling. Levels was defined to better represent the dwelling's history and this table follows.
total. Excepting the endblade, none of the objects is diagnostic of a particular period.

However, vessel fragments excavated from a similar depth outside of the N72 feature in unit D1 may provide a clue to the affiliation and age of the Occupation 1 stratum. Here, in association with a thin irregular black organic deposit 30 cm – 40 cm bgs were three soapstone fragments that are thicker than typical for Late Dorset examples. One sherd may also represent the corner of a rectangular-shaped vessel. Thicker-walled rectangular lamps and pots are usually associated with earlier parts of the Dorset era (refer to Chapter 4.5.1 and 4.5.2, as well as Linnamae [1975]) and it may be that the deeply buried black humus in unit D1 and the Occupation 1 horizon found underneath N72 were laid down in the same period. Little else can presently be said of Occupation 1 given its uncertain cultural and chronological position.

8.6.2.2 Occupation 3
A total of 270 formal and informal artefacts, as well as 451 lithic flakes, were excavated from the Occupation 3 deposit. While it was possible to distinguish between Occupation 2 and 3 strata post-excavation in most areas (refer to Table 8.3), it is conceivable that a small number of Occupation 2 artefacts are included in this total. However, any mixing is considered to have been minimal as most artefacts (82%) were collected from arbitrary Level 4 or higher (<20 cm bgs, totals from Table 8.3), layers associated solely with Occupation 3. Considering this situation, blending of the two occupations is believed to be nominal and will not affect interpretations of the architectural technology used to create the Occupation 3 dwelling.

The most numerous artefact category, excluding flakes, is unworked wood, totalling 111 catalogue entries or 41% of the assemblage (Table 8.4). This number reflects the minimum absolute amount of wood recovered as it was standard procedure to collect small scraps and slivers occurring in close association as one collection event. The majority of the unworked wood excavated from N72 consists of small fragments 5 cm in length or less and probably represents detritus related to manufacture and maintenance activities (Section 8.5.10). It is possible that this material was purposefully laid down in the dwelling’s interior to form a cushioning and insulating surface, as was suggested for nearby Late Dorset N71 (Mary-Rousselière 1976:44), although one would expect a thicker layer would be required to improve overall comfort and thermal efficiency.
<table>
<thead>
<tr>
<th>Artefact Category</th>
<th>Occupation 3</th>
<th></th>
<th></th>
<th>Occupation 2 or 3</th>
<th>Uncertain Context</th>
<th>Occupation 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>% of Assemblage</td>
<td>% of Assemblage (excluding unworked wood)</td>
<td>Number</td>
<td>% of Assemblage</td>
<td>Number</td>
</tr>
<tr>
<td>Flakes</td>
<td>451*</td>
<td>8*</td>
<td>79*</td>
<td>2*</td>
<td>111</td>
<td>3</td>
</tr>
<tr>
<td>wood, unworked</td>
<td>111</td>
<td>41.11</td>
<td>n/a</td>
<td>3</td>
<td>60.00</td>
<td>79*</td>
</tr>
<tr>
<td>microblade</td>
<td>30</td>
<td>11.11</td>
<td>18.87</td>
<td>1</td>
<td>20.00</td>
<td>5</td>
</tr>
<tr>
<td>wood, worked</td>
<td>29</td>
<td>10.74</td>
<td>18.24</td>
<td>0</td>
<td>0.00</td>
<td>3</td>
</tr>
<tr>
<td>biface</td>
<td>22</td>
<td>8.15</td>
<td>13.84</td>
<td>0</td>
<td>0.00</td>
<td>1</td>
</tr>
<tr>
<td>endblade</td>
<td>12</td>
<td>4.44</td>
<td>7.55</td>
<td>0</td>
<td>0.00</td>
<td>1</td>
</tr>
<tr>
<td>microblade, modified</td>
<td>10</td>
<td>3.70</td>
<td>6.29</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>burin-like tool</td>
<td>7</td>
<td>2.59</td>
<td>4.40</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>core, flake</td>
<td>6</td>
<td>2.22</td>
<td>3.77</td>
<td>1</td>
<td>20.00</td>
<td>0</td>
</tr>
<tr>
<td>flake knife</td>
<td>5</td>
<td>1.85</td>
<td>3.14</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>baleen</td>
<td>4</td>
<td>1.48</td>
<td>2.52</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>raw material</td>
<td>4</td>
<td>1.48</td>
<td>2.52</td>
<td>0</td>
<td>0.00</td>
<td>2</td>
</tr>
<tr>
<td>vessel, soapstone</td>
<td>4</td>
<td>1.48</td>
<td>2.52</td>
<td>0</td>
<td>0.00</td>
<td>4</td>
</tr>
<tr>
<td>ground slate</td>
<td>3</td>
<td>1.11</td>
<td>1.89</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>fragment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>burin spall</td>
<td>2</td>
<td>0.74</td>
<td>1.26</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>endscraper</td>
<td>2</td>
<td>0.74</td>
<td>1.26</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>ground slate</td>
<td>2</td>
<td>0.74</td>
<td>1.26</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>knife</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>handle preform, wood</td>
<td>1</td>
<td>0.37</td>
<td>0.63</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>handle, wood</td>
<td>1</td>
<td>0.37</td>
<td>0.63</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>microblade core</td>
<td>2</td>
<td>0.74</td>
<td>1.26</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>sideblade</td>
<td>2</td>
<td>0.74</td>
<td>1.26</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>whetstone</td>
<td>2</td>
<td>0.74</td>
<td>1.26</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>adze blade</td>
<td>1</td>
<td>0.37</td>
<td>0.63</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>bone, worked</td>
<td>1</td>
<td>0.37</td>
<td>0.63</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>burin</td>
<td>1</td>
<td>0.37</td>
<td>0.63</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>human figurine, wood</td>
<td>1</td>
<td>0.37</td>
<td>0.63</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>lump, ochre</td>
<td>1</td>
<td>0.37</td>
<td>0.63</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>nodule, metal</td>
<td>1</td>
<td>0.37</td>
<td>0.63</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>scraper, end / side</td>
<td>1</td>
<td>0.37</td>
<td>0.63</td>
<td>0</td>
<td>0.00</td>
<td>1</td>
</tr>
<tr>
<td>sidescraper</td>
<td>1</td>
<td>0.37</td>
<td>0.63</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>uniface</td>
<td>1</td>
<td>0.37</td>
<td>0.63</td>
<td>0</td>
<td>0.00</td>
<td>1</td>
</tr>
<tr>
<td>ARTEFACT TOTAL</td>
<td>270</td>
<td>100.00</td>
<td>100.00</td>
<td>5</td>
<td>100.00</td>
<td>42</td>
</tr>
</tbody>
</table>

Table 8.4 Artefacts from the 2001 season of excavation (* flakes not included in final totals).
Wood analysis by the Helluland Archaeology Project is ongoing, although it appears that the pieces from N72 involve both local material (willow and heather) as well as larger and / or straight grained examples signalling more exotic origins. A broken nephrite adze blade found near the rear of the house may have been used to rough out specimens.

Worked wood represents 10.74% of the total Occupation 3 assemblage, although in no case could any of the pieces included in this group be more specifically classified by function (only three objects found in 2001 could be categorised in such a way, see Table 8.4). Wood in this rather generic category involves examples upon which a variety of modifications could be identified, including grooving, slicing, and shaving. The fragmentary nature of the wood was an important factor contributing to the large number of unidentifiable worked specimens and supports the contention that production and refurbishment were primary occupations of the feature’s occupants. A focus on woodworking is further implied by the recovery of lithic tools (including the adze blade, burin-like tools, and various scrapers) that have been linked to the creation and repair of wooden artefacts (e.g. Grønnow 1996a; Fitzhugh et al. 2006). The marked numerical disparity between unidentifiable and recognisable wooden objects supports the interpretation, first put forth in Section 8.5.10, that wooden implements in a more advanced state of manufacture were removed from N72 when it was abandoned (or before the sod overburden had developed). The N72 wood industry has no direct correlates in the region outside of Button Point (Figure 8.1), a site that has yielded numerous finished or otherwise recognisable wooden tools and ‘art’ pieces (M.S. Maxwell 1985:220).

The ubiquitous microblade was also well represented in Occupation 3, with 30 examples totalling just over 11% of the excavated assemblage (or close to 19% if the unworked wood category is omitted). Including unmodified, retouched, and hafted examples, the prevalence of this tool type testifies to its great utility and overall practicality for a range of purposes including butchery (Renouf 1994:188-189), precision cutting (M.S. Maxwell 1985:90), and final shaping of organic tools (Fitzhugh et al. 2006). Bifaces in a variety of forms were also common (8%) and would have been indispensable for heavier jobs. Present in somewhat smaller numbers are categories typically associated with hunting activities (e.g. endblades), as well as more expedient
tools such as modified flakes, flake knives, and unifaces. Lithic production and rejuvenation are also suggested by the flakes, cores and chunks (classed as raw material), and whetstones found in the structure. Almost all of the flakes are small retouch examples that often show multiple dorsal arrises, typical of maintenance or rejuvenation rather than primary production (Andrefsky 1998). It is possible a lithic toolkit was being produced by craftspeople who expected that the necessary materials might become less available (Kelly 1988).

Another notable artefact class includes soapstone vessels, or at least the pieces from a minimum of two different lamps or pots. Three fragments from the same vessel were found in the central feature (Section 8.5.5, Figure 8.17) and are from a relatively thin-walled and elliptical vessel type typical of Late Dorset (refer to Chapter 5.3.2). As with other Dorset structures at the site (see Mary-Rousselière 1976), multiple large pieces of cut baleen (25 cm - 50 cm in length) were found close together inside N72. While both Mary-Rousselière (1976:54) and Mathiassen (1958) have suggested Dorset actively hunted baleen whales, the mere presence of baleen within N72 cannot be used uncritically as evidence for hunting when scavenging from naturally deceased whales is as likely an explanation (see recent discussion in Losey and Yang [2007] regarding how the two may be distinguished).

Perhaps significantly, harpoon heads were not found, nor, with the exception of a single worked bone (a rib from a large non-cetacean sea mammal) was any sign of a Late Dorset bone or antler industry identified. This was somewhat unexpected given evidence for Mary-Rousselière’s (1984a) “IMC” caribou bone industry was located in both N71 and N73 (Section 8.4.3.2), hinting that a different production focus, centred on wood, was favoured in N72.

The artefact assemblage also includes a burin, a burin spall, and two sideblades diagnostic of the preceding Early Palaeoeskimo period (Chapter 4.3 and 4.4). Mary-Rousselière (1976:53-54) had previously suggested that, due to poor communication, a cultural lag existed between Dorset populations at Nunguvik and those further to the south in the Foxe Basin core area. Based upon this premise, he proposed that the more isolated populations located on northern Baffin Island continued to reproduce some technologies after they had been discontinued by their southern brethren. However, as Mary-Rousselière himself noted (1976:54-55), the idea of a cultural ‘lag’ between northern and southern groups becomes problematic when one considers
that populations further north of Nunguvik, who should have been even more isolated, appear to have modified their material culture in step with southern trends.

A different explanation, and the one considered more likely, is that the anomalous tools are intrusive into the Occupation 3 stratum. Mary-Rousselière (2002:26) had suspected that an occupation pre-dating the Dorset had taken place at Nunguvik but could never isolate an intact stratum to support this belief. It is possible that the thin black layer identified as Occupation 1 represents some remnant of this earlier site use (although, as noted, no diagnostic artefacts or materials suitable for chronometric dating were located). If an *in situ* Early Palaeoeskimo occupation occurred in and around what would eventually become N72, it is conceivable that subsequent uses of the site disturbed these deposits and resulted in the secondary deposition of some earlier artefacts within the Late Dorset strata.

### 8.6.3  Suggested Season and Length of Occupation

There is a tendency amongst researchers to correlate semi-subterranean structures with cold season use and surface features with occupations during other periods (*e.g.* M.S. Maxwell 1985; Reinhardt 1986; LeMoine *et al.* 2003). As noted in Chapter 6.6.3, determination of a particular season of occupation based solely on the basis of whether a structure’s floor is above or below ground is problematic and should be avoided if other sources of information are present, although this is not to say that seasonal indicators are not represented in various elements of architecture. As the analysis of Bell House 6 (Chapter 7) demonstrated, and as consideration of the Inuit *qarmat* further established (Chapter 6.3.6), it is foolhardy to conceive of dwellings as occurring only in two discrete seasonal types: warm (= surface) and cold (= semi-subterranean).

Fortunately, multiple lines of evidence at N72, including faunal, artefactual, and architectural, exist upon which to suggest the most likely season of occupation. As highlighted in Section 8.6.1, the food bone assemblage excavated from N72 is dominated by caribou. Caribou, although formerly present around Nunguvik in dispersed groups throughout the year, should have been most numerous during their spring and fall migrations across Navy Board Inlet. Although Mary-Rousselière (1976) and Mathiassen (1928) disagree on whether Nallua was a crossing point for herds, the quantity of caribou remains from virtually all habitation features and associated middens at Nunguvik indicates a migration route was near to the site. Without more detailed
examination of the faunal remains (e.g. tooth eruption patterns as conducted by Morrison and Whitridge [1997]), specific season of death cannot be determined. In the absence of such studies it is difficult to understand if a relationship existed between Dorset economic patterns and seasonal subsistence activities, and the architectural technology represented at N72. For the present, an analogy extending the Neoeskimo preference for fall-killed caribou (Chapter 7.3.1) back to Dorset is not illogical. Whether the N72 occupants stored surplus meat for consumption later in the cold season is unclear as storage compartments were not located inside the dwelling (although modern caches in the immediate area may have disturbed earlier external features).

There is little in the lithic and organic assemblages recovered from N72 to suggest season of occupation. Bone needles and other organic skin-working equipment, often correlated with fall skin clothing production in the historic period (e.g. Jenness 1922:142) were absent from N72. The complete lack of sewing equipment in a structure with excellent bone preservation and abundant evidence of caribou suggests this activity was either not practised inside N72 (perhaps the majority of sewing had already been completed before the Late Dorset occupied the feature), was accomplished outside, or that all traces were removed during cleaning episodes. In fact, the only artefact category found in N72 that might reliably inform on season of occupation is the soapstone vessel fragments recovered in the central feature’s hearth area. The presence / absence of soapstone lamps and pots has previously been used to infer seasonality (e.g. Renouf 1994:188) and the pieces associated with Occupation 3, representing at least two vessels, suggest occupation at a time when exterior hearths were not desirable.

Elements of N72's surviving architecture also guide interpretations of seasonality. The dwelling’s floor had been excavated between approximately 10 cm and 30 cm into the substratum to create a semi-subterranean floor, a construction step often associated with a colder season of occupation (although a straight-forward correlation should not be made). This excavation could only be reasonably accomplished when permafrost was sufficiently low, as during the middle and end of the warm season, indicating Late Dorset were at least present on site in this period. Thermally efficient turf (Chapter 3.3.4) was piled around the edges of the excavation to create perimeter walls and anchor a presumed skin tent skirt, creating thick and stable berms well suited to insulating the interior from winds and cold temperatures. By itself the semi-subterranean living
floor is not conclusive evidence of cold season use; however, as discussed in Section 8.5.8, the carefully positioned entrance, oriented to avoid dominant winds and the creation of a leeward snow trap, reinforces the probability of cold period use.

Finally, the structure’s interior organisation is useful for assigning season of occupation. As discussed by Dawson et al. (2007), visibility within a dwelling plays a major role in determining the types of activities which occur, where they take place, and how they are executed. Semi-subterranean structures are dimly lit at best with the only light sources coming from oil lamps, gut or ice windows (where present), and open doorways when the sun is above the horizon. Doorways in particular might be expected to be favoured workspaces, permitting craftspeople to enjoy natural lighting while experiencing some protection from weather and/or insects. The fact that little cultural material was found close to the door (eastern part of unit F5) indicates that activities were generally not located in front of the entrance. The low frequency of material near the entry (only 11 flakes and 18 artefacts, including 10 of unworked wood) can be partially explained through a desire to keep the entrance clear, a situation possible with careful cleaning, although this practice was curtailed near the end of occupation elsewhere (see Section 8.5.5). Two alternate but speculative reasons suggest themselves to account for this underutilisation: the area was poorly lit (because the doorway was kept shut), and the location may have been too drafty for comfort given exterior temperatures.

The comparatively shallow cultural deposits affiliated with N72 confirm Mary-Rousselière’s (2002:44) original view that the structure had not been used for an extended period. The cultural materials contained inside the perimeter wall berms seem all the more shallow when it is considered that two uses of the structure, Occupations 2 and 3 (Section 8.5.4.1), are represented. Little can be said of Occupation 2 as it was largely unrecognised at the time of excavation, although it presumably reflected a similar adaptive strategy and use of the N72 area as did the subsequent Occupation 3 phase.

In sum, the available evidence suggests that N72 was probably first occupied at some point in the fall, either coincident with or slightly after its occupants had accumulated the caribou present in the dwelling’s faunal assemblage (Section 8.6.1). The days were still sufficiently warm for excavation of the living floor to be carried out, and also too warm for sufficient snow useful
for construction to have accumulated (Table 8.1). As the cold season progressed, temperatures dropped and snow depths began to increase; almost certainly this architectural resource was piled on the turf berms and against the skin superstructure to increase the structure’s overall thermal performance. At the same time, activities probably became more focussed around the central feature, as attested by the density of wood fragments and stone tools. Seal bones indicate sea mammal hunting was practised, although again seasonality studies on the remains have not been conducted to determine season of death. Given these sources of information, it seems logical to assume that, in the absence of resource or structural failure, occupation of N72 followed a pattern similar to that recorded amongst the Polar Inuit (Rasmussen 1908:29), who remained in winter quarters through the darkest period of the year when true polar night conditions were present.

8.7 Summary
Mary-Rousselière’s (2002:85) seasonal reconstruction of life for Late Dorset along Navy Board Inlet is persuasive and there was nothing encountered in the 2001 excavations that seriously questions his view of how Nunguvik fit into the Late Dorset settlement and subsistence round. According to his view, local Dorset groups spent the warm season at sites such as Saatut (Figure 8.1), primarily fishing but also taking seals when possible and replenishing their bone tool kit. Fall saw a move northward to Nunguvik where caribou were intensively exploited and cached for some part of the fall and winter period. N72 was presumably built or rejuvenated at this point in the seasonal round and woodworking appears to have been a regular activity based upon the quantities of worked and unworked wood in the excavated assemblage (Table 8.4).

Where groups spent the remainder of the cold season and spring is presently unknown, though food availability must have been a prime factor dictating where and when moves occurred. It is possible that some households settled onto the ice of Navy Board Inlet to exploit ringed seal populations given the stable ice of this waterway (Section 8.3.4) is an excellent environment for sympagic species (although, as noted in Chapter 5.3.3, whether Dorset could effectively breathing hole hunt is unclear). Dorset groups may have migrated to the floe edge (Figure 8.2), perhaps occasionally even venturing as far as Button Point, a spring aggregation locale with at least one communal longhouse structure (Damkjar 2000: Figure 106) that appears also to have been an important ritual / ceremonial location (M.S. Maxwell 1985:228).
If this scenario is plausible, then Late Dorset groups probably came at least periodically to Nunguvik as part of a larger adaptive strategy which was closely tuned to exploitation of the region’s seasonally available resources. Armed with knowledge of the area and its socioeconomic options, Late Dorset built N72 with the intention of occupying it for a specified amount of time during a known season of the year. This proposed reconstruction of one way in which N72 and the Late Dorset who built it adapted to and functioned within the context of their local environment, while also belonging to a larger Eastern Arctic society with which it shared common socio-culturally defined technological beliefs and ideas.
CHAPTER 9 – CASE STUDY 3 – KdDq-7-4, TANFIELD VALLEY, NORTH BAY, SOUTH-EASTERN BAFFIN ISLAND

9.1 Introduction
This chapter presents the results of excavations carried out during July and August of 2003 in the Tanfield Valley, near the community of Kimmirut (formerly Lake Harbour), in North Bay, south-eastern Baffin Island (Figures 9.1 and 9.2). As with the other two case studies in this dissertation (Chapters 7 and 8), this work focussed on addressing how a society’s broader architectural technology influences and can be influenced by both socio-cultural considerations (including individual and group experience and know-how) and the local environment in which the architectural feature is situated.

Work in the Tanfield Valley was conducted in association with the Helluland Archaeology Project, based at the Canadian Museum of Civilization and under the direction of Dr. Patricia D. Sutherland. The author’s work at KdDq-7-4 was made possible only though the support of the Helluland Archaeology Project. The research findings and research questions posed by this work are presented below.

9.2 The Physical Environment of South-Eastern Baffin Island
As mentioned in the previous chapter, Baffin Island is the largest island in the Canadian Arctic Archipelago, as well as the third largest island in the world. Because the island is long and relatively thin (Figure 9.1) and bordered on all sides by large marine water-bodies, it presents a complex arrangement of physiographic, climatic, and geological zones. As will become apparent in the following discussion, conditions on southern Baffin Island differ markedly from those along the northern part of the island (compare with Chapter 8.2).

The north-south axis of Baffin Island runs for almost 1600 linear kilometres, although the landmass attains a maximum west – east extension of only 675 km, with a minimum west-east distance of 240 km along south-central Baffin Island (Soper 1928:2). The Arctic Circle (66° 32' N) has traditionally (e.g. Polunin 1948:131) been used to divide the island into southern and

---

1 KdDq-7-1 refers to the Tanfield site. As is the case for KdDq-7-2 (Bare Rock) and KdDq-7-3 (Morrison), the KdDq-7-4 component cannot be spatially separated from other occupations in the area and is therefore not considered a distinct site requiring a separate Borden designation (following justifications in M.S. Maxwell [1963]).
Figure 9.1 Map of Baffin Island showing locations mentioned in the text.
northern sectors. At this latitude, the mountainous and rugged terrain typifying the northern part of the island is replaced by the low relief plains of the large interior lakes (Nettilling, Amadjuak, and Mingo) and the Great Plain of the Koukdjuak (Soper 1928:2). Further south, the terrain once again rises in elevation and becomes broken and irregular, meeting Hudson Strait in a highly complex coastline containing deep protected inlets, exposed headlands, and groups of small to large outer islands (Soper 1928:2). This landscape made travel between regions difficult during the historic period for the Inuit, who generally made such journeys only in the late winter and spring (Boas 1888:574-575).

Southern Baffin Island is part of the Canadian Shield, a large expanse of Precambrian-age granite and gneiss bedrock which dominates much of north-eastern Canada (Bird 1967:63). Both the Meta Incognita and Hall peninsulas are part of a formation referred to as either the Southern Upland (Dunbar and Greenway 1956:98-99) or Baffin Uplands (Bird 1958:148) group; geological formations in the North Bay-Big Island area date to the Archean and Palaeoproterozoic ages, falling in the earlier part of the Precambrian period (Copeland 1999:7-23). Surface rock in much of the North Bay area, including Cape Tanfield, is composed largely of metasedimentary rocks (metamorphosed sands) which are typically friable and crumble when handled. Some quartzitic stone also occurs, while chert primarily occurs as beach cobbles.

Unlike much of the Eastern Arctic, the present-day topography of the Meta Incognita Peninsula is thought to have resulted from substantial coastal erosion which took place prior to the end of the last major glacial event (Bird 1967:285). The peninsula appears to have been deglaciated by at least 8000 B.P., a much earlier date than is proposed for the neighbouring Foxe and Hall peninsulas where glacial conditions continued for millennia (Falconer et al. 1965:148-149; Bird 1967:131). Free of its ice overburden, the Meta Incognita Peninsula began to rebound while sea levels remained at a glacially-induced low, a process that created an extensive series of foreshore zones which were subjected to wave erosion until they were lifted beyond the active beach. This prolonged period of coastal emergence resulted in the creation of a waterworn hinterland reaching several kilometres into the interior; although most low-lying areas were drowned at the end of the glacial maximum as eustatic rise outpaced isostatic uplift. Also resulting from this process was the creation of numerous deep fjords, inlets, and offshore islands which
Figure 9.2 Map of the North Bay region showing locations mentioned in the text, as well as the approximate location of the winter floe edge (information on floe edge location from regional ice charts, Canadian Ice Service n.d. a).
now dominate the contemporary shoreline (Figure 9.2). Inland, a 5 km to 10 km band of wave-eroded hills uplifted shortly after de-glaciation extend into the interior before un-eroded terrain rising in excess of 700 m asl is finally encountered (Jacobs and Stenton 1985:60).

The North Bay area represents a transitional vegetation zone between the Low Arctic, which usually contains the richest vegetation, and the Middle Arctic, which is generally less fertile and has lower overall productivity (Jacobs 1988). As a result, more exposed areas (particularly headlands and seaward coasts) often have only low-growing and stunted plants while better sheltered areas have vegetation more similar to that found in the Low Arctic zone. In general, tundra-heath vegetation, including a variety of mosses, herbs, lichens, sedges, and grasses, dominate (Jacobs 1988:79). Along the south-eastern Baffin Island coast, arctic heather (*Cassiope tetragonna*), Labrador tea (*Ledum groenlandica*), and fruit-bearing plants including bilberry (*Vaccinium uliginosum*) and crowberry (*Empetrum nigrum*) are found in more restricted areas, while dwarf birch (*Betula nana*) only occurs today in isolated pockets. Arctic willow (*Salix glacialis*) can reach heights of 1.8 m along the sheltered and lushly vegetated Soper River Valley (see Figure 9.2), forming a so-called ‘willow forest’.

As shown in Table 9.1, unlike south-eastern Victoria Island and northern Baffin Island (Chapters 7 and 8), the southern shore of Baffin Island experiences neither days without a sunrise nor true polar day / night.

### 9.3 Potential Range of Resources in North Bay

Ethnographic accounts detailing the economic and social activities of the southern Baffin Island Inuit are generally restricted to the 19th century and describe a way of life that may have been significantly altered from that of the prehistoric period by centuries of sporadic contact with European explorers, whalers, and traders. While earlier contacts with the Norse (*e.g.* Sabo and Sabo 1978) do not appear to have significantly altered the Thule Inuit way of life (*e.g.* McGhee 1984b; Schledermann 2000; although see McGhee 1994), more intense interactions beginning with the 1576-1578 voyages of Martin Frobisher and escalating during the 1850s appear to have greatly affected Inuit lifeways (Henshaw 2000:21). The late 19th century observations made by Franz Boas (1888 [1964]) and others (*e.g.* Hall 1865; Mauss 1906 [1979b]) describe Inuit who
were familiar with firearms, who had at least intermittent access to other trade goods, and who may have altered their settlement-subsistence patterns to suit the requirements of the European trading system (refer to Henshaw [2000:20-37] and Barr [1994]; although Kemp [1984:464] does not believe overall settlement patterns were greatly influenced by this European presence).

Despite this enculturation, however, the ethnographic accounts of 19th century Inuit life do reveal one way in which a human population adapted to the resources and environment of south-eastern Baffin Island. These descriptions can serve as a baseline (with the same set of caveats noted in Chapter 7.3) for understanding how the Late Dorset, as their immediate predecessors, might also have exploited the area. This is because both groups presumably took advantage of the same sets of resources and dealt with many of the same logistical constraints as they went about the day-to-day business of life on the Hudson Strait. It is apparent that the Palaeoeskimos and Neoeskimos followed similar adaptive strategies throughout the region’s 4000 years of human occupancy, a situation which M.S. Maxwell (1979:80) credits to the relatively early onset of modern environmental conditions in the North Bay area (although some sea level change has occurred, as M.S. Maxwell [1973:63-64] had previously observed).

Ethnographic, historic, and archaeological evidence compiled from locations between the south coast and Cumberland Sound help reconstruct a basic pattern of socio-economic activity. Along south-eastern Baffin Island, Kemp (1971, 1976) has noted that a diverse range of terrestrial, riverine, avian, and marine animal species were exploited, although those from the inherently more stable marine environment were and continue to be the most critical (see also Wenzel 1981:59). Much the same pattern was noted by Boas (1888:471-516) in Cumberland Sound. In both areas, Baffin Island Inuit, like those in many other Eastern Arctic locations, spent much of the winter on the sea ice hunting ringed seals at both the floe edge and through breathing holes, also taking walrus and beluga whales from the floe edge (Boas 1888:498-550; Hall 1865:459). In late winter and early spring, as the sea ice began to show signs of breaking up, hunters focussed on open-water leads where seals and walrus hauled out to bask in the returning sun. Just before the ice finally broke, families moved on to the land where they fished for char at major rivers and captured migrating birds, also collecting their eggs as these became available (Boas 1888:510-513). As summer progressed, some families moved inland to the large interior
lakes to hunt congregating caribou herds (Boas 1888:421-423) while others focussed on caribou remaining on the coast. Char continued to be fished, while large and small whales moving between summer feeding grounds and over-wintering areas were also pursued (Boas 1888:501).

9.3.1 Terrestrial Resources
There is some debate concerning whether or not musk oxen were ever present on Baffin Island. While both M.S. Maxwell (1979:80) and Banfield (1974:412) report that they have never lived on the island, Hone (1934:13) records that individuals were observed on the Foxe Basin coast of Baffin Island during the early 19th century, although these reports have never been substantiated by further sightings. Urquhart (1982) and Jacobs (1989) also report an unverified sighting in the central part of the island, while Taylor (1967a) notes a single field-identified musk ox bone from the Crystall II site (KkDn-1) in Frobisher Bay (also Mary-Rousselière 2002:100).

The musk oxen question notwithstanding, the most important, and largest, regularly available land species on Baffin Island is the barrenground caribou. Two populations of caribou are identified on southern Baffin Island; a migratory herd which moves between the coast and interior, and a resident non-migratory herd found on the Hall Peninsula (Banfield 1974). As several researchers have noted (e.g. Soper 1928:63; Kelsall 1968:67-79; Banfield 1974:385-386), caribou distributions fluctuate based on the availability of forage; summers are generally spent at lower and more protected elevations where a range of browse can be found, while in winter small herds and individuals congregate at higher windswept locations where vegetation is exposed.

Although North Bay is located outside the main migration route (M.S. Maxwell 1980:510), local Dorset groups probably focussed their efforts on the migratory herd given the greater distance involved in travelling to the Hall Peninsula. However, as Soper (1928) has observed, this population is unevenly distributed along south-eastern Baffin Island, tending to be found in higher numbers where foliage is more plentiful. The migratory population typically begins its spring migration to the interior lakes (Nettilling, Amadjuak, and Mingo) around the middle of May, although some do remain on the coast (Elliott 1972: 41-43, 77-80). Pregnant cows continue to the rugged highlands, where both food and predators are scarce, to calve before returning to lower elevations where forage is more abundant (Elliott 1972:42). Most caribou, individually or in
small groups, remain in the interior for the summer (Soper 1928:64; Banfield 1974:385) before returning to the coast in the autumn, although Soper (1928:64) notes that these migrations are not on the scale reported at many other locations including south-eastern Victoria Island. The rut begins shortly thereafter and lasts until the end of November (Harper 1955:101), after which herds move to exposed wintering grounds (Soper 1928:63).

During the historic period, Stenton (1989, 1991b:21-27) has identified two patterns of caribou exploitation practised by the Inuit. The first, referred to as “interior lake”, involved the movement of multiple family groups to the inland lakes for the duration of the spring and / or summer, where fish and caribou were heavily exploited before the families returned to the coast in the fall and winter (Stenton 1991b:25). The second model, “coast-upland”, was more frequently practised and entailed the positioning of family groups at the heads of deep bays near char rivers following the spring break-up of sea ice. From these locations, hunting trips to the caribou summering grounds were made as required (Stenton 1991b:21; also Boas 1888:421-423). These dual access camps were occupied until the fall, after which people moved to the outer coast with stores of caribou skins for clothing, meat, as well as bone, antler, and sinew for tool production (Stenton 1991a). Stenton (1991b:25) notes that Inuit on the Meta Incognita Peninsula, as well as on the Foxt and Hall peninsulas, fared quite poorly when caribou numbers crashed.

It is impossible, in the absence of dedicated inland surveys, to assess the degree to which the Late Dorset and other Palaeoeskimos used the interior resources of Baffin Island. Inland sites relating to the Late Dorset (Stenton 1989:235-238) and Pre-Dorset (Milne 2003a, 2005; Milne and Donnelly 2003) are known, however, the vast majority of recorded Palaeoeskimo sites on southern Baffin Island, as elsewhere in the Eastern Arctic, are coastal (e.g. Arundale 1980; Collins 1950; Dekin 1972; M.S. Maxwell 1973, 1985; Schledermann 1975; Odess 1996, 1998). For this reason, it is unclear whether any of the Dorset on southern Baffin Island could or did practice the level of transhumance evident amongst some Neoeskimo groups.

While barrenground caribou are the largest terrestrial mammal on Baffin Island, other small-bodied animals are also present and were exploited. Of these, arctic fox and arctic hare are the most notable. Foxes are solitary outside of the breeding season and usually nocturnal. As with caribou, fox populations fluctuate and periodically crash, typically the year following the collapse.
of their chief prey, lemmings (Macpherson 1969:21, 43; Banfield 1974:296). Arctic foxes are however omnivorous, subsisting largely on scraps from polar bear kills and other carrion, as well as a range of opportunistically encountered prey, chiefly ringed seal pups in their birth lairs (Banfield 1974:297-298). Arctic foxes can be relatively easily trapped as they are unsuspicious (Banfield 1974:298), and were quite common around Kimmirut (Soper 1928), partially accounting for the establishment of the first Hudson’s Bay Company post on Baffin Island there in 1911. As noted in Chapter 5.3.3, arctic fox were exploited by Dorset populations throughout the Eastern Arctic.

Arctic hares vary in size and weight, usually averaging between 4.8 kg and 5.5 kg, or seven to twelve pounds (Banfield 1974:85). The well-known snow-white coat comes in between mid-September and late October and lasts until late May or early June (Banfield 1974:85). Arctic hares are nocturnal and are somewhat communal along the southern margins of Hudson Bay and Strait, where they tend to follow well-travelled paths (Banfield 1974:86). Hares have been reported to eat a wide range of willows, grasses, sedges, and other tundra plants, as well as sea weed, and, surprisingly, meat (Banfield 1974:86). Arctic hares are most common in mountainous areas and particularly in sheltered southward-facing valleys near the coast (Soper 1928:61). Like caribou, hares favour areas cleared of snow by the wind in winter and can be found where vegetation is abundant in summer (Soper 1928:59-61). Arctic hare drive systems (akin to the caribou drives described in Chapter 7) are known from Ellesmere Island (Sutherland, pers. comm. 2004) and hares can form a significant portion of a High Arctic Late Dorset faunal assemblage (e.g. Schledermann 1990). Although their fur is dense and soft, the thinness of hare skin limits its use in clothing (Banfield 1974:87).

9.3.2 Avian Resources
A wide variety of large and small migratory and resident birds can be found along southern Baffin Island. Resident species include willow ptarmigan, thick-billed murres (*Uria lomvia*), black guillemots (*Cephus grylle*), northern eiders (*Somateria mollissima borealis*), northern fulmars (*Fulmaris glacialis*), black-legged kittiwakes (*Rissa tridactyle*), and a variety of gulls (*Larus sp.*), amongst others (Soper 1928). Migratory waterfowl, which spend varying amounts of time on the
Hudson Strait coast but are generally restricted to the period from June until September, include snow geese (Stenton [1989:94] estimates a million can gather on the great inland lakes in the fall in preparation for the southward migration), Canada geese, oldsquaw ducks, and common, arctic, and red-throated (*Gavia stellata*) loons. Boas (1888:512) notes that, historically, most birds were taken during the summer moult when they are unable to fly. In addition, numerous species of pelagic and offshore birds remain in the area throughout the year, congregating around an extensive floe edge south of North Bay (Figure 9.2) that also serves as a staging area for migratory bird species in the summer. Many of these birds, particularly murres and guillemots, nest in large rookeries on the rocky islands in the vicinity of Cape Tanfield and can form a substantial component of some Palaeoeskimo midden assemblages (Arundale 1976, in M.S. Maxwell 1985:131, Table 6.2). However, migratory species appear not to have been a focal species for any Dorset group in the area (M.S. Maxwell 1980:510).

### 9.3.3 Lacustrine and Riverine Resources

The fish species of greatest importance to the historic and modern south Baffin Island Inuit is the arctic char (Boas 1888:513). Major spawning rivers include the Sylvia Grinnell in Frobisher Bay and the Koukdjuak River, which drains Nettilling Lake into the Foxe Basin (Figure 9.1). While there are several good char rivers along the Hudson Strait coast, none approaches the productivity of those rivers and, perhaps for this reason, riverine resources were and continue to be secondary to the marine and terrestrial zones (Kemp 1971:110).

As highlighted in Chapter 7.3.3, the movement of char between freshwater lakes and the much more ecologically productive marine environment is dictated by ice conditions. As on Victoria Island (Chapter 7.3.3), the feeding run begins as soon as the freshwater ice begins to break (typically in late June) and the return migration from the sea occurs between late July and September, usually coinciding with high tide (Grainger 1953:368). Many modern Inuit travel to outpost camps between Markham Bay and Shaftsbury Inlet (Figure 9.2) where several char rivers are located to fish during the open water season (M.S. Maxwell 1973:13; Kemp 1976:136; Sabo 1981:80-81). In addition to char, lake trout are found in several of the larger ponds and lakes in the area (those which do not freeze to the bottom in winter), although the importance of this
species to historic groups is far below that of arctic char.

9.3.4 Marine Resources
The marine environment is by far the most productive of all Baffin Island’s ecozones. Classified as sub-Arctic (Dunbar 1968:43-49), the Hudson and southern Davis Straits area is ecologically richer than true Arctic waters and can support a greater variety of species, the majority of which are closely tied to the occurrence or absence of sea ice. While Hudson Strait itself does not freeze (sizeable fields of drifting pack ice do occur), land-fast ice is present and extends into the strait from the northern and southern coasts. Development of near shore ice is however delayed by strong ocean currents and the extreme tidal amplitudes present along the channel (tides in North Bay range between 9 m and almost 13 m [M.S. Maxwell 1979:82]; also Figure 3.3). Ice conditions are also affected by wind speed and direction, as well as by the presence of a synoptic mid-tropospheric trough that is permanently centred over Baffin Bay (Bradley 1973; Williams and Bradley 1985).

Land-fast ice first forms along the eastern part of Baffin Island’s south coast and gradually extends westward (Sabo 1984:65). Ice formation begins in earnest around North Bay in mid-November, although a thin ice layer may cover sheltered inner bays by October (Sabo 1981:63). Break-up does not typically begin until late June (Table 9.1). While the duration and extent of sea ice varies (e.g. Jacobs et al. 1975; Crane 1978; Jacobs and Newell 1979), Canadian Ice Services (n.d. a) observations indicate that ice coverage involving 70% or more of the ocean’s surface occurs in the North Bay area for 30 weeks of the year (Table 9.1). Ice coverage of less than 30%, considered open water in this dissertation (Canadian Ice Services [n.d. b] holds open water as 10% or less coverage) occurs for 20 weeks. The latter part of November (also late June through early July) is considered a transitional period, when ice is too plentiful for the use of boats but too thin to support a person or sled’s weight reliably. Although it can safely support a dog team’s weight once passed 10 cm, the Inuit consider ice to be most dangerous during these intermediary periods (Freeman 1984:76).

Boas (1888:462-463) notes that contact between south Baffin Island Inuit and populations along the Nunavik coast was rare during the historic period, due in part to the treacherous
conditions present on Hudson Strait. Formation and break-up of the North Bay ice platform is
directly tied to conditions in Hudson Strait, as well as the Labrador Sea and southern Davis Strait.
The southward-flowing West Greenland Current meets the Labrador Current off of south-eastern
Baffin Island (Dunbar 1951) and in addition to producing a rich biotic zone as the result of
oceanic upwelling, this heightened water action serves to keep much of the Davis Strait /
Labrador Sea area, as well as the entrance to Hudson Strait, free of ice.

The most influential feature of the North Bay sea ice is the presence of an extensive floe
edge (sina) where the land-fast ice of the bay stretches out into Hudson Strait (Figure 9.2). The
most extensive floe edge occurs between Big Island and Juet Island (approximately 5 - 7 km
southeast of Cape Tanfield); while a second floe edge occurs further to the west in White Strait,
situated between Big Island and the Baffin Island mainland (Sabo 1981:66). Both sinas exist due
to strong ocean currents that enter the relatively constricted waters of Hudson Strait from Davis
Strait and flow westward into Hudson Bay and Foxe Basin. The Hudson Strait current travels in
an unimpeded fashion along the south Baffin Island coast until it reaches the Big Island area,
where it splits into a northern and southern stream. The northern current continues into the Foxe
Channel while the southern flow dips markedly south and crosses to Nunavik, subsequently
exiting into the Labrador Sea. Because these currents are believed to have followed the same
route since the area was first inhabited (M.S. Maxwell 1979), contemporary ice conditions in
North Bay should have been very similar during the Late Dorset period, although it is possible
that the warmer conditions which occurred during the Mediaeval Warm Period (refer to Chapter
3.4) reduced the ice’s longevity and extent.

The presence of an extensive, predictable, and ecologically rich floe edge in the North Bay
area is an important economic consideration for any human population located in its vicinity. As
McLaren (1958:41) and Freeman (1984:80) note, floe edge hunting is more productive than
breathing hole (fast ice) hunting and can be accomplished by individual hunters as well as by
cooperative teams. Open water mammals, including bearded and harp seals, walrus, and small and
large whales, as well as sympagic species, congregate along the floe edge as these waters contain
abundant prey species. Significant from an archaeological perspective is the fact that while ringed
seals of all ages linger near the floe edge as the ice platform becomes more extensive, only mature
adults construct breathing holes in areas of fast ice as it begins to consolidate (Smith et al. 1991:127). Immature and juvenile seals, which are less wary and thus more easily hunted, are restricted to the floe edge throughout the winter and can be stalked when they haul out to rest and bask (McLaren 1958; Smith 1973; Stirling and McEwan 1975).

This natural age distribution provides one potential avenue for determining where and when animals in middens were taken (e.g. Speiss 1976, 1978; Cox and Speiss 1980; Murray 2005), although travel time from sina to land-based site undoubtedly affected how species were being exploited. Nonetheless, understanding whether Palaeoeskimos were targeting specific age sets (or were at least focussing on particular hunting conditions) is critical to appreciating larger socio-economic behaviours given the importance of ringed seals to virtually all Palaeoeskimo groups (Murray 1999; Darwent 2001). M.S. Maxwell (1979:84-85) had begun this process, concluding based upon identified age sets that the winter-killed seals present in Dorset middens on south-eastern Baffin Island were taken chiefly from areas of open water.

9.3.5 Organic and Inorganic Materials Suitable for Architectural Purposes
The availability of the eight architecturally useful materials identified in Chapter 3.3 (snow, sod, antler, ivory, whale bone, wood, stone, and skin) in the North Bay area is discussed below.

Warm southerly air penetrates much further into this area of the Eastern Arctic than it does anywhere else due to the high level of cyclonic activity which occurs in Davis Strait and Baffin Bay (J.B. Maxwell 1980:141). This incursion is partly responsible for the existence of the North Water polynya (refer to Chapter 3.2.5) and also contributes to the extended open water found in much of the Labrador Sea and Davis Strait. The late formation and early break-up of sea ice permits large amounts of moisture that would otherwise be sealed beneath the sea ice to enter the atmosphere; this moisture subsequently falls in the region as precipitation. South-eastern Baffin Island in fact receives more annual precipitation than most other regions of the Canadian Arctic, with an annual snow depth averaging 300 cm (J.B. Maxwell 1980:343). At Cape Dorset, the nearest community for which long-term (30+ years) records have been kept, precipitation is particularly abundant between August and November (Table 9.1) with snow and rain recorded in all months (also J.B. Maxwell 1980:351). Greater than 20 cm of snow falls in each month.
between October and May, ensuring that abundant snow would be available for architectural purposes starting in October or November. Snow dwellings could conceivably be occupied until June, after which temperatures gradually near and then pass the freezing mark.

Sod constitutes another potential building material for the Late Dorset, although the harsh weather, winds, and waves of the Hudson Strait region limit lush vegetation growth (and peat development) to more protected areas. Cape Tanfield, which is colder year-round than better-sheltered adjacent areas (M.S. Maxwell 1985:200), projects into North Bay (Figure 9.2) and seems an unlikely area for relatively extensive peat development to have occurred. However, the shelter afforded the Tanfield Valley by high flanking hills and nearby inner islands has allowed dense and thick peat deposits to accumulate, presenting any person looking for a likely camping spot with a well-vegetated and relatively shielded location. Surveys between Big Island and Pritzler Harbour (Figure 9.2) have shown that similar areas affording access to the ocean are fairly rare in a region typified by rugged and steep topography. M.S. Maxwell (1973, 1980, 1984, 1985), who has conducted the most wide-ranging and intensive archaeological reconnaissance of south-eastern Baffin Island, repeatedly commented on the thick and abundant vegetation cover found in the valley and speculated that most or all of the groups who lived there used sod blocks extensively in architecture. He and his crew even built two sod-walled and tarp-roofed structures in the valley (Figure 9.3) to investigate the qualities of the material for habitation.

Caribou antler, as noted in Chapter 3.3.5, has also been used in architecture and could potentially be employed when available in sufficient quantities. However, as noted in Section 9.3.1, caribou are not plentiful along this area of Baffin Island, although they can occur in higher numbers in the Soper River Valley (Soper 1928). It therefore seems unlikely that people in North Bay would be able to create dwellings like the rather spectacularly engineered examples reported on the Barrengrounds (Gordon 1988). However, it is conceivable that antler roof supports similar to those described by Taylor (1960) in Sadlermiut (Inuit) dwellings were used by the Dorset.

Ivory could also be used to create supports for a dwelling’s superstructure, although it seems unlikely that walrus and narwhals were prevalent enough for their tusks to be used in construction. While Banfield (1974) describes walrus as being common east of North Bay and amongst the islands of northern Hudson Bay, the immediate North Bay area is beyond the normal
range of walruses and they are viewed as an occasional visitor at best. This seems to be the case prehistorically as well, as indicated by Arundale’s (1976) analysis of one Dorset site which suggested that most ivory arrived in the area through trade. Narwhals do not frequent southern Baffin Island today (Banfield 1974) and would probably have always been unavailable.

Bowhead bone had been used for generations to construct Thule Inuit dwellings (e.g. McCartney 1979b; Savelle 1997; Dawson 2001). While northern Hudson Strait is a major bowhead whale migration route, the capability or desire of Dorset hunters to take them is debated (M.S. Maxwell 1985:131). If Dorset groups did not hunt bowheads, as seems to be the case, most or all whale bone must have been collected from naturally stranded carcasses, a strategy similar to that proposed by Freeman (1979) for some Neoeskimo contexts. However, no in situ whale bone elements have been found in association with Palaeoeskimo architectural remains anywhere on Baffin Island and it seems, based on current knowledge, that it was not incorporated into any Baffin Island Palaeoeskimo group’s architectural strategy (but refer to Chapter 6.5.11).

The final material suitable for creating a dwelling’s superstructure is wood. Driftwood enters Hudson Strait on a fairly regular basis, carried into the region by the West Greenland Current, which is part of the Beaufort Gyre - Transpolar Drift Stream (refer to Chapter 3.3.2). Eggertsson and Laeyendecker (1995) studied the origins of modern driftwood stranded in Frobisher Bay, on the other side of the Meta Incognita Peninsula, and suggested based on species identifications that most wood travelled to Baffin Island via a northern route through the Arctic Ocean, rather than through the Canadian Arctic Archipelago. They observed that the majority of driftwood was found on the exposed and subsiding (Stravers et al. 1992) outer coast of Frobisher Bay, an area which experiences strong tide and wave patterns, as well as frequent storm conditions which combine to drive drifting wood on to the shore.

Most driftwood in North Bay seems to be of modern origin (the result of activities associated with nearby communities and camps), a situation which makes it difficult to sense how much wood may have been available prehistorically. M.S. Maxwell (1973:228) determined, based on the quantity and quality of wood from archaeological contexts, that little of the material found in North Bay arrived there naturally via the drift. Instead, he felt that most was imported from the south via human action, a conclusion that appears to contradict observations made by Franz Boas.
Boas (1888:529) considered the dog sleds produced by Inuit in the Hudson and Davis straits area to be the best because builders could access the large quantity of good quality driftwood occurring in the area. This contradiction cannot be easily reconciled, and it is unfortunate that Eggertsson and Laeyendecker did not extend their study southward to include the Hudson Strait coast.

Stone is widely available and was used in Palaeoeskimo architecture throughout the Eastern Arctic. A variety of boulder longhouses are found in the North Bay – Middle Savage Islands region (Figure 9.2), indicating that Late Dorset were not averse to using this material in large scale construction projects. However, within the Tanfield Valley stone architecture was quite restricted (M.S. Maxwell 1973, 1980), despite the presence of broad expanses of bedrock, stone outcrops, and lightly vegetated bordering hills. The dearth of stone architectural elements may in part be due to the fact that, as strange as it may seem in such a landscape, suitable building stone can be difficult to locate (most visible stone is either bedrock or highly friable metasedimentary rock). Suitable and easily obtained stones were often challenging to locate in 2003 when setting up our own tents and M.S. Maxwell (1973:9-10) noted similar issues. Dorset groups must also have experienced the same problem, ensuring that appropriate and conveniently located rocks were used and reused numerous times in the valley. The apparent absence of stone architecture in the valley will be discussed further later in this chapter.

Finally, as noted in Chapter 3.3.8, with the exception of snow, skin is the only substance that Palaeoeskimos can be expected to have regularly used to cover their shelters. Skins from a range of animals, including several seal species and caribou, could have been used by the North Bay Dorset for roofing their dwellings. However, the suitability of skins as a roofing substance varies seasonally: seals moult in the spring and summer period with the result that their skins are rather patchy and thin, therefore using the skins of animals killed at this time for coverings may have been avoided. Likewise, caribou are infested with warble flies (which bore holes through the skin) throughout the summer and their skins may have also been undesirable. While less ideal skins may have sufficed to mend a cover, or become the main material when no other option was available, there was probably a preference to use fall and winter skins for coverings.
9.3.6 Summary and Discussion
As previously observed by M.S. Maxwell (1979), the North Bay area is remarkable largely because of its stable and predictable resource base (also Kemp 1971, 1975). M.S. Maxwell (1979) felt it was this predictability that first drew people to the region almost 4000 years ago, and the moderate abundance and diversity of marine (including open water, floe edge, and fast ice species), terrestrial, avian, and lacustrine-riverine resources permitted groups to successfully occupy the area for millennia. A similar range of options would not have been available to groups west and east of North Bay where the floe edge and fast ice were either highly localised, very unstable, or completely absent (M.S. Maxwell 1979:82-84). For this reason, the North Bay area generally, and the Cape Tanfield area particularly, may have been a central area for human occupation, an appraisal borne out by the repeated and intense occupations identified there.

The Tanfield Valley, when first revisited in 2001 (more than 30 years after M.S. Maxwell’s latest excavations), appeared almost as a lush Garden of Eden in a landscape of rocky and exposed coastline. Tucked behind several small islands that take the brunt of the weather blowing in from Hudson Strait, the gently sloping if poorly drained valley is protected on three sides by low to high escarpments that create a microclimate in which sedges, grasses, mosses, low-growing willows, several berry-producing plants, and a variety of other tundra species thrive. This vegetation growth has resulted in the development of a thick humified peat deposit which covers much of the valley floor, both concealing evidence of past occupations and attracting the eye of prehistorians drawn to the area’s favourable physical appearance.

9.4 The Tanfield Valley and KdDq-7-4
KdDq-7-4 is located near the southern end of the Tanfield Valley in a well-drained area where sod deposits are thin and overlie sand and bedrock. Although intense archaeological activities associated with the fieldwork of Moreau S. Maxwell (1961-1963, 1966, 1970) occurred near KdDq-7-4 over the space of several field seasons, KdDq-7-4 was not discovered until renewed fieldwork in the valley, associated with the Helluland Archaeology Project, occurred in 2003. As with the majority of other sites located in the Tanfield Valley and along the south-eastern coast of Baffin Island (M.S. Maxwell 1980:506), there were no visible indications suggesting that a feature lay beneath the surface.
9.4.1 Physical Setting
Cape Tanfield is located immediately south of Itivirk Bay on the eastern shore of North Bay (Figure 9.2). The cape projects out into the latter bay and most known archaeological sites have been identified on its north-western corner. Coastal areas can be characterised as generally low, although the northern and north-eastern shores can be quite abrupt and make access to the water difficult or impossible. Coastal topography again becomes gradual along the south-western shore, where a number of small sheltered coves, occasionally with moderately well developed sand beaches, are found. Pieces of driftwood (most of obvious modern origin) and other jetsam of contemporary life are often visible there, as are traces of historic Inuit camps. Small tundra ponds and areas of low-lying marshy ground are common in the Tanfield Valley, where bedrock lies close to the surface. Various tundra plants thrive in the sediment traps between bedrock outcrops, many of which also contain evidence of past human occupancy (M.S. Maxwell 1973:73).

As with the case studies presented in Chapters 7 and 8, climatic records compiled between 1971-2000 by Environment Canada (n.d. a) are used to approximate environmental conditions during the Late Dorset period in North Bay. Unfortunately, the closest weather station with 30+ year records is located in Cape Dorset, just under 400 km to the west. While not ideal, data from this location are considered representative of general conditions along southern Baffin Island and serve the needs of this dissertation concerning the Late Dorset era. Select environmental data from Environment Canada (n.d. a) are presented in Table 9.1.

When temperature data from the Cape Dorset weather station (Table 9.1) are compared to the information gathered from the Cambridge Bay (Table 7.1) and Pond Inlet (Table 8.1) stations, it is evident that the southern Baffin Island coast experiences a much less marked annual temperature range. Because of the moderating effects of nearby ocean waters which give this region of the Eastern Arctic a distinctly maritime climate (J.B. Maxwell 1992), abrupt temperatures shifts between the warm and cold season are greatly reduced. The warm season, considered to be the time during which average monthly temperatures are above the freezing mark, runs from June until September (inclusive), although early to mid June and the latter part of September / early October should more accurately be considered part of the transitional spring and fall periods. Average monthly temperatures for the remainder of the year are below the

<table>
<thead>
<tr>
<th></th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily Average Temperature (°C)</td>
<td>-25</td>
<td>-26</td>
<td>-21.6</td>
<td>-14.1</td>
<td>-5.5</td>
<td>2.3</td>
<td>7.4</td>
<td>5.7</td>
<td>1.5</td>
<td>-3.9</td>
<td>-11.7</td>
<td>-20.2</td>
</tr>
<tr>
<td>Days Below 0°C (Maximum)</td>
<td>31</td>
<td>28.3</td>
<td>30.8</td>
<td>29.2</td>
<td>23.8</td>
<td>2.4</td>
<td>0</td>
<td>0</td>
<td>3.8</td>
<td>23</td>
<td>29.1</td>
<td>31</td>
</tr>
<tr>
<td>Days Above 0°C (Maximum)</td>
<td>0</td>
<td>0</td>
<td>0.24</td>
<td>0.77</td>
<td>7.2</td>
<td>27.6</td>
<td>31</td>
<td>31</td>
<td>26.2</td>
<td>8.1</td>
<td>0.94</td>
<td>0</td>
</tr>
<tr>
<td>Total Precipitation (mm)</td>
<td>22.3</td>
<td>17.3</td>
<td>21.8</td>
<td>30.1</td>
<td>31.1</td>
<td>23.7</td>
<td>34.4</td>
<td>56</td>
<td>46.7</td>
<td>44.3</td>
<td>42.4</td>
<td>33.1</td>
</tr>
<tr>
<td>Total Rainfall Amount (mm)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.1</td>
<td>3.1</td>
<td>14.7</td>
<td>34.4</td>
<td>54.7</td>
<td>32.5</td>
<td>4.3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total Snowfall Amount (cm)</td>
<td>25.5</td>
<td>20.4</td>
<td>25.7</td>
<td>34.6</td>
<td>30.7</td>
<td>9.3</td>
<td>0.4</td>
<td>1.4</td>
<td>14.1</td>
<td>42.8</td>
<td>50.2</td>
<td>41.5</td>
</tr>
<tr>
<td>Average Snow Depth (cm)</td>
<td>48</td>
<td>46</td>
<td>52</td>
<td>59</td>
<td>56</td>
<td>19</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>22</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>Days with Snow Depth Greater Than 10cm</td>
<td>31</td>
<td>28.4</td>
<td>31</td>
<td>30</td>
<td>n/a</td>
<td>14.9</td>
<td>0</td>
<td>0</td>
<td>0.15</td>
<td>7.9</td>
<td>26</td>
<td>30.9</td>
</tr>
<tr>
<td>Snow Depth at Month End (cm)</td>
<td>48</td>
<td>47</td>
<td>55</td>
<td>58</td>
<td>41</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>13</td>
<td>28</td>
<td>40</td>
</tr>
<tr>
<td>Average Wind Speed (km/h)</td>
<td>14.9</td>
<td>14.1</td>
<td>14.7</td>
<td>16.5</td>
<td>17.7</td>
<td>16.5</td>
<td>15.5</td>
<td>17.3</td>
<td>18.8</td>
<td>21.6</td>
<td>19.1</td>
<td>15.8</td>
</tr>
<tr>
<td>Predominant Wind Direction</td>
<td>W</td>
<td>W</td>
<td>W</td>
<td>W</td>
<td>W</td>
<td>E</td>
<td>E</td>
<td>W</td>
<td>W</td>
<td>W</td>
<td>NE</td>
<td>W</td>
</tr>
<tr>
<td>Maximum Wind Speed (km/h)</td>
<td>83</td>
<td>72</td>
<td>70</td>
<td>70</td>
<td>76</td>
<td>65</td>
<td>70</td>
<td>89</td>
<td>93</td>
<td>96</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>Wind Direction</td>
<td>E</td>
<td>W</td>
<td>SE</td>
<td>W</td>
<td>E</td>
<td>W</td>
<td>NE</td>
<td>W</td>
<td>W</td>
<td>E</td>
<td>SE</td>
<td>E</td>
</tr>
<tr>
<td>Ice Coverage Out of 10, Weekly Record</td>
<td>10, 10, 10, 10</td>
<td>10, 10, 10</td>
<td>10, 10, 10</td>
<td>10, 10, 10</td>
<td>9-9+, 9-9+, 9-9+, 9-9+, 9-9+, 9-9+, 9-9+, 9-9+</td>
<td>9-9+, 9-9+, 7-8, 1-3</td>
<td>1-3, 0-1, 0-1, 0-1, 0-1</td>
<td>0-1, 0-1, 0-1, 0-1, 0-1, 0-1</td>
<td>0-1, 0-1, 0-1, 0-1, 0-1, 0-1</td>
<td>0-1, 0-1, 0-1, 0-1, 0-1, 0-1, 0-1</td>
<td>0-1, 0-1, 0-1, 0-1, 0-1, 0-1, 0-1</td>
<td>1-3, 3-5, 5-7, 9-9+, 9-9+, 9-9+, 9-9+, 9-9+</td>
</tr>
<tr>
<td>Days Without a Sunrise</td>
<td>n/a</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
freezing mark (Table 9.1) and constitute the cold period.

Hudson Strait is the chief west-east conduit connecting Hudson Bay and the eastern Arctic Archipelago to the Atlantic Ocean, permitting the major currents of the latter (chiefly the West Greenland and Baffin Currents [Melling et al. 2001]) to influence weather and environmental conditions as far west as western Hudson Bay and the Foxe Channel. The massive amount of water than moves through Hudson Strait not only creates a rich ecological zone within the southern Baffin Bay – Davis Strait – Hudson Strait area but also ensures that much of the area is kept completely ice-free, or that any ice coverage is discontinuous and relatively short-lived. One of the consequences of this extended open water is the high amount of precipitation that falls along the southern Baffin Island coast (see Section 9.4.1). As indicated in Table 9.1, total precipitation is heaviest between August and November, with the least precipitation falling in February and March. Not surprisingly, snow coverage greater than 10 cm occurs between the end of October and the beginning of June (subject to local conditions of terrain and wind patterning), presenting an extended period during which snow could have been incorporated into the design and construction of dwellings.

Winds along southern Baffin Island can be extreme. This is caused in large measure by the high level of cyclonic activity present in Davis Strait and Baffin Bay throughout much of the year (see Chapter 3.2.2), a situation which brings both heavy precipitation and high winds to neighbouring landmasses (J.B. Maxwell 1980:157; Przybylak 2003:25). Generally, damaging winds along the south coast are most common from December to March (J.B. Maxwell 1982:380), blow predominantly from the west for eight or nine months of the year, and range in speed between 14.1 km/h and 21.6 km/h, although maximum recorded wind speeds for all months are high (Table 9.1). However, wind direction and speed are affected to some degree on the Tanfield Valley floor (see description below) due to the presence of high hills which run northwest-southeast and flank the valley. While these hills often funneled winds through the valley in July and August (offering much appreciated relief from mosquitoes), they also blocked the worst of the westerly and easterly winds that can ravage other parts of Cape Tanfield.

In terms of ice coverage, North Bay provides a much more stable sea ice platform than many areas of south-eastern and south-western Baffin Island (data taken from The Atlas of
Canada [n.d.] and Canadian Ice Services [n.d. a.]). As indicated in Figure 9.2, the floe edge between the Middle Savage Islands and Markham Bay closely parallels the shore, except along North Bay where M.S. Maxwell (1979:82) notes an extensive sea ice platform averaging 187 km$^2$ (72 miles$^2$) is present. Sea ice does not begin to form in North Bay in earnest until late November and can be considered consolidated ice until early-mid June. Break-up is swift and near open water conditions (considered less than 30% coverage, contra Canadian Ice Services [n.d. b] which considers 10% to be open water) occur for approximately 20 weeks, from the end of June until the middle of November. Greater than 70% ice coverage occurs for 30 weeks (Table 9.1). Distance from Cape Tanfield to the floe edge would be expected to increase as the extent of landfast ice increased, although the warmer than present temperatures of the Late Dorset period may have caused a reduction in sea ice and an attendant decrease in travel time to the sina.

The “Tanfield Valley” is the unofficial name M.S. Maxwell applied to the broad valley which runs in a north to northwest direction across the south-eastern part of Cape Tanfield (Figure 9.3). M.S. Maxwell (1973:87) records the valley as being approximately 326 m in length (southeast - northwest), with a maximum width of 107 m. At its southern end the valley opens onto a small cove that is sheltered from North Bay by a number of small near-shore islands. As noted in Section 9.3.4, tidal ranges in the area are extreme (8 m – 14 m) with the result that access to the valley from this cove varies based on whether low or high tide conditions are occurring. Regardless of tidal height, beyond the littoral zone the valley appears as a relatively level and lushly vegetated expanse beginning approximately 61 m inland from the strand line. At the southern end of the valley is a level and comparatively well-drained plateau varying between 5.5 m asl and 6.7 m asl (M.S. Maxwell 1973:89), to the north the valley rises gradually in elevation to over 15 m asl. The southern plateau was intensively occupied throughout the Dorset era, with earlier occupations occurring to the north (see Section 9.4.2).

The Tanfield Valley is defined on its western and eastern limits by rocky hills which reach slightly more than 60 m asl (M.S. Maxwell 1973:87). The western side of the valley is leeward to the prevailing winds and should therefore accumulate the greatest depths of snow during the cold season (e.g. Li and Sturm 2002). The valley’s western margin also has a more pronounced vertical rise than does the eastern limit, with a series of linear rock outcrops stretching in
Figure 9.3 Map of the ‘Tanfield Valley’ showing the identified sites (note contour lines are in feet). Figure adapted from M.S. Maxwell (1973: Figure 15).
progressively higher levels northward into the valley (the largest of these extends into the valley for almost 61 m). In between these oftentimes poorly drained troughs, peat has accumulated and several sites have been identified (Section 9.4.2). The eastern limit of the valley behind the plateau slopes sharply downward and is very poorly drained with several tundra ponds (the smaller of which almost completely evaporate by the end of summer) and a braided stream which eventually drains into the sheltered southern cove. The areas adjacent to and north of the tundra ponds once again rise in elevation to a saddle approximately 15 m asl (M.S. Maxwell 1973:90) at the end of the valley, before finally sloping down to Itivirk Bay at its northern end.

As can be seen in Figure 9.3, KdDq-7-4 is located immediately north of where the rock outcrops defining a secondary northwest-southeast swale on the western limit of the valley slip below ground surface. Southwest of KdDq-7-4 is a larger swale in which the Nanook (KdDq-9) site is located; while to the south (seaward) are Site 18 (KdDq-18), Site 16 (KdDq-16), Tanfield (KdDq-7-1), Bare Rock (KdDq-7-2), and Morrison (KdDq-7-3). To the north are Kemp (KdDq-8-2), Avinga (KdDq-8-1), Kakela (KdDq-8-3), and Loon (KdDq-10). With the exception of the Kakela site, which is located at approximately the midpoint of the valley’s west-east width, all of the sites are placed along the western margins of the valley in the lee of the western high hills (Figure 9.3), an area M.S. Maxwell (1973:89) had previously recognised as particularly sheltered from north-westerly, south-westerly, and westerly winds.

9.4.2 Cultural Setting
The Cape Tanfield and Tanfield Valley sites are amongst the most widely reported, cited, and comparatively analysed occupations anywhere in the Eastern Arctic (e.g. M.S. Maxwell 1962, 1973, 1974/1975, 1976a, 1979, 1980a, 1981, 1984, 1985; Arundale 1976; Dekin 1976). Evidence of a pre-Inuit presence was first found on the exposed inner islands and outer coast in the vicinity of Juet Island, where lithic scatters in denuded areas pointed to numerous Palaeoeskimo occupations (M.S. Maxwell 1962). Subsequent archaeological work has demonstrated that eastern North Bay has been occupied at least intermittently since the early Pre-Dorset period (M.S. Maxwell 1973, 1976b, 1984, 1985). The relatively intense Palaeoeskimo presence on Cape Tanfield, and particularly in the Tanfield Valley, was found due to purposive test excavations in
promising areas as the overlying vegetative cover completely masked signs of archaeological deposits beneath the ground surface (M.S. Maxwell 1962).

Cape Tanfield was first occupied during the early Pre-Dorset period based on artefact typologies and two normalised uncalibrated sea mammal dates from the Closure site (KdDq-11) of 4690±380 B.P. (GSC-1382) and 4480±105 B.P. (GaK-1281). Given the problems of dating sea mammal materials, these assays are undoubtedly at least a couple of centuries too early, although they remain amongst the earliest sea mammal-derived dates anywhere in the Eastern Arctic (CARD). The majority of known Dorset-era sites in this region have been recorded in the Tanfield Valley, while the latest known prehistoric occupation, a Thule-age sod and whale bone dwelling at the Shorty site (KdDq-24) on the west side of Cape Tanfield, represents the only obvious Neoeskimo occupation thus far identified.

In the Tanfield Valley itself, twelve Borden designations have been assigned; although M.S. Maxwell (1973:197; 1985:155, 169-170) notes that several of these designations artificially subdivide large and more-or-less continuous occupations (e.g. the Tanfield [KdDq-7-1], Bare Rock [KdDq-7-2], and Morrison [KdDq-7-3] ‘sites’). KdDq-7-4, while located on the same southern plateau as Tanfield-Bare Rock-Morrison (Figure 9.3, hereafter referred to simply as the Tanfield site), is approximately 25 m to the northwest and its relationship to the larger component is, as will be discussed in Sections 9.5 and 9.6, not fully understood. What, if any, relationship exists between KdDq-7-4 and the Nanook site, situated 12 m to the southeast of KdDq-7-4, is equally ambiguous.

Based on his multi-season excavations in the Tanfield Valley, M.S. Maxwell (1985:170) argues that the large Tanfield site was occupied primarily during the Early Dorset period, while the neighbouring Nanook and Kemp sites date to the Middle Dorset era. The Kemp site in particular appears to have been located to take advantage of the shelter offered by the high western hills bordering the valley (Figure 9.3) and its sloping topography and poorly-drained matrix suggest that it could only have been habitable in the cold season (M.S. Maxwell 1985:200). A similar rationale is offered regarding the Nanook occupation. Late Dorset is believed to be represented in the valley by Site 16 (KdDq-16), the lowest occupation (2 m asl) thus far found in the valley and consisting of a small tent ring structure containing four artefacts
Late Dorset deposits have also been identified outside of the valley on the north-western part of Cape Tanfield where diagnostic artefacts were found beneath the Thule Inuit winter dwelling at the Shorty site. A number of other small and shallow Late Dorset loci, suggestive of short-term / repeated occupations, are also known in the North Bay area (M.S. Maxwell 1985: Figure 7.29).

A more substantial Late Dorset occupation, possibly occurring during the cold season, may be found at the Talaguak (KeDq-2) site on the southern coast of McKellar Bay (M.S. Maxwell 1973:253-258). As with the Shorty site, the Late Dorset occupation is beneath a larger Thule Inuit one. This site was briefly visited in 2003 and it is possible that several depressions situated slightly apart from more obvious Thule Inuit structures may be Palaeoeskimo given their rectangular shape (the Thule structures have round footprints), lack of entrance passages, and absence of whale bone structural elements. Diagnostic Late Dorset artefacts (in secondary position) found inside excavated Thule Inuit features further suggest a possible Dorset affiliation for the nearby rectangular dwellings. Plans to test one of these depressions in 2003 were cancelled given the high number of polar bears in the area.

M.S. Maxwell (1985: Figure 7.29, 234) also briefly reports upon a longhouse, 14 m in length, on the landward side of Juet Island, although attempts to relocate this structure as part of helicopter surveys in 2003 and 2005 were unsuccessful. However, the discovery of a large number of previously unreported longhouse structures between Big Island and Pritzler Harbour strongly indicates that a significant Late Dorset population was periodically aggregating along this area of south-eastern Baffin Island.

9.4.3 Dorset Architectural Forms Identified or Inferred in the Tanfield Valley
There are very few architectural remains identified in the Tanfield Valley, despite the location’s relatively intense human presence. Potential reasons for the paucity of structures may relate to several factors including poor site visibility caused by the valley’s sod mantle, the use of perishable structural materials in construction, reoccupation of sites with related reuse of site furniture (a problem also identified elsewhere [e.g. Renouf and Murray 1999:119]), and the possibility that structural remains are preserved in areas not investigated by archaeologists.
The Tanfield Valley falls within the Low Arctic vegetation zone (Section 9.2), meaning that vegetation cover and diversity in this area is more abundant than in most parts of the Eastern Arctic. Active vegetation and its underlying peat blanket restrict site visibility and can impede the recognition of specific site elements (including architecture), adversely impacting interpretation of site size and occupational intensity. In simple terms, ecological conditions along south-eastern Baffin Island can acutely influence “the extent to which an observer can detect the presence of archaeological materials at or below a given place” (Schiffer et al. 1978:6) particularly when “practically all of the pre-Dorset and Dorset habitation sites are now buried beneath four to twelve inches of sod, and not discernible from the surface” (M.S. Maxwell 1973:8). When combined with other factors, such as observer experience and potential biases (e.g. Banning 2002; Hawkins et al. 2003), it should not be surprising that sites consisting of large or conspicuous elements are the ones most readily identified while the traces of less obtrusive occupations may be undetectable solely via surface examination (Schiffer 1987:257-259).

Outside of the Arctic, buried or obstructed deposits have been successfully investigated using various non-invasive geophysical surveying techniques (see Banning 2002). For example, magnetometer readings can be used to distinguish between modified matrix layers and are especially useful for discerning episodes of fire use (involving a minimal temperature of 565° C) (Clark 1990:64-65) which oftentimes occur in association with dwelling remains. Even when definite structural boundaries cannot be recognised, Eastaugh (2002:25) notes that the cultural debris associated with an occupation may be sufficiently distinct for features to be identified without actual subsurface excavation. While geophysical surveying has been used profitably on two Dorset sites in Newfoundland (Eastaugh 2002), these sites are outside the zone of continuous permafrost, which cannot be penetrated to any depth by geophysical surveying methods (e.g. Hauck et al. 2003), making them ineffective in most arctic environments. Other techniques have been suggested for identifying low visibility sites (e.g. Milne 2003b); however, the required investment of skill and time can be prohibitive.

Surface indicators of underlying archaeological remains were visible at only two sites (Nanook and Tanfield) in the Tanfield Valley (M.S. Maxwell 1973:171, 200); the remaining loci were identified exclusively via subsurface test excavations at likely spots. Architectural remains...
have only been definitively identified at four locations (M.S. Maxwell 1973, 1980; Appendix A): the Early Dorset Morrison and Bare Rock components of the Tanfield site, the Nanook site, and Site 16. The remains of what may be disturbed or incomplete stone tent rings have been located at the Pre-Dorset Loon, Avinga, Kakela, and Site 13 locations, while the use of structures made with perishable construction materials (snow or sod) has been inferred at the Early-Middle Dorset Kemp and Tanfield sites. The Morrison Early Dorset feature (M.S. Maxwell 1980:507-508, Figure 1; Appendix A) was an oval semi-subterranean feature measuring approximately 6 m x 7 m with two lateral sleeping areas (one of layers of stone and the other of gravel). A number of driftwood pieces are thought to be part of the roof and cold season usage was suggested. The Site 16 tent ring was identified as a short-term single use warm season Late Dorset structure based on its low (2 m asl) elevation and ‘late-looking’ assemblage (M.S. Maxwell 1973:238). Correlating the feature with the warm season is consistent with M.S. Maxwell’s (1980:514) later statement that only warm season Late Dorset structures are known along south-eastern Baffin Island.

M.S. Maxwell (1979) suggested the total population along this part of Baffin Island during each of the Dorset periods was between 100 and 200 people. However, the marked dearth of structural remains throughout the Dorset era (M.S. Maxwell 1980:506) implies that the complete Dorset settlement-subsistence round may not be fully represented by the known array of sites. This situation led M.S. Maxwell (1980:506) to suggest many Dorset groups spent the cold season either on the sea ice, possibly in snow dwellings, or on the land in sod or snow features. However, as discussed in Chapter 5.3.3, direct evidence for sea ice occupations does not exist (sea ice occupations may be recognised using indirect indicators), while snow dwellings have proven equally problematic to define (see Chapter 3.1.1). If sod dwellings were used in the area they appear to have ‘melted’ back into the natural sod stratum with little sign that they once existed, although M.S. Maxwell’s (1973:125, 202, 207-208, 1985:153) rationale for suggesting sod dwellings were used by Palaeoeskimos in the Tanfield Valley is discussed below.

The idea that sod structures were used is based primarily on two pieces of evidence: the lack of architectural remains in the North Bay area in general and in the Tanfield Valley in particular; and the identification of what are believed to be deteriorated sod blocks (consisting of compacted sod deposits with few to no stones) in the deep humus of several sites. As an example,
the sheer size of the Tanfield site deposit, estimated to be at least 1860 m<sup>2</sup> and averaging 60 cm in depth (M.S. Maxwell 1985:179), implies that shelters of some form must have been used even though none has been located. In the absence of more obvious signs, M.S. Maxwell (1984:366) contends that perishable sod dwellings were created which gradually graded back into the sod substratum when they were abandoned. Maxwell (1973:207) described the thick stratigraphy of this site as being “full of fibers ... [with] an apparent horizontal bedding, with no possibility of intrusions ... and no signs of pits or depressed floor levels” (M.S. Maxwell 1973:207). He contends that sod-walled dwellings “would leave undulations of fiberous layers of moss and grass. Since these undulations do not appear in any of the profiles, we have to assume that if the shelters were made of sod they were temporary shelter, frequently knocked down and rebuilt” (M.S. Maxwell 1973:207). Maxwell was unable to determine what shape and size such habitations might have taken, although their use is suggested at the Kemp, Kakela, Nanook, and Tanfield sites (M.S. Maxwell 1973:125, 145, 158, 171-173, 202).

The uncertainty associated with isolating dwellings at these places captures the difficulty inherent in investigating architectural remains assumed to have been built using the natural substrate as a primary building material. As highlighted during discussion of Bell House 6, which was also made with substantial amounts of sod (Chapter 7.5), the ability to distinguish naturally occurring sods from those which were intentionally moved to or within a site is critical if an accurate understanding of an occupation is to be achieved. The importance of this issue inspired Maxwell to build two sod-walled and tarp-roofed features, one at the Loon site and the other near Tanfield (see Figure 9.3), to evaluate what archaeological traces such occupations might leave. The Tanfield reconstruction was used for lunches by six adults over a period of 100 days, after which the interior was excavated, revealing “a profile of horizontally bedded moss fibers, with interspersed artifacts very much like the prehistoric midden” (M.S. Maxwell 1973:208).

9.4.4 Something Different: “Anomalous” Finds in the Valley
Not only have the Tanfield Valley sites shaped how prehistoric cultural developments are viewed on southern Baffin Island, but these sites have also become the standard through which we interpret events across the Eastern Arctic. This is due largely to M.S. Maxwell’s (1985)
Prehistory of the Eastern Arctic, the pre-eminent regional reference book which relies heavily on the North Bay area for its interpretations. However, as with the Nunguvik site discussed previously (Chapter 8), renewed research has focussed on several Tanfield Valley sites in an effort to investigate previously unsuspected cultural events which may have occurred there.

Using an approach similar to that applied to the Nunguvik assemblage, the Helluland Archaeology Project has focussed on specific classes of material culture (primarily cordage, wooden objects, and architectural remains) from the multi-component Tanfield and Nanook sites (Figure 9.3) to support the idea of some form of communication and interaction between Dorset and mediaeval European Norse (Sutherland 2000a, 2000b, 2002). As noted in Chapter 5.4.7, the idea that early Europeans were present in the Canadian Arctic and may have met the Dorset (as well as the Thule Inuit) had been previously suggested (e.g. Sabo and Sabo 1978; McGhee 1984b; Schledermann 2000), however Sutherland envisions a much greater level of interaction than had previously been anticipated (e.g. Jones 1964).

Sutherland’s reanalysis began with the spun and plied cordage recovered from the Nanook and Tanfield sites by Maxwell, who originally identified the pieces as being made from musk ox hair. As musk oxen are not indigenous to Baffin Island (Section 9.3.1), the presence of supposed musk oxen at the sites was used as proof of long distance trade networks between geographically widely spaced Dorset populations (M.S. Maxwell 1985:131, 206; also Odess 1998:429). However, new analysis of these fragments has determined that the cordage contains no musk oxen hair and that most, similarly to Nunguvik, were made from arctic hare fur and other native species (Sutherland 2000a:165, pers comm. 2006). Additional study revealed that the Tanfield Valley cordage was created using techniques commonly employed by the Norse (Sutherland 2002:115), albeit virtually all known Norse examples are made from plant fibres (Østergård 2004). Sutherland (2000a:161) has noted that spinning animal hair into cordage would have offered very few advantages for the Dorset, who might have valued the material more as a curiosity, and that the Norse (who had a long tradition of spinning) were more likely to have produced the pieces and then exchanged them with Dorset groups.

---

2 Cordage is now known from Nunguvik (Chapter 8), Avayalik-1 (JaDb-10) in Labrador (Jordan 1980), Cape Ray (C JBt-1) in Newfoundland (Linnamae 1975), and Willows Island-4 (KeDe-14) in Frobisher Bay (Odess 1996, 1998).
Like Nunguvik, the Tanfield and Nanook sites have also yielded abundant examples of worked wood; M.S. Maxwell (1973:228) reports Nanook alone produced 266 pieces (excluding woodworking detritus). Not only was much of that wood, as well as the smaller sample from the Tanfield site, in excellent condition (as noted in Chapter 3.3.2, driftwood is often of inferior quality), several of the pieces are described as “fine, [and] straight-grained”, suggesting that such “wood may have been imported from the south rather than collected through the vagaries of wind and current” (M.S. Maxwell 1985:228). While trade in green wood between different Dorset populations may have taken place elsewhere (e.g. between Victoria Island and the mainland, see Chapter 7.3.5), it is less likely that Dorset living on southern Baffin Island participated in such networks given the navigational challenges posed by Hudson Strait. Furthermore, the tree-line in the Labrador-Ungava area (the closest direct option) is currently over 500 km south of North Bay and has not moved significantly since before 4500 years ago (Short and Nichols 1977; Fitzhugh and Lamb 1985; Lamb 1985). In the absence of direct procurement or trade with neighbouring groups, it is unclear how south-eastern Baffin Island Dorset were able to access an apparently regular supply of good-quality wood.

Sutherland (2000a, 2000b) has examined wood from the Tanfield Valley sites and has concluded that some of it was worked using techniques which are atypical of the Palaeoeskimos. As at Nunguvik (Sutherland 2000a:162; Chapter 8.4.4), wooden pieces from the Tanfield Valley show signs of having been sawn, nailed (possibly with metal nails), and scarfed, while mortise holes and tenon joinery are also apparent (e.g. M.S. Maxwell 1985: Figure 6.5; Sutherland 2000a: Figure 105a). It is difficult to appreciate exactly how widespread these practices might have been given the rarity of reports detailing Palaeoeskimo organic technologies (e.g. Grønnow 1996; LeMoine and Darwent 1998; LeMoine 2005), although it does seem that these technical attributes are only known from Dorset sites along the Baffin Bay-Davis Strait-Hudson Strait-Labrador Sea coast (Sutherland 2000a).

Of particular interest are the architectural remains uncovered at the Nanook site. The feature(s) created there are, as noted by M.S. Maxwell (1985:156), “very difficult to interpret” within the known range of Palaeoeskimo architectural technology (Appendix A and Chapter 6). M.S. Maxwell (1973:157, Figure 36A) first uncovered a coursed stone and sod wall running
north-south and paralleling a bedrock outcrop in the north-eastern part of the site, in an area initially designated as Component 1. The line of this wall, which defined the eastern margin of the site, seems to have been altered and may have been constructed over at least two episodes. Roughly intersecting the northern end of the wall is a much less substantially built west-east stone wall, while a third discontinuous north-south line of stones on the site’s western limit may represent the western edge of a structure. A layer of cut sod was found lying between the western and eastern walls and was suggested to function as the liner for a floor or sleeping area (M.S. Maxwell 1973:158). However, if the interrupted north-south line of rocks positioned on the feature’s western boundary is a wall, it demarcates a feature just 1.85 m wide (M.S. Maxwell 1973:157); this space is further reduced due to a large glacial erratic in the feature’s north-western ‘corner’. Given the narrow space thus created, it was suggested that the actual western wall lay somewhere beyond the excavation limits. Charred seal fat and skin from the feature yielded a date (undoubtedly too old) of 2410±120 B.P. (M-1535).

In the south-western area of the site, originally designated as Component 2, a second architectural element was identified. Unlike the Component 1 feature, the remnants of this poorly defined structure indicate it was probably made mainly of sod and it appeared on the surface as a slightly raised area (M.S. Maxwell 1973:171). As at the Kemp and Tanfield sites, where sod structures were also thought to have been used, dense and thick mats of fibrous sod were encountered and used to infer the limits of a structure (see below). On the feature’s eastern limit was a small pavement of medium and small stones measuring approximately 40 cm x 29 cm, apparently in association with a shallowly depressed rectangular area measuring 28 cm x 13 cm, itself bounded by a north-south line of stones (M.S. Maxwell 1973:171, Figure 41).

Two periods of occupation were again inferred. The distribution of small artefact-rich gravel lenses in the upper deposit suggest the remains of decomposed sod blocks used to construct a structure (M.S. Maxwell 1973:171). The older and deeper deposit was immediately below the gravel-included upper sod and was also associated with deposits of cut turf. Encapsulated within this second sod level were a layer of willow branches, possibly purposefully cut, and a deposit of caribou skins which might represent cushioning for a sleeping area, perhaps similar to one noted by Mary-Rousselière (2002) at the Nunguvik N73 feature. Further east,
caribou skins overlay the willow branches (M.S. Maxwell 1973:172). A sample of willow branches from this feature produced an uncorrected date of 1840±53 B.P. (P-706).

Subsequent excavations linking Components 1 and 2 revealed a coursed stone and sod block wall or bench that measured 15 m x 1 m (averaging 30 cm in height) and ran roughly north-south (M.S. Maxwell 1980: Figure 3). This construction appears to connect the features associated with the two site components described above, although it is not at all clear what, if any, relationship might be shared between them. On top of or immediately adjacent to the long coursed wall are a series of four burned areas, roughly 1.6 m apart, which were identified as kitchen areas due to the presence of burned sticks and rocks coated with charred sea mammal fat (M.S. Maxwell 1980:509-510, 1985:156). Because caribou and seal skins were periodically found on top of the long wall/bench, M.S. Maxwell (1980:510) interpreted the feature as the remains of a skin-covered “communal dwelling with a single, long sleeping bench divided into separate family enclosures”. Additional work at the Nanook site by the Helluland Archaeology Project has revealed other unusual architectural features including part of a rubble-filled boulder wall and what appears to be a stone-lined floor drain (Patricia Sutherland, pers comm. 2005).

These structural remains are presently unique in the Eastern Arctic in terms of the known Palaeoeskimo architectural repertoire (Appendix A). They also have no counterpart amongst the Palaeoeskimo architectural remains excavated from Newfoundland and Labrador (Renouf 2003), Greenland (Andreasen 2003), or the High Arctic (Sutherland 2003). As noted by Sutherland (pers comm., 2005), they do however share certain aspects of their construction and appearance with non-indigenous populations, including the Norse. Research is ongoing to understand how the architectural and artefactual remains present at Nanook, as well as other Tanfield Valley sites, relate to the Dorset and other potentially non-Palaeoeskimo groups. What is clear is that the materials and architecture present here appear to lie outside of the typical range of behaviours and adaptations currently attributed to the Eastern Arctic Dorset.

9.5 Excavations at KdDq-7-4
Work on KdDq-7-4 began July 23rd and ran until the close of the 2003 excavation season on August 10th. Prior to this start date I had been occupied with activities at two other sites in the
Tanfield Valley: a sod house reconstruction built by M.S. Maxwell at the Loon Pre-Dorset site on the valley’s northern end; and the Kemp Middle Dorset site, located midway up the valley on its western side (Figure 9.3). Plans to investigate a possible feature near Site 16 (previously suggested by M.S. Maxwell as Late Dorset based on its elevation) were cancelled after repeated visits by bears made solitary work close to the shore ill-advised.

9.5.1 Identification and Context of KdDq-7-4
KdDq-7-4 was inadvertently located in 2003 during core sampling operations by Charles Schweger of the University of Alberta. Nothing on the surface indicated an archaeological feature existed below ground cover and it was not until vegetation was removed in order to take the core that archaeological remains, in the form of a darkened ashy matrix, were noted. The area is situated at approximately 12 m asl, roughly equal to that of the nearby Nanook site, while the Tanfield site is between 5 and 6 m lower (Figure 9.4).

KdDq-7-4, assigned a temporary field designation of Site Locality 25 as it was the twenty-fifth location of human activity identified in the valley, is in an area of relatively level ground and has an unobstructed view of the sheltered cove and small islands immediately offshore, as well as a portion of North Bay. The feature is located within the limits of the secondary western swale described in Section 9.4.1, although the parallel outcrops dip just below the surface approximately two metres to the south. The valley begins to slope downward about 5 m north of the feature into a marshy low-lying area containing tundra ponds (Figure 9.3). The ground surface at KdDq-7-4 consists of a thin covering of dried sphagnum moss and lichen, as well as grass and sedge species, arctic poppy, arctic cranberry, and cotton grass. KdDq-7-4 is located in one of the better areas of the valley in which to camp during the warm season. Its position on the western side of the valley in the lee of high hills protects it from the westerly winds which predominate in the region for nine months of the year (Table 9.1). The locus is also well placed to avoid the wet conditions found further north in the valley, as well as in the nearby bedrock swales where melt-water accumulates and warm season camping conditions are poor. Nearby occupations (see Figures 9.3 and 9.4) include the Nanook site (approximately 15 m to the southwest), Site 18 (about 12 m to the south), the Morrison-Bare Rock-Tanfield
components (25 m – 40 m to the southeast), and Site 16 (90 m to the southeast).

Figure 9.4 Looking southwest to KdDq-7-4, indicated by the metal excavation pegs in the centre of the photo. The ridge to the right demarcates the eastern limit of the Nanook site (KdD-9), while Site 18 (KdDq-18) is located behind the white excavation tent. The Tanfield site complex (including Morrison, KdDq-7-3, and Tanfield, KdDq-7-1), are located to the left of the shot.

9.5.2 Excavation Strategy and Methodology
An excavation grid consisting of 16 one metre² units was centred over the previously uncovered cultural deposits (Figures 9.5 and 9.6). This grid was oriented to the northwest in order to accommodate as much of the previously de-vegetated area as possible within a single 1 m excavation unit (N52W52 on the excavation grid). The north-western boundary of the grid was, for the sake of convenience, designated as grid north throughout excavation. The grid’s four outer corners were tied into the larger Tanfield Valley map being produced by the Helluland Archaeology Project using a total station, however that map has not been finalised and the map produced by M.S. Maxwell (1973: Figure 15) is used in its stead (Figure 9.3). After mapping the excavation grid, eight of the 16 units were de-sodded, with 10 cm baulks left
between squares. The ninth unit, N52W52, had no baulks as it had been completely de-vegetated previously and the cultural deposits revealed (Section 9.5.4). The remaining grid units were left undisturbed so that they could be investigated if required. Excavation proceeded following natural strata and each identified level was removed throughout all units prior to the excavation of the next layer. As sterile substrate or bedrock was reached in each square, profile drawings were created for the northern and western walls showing the visible stratigraphy. The eastern baulks of two north-eastern units (N53W52 and N53W53) were also recorded as these profiles preserved additional stratigraphic information (Figure 9.10).

![Figure 9.5](image)

**Figure 9.5** Looking east to KdDq-7-4. The de-vegetated area in the centre-left of the photo is where sod was removed in preparation for a core sample (not taken). The largest of the tundra ponds present in this area of the Tanfield Valley (refer to Figure 9.3) is visible in the upper left of the photo.

All identified levels were drawn at the start and end of excavation by the present author onto graph paper using a 1:10 scale. In addition to showing the position of all cultural materials, these drawings also marked the position of rocks greater than 10 cm in length (the margins of
incompletely exposed stones were indicated by dashed lines), recorded changes in the appearance of the matrix, and also indicated any other notable qualities. Initially, all stones greater than 10 cm were left in place; however, as excavation proceeded it became clear that some stones had been deposited on top of the occupation levels after they had been abandoned. These stones were mapped, their elevation taken relative to the ground surface, and they were then removed. As levels were completed, short descriptions were written of their general appearance and character, as well as any relationship thought to exist with the larger excavation. Flakes and faunal materials were collected by unit and level, the former were also piece-plotted onto unit level drawings. Artefacts were recorded in three dimensions with reference to each unit’s south-eastern excavation peg and their position indicated on unit level drawings.

After their exposed faces were lined with plastic, all baulks were left in situ at the close of excavation. The rationale for this decision was two-fold: first, it is believed that two of the northernmost squares (N53W52 and N53W53) overlie what is thought to be the southern boundary of an earlier and possibly semi-subterranean sod structure (see Sections 9.5.3, 9.5.4, and 9.5.5). Given the aforementioned issues surrounding the delineation of this type of dwelling, preservation of a complete stratigraphic sequence for that possible feature (contained in the baulks) was desired in case additional excavations took place at KdDq-7-4. A secondary and more pragmatic consideration reflected the need to finish excavation activities as the end of the field season approached. Figure 9.6 shows a plan drawing of KdDq-7-4.

9.5.3 Under the Surface
As previously noted, there were no surface signs of underlying cultural deposits at KdDq-7-4 (e.g. unusually green or thick vegetation, or stones penetrating the surface cover). Following the unexpected discovery of archaeological remains at this location it was anticipated that culture-bearing strata would be relatively thin as bedrock outcrops emerge from the tundra quite close to the grid, limiting the accumulation of substantial sub-surface deposits. Poor organic preservation was also expected given other thin near-surface sites in North Bay yielded only lithic remains (M.S. Maxwell 1973). As excavation began, numerous rocks were encountered almost immediately below ground cover, an unusual situation in view of the fact that most sites in the
Figure 9.6 Level 3 plan drawing of the 2003 excavations at KdDq-7-4.
valley contain few or no stones. These rocks were not obviously patterned in a way suggestive of individual episodes of use, implying that if these were brought to the site by human hands, they had either been moved substantially during abandonment or were all not used contemporaneously (cultural deposits under some stones support both possibilities). Because KdDq-7-4 presented immediately as a palimpsest, secondary information pertaining to the architectural remain(s) are employed more extensively here than in the other case studies to aid interpretation and determine the type of architectural remains hidden in the deposits.

9.5.4 Stratigraphy Identified During the Excavation
Seven stratigraphic levels were identified during excavation and point to at least two separate periods of use. North-south and west-east baulk drawings are shown in Figures 9.7 and 9.8.

Level 1 post-dated the activities which took place at the location and was present in all of the excavated units. This level was composed of active vegetation and its associated roots, as well as thin deposits of loose brown humus occurring amongst and immediately below the roots. This level varied in thickness between 2 cm and 15 cm, with the deepest deposits occurring in the westernmost squares. This level was culturally sterile.

Level 2 also accumulated after KdDq-7-4 was last occupied and consisted of a thin (< 5 cm) brown organic deposit extending from the lowermost part of Level 1. Intermittently present in the units, it was distinguished from Level 1 by its more compacted and peaty composition. This level contained a very small amount of material culture in its lowermost part.

Level 3 occurred either directly below the active Level 1 vegetation zone or beneath Level 2 where that deposit was identified. Level 3 ranged between approximately 8 and 18 cm in depth, with the deepest deposits found along the western and northern limits of the excavation. The bases of virtually all stones present were located in this layer, which consisted of a dark black-brown to black greasy deposit. While inter-level stratigraphy could not clearly be distinguished, the presence in several units of very thin sand bands interspersed at various depths, and occasionally as larger areas of mottled sandy black (refer to Figures 9.7 and 9.8), indicates that Level 3 resulted from multi-episodic but largely indistinguishable use. The vast majority of cultural material was recovered from this layer.
Figure 9.7 KdDq-7.4 north-south stratigraphic profiles of rows W51, W52, and W53.
Figure 9.8 – KdDq-7-4 west-east stratigraphic profiles for rows N53, N52, and N51.

N53W53, N53W52, and N53W51

N52W53, N52W52, and N52W51

N51W53, N51W52, and N51W51

KdDq-7-4 Stratigraphic Profile Key:
- Level 2
- Level 3 Organic
- Level 4 Sand
- Level 5 Organic
- Burnt Blubber
- Level 5 Organic?
- Level 6 Sand
- Rock

1 ft
Level 4 was not labelled as a discrete deposit in the field. Rather, the thin (1 - 3 cm) layer of essentially continuous sand found only in units N53W53 and N53W52 was noted in the field records, measured for depth below surface, and dug through. Sand deposits encountered at similar depths in the eastern grid units occurred immediately above bedrock; therefore it was initially thought that the appearance of sand in the north-western units heralded the imminent approach of similar sterile deposits (Level 7). However, it quickly became clear that the sand deposits encountered in N53W53 and N53W52 were different from those found elsewhere when a second deeper and very greasy black cultural layer was revealed (Level 5). Level 4 was culturally barren, unlike the artefact-rich sand deposits found at Nanook, which M.S. Maxwell (1973:171) interpreted as marking the remains of sod blocks brought in for use in construction. The Level 4 sand layer here is instead interpreted as representing a hiatus in occupation.

Level 5 was only definitively identified in units N53W53 and N53W52 (almost certainly also extending into N52W53) and occurred approximately 20 cm below modern ground surface (Figures 9.7 and 9.8). Equally deep and greasy deposits continued into N52W53 and the western and northern quadrants of N52W52, however, an intervening Level 4 layer was not noted (perhaps due to the inexperience of the excavators who arrived during the last few days of excavation work and dug the lowermost parts of these units) and the deposit in those units are treated as Level 3. As implied, Level 5 occurred immediately below Level 4 and was markedly less sandy than Level 3. Indeed, no sand deposits, bands, or inclusions were recognised anywhere in the level, with the exception of one localised area isolated in the eastern baulks of N53W53, N52W52 and the northern baulk of N52W51 (Figures 9.8 and 9.10) where horizontal and vertical sand ‘lines’ suggest sod blocks may have been used. Level 5 contained a number of artefacts, as well as probable paving stones which were placed immediately upon underlying sterile Level 7 sand (see Figure 9.9). Level 5 varied between approximately 8 cm and slightly less than 20 cm in total thickness. The Level 5 and Level 3 artefact assemblages are compared in Section 9.6.2.

Level 6 consisted of localised deposits of sterile sand, often intermixed with black organic material that had apparently percolated down from overlaying cultural layers. These pockets of sand, usually 3 cm - 5 cm in total depth, are directly associated with the bedrock which rises near the surface on the grid’s eastern units. Level 6 most often occurred in shallow natural depressions
in the bedrock, as well as on the bedrock’s downward slope where it had leached from upper levels.

Level 7 is sterile substrate. Unlike sterile Level 6 which contained some secondary organic matter, Level 7 bore no trace of human occupation. The level variously consisted of either sterile beach sand and gravel or bedrock.

9.5.5 Summary
A total of nine 1 m² units were excavated at KdDq-7-4. Where bedrock was not present, units generally reached a total depth between 30 cm and 40 cm below ground surface. The deepest and most complex deposits were in the western and northern units where at least two distinct episodes of habitation were stratigraphically distinguishable. Shallower deposits occurred in the southern and eastern squares where subsurface bedrock was very close to the surface. Unlike most other localities in the Tanfield Valley, KdDq-7-4 contained numerous large to small rocks which now form an occupational palimpsest. As discussed in the following section, these stones and associated cultural debris most probably represent the remains of several successively reworked low-cost surface structures that were intended for short-term use.

9.6 Interpreting KdDq-7-4
Unlike the two case studies presented previously (Chapters 7 and 8), architectural details of the feature at KdDq-7-4 are not clearly defined and its interpretation is therefore more complicated. The remains uncovered in 2003 are ephemeral and are, to some degree, in secondary context due to reuse of this area of the Tanfield Valley. Because of this history of reoccupation, even relatively simple attributes such as dwelling shape and size are impossible to determine with any degree of certainty. Further complicating analysis is the fact that most Palaeoeskimo occupations in the Tanfield Valley in particular and the North Bay area in general are equally poorly defined, with structural remains inferred from secondary signals as much as they are based upon easily apparent architectural elements (see Section 9.4.3). The current situation, where we simply do not know a lot about building traditions along this section of south-eastern Baffin Island, means that we lack a base knowledge of how the Late Dorset might have accommodated the ‘fixed’ physical environment within their ‘flexible’ cultural world (Chapter 2.2.2). On the other hand, the fact that
most structures in the area are equally poorly defined may be an important piece of information for understanding the Dorset technological strategy in this area.

In this regard, the use of an interpretive method employing the *chaîne opératoire* proves instrumental because it permits any one technological product (in this case the dwelling structure) to be compared with the larger technological world in which it operated (the entire Eastern Arctic, not simply southern Baffin Island). This type of analysis allows recurring actions and choices to be recognised as a ‘tradition’, or *connaissance* knowledge, while also identifying where and when people diverged from these broader conventions of behaviour by applying *savoir-faire* knowledge (Chapter 2.2.3). Ultimately, such an approach may help us understand the reasons and motivations for such variations (Rapoport 1980:284-285; Lemonnier 1992:19-20). By adopting this perspective, even the most ephemerally preserved architectural remains are useful for understanding technology as a whole because some of the actions underlying the creation (and destruction) of the architectural artefact are still identifiable and their place within the larger technological scheme recognisable. The following sub-sections present information collected and recorded at KdDq-7-4, in addition to that described in Section 9.5, in order to create as complete a picture as possible of the events responsible for the production of that feature, and ultimately to situate it within the larger Palaeoeskimo architectural world.

9.6.1 The Faunal Sample
The faunal materials recovered from KdDq-7-4, which await formal analysis, are not what one typically envisions when thinking of an arctic setting. No ivory, antler, or baleen was found, and only a very small amount of fish and seal bone was collected. Instead, the faunal sample was dominated by numerous clumps of fur (arctic hare, seal, and caribou) and feathers, as well as keratin sheaths from seal claws (also common at the Tanfield site [M.S. Maxwell 1973:201]). A small amount of spun and plied cordage, made from local animals, represents a less traditional source of information on animal exploitation. Small seal bone, from either ringed or harbour seal (*Phoca vitulina*, currently a summer visitor to the area) dominates the field-identified sample, indicating (along with the claw sheaths, whose size suggests they are also from small seals) that these were a primary food source for the site occupants.
Curiously, the overwhelming majority of recognisable seal bones are from the extremities, particularly the flippers. Savelle (1984:520) has suggested that faunal assemblages dominated by limb bones may represent early winter occupations where cached body elements (particularly cranial, lower axial, and limb bones) are consumed. However, in the case of the Dorset, who may have been less proficient at open water sea mammal hunting (Chapter 5.3.3), the reverse might be true in that animals captured from the floe edge may have been cached for the potentially lean time following break up of the ice platform. This latter scenario may be more likely as suggested by Murray’s (2005) recent examination of body part representations at Dorset sites, which led her to draw similarities between the hunting strategies (and success rates) of Dorset hunters and polar bears (whose lean season coincides with the ice-free period).

A small sample of fish bone, presumably from either arctic char or lake trout (formal identification is needed), was also excavated from Level 3 of unit N51W51 (it is thought the bones are not from marine species as Palaeoeskimos appear not to have exploited fish from this zone [M.S. Maxwell 1985:141]). The fish could not have been caught at Cape Tanfield as local lakes are too shallow to permit over-wintering by fish, and there are no spawning rivers.

More indirect evidence for the exploitation of animal species has been identified in the form of clumps of feathers and animal fur, the latter representing mainly arctic hare (possibly relating to the hare fur cordage found at KdDq-7-4, as well as in nearby sites, Sutherland pers comm. 2005). Fur from seal and caribou was also identified. The feathers have not been identified to species, although considering the great number and variety of birds present in the summer period (Section 9.3.2); it may be that the feathers are from individuals captured then. The feathers and fur were distributed throughout all excavated units and in both occupational levels (Level 3 and 5), while cordage fragments were collected from the lower part of Level 3 (n = 3) and Level 5 (n = 6) in units N53W53, N53W52, N52W52, and N51W52.

9.6.2 The Artefact Assemblage
KdDq-7-4 was excavated following natural stratigraphy so that all recorded levels relate directly to the depositional sequence identified at the locality. In total, 651 flakes and 302 artefacts were collected and are shown in Tables 9.2 – 9.4. As was also the situation with Nunguvik N72
(Chapter 8), the assemblage from KdDq-7-4 resulted from multiple occupations (two), each contained in a single layer that was largely separated from the other by a sterile intervening deposit (Section 9.5.4 describes the stratigraphy). Table 9.2 displays all artefacts collected from KdDq-7-4 by category, Table 9.3 shows those artefact classes according to specific occupation level, while Table 9.4 presents information on the flake assemblage.

Organic implements were not found; probably a result of the acidic peat environment which encapsulated the cultural layers and preserved keratin substances like hair and claws while dissolving skeletal materials (see Painter 1991, 2000). The relatively shallow deposits at KdDq-7-4 precluded the development of permafrost and also contributed to poor organic preservation.

9.6.2.1 The Level 5 Occupation
This occupation represents the oldest identifiable use of the KdDq-7-4 area and lies on top of sterile substrate (Section 9.5.4). A total of 76 catalogued items were found (Table 9.3).

Tufts of unmodified fur dominate, representing almost 41% of the total recovered assemblage (Table 9.3). Visual inspection demonstrated that most is arctic hare, with lesser quantities of caribou and what is probably seal; the fur occurred in small bunches throughout the deposit and did not give the impression of being from any one complete carcass or isolated processing event. The high frequency of arctic hare fur probably reflects the former prevalence of this species in the Tanfield Valley area given its warm season preference for southward-facing and well-vegetated valleys (Soper 1928:59-61).

The distribution of hare fur throughout the level is not easily understood, although it may relate in some as yet unknown manner to the six fragments of spun and plied cordage also found in Level 5. With one exception, all cordage pieces were small (< 10 cm in length) and give every indication of occurring randomly within the stratum. In only one instance did a palm-sized bundle of cordage seem to be in association with an architectural feature, a remnant section of floor paving which is shown in Figure 9.9 and is further discussed in the following sub-section. Other artefact categories from this stratum include microblades, which totalled almost 16% of the assemblage (Table 9.3). Microblades are usually quite common at Palaeoeskimo sites.
<table>
<thead>
<tr>
<th>Artefact Classification</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fur</td>
<td>73</td>
<td>22.6</td>
</tr>
<tr>
<td>Microblade</td>
<td>52</td>
<td>16.09</td>
</tr>
<tr>
<td>Endscaper</td>
<td>28</td>
<td>8.67</td>
</tr>
<tr>
<td>Endblade</td>
<td>21</td>
<td>6.5</td>
</tr>
<tr>
<td>Faunal materials</td>
<td>21</td>
<td>6.5</td>
</tr>
<tr>
<td>Biface</td>
<td>14</td>
<td>4.33</td>
</tr>
<tr>
<td>Fur and feathers</td>
<td>12</td>
<td>3.72</td>
</tr>
<tr>
<td>Ground slate knife</td>
<td>12</td>
<td>3.72</td>
</tr>
<tr>
<td>Burin-like tool</td>
<td>10</td>
<td>3.1</td>
</tr>
<tr>
<td>Feathers</td>
<td>10</td>
<td>3.1</td>
</tr>
<tr>
<td>Cordage</td>
<td>9</td>
<td>2.79</td>
</tr>
<tr>
<td>Sidescraper</td>
<td>7</td>
<td>2.17</td>
</tr>
<tr>
<td>Leather(?) and skin fragments</td>
<td>6</td>
<td>1.86</td>
</tr>
<tr>
<td>Unidentified organic</td>
<td>6</td>
<td>1.86</td>
</tr>
<tr>
<td>Vessel fragment</td>
<td>6</td>
<td>1.86</td>
</tr>
<tr>
<td>Core</td>
<td>4</td>
<td>1.24</td>
</tr>
<tr>
<td>Burin</td>
<td>3</td>
<td>0.93</td>
</tr>
<tr>
<td>Burnt fat and cinders</td>
<td>3</td>
<td>0.93</td>
</tr>
<tr>
<td>Ground slate fragment</td>
<td>3</td>
<td>0.93</td>
</tr>
<tr>
<td>Microblade core</td>
<td>3</td>
<td>0.93</td>
</tr>
<tr>
<td>Wood, unworked</td>
<td>3</td>
<td>0.93</td>
</tr>
<tr>
<td>Birch Bark</td>
<td>2</td>
<td>0.62</td>
</tr>
<tr>
<td>Flake, retouched</td>
<td>2</td>
<td>0.62</td>
</tr>
<tr>
<td>Slate, worked</td>
<td>2</td>
<td>0.62</td>
</tr>
<tr>
<td>Endblade, preform</td>
<td>1</td>
<td>0.31</td>
</tr>
<tr>
<td>Core rejuvenation flake</td>
<td>1</td>
<td>0.31</td>
</tr>
<tr>
<td>Fur or skin</td>
<td>1</td>
<td>0.31</td>
</tr>
<tr>
<td>Fur and seal claw</td>
<td>1</td>
<td>0.31</td>
</tr>
<tr>
<td>Linear flake</td>
<td>1</td>
<td>0.31</td>
</tr>
<tr>
<td>Microblade core, retouched</td>
<td>1</td>
<td>0.31</td>
</tr>
<tr>
<td>Raw material, lithic</td>
<td>1</td>
<td>0.31</td>
</tr>
<tr>
<td>Skin, stitched?</td>
<td>1</td>
<td>0.31</td>
</tr>
<tr>
<td>Stone with burnt fat</td>
<td>1</td>
<td>0.31</td>
</tr>
<tr>
<td>Unidentified lithic tool</td>
<td>1</td>
<td>0.31</td>
</tr>
<tr>
<td>Uniface</td>
<td>1</td>
<td>0.31</td>
</tr>
<tr>
<td>Total</td>
<td>323</td>
<td>100.03</td>
</tr>
</tbody>
</table>

*Table 9.2* KdDq-7-4 artefacts by category (all levels; flakes are shown in Table 9.4).
Figure 9.9 Plan drawing of the bottom of Level 5 deposits in units N53W53 (top) and N52W53 (bottom) showing the position of possible paving stones.

and some researchers (e.g. M.S. Maxwell 1973, 1976a, 1985; Tuck 1975; McGhee 1979; Renouf 1994; Sutherland 1996) have used their frequency to infer season of occupation and the probable range of activities undertaken, often linking microblades with butchery and clothing production during the summer and fall. Five triangular endblades were found and suggest hunting activities.
Also located in the level were scrapers (both end and side), burin-like tools, and a burin (presumably in secondary context, although M.S. Maxwell [1973:311-335] reports burin technology continued along south-eastern Baffin Island into the Late Dorset period); all are associated with the production of organic tools and the processing of animal carcasses.

Surprisingly, not a single piece of lithic detritus was identified in Level 5.

9.6.2.2 The Level 3 Occupation
Unmodified fur packets also dominated the Level 3 deposit, although not to the extent seen in Level 5 (Table 9.3). As in Level 5, the distribution of the fur is unpatterned and it occurs throughout the level and in all squares. Equally scattered masses of feathers were collected from Level 3 and while additional examination is required, it stands to reason that some of the feathers are from birds killed during the warm season when a variety of migratory and resident birds nest on and near Cape Tanfield (refer to Section 9.3.2). Other organic classes include small pieces of unworked skin, what is either naturally dried skin or perhaps untanned leather, small pieces of birch bark, and a piece of animal skin with possible stitching holes along one edge (Table 9.3).

Occurring with greater frequencies in the Level 3 occupation layer (as compared to the earlier deposit) are microblades, which account for almost 18% of the assemblage. Endscrapers are also markedly better represented, accounting for 11.5% of the total (as opposed to only 2.63% in Level 5); sidescrapers too were more frequent (n= 6, 2.65%). In general, processing equipment (including not only scrapers but also bifaces n=14, 6.19%; slate knives n=10, 4.42%; and burin-like tools n=8, 3.54%) form a large part of the recovered tool-kit. A variety of other tools occur in smaller numbers. The represented categories together create an impression of an assemblage that was generalised and intended to fulfill a number of pursuits including hunting, processing, and organic tool production (Table 9.3).

All chipped stone detritus at KdDq-7-4 was associated with the Level 3 occupation. The flakes are dominated by quartz crystal, which makes up over 45% of the collection. Low quality non-lustrous beige, blue-grey, and grey cherts, which M.S. Maxwell (1973:10-11) reports are native to south-eastern Baffin Island, account for an additional 38% of the total. The remaining chert flakes (see Table 9.4) are also low quality and, although more variable in colour, are
<table>
<thead>
<tr>
<th>Artefact Classification</th>
<th>All Levels</th>
<th>% of Assemblage</th>
<th>Level 3</th>
<th>% of Assemblage</th>
<th>Level 5</th>
<th>% of Assemblage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fur</td>
<td>73</td>
<td>24.17</td>
<td>42</td>
<td>18.58</td>
<td>31</td>
<td>40.79</td>
</tr>
<tr>
<td>Microblade</td>
<td>52</td>
<td>17.22</td>
<td>40</td>
<td>17.70</td>
<td>12</td>
<td>15.79</td>
</tr>
<tr>
<td>Endscraper</td>
<td>28</td>
<td>9.27</td>
<td>26</td>
<td>11.50</td>
<td>2</td>
<td>2.63</td>
</tr>
<tr>
<td>Endblade</td>
<td>21</td>
<td>6.95</td>
<td>16</td>
<td>7.08</td>
<td>5</td>
<td>6.58</td>
</tr>
<tr>
<td>Biface</td>
<td>14</td>
<td>4.64</td>
<td>14</td>
<td>6.19</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Ground slate knife</td>
<td>12</td>
<td>3.97</td>
<td>10</td>
<td>4.42</td>
<td>2</td>
<td>2.63</td>
</tr>
<tr>
<td>Fur and feathers</td>
<td>12</td>
<td>3.97</td>
<td>11</td>
<td>4.87</td>
<td>1</td>
<td>1.32</td>
</tr>
<tr>
<td>Feathers</td>
<td>10</td>
<td>3.31</td>
<td>10</td>
<td>4.42</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Burin-like tool</td>
<td>10</td>
<td>3.31</td>
<td>8</td>
<td>3.54</td>
<td>2</td>
<td>2.63</td>
</tr>
<tr>
<td>Cordage</td>
<td>9</td>
<td>2.98</td>
<td>3</td>
<td>1.33</td>
<td>6</td>
<td>7.89</td>
</tr>
<tr>
<td>Sidescraper</td>
<td>7</td>
<td>2.32</td>
<td>6</td>
<td>2.65</td>
<td>1</td>
<td>1.32</td>
</tr>
<tr>
<td>Vessel fragment*</td>
<td>6</td>
<td>1.99</td>
<td>4</td>
<td>1.77</td>
<td>2</td>
<td>2.63</td>
</tr>
<tr>
<td>Leather(?) and skin fragments</td>
<td>6</td>
<td>1.99</td>
<td>3</td>
<td>1.33</td>
<td>3</td>
<td>3.95</td>
</tr>
<tr>
<td>Unidentified organic</td>
<td>6</td>
<td>1.99</td>
<td>5</td>
<td>2.21</td>
<td>1</td>
<td>1.32</td>
</tr>
<tr>
<td>Core</td>
<td>4</td>
<td>1.32</td>
<td>3</td>
<td>1.33</td>
<td>1</td>
<td>1.32</td>
</tr>
<tr>
<td>Burin</td>
<td>3</td>
<td>0.99</td>
<td>2</td>
<td>0.88</td>
<td>1</td>
<td>1.32</td>
</tr>
<tr>
<td>Burnt fat cinders</td>
<td>3</td>
<td>0.99</td>
<td>3</td>
<td>1.33</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Wood, unworked</td>
<td>3</td>
<td>0.99</td>
<td>1</td>
<td>0.44</td>
<td>2</td>
<td>2.63</td>
</tr>
<tr>
<td>Ground slate fragment</td>
<td>3</td>
<td>0.99</td>
<td>2</td>
<td>0.88</td>
<td>1</td>
<td>1.32</td>
</tr>
<tr>
<td>Microblade core</td>
<td>3</td>
<td>0.99</td>
<td>3</td>
<td>1.33</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Flake, retouched</td>
<td>2</td>
<td>0.66</td>
<td>2</td>
<td>0.88</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Birch bark</td>
<td>2</td>
<td>0.66</td>
<td>1</td>
<td>0.44</td>
<td>1</td>
<td>1.32</td>
</tr>
<tr>
<td>Slate, worked</td>
<td>2</td>
<td>0.66</td>
<td>2</td>
<td>0.88</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Endblade, preform</td>
<td>1</td>
<td>0.33</td>
<td>1</td>
<td>0.44</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Core rejuvenation flake</td>
<td>1</td>
<td>0.33</td>
<td>1</td>
<td>0.44</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Linear flake</td>
<td>1</td>
<td>0.33</td>
<td>0</td>
<td>0.00</td>
<td>1</td>
<td>1.32</td>
</tr>
<tr>
<td>Microblade core, retouched</td>
<td>1</td>
<td>0.33</td>
<td>1</td>
<td>0.44</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Raw material, lithic</td>
<td>1</td>
<td>0.33</td>
<td>1</td>
<td>0.44</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Unidentified lithic tool</td>
<td>1</td>
<td>0.33</td>
<td>1</td>
<td>0.44</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Uniface</td>
<td>1</td>
<td>0.33</td>
<td>1</td>
<td>0.44</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Fur or skin</td>
<td>1</td>
<td>0.33</td>
<td>1</td>
<td>0.44</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Fur and seal claw</td>
<td>1</td>
<td>0.33</td>
<td>0</td>
<td>0.00</td>
<td>1</td>
<td>1.32</td>
</tr>
<tr>
<td>Skin, stitched?</td>
<td>1</td>
<td>0.33</td>
<td>1</td>
<td>0.44</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Stone with burnt fat</td>
<td>1</td>
<td>0.33</td>
<td>1</td>
<td>0.44</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Total</td>
<td>302</td>
<td>100.00</td>
<td>226</td>
<td>100.00</td>
<td>76</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Table 9.3 KdDq-7-4 artefacts by occupation level.
<table>
<thead>
<tr>
<th>Unit</th>
<th>Total flakes</th>
<th>Quartz Crystal</th>
<th>Chert, beige</th>
<th>Quartzite, white</th>
<th>Chert, blue-grey</th>
<th>Chert, grey</th>
<th>Chert, brown-red</th>
<th>Chert, grey-brown</th>
<th>Quartzite, brown</th>
<th>Flint, brown</th>
<th>Chert, brown</th>
<th>Slate</th>
<th>Chert, white</th>
<th>Chert, black</th>
<th>Unknown material</th>
</tr>
</thead>
<tbody>
<tr>
<td>N53W53</td>
<td>15</td>
<td>6</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N53W53</td>
<td>14</td>
<td>9</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N53W52</td>
<td>16</td>
<td>4</td>
<td>10</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N53W52</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N53W52</td>
<td>9</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N53W51</td>
<td>11</td>
<td>6</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N53W51</td>
<td>11</td>
<td>10</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N52W53</td>
<td>24</td>
<td>10</td>
<td>7</td>
<td>4</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N52W53</td>
<td>36</td>
<td>10</td>
<td>15</td>
<td>0</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N52W53</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N52W53</td>
<td>23</td>
<td>10</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N52W53</td>
<td>97</td>
<td>39</td>
<td>25</td>
<td>0</td>
<td>6</td>
<td>2</td>
<td>8</td>
<td>9</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N52W53</td>
<td>24</td>
<td>12</td>
<td>5</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N52W52</td>
<td>27</td>
<td>11</td>
<td>6</td>
<td>4</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N52W52</td>
<td>30</td>
<td>13</td>
<td>4</td>
<td>2</td>
<td>9</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N52W52</td>
<td>53</td>
<td>19</td>
<td>13</td>
<td>14</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N52W51</td>
<td>18</td>
<td>5</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N52W51</td>
<td>12</td>
<td>7</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N52W51</td>
<td>38</td>
<td>19</td>
<td>3</td>
<td>11</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N52W51</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N51W53</td>
<td>44</td>
<td>18</td>
<td>3</td>
<td>5</td>
<td>8</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N51W53</td>
<td>11</td>
<td>7</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N51W52</td>
<td>15</td>
<td>8</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N51W52</td>
<td>35</td>
<td>16</td>
<td>2</td>
<td>6</td>
<td>3</td>
<td>0</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N51W52</td>
<td>29</td>
<td>23</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N51W51</td>
<td>23</td>
<td>18</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N51W51</td>
<td>33</td>
<td>10</td>
<td>13</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

651       | 295           | 136            | 85           | 61               | 24              | 16           | 9                | 7                | 5               | 4           | 3           | 3     | 2           | 1           |

% of Total| 45.16         | 20.89          | 13.21        | 9.37             | 3.69            | 2.46         | 1.38             | 1.08             | 0.77            | 0.61        | 0.46        | 0.46  | 0.31        | 0.15        |

**Table 9.4** Flakes from KdDq-7-4, by unit and material.
probably also from local sources. No exotic materials were identified in the sample. Examination of the flake assemblage reveals that no large or medium-sized flakes (>7 mm in length) were recovered, suggesting that primary production of new tools was not conducted within the area of KdDq-7-4 excavated in 2003. There is very little evidence of cortex and the overwhelming majority of flakes are small (<5 mm) secondary or tertiary examples suggestive of late stage reduction and maintenance, rather than primary production. Two concentrations of very small (<2 mm) flakes, all of quartz crystal, were located in the upper deposits of Level 3 and support the idea that final shaping and rejuvenation were carried out in the excavated area.

9.6.3 Understanding the Architecture with the Aid of Stratigraphy and Artefacts

As with other sites excavated in the Tanfield Valley and on Cape Tanfield (Section 9.4.2), stratigraphy indicates that KdDq-7-4 was occupied multiple times. While only two periods of occupation could be definitively discerned (represented by Levels 3 and 5), it was previously argued that more than one occupational event is probably contained within Level 3. This opinion is based primarily on two pieces of stratigraphic evidence: small discontinuous horizontal sand lenses signifying periodic abandonment between occupation events; and the occurrence of stones that were completely encapsulated by cultural deposits, a result of their repositioning by successive site occupants through an undetermined period of use. A longer hiatus, represented by a more-or-less continuous sand layer (Level 4) in units N53W53 and N53W52, separates Level 3 from a deeper and older Level 5 occupation.

Two distinct types of architectural remain appear to have been built during the occupations (to facilitate discussion, Level 3 will be treated as a single occupation).

The Level 5 Occupation
This is the earliest identifiable use of KdDq-7-4 and is composed of a deeply buried deposit (now more than 20 cm below ground surface) that is both darker and greasier than the overlying occupation. Sand inclusions akin to those observed in Level 3 (see below) were absent and it is believed that the Level 5 occupation was either uninterrupted or that it was reoccupied with sufficient rapidity for stratigraphic signs of disuse to not be preserved.

Based on stratigraphy, Level 5 predates the Level 3 deposits. Most obviously, the Level 5
deposit is the lowest occupation layer, and in the absence of signs that the stratigraphy was ‘reversed’ or subjected to the “Law of Upward Migration” (Schiffer 1977; Rathje and Schiffer 1982:123) where earlier deposits overlie later ones, it must have been laid down first. The greater antiquity of Level 5 is further indicated by the presence of a horizontal sterile Level 4 deposit which clearly indicates that some period of time elapsed between the end of the occupation preserved in Level 5 and the start of the one(s) represented by Level 3 (see Figures 9.7 and 9.8).

Although the 2003 excavations only appear to have touched its outer limits, it is hypothesised that the earlier occupation involved a semi-subterranean feature that may have had a partially paved floor (additional testing is required to investigate this possibility). The tentative identification of a completely buried feature is based largely on stratigraphic profiles which, as shown in Figure 9.7, show the Level 5 deposit angling down into the underlying sterile Level 7 in units N53W53 and N53W52; this sloping cut continues beyond the northern limits of the 2003 grid. Future excavation will confirm or refute whether the edge of an architectural feature is truly represented in the baulk stratigraphy of N53W53 and N53W52. However, examination of those units indicates the creation of some form of sunken-floored feature was an intentional decision on the part of the Level 5 inhabitants, who had to invest some quantity of time and effort in the removal of extant ground surface and underlying sterile Level 7 substrate in order to create the observed profile.

The east wall baulks of units N53W53 and N53W52 also preserved evidence of what may best be interpreted as the use of sod blocks (Figure 9.10). The appearance of the blocks, suggested by the occurrence of darkened sod or peat capsules ringed by thin deposits of sand, is consistent with M.S. Maxwell’s description of probable sod features elsewhere in the Tanfield Valley (refer to Section 9.4.3), although no artefacts were found in the sandy periphery of each decomposed block. These apparent turves were slightly larger than hand-sized and may relate to a possibly paved surface, described below.

Finally, at a depth of between 17 cm and 26 cm below current ground surface in units N53W53 and N52W53 are a group of carefully laid flat stones (see Figure 9.9). These stones are clearly not associated with the Level 3 occupation as the two occupation levels are separated by the Level 4 sterile deposits; the stones themselves are further isolated from Level 3 by between 7
cm (unit N52W53) and 14 cm (unit N53W53) of intervening Level 5 accumulations. The flagstones are provisionally interpreted as the remains of a partially dismantled floor pavement, although insufficient investigation of this inferred structure were undertaken in 2003 to discuss details of the presumed feature’s size, shape, or function. Its cultural affiliation is also unknown.

The Level 3 Occupation
As described in Section 9.5.4, the Level 3 deposit contains several thin and discontinuous sand lenses at varying depths; these inclusions are thought to be aeolian in origin and are interpreted as evidence for periodic episodes of abandonment followed by subsequent reoccupation. There are no signs that any occupation involved intentional excavation into the surface, nor were areas of compressed ground (associated with habitation) identified. Instead, available evidence points to brief site usages that likely involved ground-level surface dwellings; these structures in all likelihood employed many of the larger rocks (Figure 9.6) as anchors for skin-coverings.

As already discussed, Level 3 activities clearly post-date those associated with Level 5. It
appears that the earliest Level 3 occupation took place when the bedrock outcrops along the eastern part of the excavated area (Figure 9.6) were covered by only a thin vegetation layer. As indicated in the figure, several of the stones in unit N53W51 rest directly on this bedrock. The limits of the habitation zone are clearly marked in N51W51 by the distribution of the Level 3 cultural deposit which ends rather abruptly midway through the unit (see Figure 9.6).

The greatest concentrations of stones occur in units N51W52, N51W53, N52W52, and N52W53 (Figure 9.6) where 449 of the 651 flakes (or 68.97% of the total) were found (Table 9.3). This is also where the Level 3 deposits are thickest, implying that the most intense activities occurring in the portion of KdDq-7-4 investigated in 2003 took place there (and probably continued into the unexcavated zone west of the grid). Today there is no readily apparent pattern to the rocks, although the eastern arc of a possible structure may be indicated by a number of neighbouring stones of the same approximate size and depth (see Figure 9.11). It is impossible to determine whether these probable structural stones were positioned inside or outside of the presumed feature (refer to Dekin [1976:82-84] for determining the placement of covering skirts) because repeated use of the locality has resulted in the deposition of cultural materials above and below many rocks. If the stones forming the arc are more-or-less in situ, then a small 1.5 m diameter tent, involving an internal area of only 1.77 m², may have formerly been present. It is improbable that this represented the entire area of a structure, unless the most basic short-term usage was intended, and it is presumed the hold-down stones comprising the partial arc were moved in such a way that the actual size of the feature has been minimised. There are no signs that nearby rocks were arranged into any kind of recognisable internal feature.

However, a raised sandy area rising up from Level 3 to contact the Level 1 active sod was identified in the eastern quadrants of unit N52W53 (Figure 9.11) and is probably the remains of an informal hearth area. This feature falls within the confines of the suggested dwelling. The composition of this deposit was comparatively loose and the matrix can be characterised as possessing a crumbly organic quality; the mix consisted largely of burnt fat, burnt or oil-soaked peat, dried fragments of skin, and very small bone fragments; it left a sooty residue when handled. Several fat-encrusted stones and two rim sherds from what appears to have been a more rectangular-shaped graphite vessel (a form common during earlier Dorset, although it was also
Figure 9.11 Position of hold-down stones associated with a possible surface habitation feature.
made infrequently in later Dorset; see McGhee [1976:21-23] and Cox [1978:111]) were also associated and support the suggestion that this spot may have been a hearth area.

A second possible hearth area was identified in the north-western quadrant of N51W51 where it extended into the unexcavated baulk (Figure 9.11). The matrix of this slightly raised area was exceptionally dense and fatty and was associated with several mendable fragments of a round to oblong thin-walled soapstone vessel. This form was common amongst Late Dorset (Chapter 5.3.2) and the vessel was probably hand-sized when complete. The hearth feature may have been contemporary with the inferred dwelling structure considering that both occur at a similar depth (in which case it was an external feature), or it may have been used during a separate episode. However, more diagnostic materials, or samples suitable for chronometric dating, were not present and this suggestion remains otherwise poorly supported. Finally, a fire-reddened stone in the upper part of the Level 3 deposit in N51W53 suggests a third informal hearth area (Figure 9.11), demonstrating that multiple cooking or hearth areas were present at KdDq-7-4.

Unfortunately it proved impossible to clearly establish whether these features were related in any manner to each other, or to the possible surface dwelling feature (other than the fact that all occurred in Level 3). Considering the lack of an obvious connection, and given their un-patterned distribution in relation to the many exposed stones, these architectural elements cannot clearly be related and it is likely that they were used at different times (although the hearth area identified in N52W53 may be linked to the possible surface dwelling).

9.6.4 Who is Responsible for KdDq-7-4?
While excavated materials are, with the exception of the cordage fragments, consistent with a Palaeoeskimo occupation, determining precisely which group or groups were present at KdDq-7-4 is less obvious. This is because the assemblages from Levels 5 and 3 consist largely of undiagnostic objects which make a precise identification of cultural affiliation difficult. Given the dearth of temporally sensitive materials found in 2003, secondary lines of evidence must be employed in order to include or exclude specific Palaeoeskimo periods from consideration.

A sea level reconstruction developed by M.S. Maxwell (1973: Figure 16) for the Tanfield Valley indicates that the southern part of the valley was inundated during the Early Palaeoeskimo
period. While this sea level model should be further evaluated, its findings show that the area in which KdDq-7-4 is located (Figure 9.3) was uninhabitable until after 3000 B.P., suggesting that the burins in Levels 5 and 3 may have been introduced as intrusive elements. It also seems improbable that KdDq-7-4 is associated with the ‘Transitional’ populations which occupied much of the Eastern Arctic prior to the Dorset era (Chapter 4.4) considering no sites dating between 2800 B.P. and 2500 B.P. have been recognised and no diagnostic materials were found.

Instead, the overwhelming majority of materials indicate that it was Dorset groups who left the occupation debris at KdDq-7-4. However, artefacts diagnostic of a particular period within Dorset (Chapters 4.5 and 5.3.2) are disappointingly rare. Equally unsatisfactory are the low number of artefacts recovered from Level 5 (n=76, of which 31 were fur clumps; Table 9.4). Because the Level 5 sample is so small, it proved impossible to compare it with the one from Level 3 in order to help determine how the two deposits might relate chronologically (e.g. Koetje 1991). While a basic assessment of the assemblages shows a number of similarities amongst the lithic tools (e.g. the preponderance of microblades, endscrapers, and endblades in the toolkits of both levels, when fur bunches are discounted), there are also several differences. Most obviously, as indicated in Table 9.3, bifaces, burin-like tools, and ground slate knives are much less common (or completely absent) in Level 5. Other more temporally sensitive traits (including Late Dorset-style endblades with concave bases and rectangular vessels associated with earlier Dorset) are contradictory. Whether any significance should be attached to the fact that Level 5 produced no flaked debris (almost unheard of at Palaeoeskimo sites) is unclear.

The Level 3 deposit was dominated by organics; particularly clumps of fur, feathers, and mixed bunches of fur and feathers (Table 9.3). As with the earlier occupation, organic tools were not present and lithic artefacts useful for determining chronology were rare, although M.S. Maxwell (1985:227) has remarked that there are few obvious temporal markers within the Dorset era. The only chronologically sensitive objects (M.S. Maxwell 1985:223-224, 227) were four Late Dorset-style concave-based endblades (out of 16 recovered from Level 3), as well as the sherds of a thin-walled oblong or round soapstone vessel also typical of Late Dorset. However, the relatively high number of ground slate knives and pieces of a rectangular graphite vessel in Level 3 (Table 9.3) suggest an earlier Dorset affiliation.
Understanding the origins of the nine pieces of cordage excavated from KdDq-7-4 is even less clear. The bundle of cordage located in Level 5 appears to be associated with an area of deeply buried flagstone paving (Figure 9.9), although the nature of the cordage’s relationship to the tentatively identified feature is unclear. How or why the remaining eight lengths (five additional fragments from Level 5, along with three from Level 3) came to be incorporated into KdDq-7-4 is unclear. The Level 3 cordage fragments (from N53W53, N53W52, and N52W52) were rather deeply buried in that level (> 15 cm bgs) and were located away from the main rock concentration previously suggested to represent a badly disturbed surface dwelling (Figure 9.10).

Whether the deposition of these pieces in Levels 5 and 3 resulted from a single common denominator cannot be determined based solely on the work thus far conducted at KdDq-7-4. Nor is it clear how the occupations at KdDq-7-4 relate to the other sites in the Tanfield Valley where cordage and other unusual artefacts have been identified (Sutherland 2000a, 2000b; Section 9.4.4). Sutherland has proposed that components of the assemblages recovered from the Nanook and Tanfield sites result from a European presence in the area which dates after the 10th century A.D. If she is correct, the presence of cordage in both levels of KdDq-7-4 suggests that the occupations occurred quite late in the Dorset era.

9.6.5 Suggested Season and Length of Occupation for Level 3
Available information supports the identification of the KdDq-7-4 Level 3 occupation as a short-term warm season habitation. Stratigraphic evidence indicates that Level 3 was occupied intermittently for short periods of time; occupational hiatuses were sufficiently long for trace deposits of windborne sand to accumulate, however, these inclusions were not extensive enough for separate occupation events within the general deposit to be isolated. The depth of the cultural material indicates the inhabitants did not use sod and that activities were not as intense as at other sites (Section 9.4.2 and 9.4.3). Interpretation of the locality as a warm season habitation is based upon several interconnected pieces of evidence discussed below.

First are the archaeological remains themselves. As discussed in Section 9.4.3, much of the southern Tanfield Valley is unsuitable for habitation during the warm season considering that partly thawed tundra, surface run-off, and standing water make it uncomfortably wet.
Nonetheless, many of the most intensely occupied sites are located in areas that in the summer are uninviting or completely uninhabitable, clearly indicating that they could only have been reasonably used when the ground was frozen (use of snow dwellings has been inferred at multiple places, see Section 9.4.3). In comparison, KdDq-7-4 is positioned on one of the best drained and levels spots in the valley, suggesting rather strongly that a different site location strategy was in operation which clearly involved avoidance of areas that transform into boggy morasses as the warm season progresses. Repeated summer use of KdDq-7-4 was unquestionably guided by the awareness that it remains one of the few places to stay dry during the warm period.

Warm season habitation is further implied by the rather ephemeral stone architecture (refer to Figures 9.6 and 9.11). While the presence of insubstantial to virtually negligible architectural remains has occasionally been taken as a sign of cold season occupation involving some form of snow dwelling (see Chapter 3.3.1), the architecture found at KdDq-7-4 does not support a similar interpretation. As pointed out by ethnoarchaeological and ethnographic sources, snow dwellings are not associated with quantities of stone because this material is generally hidden and rendered unavailable for much of the snow season (e.g. Jenness 1922; Mathiassen 1928; Savelle 1984; Labrèche 2003).

Even if stones were found and brought to KdDq-7-4 for cold season use, these would be covered and rendered unavailable by snowfalls in subsequent years, necessitating collection of a new set of rocks at each reoccupation. This seems to be an unnecessary and fairly redundant amount of work, especially when a comparable building material (snow) should have been immediately at-hand if occupation occurred when snow was present. Rather than this improbable scenario, the use of stone in construction suggests that snow was not available for building purposes and that another construction material, stone, was collected and transported to the area. These stones were shuffled about during reuse of the area, accounting for the occurrence of cultural material above and below some rocks. The presence of multiple hearth areas resting directly onto the ground surface (Figure 9.11) further negates the odds that dwellings constructed at KdDq-7-4 were built of snow.

The location of the habitation site in relation to the valley’s topography also points to a non-cold season occupation. In addition to being very well-drained, KdDq-7-4 is also in a
relatively exposed part of the valley where the window in which sufficient snow cover exists for building purposes is comparatively short. Chapter 3.3.1 briefly reviewed the Inuit quest for suitable building snow, revealing they usually settled in lee areas where long-lasting drifts rapidly form into cohesive masses; in comparison, the tundra around KdDq-7-4 is lightly scarred by skidoo tracks, suggesting this part of the valley is thinly covered and / or loses snow comparatively early. Both Labrèche (2003) and Savelle (1984) further note that Inuit preferred to situate snow dwellings on sloping ground to aid construction. Although Dorset and Thule Inuit adaptations differ in many respects, both would likely select locations offering similar benefits if snow dwellings were built.

While small, the faunal sample from Level 3 yielded a small number of fish ribs. As outlined in Chapter 5.3.3, there is no evidence that Late Dorset utilised marine fish species, nor do they appear to have fished for freshwater species through lake ice. No Cape Tanfield lake is deep enough to allow fish to over-winter, although char rivers are present in Shaftsbury Inlet (Section 9.3.3; Figure 9.2) and it is possible fish found at KdDq-7-4 were captured there. While it is feasible that the fish were taken during the warm season and stored for later cold period use, the small numbers found were more likely eaten almost immediately after being caught.

Finally, evidence of animal processing, if not direct consumption, is represented by the quantities of feathers and fur found throughout Level 3. While some bird species are resident around Cape Tanfield throughout the year, the greatest number and diversity of birds occur in the warm season when large colonies gather throughout North Bay for breeding and nesting (Section 9.3.2). Although birds appear not to have been a major economic focus for any Palaeoeskimo group in the vicinity of Cape Tanfield, they were exploited in small numbers when available and the feathers found in KdDq-7-4 suggest that some birds were captured and consumed, perhaps during their summer moult when they were easiest to obtain (Section 9.3.2).

9.7 Summary
The KdDq-7-4 deposits are best interpreted as the result of at least two different occupations by groups who were no doubt exploiting the diversity of resources located on and adjacent to Cape Tanfield. The earliest recognisable use of the locale, contained in Level 5, was very minimally
investigated in 2003 and appears, based on limited excavation, to have been a possible semi-subterranean structure (possibly with sod wall berms) whose main area extends north of the 2003 excavations. Little more can be said of it, other than that it predates Level 3.

The occupations contained within Level 3, where at least one surface structure lacking identifiable internal organisation has been suggested (Figure 9.11), appear to be short-term warm season camps occupied by small Dorset groups that returned to the same camping spot intermittently over a period of years. For how many years people revisited this area cannot be known with certainty, nor can it be said if it was the same group of people travelling between hunting or aggregation areas that chose the well-situated valley as their layover point.

A lack of clearly diagnostic artefacts and/or suitable materials for absolute dating has meant that it is impossible to say with certainty that those people were Late Dorset, although signs point to an occupation late in the Dorset era. No matter their chronological place, those who camped, however briefly, at KdDq-7-4 (and possibly at nearby Site 16, see Section 9.4.3) occupied this part of the Tanfield Valley during the warm season, possibly as they were journeying to or from one of the communal longhouse sites identified on the offshore islands between Big Island and the Middle Savage Islands (refer to Figure 9.2). Other Late Dorset aggregation sites have been correlated with warm season use (Damkjar 2000, 2005) and there is no reason to suspect that people on south-eastern Baffin Island deviated from this pattern.

The presence of spun and plied arctic hare cordage, manufactured using techniques comparable to those reported from Norse Greenland (Patricia Sutherland, *pers comm.* 2005) is puzzling. At least one large hand-sized bundle of cordage was found directly on top of the remnant flagstones at the base of the Level 5 cultural deposit and appears to be associated with that feature. Five other fragments from Level 5 are not as clearly linked to this possible structure, although similar processes may have been responsible for their presence. Explaining the origins of the three cordage pieces excavated from Level 3 is even less clear. None were found within the perimeter of the possible tent ring (Figure 9.11), and their depth suggests that they may be associated with an earlier use of Level 3 which can no longer be isolated. It is equally feasible that the lengths were inadvertently dropped or otherwise transported to KdDq-7-4 as a result of activities unrelated to the locality’s chief use.
What is more certain, based on the evidence outlined in Section 9.6.4, is that the Level 3 component of KdDq-7-4 was used by Dorset groups multiple times for short-term warm season occupation. Where these people went following the abandonment of the area is unknown, as is their relationship to the other sites in the region.
CHAPTER 10 – IDENTIFYING AND UNDERSTANDING THE LATE DORSET TECHNOLOGY OF ARCHITECTURE

10.1 Introduction
Analysis can now return to the methodological and analytical strategies discussed in Chapter 2 which centre on the chaîne opératoire approach first introduced by Leroi-Gourhan (1964, 1965, 1993). Leroi-Gourhan’s concept of the chaîne opératoire was heavily influenced by the writings of Marcel Mauss (1935, 1979), particularly Mauss’s recognition that technical actions (techniques) are also social acts which are learned within the context of specific cultures. Key for archaeological research was Leroi-Gourhan’s appreciation of the existence of an intrinsic link between the ‘gesture’ visible archaeologically and the individual who directed that action. He further understood that most goals or tasks could be achieved using a variety of steps but that the choice to use one sequence of actions rather than another was influenced by the dynamic social environment in which those technological activities took place. As discussed in detail by Lechtman (1977), Lemonnier (1986), and Pfaffenberger (1992), all technologies are at their root composed of chaînes opératoires, operational sequences which are learned within, and directly reflect, various social relationships, ideologies, and knowledge bases shared by members of a given cultural group. Identifying how a technology is organised and used should, at least in theory, inform on the socio-cultural world in which it was developed and propagated.

In this chapter I attempt to define and interpret the Late Dorset technology of domestic architecture using the complementary frameworks of technology and chaîne opératoire. As domestic dwellings operated within two worlds, the social and the physical, one might expect them to reflect elements of both realms. One of the goals of this chapter is therefore to investigate the degree to which the design and use of Late Dorset homes was influenced by the local physical environment and, concomitantly, whether domestic architecture may have also reflected Late Dorset social organisation and belief systems. The question of whether Dorset society was ‘open’ or ‘closed’ is also addressed from a technological vantage point. As highlighted below, it is not always possible to recognise the more esoteric aspects of Dorset society which presumably existed using available architectural attributes. However, architectural remains do provide one important avenue for exploring how Late Dorset actively integrated the fixed nature of their
physical environment with their own (potentially) more fluid or flexible social world, in the process creating a technology of architecture preserving some of those decisions and practices.

As first outlined in Chapter 2.2.3, two complementary scales of analysis, macro and micro, are employed in this investigation. On the broader level, the 52 dwellings presented in Chapter 6 are used as the basis for constructing a general technological framework of architecture across the Eastern Arctic. Analysis begins at this level in order to evaluate the architectural attributes (see Section 10.2.1) found in these structures as a means of assessing how the dwellings’ basic operational sequences contributed to the variation and patterning identifiable in Late Dorset architectural technology. As more fully discussed in Chapter 2 and noted below, each time Late Dorset designers weighed their options and chose between alternatives there existed an opportunity, whether purposeful or unintentional (see Cowgill 2000; Dobres and Robb 2000; Eerkens and Lipo 2005), for variability or conformity. Where particular strategies and sequences of actions were selected for regularly, we see behavioural patterning indicative of technological traditions, widely shared action strategies viewed as appropriate by Late Dorset culture members. Conversely, as noted by Hodder (2000:26), more irregular activities, frequently overlooked or dismissed as ‘noise’ because they seem anomalous and are potentially more difficult to understand, become readily apparent when architecture is examined on this broad scale. By throwing the analytical net as widely as possible during this first investigative step it is possible to distinguish practises which were commonly used from those that were not, as well as determine the influence of various factors (i.e. raw material availability and effectiveness, environmental conditions, and the intended function of the dwelling – long-term versus short-term, cold season versus warm season) on the design of architecture.

Once the organisation of the technological system is better understood, analysis can move to examine architectural technology on a more focused and agent-centred scale (see Dobres and Hoffman 1994:214) using the three case studies presented in Chapters 7 – 9. Each of these structures were previously described in great detail and placed, as fully as possible, within their social and environmental contexts in order to facilitate identification of those factors which influenced how the dwellings were designed and used. As will be subsequently shown, understanding how the social and natural worlds were considered by the people who designed and
used these specific dwellings makes it possible to formulate general hypotheses accounting for some of the marked norms and deviations identified during the macro-scale analysis of architectural technology.

From an analytical perspective, macro-scale interpretations naturally precede micro-scale ones much as the horse should always go before the cart; the failure to first conduct a macro-scale examination makes it very difficult to see generally recurrent actions (or patterns) and to understand how a technological system was arranged. Equally problematic, neglecting the micro-scale may mean that the idiosyncratic behaviours which preserve the gestures of the individual agent archaeologically can go unseen. Only by combining the two scales can we reinsert the dynamic individuals whose knowledge and decisions produced the material culture into the static archaeological record, resulting in a more comprehensive treatment of past technological systems (Dobres 1999:19; Dobres and Hoffman 1999:8).

10.2 Searching for Technological Traditions Using a Macro-Scale Approach
As noted in Chapter 2 and reiterated in Chapter 6, publications dealing with the domestic structural remains of the Late Dorset seldom include more than basic information and observations on structures and sites. The vast majority do not provide the detailed background information necessary to fully reconstruct a dwelling’s chaîne opératoire or provide the perspective needed to identify and understand the rationale underlying various decisions.

The structures included in Chapter 6 have been published in sufficient detail for their basic chaînes opératoires to be explored and a general range of behaviours to be recognised. In this section they are analysed using a number of readily identifiable architectural attributes and associated elements (listed in Figure 10.1 and presented in detail below). Each time one of these attributes, or a variant of it, was or was not used marked an occasion where a choice was made and where behavioural patterns and / or anomalies occurred. Investigating the architecture on a component by component basis brings a much more meaningful and informative study into being than was possible in Chapter 6.8, when architectural remains were considered along only geographic and temporal lines.

As was apparent from my general lack of success in linking architectural consistencies and
changes with chronological or regional developments, other considerations seem to have
exercised a larger influence on the design of domestic structures. As will be demonstrated through
the course of this chapter, while overall variability seems to have been the ‘rule’ of form
suggesting a flexible technological system, there are also indications that some basic design
processes regularly recurred. The repetition of these actions points to the existence of culture-
wide technological traditions which were implemented where possible or practical. These
technical traditions are identified and discussed in the following sub-sections.

<table>
<thead>
<tr>
<th>Architectural Attributes Identified in Late Dorset Domestic Structures:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor Type</td>
</tr>
<tr>
<td>Floor Preparation</td>
</tr>
<tr>
<td>Floor Shape</td>
</tr>
<tr>
<td>Dwelling Size</td>
</tr>
<tr>
<td>Sleeping Areas</td>
</tr>
<tr>
<td>Isolated Internal Features</td>
</tr>
<tr>
<td>Presence of Axial Features and Central Features</td>
</tr>
<tr>
<td>Length of Occupation</td>
</tr>
<tr>
<td>Orientation of Axial / Central Feature</td>
</tr>
<tr>
<td>Axial Feature Alignment</td>
</tr>
<tr>
<td>Upright Border Stones (Axial Features only)</td>
</tr>
<tr>
<td>Interior Pavement (Axial Features only)</td>
</tr>
<tr>
<td>End or Terminus Stone(s) (Axial features only)</td>
</tr>
<tr>
<td>Presence / Absence of Heat / Light Sources (Axial Features only)</td>
</tr>
</tbody>
</table>

Figure 10.1 Architectural attributes (and associated elements) used in analysis.

10.2.1 The Architectural Attributes
Figure 10.1 lists the attributes used to evaluate the 52 Late Dorset dwellings as part of the macro-
scale analysis of domestic architecture. Considering that central and axial features tend to be more
complex, they are further subdivided into six elements in order to better identify where in the
process of creation these features conformed to or strayed from the ‘standard’ form generally
agreed upon by researchers (see Chapter 6.3.2). During discussion of each of these components,
stages where preferences appear to have been expressed are identified, as are occasions where
more unusual or atypical decisions were made. The importance of these traditions for increasing
our understanding of architecture is discussed in Section 10.5.

**Dwelling Floor Type**

Once a particular location had been selected for occupancy, the first decision faced by Late Dorset builders concerned the type of floor to be used. Two options were available: a surface structure necessitating little or no modification of the natural ground surface; or a semi-subterranean floor which required digging into the substrate to a satisfactory depth. Obviously a surface floor would require the least amount of time and energy investment; progressively more would be needed to create semi-subterranean floors of increased depth.

Surface dwellings are often equated with both short-term (whether real or anticipated) and warm season occupations, situations where there is generally less concern with formal site structure and overall thermal efficiency (see Kent 1991, 1992; Chapter 2.2.5). Surface dwellings are usually recognised as areas from which stones were removed or beach gravel levelled to create a cleared zone approximating the structure’s interior size and shape; these structures may be further defined by perimeter markers, usually hold-down stones, piled sods, or a gravel berm. In cases where such markers are absent or otherwise unrecognisable, the size and shape of a dwelling can be approximated using other data (e.g. artefact or vegetation concentrations), although this is not always possible (see discussions in Savelle [1984] and Milne [2003b]).

Dwellings with sunken floors were created by removing vegetation and underlying soils and stones to create a flat-bottomed pit which became the interior living floor. Total depth of excavation varied and would be limited by a number of physical factors including height of permafrost (which constrains the rate of excavation beyond a certain depth) and the presence of bedrock beneath ground surface. The effort and time investment required to create a semi-subterranean floor would vary based upon the aforementioned local conditions, as well as the depth and size of the required dwelling footprint. Archaeologists typically equate semi-subterranean dwellings with longer-term occupations and / or those occurring in colder periods (Chapter 2.2.5). No special-purpose digging equipment suitable for excavating semi-subterranean floors, such as the mattock heads known from the Thule Inuit period, has been identified at Late Dorset sites although presumably hand tools of some form were used.
Fifty-one of the dwellings described in Chapter 6 include information on floor type (Figure 10.2a). Of those, 28 (or 54.9%) were semi-subterranean (8 were described as very minimally so), whereas 23 (45.1%) were recorded as surface features. There was no clear preference for one floor type over the other and it is probable that the selection of a surface or semi-subterranean floor was a pragmatic decision related to season of use and anticipated length of occupation. In order to explore if a relationship existed between floor type and season of use, I subdivided the surface and pit features according to identified season(s) of use, although 19 dwellings for which no season of occupation was reported were necessarily excluded (Figure 10.2b). Analysis of the remaining 33 dwellings indicated that the time of year was a determining factor in the selection of surface or sunken living floors as all structures identified as cold season (including cold season, year-round, and summer through winter periods) employed a semi-subterranean floor, although pit dwellings were also employed in non-cold season periods. McGhee (1996:206) for example,
describes warm season tents as being excavated 10 cm – 20 cm into the ground. However, while the floor type associated with warm season dwellings is more variable than is the case for those used in colder seasons, the overwhelming majority of warm season occupations occurred in surface features (Figure 10.2b). Transitional season occupations did not have a clear association with surface or semi-subterranean dwelling forms.

**Floor Preparation**

Living floors were sometimes further elaborated using supplementary construction steps. One such embellishment was the use of vegetation (usually mosses and willows) as floor padding inside dwellings (e.g. McGhee 1981a:50; Grønnow 1999). However, the identification of organic mattresses is only possible where preservation conditions allowed those materials to remain recognisable (e.g. in close proximity to or under near-permanent snow banks on Dundas Island, refer to Chapter 6.5). Because identification can be documented only in cases of exceptional organic preservation and does not necessarily reflect the scope of this behavioural step, the use of
organic padding will not be considered further in this chapter, although instances were noted on a case by case basis in Chapter 6 and in Table 6.2. Similarly, while the use of skin floor linings is inferred in several Palaeoeskimo dwellings, the lack of in situ examples and the potential impact of preservation conditions on their identification mean that floor liners will not be further dealt with.

Differential preservation of inorganic materials is much less of an issue (aside from the potential removal of materials for recycling) and represents a more impartial and useful attribute. Reviewing the descriptions published for the 52 Late Dorset dwellings (Chapter 6), it seems that additional elaboration of living floors, whether surface or semi-subterranean, was not a common design activity (Figure 10.3). The most frequently occurring step was to bring small and medium-sized flat stones into a structure to create paved areas, although this procedure appears not to have been viewed as widely necessary by Late Dorset builders. In fact, only three of 52 structures had floors with significantly paved areas; although small paved areas did occur in some dwellings, typically near an entrance or associated with an axial or central feature (Figure 10.3).

![Figure 10.3](image)

**Figure 10.3** Identified floor treatment.
Floor preparation might also involve the careful clearing of angular stones and other offending materials from portions of a structure; these areas were sometimes also intentionally levelled and are typically identified by excavators as sleeping areas. Only 18 of the 52 dwellings presented in Chapter 6 had such zones: 13 were formed by clearing / levelling and two were created by importing gravel to create slightly raised mattress pads (details of the remaining three were not specified). No distinct sleeping zones were recognised in the other 34 Late Dorset structures, implying either special steps were not taken to create such areas, or that sleeping areas were present but cannot be recognised. The relatively small amount of useable space inside a typical Late Dorset dwelling (see discussion below on dwelling size) implies that interior space was at a premium and full-time sleep-dedicated places may not have been practical. Instead, as amongst the Nunamiut (see Binford 1983:163), sleeping areas were probably used throughout the day for a range of actions other than sleeping, a scenario which resulted in a mixed assemblage difficult to distinguish archaeologically. Janes (1983:60) reports a similar situation amongst the Dene where dwellings contained “generalized activity centers rather than clusters of spatially distinct and mutually exclusive activity areas”. If Late Dorset use of space is akin to these historic cases, it seems unlikely that the use of dedicated and recognisable single-purpose sleeping areas was a widespread phenomenon (number and placement of identified sleeping areas is discussed below).

Sleeping Areas
In cases where defined sleeping areas were recognised, they were always located on a structure’s lateral margin (Figure 10.4). This is consistent with earlier Palæoeskimo square and rectangular dwellings where rear sleeping platforms were very rare (refer to Appendix A). Only Meldgaard (1960b:589) has reported rear sleeping platforms or benches from Late Dorset based on his work at the Alarnerk site (NhHd-1) in Foxe Basin. Meldgaard considered those structures to be noteworthy for their cold-trap entrances, long and narrow footprints, separate alcoves for storage and fires, and rear raised benches. As these architectural traits were all thought to have been exclusively Thule Inuit traits (although refer to Chapter 6.3.5), Meldgaard explained their use in supposed Dorset contexts as an indication of Thule contact with and influence on remnant Late Dorset populations. However, Savelle et al. (forthcoming), based on work at the nearby Kapuivik
site (NjHa-1), have suggested that such structures are actually Thule *qarmat*. Their findings indicate researchers should be critical of the idea that Thule-influenced Late Dorset groups used rear sleeping areas, at least until the Alarnerk dwellings are fully described and photographs or plans published (the Alarnerk features were excluded from Chapter 6 given their poorly reported nature).

![Figure 10.4 Number of identified sleeping areas.](image)

Discounting the Alarnerk structures, recognised sleeping areas typically occur in pairs whereas single lateral loci are more rarely found (Figure 10.4). If the Thule and historic Inuit pattern of a single family per sleeping area (*e.g.* Steensby 1910; Taylor 1974; Damas 1969; Kaplan 1983) was also a valid arrangement for Dorset, then it seems probable that structures with two sleeping zones housed two families while dwellings with a solitary sleeping locus were single family structures. The question of single versus multi-family dwellings is revisited as part of the discussions of dwelling size and use of multiple heat / light sources below.
Floor Shape and Inferred Superstructure
Unlike their Early Palaeoeskimo forbearers who favoured dwelling footprints that were circular, oval, or bilobate (refer to Appendix A), Dorset builders preferred floors with a square or rectangular shape, although other forms were also employed (Figure 10.5a). Speaking in general terms, the switch from round to quadrangle dwellings has long been tied to increased sedentism as groups reduced their mobility and became more settled (e.g. Whitling and Ayres 1968; Flannery 1972; Rapoport 1980; Rafferty 1985; Saidel 1993; Lyons 1996). Researchers (e.g. Dawson 2001, 2002; LeMoine 2003) have also noted that a dwelling’s shape directly influences the spatial organisation of interior activities and affects social interactions by facilitating or restricting contact between individuals located in different areas of the dwelling.

![Figure 10.5a](image)

**Figure 10.5a** Dwelling floor shape.

As was noted in Chapter 5.3.3, Late Dorset in many parts of the Eastern Arctic seem far less mobile than their predecessors, becoming seasonally sedentary at some locations and possibly year-round residents at a limited number of sites where they exploited a much broader range of
resources than earlier groups. Figure 10.5a shows the variety of floor shapes identified during the Late Dorset era and it is apparent that a preference for square and rectangular footprints existed, although rectilinear and rounded dwellings were used almost equally during the warmer months (Figure 10.5b). This contrasts with the historic Inuit, whose high summer mobility resulted in the almost exclusive use of lower-cost circular dwellings (McCartney 1977:132). It may be that the frequent use of higher-cost dwellings throughout the year by Late Dorset is an indication that at least some groups were practising higher structural sedentism enabled by a broadening of the diet and economy (see Chapter 5.3.3).

![Dwelling floor shape and season of occupation.](image)

**Figure 10.5b** Dwelling floor shape and season of occupation.

Round and rectangular floor plans have several functional weaknesses and advantages over the other. Key amongst them is the relationship between building and maintenance costs, as synthesised by McGuire and Schiffer (1983). As those authors note, rectilinear dwellings, which are often domed, require a higher initial investment of labour, time, and materials but necessitate
far less upkeep / maintenance over their use-life than less expensive conical (tepee-type)
structures which are also easier to roof (see Whitling and Ayres 1968:124; Rapoport 1969a:25;
Swanson 1981: vii – viii). On the other hand, domed dwellings have increased wind-resistance
(Keiser 1978:21; McGuire and Schiffer 1983:284) and are more easily and economically heated
thanks to better air circulation against the domed roof (Evans 1980:50; Odgaard 2003). Square or
rectangular floored structures can also be efficiently subdivided (Whitling and Ayres 1969:122)
and that space more fully used because, in comparison to the sharply sloping walls of conical
dwellings, a dome’s less acute arch reduces the amount of space lost near the margins due to
diminished headroom (Kahn 1978:200-201).

It is impossible to determine the angle of the roofs used in Late Dorset dwellings in the
absence of direct evidence (e.g. preserved post moulds, which are very rarely identified in arctic
Dorset settings). In a treeless environment it can only be assumed that Dorset used a variety of
materials as roof supports (refer to Chapter 3.3) in the same manner as did the later Neoeskimos,
who can serve as a useful analogy in that the latter had similar dwelling requirements and faced
many of the same environmental constraints and allowances. As summarised by Thøvald Faegre
(1979:125-135), the historic Inuit used three main tent types (ridge, conical, and domed), with the
final form of each determined largely by the number of poles available for construction.

According to Faegre, the ridge tent required the smallest number of tent poles (as few as
three) and was formed by setting the main ridge pole at an angle with one end resting on the
ground at the dwelling’s rear and the other sloping upward above the entrance. Secondary poles
were laid out laterally from the main support. Of note, the supporting stones (or similar) used to
anchor the covering skirt to the ground formed a D-shape with the curved line positioned at the
rear of the dwelling. Although the walls of the resultant dwelling were quite sloped and an adult
could only stand near the centre, the minimalist construction technique would have clear
advantages for households practising a high degree of mobility. The conical tent, secured by a
circle of hold-down stones, required more and longer poles than the ridge form, as well as a larger
number of covering skins. Faegre describes these tents as having their skirts rolled outward so
that the anchors were on the outside of the structure, although Dekin (1976) suggests the skirt
and hold-down stones of a Palaeoeskimo dwelling he excavated were located inside the structure.
The domed tent, associated with square, rectangular, or elongated oval floor plans, clearly represented a high cost building strategy (McGuire and Schiffer 1983) as it called for the largest number of poles and skins, but resulted in a sturdy structure that minimised heat loss because its surface to volume ratio was the lowest (Strub 1996:99-100). In contrast to the other types, Faegre notes that only domes were used in the cold season and were often covered with two layers of skins, with willow branches filling the intervening space for added insulation (e.g. Boas 1888:578).

While a similar dwelling typology cannot be reconstructed for Late Dorset given the lack of direct evidence for roof form, it is possible to make inferences regarding the superstructure using what has survived archaeologically: the floor-plan. As detailed in Chapter 6 and shown in Figure 10.5a, Late Dorset dwellings fall into three broad shapes: D-shaped, oval / circular, and square / rectangular. These perimeter outlines agree with those associated with Faegre’s tent types, where each kind of tent was associated with a distinct footprint. Thus, the three D-shaped Late Dorset structures (Figure 10.5b) may represent lightly-roofed dwellings, similar to Inuit ridge tents that were occupied for relatively short periods in the warm and transitional seasons (this by and large agrees with interpretations given by the excavators of those Dorset features). Late Dorset structures with round or oval footprints were probably similar to the Inuit conical tent (Mathiassen [1927b:128-129] was surprised that these tents were used by the Thule on wood-poor Southampton Island, although he does remark that the historic Sadlermiut had adopted a form requiring less wood), while rectangular dwellings would almost certainly have been covered with a domed superstructure. While the high number of Late Dorset structures not identified to season makes any link between floor shape and season spurious, it may prove significant that none of the circular structures has been associated with cold season usage whereas ten of the square / rectangular forms were occupied during the late fall and / or winter periods (refer to Figure 10.5b).

**Dwelling Size**

Interior dwelling sizes were only calculated where a clearly defined perimeter marker (hold-down stones, gravel / sod berm, semi-subterranean depression, etc.) was present. Thirty-six of the 52
dwellings discussed in Chapter 6 were so marked, and as shown in Figure 10.6, the range of sizes is relatively broad. Somewhat surprisingly, internal size does not seem to be associated with geographic location or season of use as both small and large structures were employed in similar areas and at similar seasons. As shown in Figure 10.6, 16 dwellings (44.45%) are less than 14.99 m², 17 (47.22%) fall between 15 m² and 29.99 m², while three large structures (8.34%), two of which are located in Labrador, are greater than 45 m².

![Figure 10.6 Interior dwelling size.](image)

Archaeologists have previously tried to link dwelling size with number of occupants (e.g. Hassan 1981) with mixed results that have not been universally embraced. While such links typically rely on analogy and assumptions regarding acceptable versus unacceptable amounts of space per person, interior size probably does correlate, to a degree, with the number of occupants residing in a structure. Ethnographic work amongst the Netsilik indicates that dwellings containing a single nuclear family (involving between four and six people) were common; as were multi-family structures housing extended and related groups (e.g. Damas 1968). Hassan (1981:73;
referencing Cook [1972]) reports that nuclear family dwellings containing up to six people should be expected to be about 14 m² in total area (allowing 2.32 m² / person), with each extra person requiring an additional 9.29 m² of interior space. Using this calculation as a guide suggests that the majority of reported Late Dorset dwellings, those falling between 10 m² and 25 m² (Figure 10.6), would have housed a single nuclear family, with a smaller number of larger dwellings possibly sheltering an extended family or multiple nuclear groups.

However, the identification of most Late Dorset structures as single family dwellings using Hassan’s size criteria is at odds with interpretations of Dorset household size based upon number of sleeping areas (see above) and heat / light sources located in midline features, discussed below. Given this apparent contradiction (and the problems inherent with assuming that a universal hunter-gatherer standard of appropriate personal space existed), Damkjar’s (2000:176, 2005:149) investigation of the relationship between the size of Late Dorset longhouses and the number of people associated with each is of great utility. Damkjar’s calculations attempted to specify how many individual families (he does not denote the size of these units) were connected with longhouse features by using the number of hearths present in neighbouring hearth rows as a guide. Working from the assumption that the number of hearths reflected the number of family units in the associated longhouse, Damkjar calculated that the average communal site (with a longhouse measuring between 14 m and 15 m in length and 4.5 m in interior width) sheltered 12 families, or approximately 50 people. Based on these numbers, he (2000:176) suggested each family group had approximately 7 m² to 8 m² of space inside the longhouse structure (or the area of a 3 m² – 3.3 m² circle).

Damkjar’s numbers are much smaller than the figures produced by Hassan and Cook but probably more accurately reflect living conditions amongst the Late Dorset if similar space allowances were made by Dorset architects for communal and domestic living conditions. Adopting these calculations, it seems probable that a number of the 20 Late Dorset dwellings greater than 15 m² were multi-family structures.

Isolated Internal Features
Presented in Figure 10.7 are the range and frequency of features identified inside Late Dorset
dwellings (sleeping areas and axial / central features are dealt with separately and are not included in this tally). Construction of dwelling ‘furniture’ that preserved archaeologically appears to have been a relatively rare occurrence, with most instances \((n = 12)\) involving heat / light sources. Of these, the most common architectural element was the unstructured hearth area (refer to Chapter 6.3.3) which sometimes co-occurred with axial / central features but was chiefly used when more formally-built features were absent (refer to Table 6.2).

**Figure 10.7** Occurrence of isolated internal features.

**Midline Feature Type**
The midline feature was brought into the Eastern Arctic with the first Palaeoeskimos at \textit{circa} 4500 B.P. and continued to be constructed throughout the Late Dorset period. Of the 52 Late Dorset dwellings listed in Table 6.2, only 14 lack any indications of a midline arrangement (Figure 10.8). Axial features, clearly laid out and demarcated by stones (whether slabs or cobbles), were much more commonly built than ephemeral central features, although it is possible that the latter are underrepresented because their less robust characteristics can make them harder to identify (see Chapter 6.3.2). Given that axial features, and central features to a lesser degree, were
relatively complex features, their elements are individually discussed below.

![Graph showing type of midline feature]

**Figure 10.8** - Type of midline feature.

**Orientation of Axial / Central Feature**
Thirty-eight dwellings contain evidence for axial or central features. The orientation of these features has only been reported in 55% of cases (n=21), usually because the excavator specifically described dwelling features according to an easily identified point on the landscape (usually a water-body / shoreline, but sometimes also a beach terrace), or an associated map or photograph allowed me to identify direction. As indicated in Figure 10.9, both central and axial features were most commonly laid out so that they ran perpendicular to the shoreline (n=16), whereas only five features (23.8%) were oriented parallel to the water's edge. There are no obviously apparent functional reasons for orienting midline features to the water, suggesting that the strong preference for 'pointing' such features at the shoreline was an intentional and perhaps ideologically important decision on the part of Late Dorset designers. Such a practice would be
consistent with the view put forth by some researchers (see Chapter 5.3.4) that midline features played a deeply symbolic role reflective of Dorset cosmology and/or belief systems.

Beyond their possible social significance, the manner in which the axial or central feature was aligned has to have affected the internal organisation and spatial structuring of dwellings. While evidence for entrances is not preserved in most structures (only seven were identified amongst 52 Late Dorset dwellings), those with recognised doors are almost universally situated so they faced the nearest water-body (only one dwelling from the entire Eastern Arctic Palaeoeskimo sequence, at a Saqqaq site in west Greenland, faces away from the water, see Appendix A). Speaking in general terms, there is a strong tendency amongst northern hunters and gatherers for placing doorways so they provided a good view of any nearby water (e.g. Tanner 1979:102-105). Given this situation, it seems highly probable that most or all Late Dorset dwellings had entrances, whether we can see them archaeologically or not, that faced the water. Extrapolating from this, a logical deduction is that if the front wall of Dorset dwellings was the one facing the water, and if most midline features also pointed in that direction, then axial and

![Graph showing orientation of midline features to water/shoreline.](image)

**Figure 10.9** Orientation of midline feature to water/shoreline.
central features had to have intersected the dwelling’s front wall at or near its midpoint (although the door is always to one side of the midline feature). This means that, unless the entrance opened directly onto the midline feature, one of the cleared areas lateral to the dwelling’s midline functioned as both a living space and a foyer.

If, as seems likely, multi-family dwellings were at least occasionally used by Late Dorset, and if each lateral space hosted a family, then one group’s living area was impacted by the door’s location. How the entrance was positioned in relation to the dwelling’s interior layout has potential to inform about social relations inside the structure considering many hunter-gatherer groups associate the area immediately next to the entrance with lower status individuals (Flannery 1953; Rapoport 1969a; Bourdieu 1973; Tanner 1979, 1991; Yates 1989). It might be that in Late Dorset society a junior member’s family (perhaps a son or younger brother) was relegated to the side of the dwelling where the entrance was located, while higher status or more senior people (e.g. fathers, elder brothers, or perhaps more successful hunters) occupied the part of the dwelling furthest from the door. However, such a supposition cannot be proven using architectural information alone and further data (e.g. spatial analyses of artefact distributions) are required to fully evaluate this possibility.

**Axial and Central Feature Alignment**

Axial and central features were, with the exception of symmetric round and square dwellings, laid out along either the long or short axis of a structure (i.e. they were not placed on a diagonal line). Alignment could therefore only be recognised when perimeter outlines were clearly visible. The requirement that a dwelling’s footprint be plainly identifiable resulted in the exclusion of 21 structures whose form could not be determined with certainty, leaving 17 midline features to be used in this analysis. Information is summarised in Figure 10.10.

As indicated by the figure, there seems to have been a slight preference for midline features (nine axial and one central feature) to be associated with the structure’s longer axis, forming two long and narrow lateral living spaces. In those 10 cases, six central / axial features were perpendicular to the shore, two were parallel to it, and two were not described (refer to Table 6.2 for particulars). In contrast, seven features (six axial and one central feature) were aligned along the short axis to create two relatively narrow but deep zones (the orientation of only
one midline feature was noted, it was perpendicular to the water). However, the large number of
dwelling features necessarily excluded from this study makes attempts to infer underlying
behavioural significance for the alignment of midline features inadvisable.

Figure 10.10 Midline feature alignment to dwelling axis.

Use of Border Stones (Axial Feature only)
Because no central features have been associated with border stones, only axial features are
considered in this section. More than half of the axial features described in Chapter 6 possessed a
double row of stones which helped define the lateral margins (Figure 10.11). The form of the
border stones selected varied in terms of type (e.g. cobbles or slabs exclusively, or a mix of the
two) and there are also differences in thickness, overall size, and height above any paving stones
inside the axial (refer to Table 6.2). However, whether any significance should be attached to the
choice of stones selected for construction (particularly in locations where multiple types were
available) could not be determined.
The use of stone rows makes sense from a functional point of view considering such dividers, as first noted by Knuth (1967), would serve to keep materials inside the axial feature from migrating into the living quarters while also ensuring that objects in the lateral areas (e.g. bedding) did not stray into the central workspace (a critical consideration given the fire sources often present there, see below). Utilisation of lateral rows is also consistent with a more esoteric, although fundamentally un-testable, interpretation put forth by Plumet (1989) and Odgaard (1998) that sees the axial feature as the dwelling’s symbolic spinal column, focussing and directing activities within the structure (also Chapter 5.3.9). A smaller number of axial features had only a single row of lateral stones (Figure 10.11), while bordering stones were completely absent from five features (such forms are sometimes referred to as axial pavements).

**Interior Pavement (Axial Feature only)**
As indicated in Figure 10.12, over 84% of the axial features included in this study were paved.
There is however a great deal of variation between axial features in terms of how carefully and fully those interiors were lined (refer to Table 6.2). At one end of the range were axial features whose interiors were completely overlain with carefully selected stones that were modified to ensure close fits and a level surface. At the other end of the spectrum are those features whose interiors were composed of non-contiguous stones which produced an interrupted and seemingly non-functional pavement. As an example of the former, LeMoine et al. (2003; also Chapter 6.5.11) reconstructed a well-preserved axial feature with a double row of stone uprights and a fully paved interior. They noted that the original architects had devoted considerable time and care to the construction of the arrangement, which resulted in a workspace that appeared highly functional; it is also likely that the care with which this feature was built was an intentional display on the part of the architects of their “technical know-how” (Dobres 1995a:40). But the same site also contained dwellings whose axial arrangements were invested with minimal effort with the

---

**Figure 10.12** Occurrence of paving stones inside axial features.
result that the interior pavement was irregular and uneven, producing a far less suitable work station. In such cases the axial feature may have been expediently created to fulfil spatial needs (i.e. to subdivide the dwelling) or other non-functional obligations (e.g. Plumet 1989).

End or Terminus Stone(s) (Axial Feature only)
In Chapter 6.8.2 I noted that the use of end or terminus stones to close off axial features is currently restricted geographically to the High Arctic and Greenland (n=8). As shown in Figure 10.13, only 25% of all axial features exhibit this added building step, and within that small group there are examples that are closed off at both or only one end. In cases where a single end stone was present there is no discernable pattern whereby the ‘front’ or the ‘rear’ of the feature was sealed. While their use and position seems meaningful, a ready explanation for why terminus stones were added to axial features is not evident, nor is it apparent what circumstances might have made the use of one, two, or no stones appropriate.

Figure 10.13 Occurrence of end / terminus stones in axial features.
Number of Heat and/or Light Sources (Axial Features only)

Definite evidence for the controlled use of fire was not reported amongst the six central features discussed in Chapter 6 and only axial features are included in this discussion. Fully 75% of axial features contained evidence for heat sources (n=24) and 19 of those had more than one locus (Figure 10.14). Pot supports are the most commonly used element when multiple fire sources were identified, where they were either matched with another lamp stand or combined with a different heat/light source. Informal hearth areas, recognised by deposits of ash, charcoal, and/or other burnt fuels, were employed in 25% of axial features where a fire source was identified. A variety of other heat/light sources were used less frequently (Figure 10.14).

As described in Chapter 6.3.4, lamp stands and platforms are locations where vessels burning comparatively clean burning sea mammal fat requiring minimal ventilation (see Dawson et al. 2007) were positioned. Slightly over half (n = 14) of the axial features containing a recognised heat/light source used oil-burning lamps exclusively (based on actual vessel remains, or secondary indications such as fat encrustations); a pyro-technology that Odgaard (2003) observed to be more efficient than indirect heating methods (e.g. cooking and heating stones). Of the remaining 10 axial features, four used a lamp stand or hearth in combination with an alternate heat/light source (either an informal hearth area or a fire pit). While it is unclear precisely what fuels may have been burned in the open hearths, six axial features contained only this form of heat/light (Figure 10.14) and their use does not appear to correlate with a particular time of year as they were identified in both cold and warm season structures (refer to Table 6.2).

It may be useful to return again to the historically recorded Inuit as an analogy for Late Dorset household organisation. Amongst the Inuit, each wife owned and was responsible for her own soapstone vessel with whose flame the family’s food was cooked, its clothes dried, and its dwelling lit and heated (e.g. Boas 1888; Jenness 1922; Balikci 1970). Archaeologists assume that the same held true for the prehistoric Thule Inuit and typically calculate the number of families represented in a dwelling based upon the number of lamps present so that one lamp represents one family, two lamps equals two families, and so forth (LeMoine 2003:128). This practice has been further extended into antiquity, whether implicitly or explicitly, where similar correlations are made for the Palaeoeskimo period (e.g. McGhee 1981; Plumet 1985; LeMoine 2003). Assuming
an Inuit analogy is appropriate for Late Dorset, it seems realistic to believe that the 19 Dorset dwellings containing axial features with two loci of heat / light can be linked with two family groups, and that two (or perhaps three) axial features with three fire sources may have been used by three cohabitating family units.

![Figure 10.14](image.png)

Figure 10.14 Occurrence of heat / light sources inside axial features.

At the same time, there is no clear relationship between the number of heat / light sources, the inferred number of occupants, and the overall size of a given dwelling. As noted in the previous discussion of dwelling size, calculations produced by Hassan (1981) were intended to create a generalised gauge of dwelling size for all hunter-gatherer populations, these suggest that most Late Dorset dwellings (including those with multiple heat and light sources) were single family homes. However, using Damkjar’s (2000) calculation of family space inside Late Dorset communal structures as a guide, it seems that a far greater number of dwellings potentially sheltered more than one family unit. It appears likely that the relatively small size of Late Dorset dwellings, when compared to those in more temperate climates referenced by Clark and Hassan, is actually a reflection of the extreme northern climate in which the Late Dorset were located. Under such conditions it should be expected that Late Dorset builders must have had to negotiate compromises between acceptable personal and work space and a need to minimise the fuel
required to heat dwellings, resulting in structures which were smaller and more thermally efficient than those in more moderate environments.

**Length of Occupation**

While duration of use is not an architectural element in the same sense as the above attributes, length of occupancy (both anticipated and real) would nonetheless have been a significant influence on Late Dorset architectural design, as it was for hunter-gatherers the world over (refer to Chapter 2.2.5), and must be considered.

![Figure 10.15](image)

**Figure 10.15** Identified occupation length for the Late Dorset dwellings.

However, it is difficult to fully appreciate the role played by anticipated residency in the creation of a Late Dorset dwelling when 22 of the 52 included in this study must be excluded because insufficient information was provided concerning their period of occupancy. Further complicating matters is the fact that there is no explicit definition of what constituted a ‘short’ occupation and what was considered to be a ‘long’ one. Occupations were often described in terms of seasons (or parts thereof) without any indication of whether the reader should consider
that season to be short or long. Conversely, occupations were sometimes described in terms of length without any indication of their season(s) of use. In an effort to introduce some standardisation, I examined all structures for which both length and season(s) of occupation were specifically noted as a means to more precisely mark out the occupancy period of the less precisely defined dwellings. As a result, I suggest that three broad periods of use can be defined: short, involving less than a single season; moderate, entailing one full season plus some part of another; and long, where occupation stretches through at least two full seasons. The dwellings were sub-divided using these criterion (see Table 6.2), and the results are shown in Figure 10.15.

Somewhat surprisingly, given the general interpretation of the Late Dorset period as a time of greater structural and site sedentism (Chapter 5.3.3), the majority of dwellings (60%) were short-term structures occupied for less than one full season. Slightly more than 23% of the structures were used over a moderate period of time, while less than 17% can be considered longer term using the definitions proposed above. It is likely that some of the moderate and long term dwellings were reused because it is often cheaper to refurbish, rather than build from scratch, with the result that occupations of these lengths may be under-represented because they can be more difficult to distinguish. Each of the five long-term structures had a rectilinear floor shape, while three of the dwellings correlated with moderate length occupations had this floor plan.

10.3 Recognising Late Dorset Architectural Traditions: technology at the macro-scale
The seven attributes and six elements examined in the preceding section were each the product of a sequential ordering of individual gestures which were implemented to meet at least one strategic goal, the creation of a dwelling capable of sheltering its inhabitants from the outside world. In all cases the use of these attributes necessitated the weighing of options before only one was selected, whether that choice involved picking the form an attribute might take (e.g. floor shape) or determining if it would be created at all (e.g. a midline feature). As previously noted by Dobres and Hoffman (1994), the selection of a given behaviour from a number of options will either perpetuate or alter a technological system. Such choices are typically guided by personal and group knowledge and reflect not only the physical environment in which the artefact was created and used, but also aspects of the society’s social structure including various inter-group
relationships and overall adaptive flexibility (see Lechtmann 1977, 1984).

Deconstructing the 52 dwellings according to their component parts in this manner is the most fruitful way of recognising how the Late Dorset technology of architecture was organised at a multi-regional level. By beginning at the macro-scale and using comparative observations, commonly practised strategies and decisions indicative of general technological traditions are immediately apparent, as are situations where alternate strategies were employed less intensively. Once this identification is complete, research can advance to understand the significance of the similarities and differences and investigate why they might be present.

10.3.1 Patterns of Behaviour and Technical Connaissance Knowledge
When looking for indications of technical traditions or tendencies it is most useful to compare the frequency with which the various attributes and elements identified previously were used (these are summarised in Tables 10.1 and 10.2). Patterns of design which commonly occur are interpreted as representing widely shared and / or agreed upon production steps, whereas construction practises used relatively rarely are viewed as less well known or generally applied. Throughout the comparative analysis which follows, architectural technology is upheld as an active and dynamic part of Late Dorset culture and a means through which social identities and relationships could be expressed.

The first attribute considered in the preceding section, dwelling floor type, clearly demonstrates that a habitual operational strategy existed which guided the selection of a surface or semi-subterranean floor design. That choice was undoubtedly influenced by local environmental conditions and season(s) of use, as it was for virtually all foraging societies including those who preceded the Late Dorset in the Eastern Arctic (see Appendix A and discussion in Chapter 3.2). The logic underlying the use of a sunken floor in a cold season dwelling is clear: such floors are better able to curtail drafts blowing between the skin covering and ground surface; sunken floors also benefit from the “heat sink” (Gilman 1987:542) created when heat energy trapped in the ground during the warm season is released into the dwelling as the cold season progresses (this is akin to the land–ocean dynamic, see Chapter 3.2.1). That Late Dorset architects were aware of the advantages of semi-subterranean floors cannot be doubted considering all known cold season
structures are semi-subterranean (Figures 10.2a and 10.2b), a strong indicator that this option was always selected when cold season structures were built.1

Interestingly, three shallow semi-subterranean structures, believed to have been used during the summer – early fall period (NiHf-45; see Table 6.2), have also been recognised. The occurrence of non-cold season sunken-floor dwellings suggests that a straightforward (and often implicit) associative dichotomy between cold season semi-subterranean habitations and warm season surface dwellings is an oversimplification. Considerations other than season of use (refer to Chapter 2.2.5) must have played a role in the selection of a particular floor type, however, the contextual information necessary to determine what those other factors may have been is not evident in the published materials and these additional influences remain unknown.

Examination of Late Dorset floor shapes has also proven to be potentially informative. As indicated in Table 10.1, there is an overwhelming tendency for Late Dorset dwellings to be square to rectangular in outline. Use of this shape amongst hunter-gatherers is, as noted previously, often associated with longer-term occupations and would seem to fit interpretations (see Chapter 5.3.3) of Late Dorset in many regions as seasonally sedentary foragers occupying sites for longer periods than their predecessors, who typically built dwellings with round, oval, or elliptical floor plans (Appendix A). Unfortunately, as noted in Section 10.2.1, descriptions of the Late Dorset dwellings used in this analysis generally do not contain information on the specific length of time each was thought to have been inhabited. Because of this, it is impossible to conclusively determine if mobility associated with particular rectilinear dwellings was reduced or, to phrase the problem slightly differently, to evaluate whether the use of rectangular / square structures (rather than round / elliptical ones) indicates individual occupations of longer duration. Speaking generally and using secondary lines of evidence including analogy with other hunter-gatherers, it does however seem likely that dwellings with more efficient rectilinear floor plans and sturdier but expensive roofs (Section 10.2.1) were built by people planning to live in them during the cold season (Gulf Hazard-1 House 1 and Longhouse; refer to Table 6.2) or for comparatively longer

1 The lack of cold season surface features may more accurately reflect low visibility and not a lack of use (also an issue in Neoeskimo research, see Chapter 6.3.7). The effect of archaeologically invisible building materials on seasonal interpretations is a further complication (i.e. surface structures on Dundas Island were first interpreted as warm dwellings [Chapter 6.5.5 – 6.5.8], but more recently described as cold occupations [McGhee 1996:206]).
<table>
<thead>
<tr>
<th>Architectural Attribute (n = total number of dwellings)</th>
<th>Number of Dwellings with Attribute</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Floor Type (n=51)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semi-subterranean</td>
<td>28</td>
<td>54.90%</td>
</tr>
<tr>
<td>Surface</td>
<td>23</td>
<td>45.10%</td>
</tr>
<tr>
<td><strong>Floor Preparation (n=52)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None identified</td>
<td>31</td>
<td>59.62%</td>
</tr>
<tr>
<td>Cleared lateral area (sleeping areas)</td>
<td>18</td>
<td>34.62%</td>
</tr>
<tr>
<td>Paving stones</td>
<td>3</td>
<td>5.77%</td>
</tr>
<tr>
<td><strong>Sleeping Areas (n=18)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Double</td>
<td>13</td>
<td>72.22%</td>
</tr>
<tr>
<td>Single</td>
<td>5</td>
<td>27.78%</td>
</tr>
<tr>
<td><strong>Floor Shape (n=39)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Square / rectangular</td>
<td>26</td>
<td>66.67%</td>
</tr>
<tr>
<td>Round / oval</td>
<td>10</td>
<td>25.64%</td>
</tr>
<tr>
<td>D-shaped</td>
<td>3</td>
<td>7.69%</td>
</tr>
<tr>
<td><strong>Dwelling Size (n=36)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 m² - 29.99 m²</td>
<td>8</td>
<td>22.22%</td>
</tr>
<tr>
<td>20 m² - 24.99 m²</td>
<td>6</td>
<td>16.67%</td>
</tr>
<tr>
<td>25 m² - 29.99 m²</td>
<td>3</td>
<td>8.33%</td>
</tr>
<tr>
<td>&lt; 14.99 m²</td>
<td>10</td>
<td>27.78%</td>
</tr>
<tr>
<td>&lt; 9.99 m²</td>
<td>6</td>
<td>16.67%</td>
</tr>
<tr>
<td>&gt; 30 m²</td>
<td>2</td>
<td>5.56%</td>
</tr>
<tr>
<td>&gt; 45 m² - 50 m²</td>
<td>5</td>
<td>8.33%</td>
</tr>
<tr>
<td>&gt; 55 m² - 60 m²</td>
<td>1</td>
<td>2.78%</td>
</tr>
<tr>
<td><strong>Isolated Internal Feature (n=21)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hearth area</td>
<td>6</td>
<td>28.57%</td>
</tr>
<tr>
<td>Lamp stand</td>
<td>3</td>
<td>14.29%</td>
</tr>
<tr>
<td>Cache</td>
<td>2</td>
<td>9.52%</td>
</tr>
<tr>
<td>Crib stones</td>
<td>2</td>
<td>9.52%</td>
</tr>
<tr>
<td>Slab hearth</td>
<td>2</td>
<td>9.52%</td>
</tr>
<tr>
<td>Storage pit</td>
<td>2</td>
<td>9.52%</td>
</tr>
<tr>
<td>Sod wall liner</td>
<td>2</td>
<td>9.52%</td>
</tr>
<tr>
<td>Lamp platform</td>
<td>1</td>
<td>4.76%</td>
</tr>
<tr>
<td>Box support</td>
<td>1</td>
<td>4.76%</td>
</tr>
<tr>
<td><strong>Midline Feature Type (n = 38)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Axial feature</td>
<td>32</td>
<td>84.21%</td>
</tr>
<tr>
<td>Central feature</td>
<td>6</td>
<td>15.79%</td>
</tr>
<tr>
<td><strong>Length of Occupation (n=30)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short (less than one season)</td>
<td>18</td>
<td>60%</td>
</tr>
<tr>
<td>Moderate (full season + part of another)</td>
<td>7</td>
<td>23.33%</td>
</tr>
<tr>
<td>Long (multi-season / year-round)</td>
<td>5</td>
<td>16.67%</td>
</tr>
</tbody>
</table>

Table 10.1 Occurrence of architectural attributes in the Late Dorset dwellings used in analysis.
periods of time.

There are also indications that the use of multi-family dwellings, for which we have some evidence amongst earlier populations (Appendix A), was a widespread phenomenon in Late Dorset. Earlier in this analysis I noted that dwelling size and shape, the presence of dual cleared zones (or sleeping areas), and the occurrence of multiple heat and light sources inside axial features indicate that a majority of dwellings were home to two (or possibly more) family units. The co-occurrence of some or all of these often inter-linked architectural attributes and elements indicates the choice to cohabitate was a decision that was reached prior to the beginning of construction (especially when one considers it would be difficult to alter some of a dwelling’s features once the structure was erected).

Examination of internal features identified in the habitation structures signals the presence of further technological traditions, although variability in form indicates that considerable leeway existed in terms of how some of the attributes and elements were used and combined. Midline features typify both the apparent inflexibility and fluidity of Late Dorset architectural technology. Perhaps the most inviolate rule that can be identified in Late Dorset architecture was that axial and central features were always placed in the centre of the dwelling to create two essentially equal lateral zones (although, as observed earlier, positioning of an entrance in one of these ‘equal’ zones suggests status differences in the use and organisation of these two spaces may be identifiable). Amongst other probable benefits associated with locating midline features centrally was ease of access to the feature and its contents as occupants in both lateral zones could use the feature in an unimpeded manner (refer also to LeMoine 2003). Central positioning of midline features is a clear holdover from earlier periods (Appendix A) and would seem to represent a ‘rule’ from which little or no deviation was acceptable. Apparently equally clear was a tenet that these features were laid along either the long or short axis of the dwelling and not on a diagonal line. In no case was a midline feature laid in a line which was not 90° to the perimeter walls (features might diverge slightly, but in all cases this was minimal and probably inadvertent). Again this is also true of earlier Palaeoeskimo dwellings (Appendix A).

There is also a clear tendency to orient midline features so they were perpendicular to a major water source, whether freshwater or marine. As indicated in Table 10.2, 76% of midline
features whose orientation was identifiable were pointed to the water, a frequency which indicates the landscape played an important role in the design and layout of many dwellings. Less strongly expressed was a preference for midline features to follow the longer axis of asymmetrically-floored structures (almost 59% were so positioned). However, this attribute was often not noted when dwelling features were described (the alignment of more than half of the midline features in unknown), limiting the interpretative value of this trait. Late Dorset architects also appear to have favoured axial features with a dual row of upright bordering stones (refer to Table 10.2), rather than only a single row or none at all. As previously observed (Section 10.2.1), both functional and symbolic interpretations can be tied to this element.

From a more clearly functional perspective, the addition of a number of architectural elements to many axial features testifies to their important role as the central workspace of the home. Many artefacts are usually found in the immediate vicinity of midline features (refer to Chapter 6.3.2), no doubt due in part to the fact that most activities requiring visual acuity had to take place near the lamps located inside 75% of axial features (see Dawson et al. [2007] for a similar interpretation of the importance of the lamp stand amongst the Thule Inuit). Further suggesting axial features functioned as the dwelling’s focal point is that fact that almost 90% of such features are fully or predominantly paved (a further 6.9% are intermittently flagged, see Table 10.2), creating a stable and flat surface upon which a variety of activities could occur. In combination with these other elements, the focal position of the axial feature, particularly in features containing more than one light / heat source and which were thus probably multiple family dwellings, must have been great. It is unclear if the role played by the less formally constructed central feature, lacking fire sources and other structural elements, was decreased in comparison.

A final trait shared by most Late Dorset dwellings, as well as their communal longhouse cousins, is that total structural widths (measured from the interior) do not exceed 6 m. Schledermann (1990:205-206; also Damkjar 2000:172, 2005:148) first noted this amongst the longhouses he investigated on Ellesmere Island and suggested that dimensions did not surpass this measure because architects were constrained by the roofing materials available to them.
### Table 10.2  Occurrence of architectural elements in midline features.

<table>
<thead>
<tr>
<th>Midline Feature Element</th>
<th>(n)</th>
<th>Number of Features with Element</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Orientation of Midline Feature</strong> (n=21)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perpendicular to water</td>
<td>16</td>
<td></td>
<td>76.19%</td>
</tr>
<tr>
<td>Parallel to water</td>
<td>5</td>
<td></td>
<td>23.81%</td>
</tr>
<tr>
<td><strong>Midline Feature Alignment</strong> (n=17)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dwelling long axis</td>
<td>10</td>
<td></td>
<td>58.82%</td>
</tr>
<tr>
<td>Dwelling short axis</td>
<td>7</td>
<td></td>
<td>41.18%</td>
</tr>
<tr>
<td><strong>Border Stones</strong> (Axial Feature only) (n=26)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Double row</td>
<td>17</td>
<td></td>
<td>65.38%</td>
</tr>
<tr>
<td>No rows</td>
<td>5</td>
<td></td>
<td>19.23%</td>
</tr>
<tr>
<td>Single row</td>
<td>4</td>
<td></td>
<td>15.39%</td>
</tr>
<tr>
<td><strong>Interior Pavement</strong> (Axial Feature only) (n=29)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>26</td>
<td></td>
<td>89.66%</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
<td></td>
<td>6.90%</td>
</tr>
<tr>
<td>Intermittent</td>
<td>1</td>
<td></td>
<td>3.45%</td>
</tr>
<tr>
<td><strong>End / Terminus Stones</strong> (Axial Feature only) (n=8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One end</td>
<td>6</td>
<td></td>
<td>75%</td>
</tr>
<tr>
<td>Both ends</td>
<td>2</td>
<td></td>
<td>25%</td>
</tr>
<tr>
<td><strong>Number of Heat / Light Sources</strong> (Axial Feature only) (n=32)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 sources</td>
<td>Empty / None Identified</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>1 source</td>
<td>1 hearth area</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 lamp stand</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lamp stand (+ boiling container)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2 sources</td>
<td>2 lamp stands</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lamp stand + platform</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lamp stand + hearth area</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 hearth areas</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lamp platform + hearth area</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>3 sources</td>
<td>3 lamp stands</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lamp stand + hearth + fire pit</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 hearth areas</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2 or 3 sources</td>
<td>2 or 3 hearth areas</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
As indicated in Table 6.2, most Late Dorset domestic structures range between 4 m and 6 m in total width and very rarely exceed that upper measure, indicating that whatever constraint operated to restrict the size of communal structures was also in operation for the domestic dwellings. Whether limited by building materials or some other consideration, it seems clear that Late Dorset craftspeople were unable or unwilling to surpass this standard breadth.

Other aspects of Late Dorset architecture occur far less frequently, either because they did not preserve as readily, or because the actions were practised far less often (refer to Tables 10.1 and 10.2). Such activities included the augmentation of living floors and the creation of internal furniture distinct from the midline features. Whether these less commonly used architectural choices represent failed attempts to modify existing building practises or suggest the existence of discrete regional or temporal traditions which have not yet been isolated is uncertain.

10.3.2 Organisation of Late Dorset Domestic Architecture: a macro-scale view
If patterned or recurrent actions can be taken as an indication of widely-held technological strategies, the most persistent pattern of behaviour evident in Late Dorset domestic architecture is that there was no one chaîne opératoire guiding the construction of a dwelling. Instead, it seems clear from the variability with which architectural attributes and elements were created that a range of actions and techniques were employed as particular architectural features were or were not incorporated into a dwelling structure. Attributing a flexible technological strategy to Late Dorset domestic architecture accounts for much of the variability evident archaeologically, for while widely occurring patterns of actions (refer to Tables 10.1 and 10.2) suggest that some basic architectural norms were present; it is clear that alternative decisions were often made.

The variability in form and design further implies, at least where domestic architecture was concerned, that Late Dorset technology could be fairly open and malleable as architect-builders adapted and adopted widely held connaissance knowledge in ways that suited their specific goals and desires (savoir-faire). The choice to include or exclude certain steps when manufacturing a structure would certainly be affected by considerations including length of anticipated occupation, season(s) of use, and number of occupants to be sheltered, amongst others. This further suggests a responsive technological system where adjustable chaînes opératoires created the range of
dwelling forms identified and analysed in the previous sections. This stands in marked contrast with other forms of Late Dorset technology, where production appears to have been much more constrained in terms of manufacturing steps and form of final product (e.g. McGhee 1996:136-145). The rationale underlying this apparent divergence may relate to simple practicality: in matters of dwelling function and efficiency, which directly influences the household’s survival, architectural technology was structured so that its practitioners were not proscribed from using various combinations of attributes and elements in order to increase that structure’s overall performance.

The following section examines three well-recorded and contextualised Late Dorset structures, previously presented in Chapters 7 – 9 as case studies, in light of the conclusions reached based on the broader scale analysis. Adopting a micro-scale approach at this stage helps to illuminate the reasons, primarily linked to the differential application of both general connaissance and particular savoir-faire knowledge, for why at least some of the variability and continuity of form evident in Late Dorset domestic architecture may have been present.

10.4 Investigating Architectural Technology Using a Micro-Scale Approach
The case studies represent detailed micro-scale reconstructions of the events and conditions which may have influenced the design and form of each dwelling. By considering the three structures within the context of their local cultural and environmental settings, the rationale behind the choices made by the individual builder(s) can be framed within each dwelling’s individual social and physical world. Approaching interpretation of the structures in this manner enables Late Dorset architects to be introduced directly into the interpretation as vibrant agents who operated within dynamic worlds and responded to known and novel situations by making choices based upon both their general (connaissance) and specific (savoir-faire) knowledge and abilities. By paying attention to the micro-scale, the potential significance and repercussions of such decisions, both for the overall technological system and for our understanding of it, are not as easily overlooked.

10.4.1 Insights from House 6, Bell Site, Victoria Island
As detailed in Chapter 7.6.3, House 6 was interpreted as a shallow semi-subterranean dwelling
that was built during the late summer / early fall period, coincident with the region’s caribou and char migrations, and occupied into some unknown portion of the ensuing cold season. Several of the architectural attributes discussed in Chapter 7.5 (i.e. the asymmetrically placed entrance, the relatively shallow floor, and the lack of interior elaboration) indicate that a relatively lower-cost construction strategy, a tactic often associated with reduced occupancy (see Chapter 2.2.5), was chosen by the builders. Based on the architectural remains (Chapter 7.5), I argued that House 6 likely represents a ‘between-seasons’ qarmat-type structure of the sort used by the historic Inuit (Ryan 2003b). This interpretation was supported both by the fall-dominated faunal material associated with the dwelling (Chapter 7.6.1) and by an artefact assemblage in which worked antler, presumably obtained during the fall hunt, was the most common category (Chapter 7.6.2). Further evidence for fall occupancy comes from the high percentage of needles and microblades, the second and third most common tool classes (see Table 7.2), which are often associated with the production of skin clothing (many Inuit groups sewed clothing at fall land-based camps prior to moving onto the sea ice as this is the best season to sew skin clothing [Jenness 1922:142]).

The architectural traits identified in House 6 reflect many of the technological trends identified earlier in this chapter as part of the larger Late Dorset technology of domestic architecture. House 6 adheres to what seem to be standard Late Dorset design strategies in orienting the front of the structure to the water (in this case, Ferguson Lake), by using a rectangular floor plan, and in having little internal architectural elaboration (i.e. lacking floor paving or other interior features). Although shallow (no more than 20 cm deep), the structure’s floor was also semi-subterranean, an attribute consistent with the Late Dorset habit of building sunken floors in cool and cold season dwellings. Further, the internal area of House 6 (25.88 m²) falls within the most commonly reported size range of 15 m² – 29.99 m² (Table 10.1) for domestic dwellings. The structure’s internal width is less than 6 m, a measure very rarely exceeded in domestic and communal features (Section 10.3.1).

House 6 also follows what I consider to be a hallmark of Late Dorset domestic architectural technology in that the dwelling was probably a multi-family structure. Whereas multiple family dwellings were infrequently used in earlier periods (refer to Appendix A), previously in this chapter (Section 10.3.1) I used several architectural attributes and elements (e.g.
the presence of multiple heat/light sources, dual sleeping areas, and overall dwelling size) to suggest multi-family structures were much more commonly designed and built by the Late Dorset. While many of the architectural clues used to suggest shared living space could not be identified in any form inside House 6 (see Chapter 7.5), the sheer size of the dwelling (25.88 m²) makes it likely that the structure was designed to house at least two families. The probability that House 6 was occupied by two or more families gains support when one considers that Damkjar (2000:176) calculated families within communal structures had between 7 m² and 8 m² of space.

From an economic perspective, joining two (or more) families inside House 6 would have created a household in which the costs of dwelling construction and maintenance (including fuel) could be shared and where the labour of its occupants could be combined more effectively. Although this cannot be absolutely determined; it is likely, considering that the economy of the House 6 occupants was based largely on caribou (Friesen 2002:341; Howse 2005, 2008), that at least some of the *inuksuit* drive systems located on the north side of the river (Brink 2005) were utilised by those living at the Bell site. Use of this hunting strategy may have had significant socio-economic repercussions considering caribou drive systems can only be successfully operated (and the proceeds processed with less waste) if the efforts of many individuals are combined. The necessarily communal nature of this hunt distinguishes it from the char fishery, which can be cooperative but could also be effectively conducted by a single fisher and their partner-processor (*e.g.* Friesen 2002:340). The decision to amalgamate two (or more) families into caribou-focussed House 6 as a single larger household may therefore have been at least partially a result of the occupants’ economic pursuit, which necessitated higher levels of cooperation and labour sharing than could be provided by a smaller single family unit (Damas [1969:51, 1984:400] similarly suggested this was one of the primary reasons why Inuit congregated on the winter sea ice). The close proximity of House 6 to another apparent Late Dorset semi-subterranean structure of comparable size (House 7) further implies, if the two are contemporaneous, that site occupants knew the advantages of joining into larger cooperative groups at some points in their seasonal round.

However, while House 6 fits generally within the macro-scale framework of Late Dorset architectural behaviour highlighted previously, it also diverges from more widely practised
technical activities. Potentially the most significant departure involves the absence of an axial or central feature inside House 6. While it is possible that a midline feature was built but was later obfuscated, either through time or by previous archaeological work on the dwelling (refer to Chapter 7.5.6), this seems unlikely. Signs of this kind of feature were not located in 2002 and no mention of a formally designed and constructed axial feature was noted in 1988 (refer to Taylor et al. n.d.); despite the fact that such architectural elements always attract the archaeologist’s attention. In fact, Helmer (in Taylor et al. n.d.) specifically remarked on the lack of formal architectural attributes associated with the dwelling. Although central features can be less apparent and therefore more easily overlooked when compared to axial arrangements, it seems unlikely that those involved in the 1988 excavations (all having previous experience excavating Dorset sites) completely failed to detect a midline feature of any sort, implying that there was not one there to be noted.

The absence of a midline feature (and its resultant lateral lobes) is, as indicated in Figure 10.8, unusual amongst Late Dorset habitations. The majority of previously reported dwellings lacking axial or central features seem to have been shorter term structures where, for reasons of mobility, such architectural constructions were presumably deemed unnecessary (or were so lightly built that no trace preserved). However, while House 6 was not occupied for an extended period, it was used for a sufficiently long time that decisions regarding the inclusion of various architectural embellishments should not have been based solely on the dwelling’s anticipated length of occupation. The presence of other architectural investments in House 6, including a sunken floor, rear alcove expansion, and shallow cold trap entrance, imply that occupation of at least moderate duration was planned from the start. It remains unclear why the builder-occupants of House 6 chose not to construct a midline feature when such arrangements were so widely employed by many Late Dorset groups and their predecessors.

Another architectural anomaly recognised in House 6 was the creation of a small alcove in the rear wall of the dwelling (Figure 7.7), suggested to have functioned as a food preparation or kitchen area (Chapter 7.5.10). Assuming that Late Dorset women were responsible for cooking.

\[\text{Only one structure, from NiHf-45 in Foxe Basin, has a similar expansion (Chapter 6.4.2 and Figure 6.5). The function of this alcove was not given and it is unclear whether any significance should be attached to the fact that the dwelling}\]
and lamp care (as was the case amongst the Neoeskimos, see discussion in LeMoine [2003]), the location of a probable kitchen area in the rear of House 6 and adjoining an area invested with some degree of architectural elaboration (see Chapter 7.5.8 and 7.5.10) permits inferences concerning the position of women in the household to be suggested. As has been pointed out for several hunter-gatherer groups (see Tanner 1979:75-82; Yates 1989; Whitelaw 1994; Oetelaar 2000), the locations occupied by people in a dwelling are determined by considerations including age, sex, and social position, so that lower-ranked individuals typically find themselves in less desirable locations (e.g. nearer the entrance) while higher status persons are located in more advantageous or prestigious spots, typically located along the rear wall. Amongst arctic dwellers, who must deal with prolonged periods of winter dark and cold (refer to Chapter 3.2), position relative to the heat / light source was no doubt also significant as these features were focal points for social and work-related purposes (e.g. Dawson et al. 2007).

Presuming Late Dorset women tended the flame, it appears that those living in House 6 occupied and controlled perhaps the most desirable place in the dwelling. By building a rear kitchen area that was discretely different yet architecturally integrated into the overall dwelling, those who occupied that space and operated the flame – the resident women – could restrict (or at least monitor) who else accessed the area and its contents. Control of the fire and any associated kitchen equipment (including food) must have provided those individuals with a potent means of empowering themselves within their household (see Bodenhorn [1990:65] and Dawson [1995:78] for discussion in historic Inuit / Iñupiat society; contra Whitridge [1999b:118-119]).

Finally, House 6 possessed an entrance of a form that has not been reported elsewhere. As is apparent from Chapter 6, researchers have generally been quite unsuccessful in identifying clear signs of entryways in Late Dorset domestic dwellings as only seven other features have been confirmed (Table 6.2). In three instances the access point was indicated by a break in the perimeter wall, while in two cases each the entrances were marked either by a small extension (or ‘porch’) or by a vertical drop between the structure’s interior and exterior (interpreted as a cold-trap). All entryways were situated at the centre of the front wall and provided a view of the water.

At first glance, the fact that House 6 (and the other seven dwellings with doors) had

also lacked a midline feature and was interpreted as a caribou-focussed qarmat-like dwelling (Murray 1996:71).
clearly defined entrances seems remarkable enough. While entryways are an obvious functional requirement of any dwelling, it seems clear that the Late Dorset method for incorporating them into domestic structures involved techniques which typically did not leave traces archaeologically. In the case of House 6, however, Late Dorset architects chose to build a relatively elaborate entrance comprised of a 1.25 m long extension, partially defined by a row of small rocks (see Figure 7.7), with a base approximately 10 cm below the floor of the main living space forming a cold trap. The combination of these features distinguishes the House 6 entry from two dwellings with entries from Greenland (see Chapter 6.6.1) and Labrador (see Chapter 6.7.5) that were only sunken; as well as the ground-level extension entrances associated with structures at NiHF-45 (Chapter 6.4.2) and Avayalik Island-9 (Chapter 6.7.5). Based on published information, House 6 appears unique in pairing a ‘porch’ with a sunken cold-trap, suggesting that its designers were experimenting architecturally, perhaps refining an entrance form that was thermally efficient and worked to reduce air flow into the dwelling.

Finally, while the House 6 entrance conforms to Late Dorset practice by opening onto the water, it differs from custom in that it was asymmetrically situated to one side of the structure’s front wall (refer to Figure 7.7). This decision seemed quite odd until the ground in front of the dwelling was more closely examined (refer to Chapter 7.5.9), at which point a practical rationale for an apparently aberrant building step was made obvious. Located immediately in front of and adjacent to the structure’s front wall was a natural sterile hummock; in order to position the dwelling’s entrance symmetrically, builders would have had to dig through and remove much of this deposit. Considering the dwelling was not intended for long-term use, and further supposing that its occupants were quite engaged in exploiting (i.e. hunting and processing) the area’s localised caribou and char resources, they may have decided that added architectural investment was not warranted. Instead, the peculiarities of the structure’s immediate environment were accommodated in the dwelling’s design by diverging slightly from the norm.

In summary, analysis of House 6 indicates that Late Dorset near the western limits of their geographic range adhered to most facets of the larger technology of domestic architecture while modifying some aspects to suit their own purposes. Habitation density (at least 11 Late Dorset semi-subterranean dwellings), extent and depth of midden deposits, and proximity to the large
Cadfael aggregation area indicate that Bell was a favoured locale, probably a focal point, for groups throughout the region. However, determining precisely how House 6 fits within the larger site and regional picture is difficult to fully envision given that the structure remains the only domestic feature thoroughly investigated in the south-eastern Victoria Island area.

10.4.2 Insights from N72, Nunguvik, North Baffin Island
The dwelling designated as N72 was square-shaped (with rounded corners), semi-subterranean, and defined by a low broad perimeter sod wall (Figure 8.12). Three cultural strata were identified, although the oldest (Occupation 1) pre-dates construction of the dwelling and is not related to the feature (refer to Chapter 8.5.4.2 and 8.6.2.2). Occupation 3 encompasses the final recognised use of the structure and is the one directly associated with the architectural remains and the majority of cultural materials (see Table 8.3). An intervening Occupation 2 horizon probably represents an earlier use of the feature; although most traces seem to have been removed when the dwelling was renovated at the start of Occupation 3 (refer to Chapter 8.5.4.2 and 8.6.2.1).

Construction and refurbishment of N72 is suggested to have begun before the onset of the cold period, when permafrost was still low enough to allow the sunken floor to be created and modified, with the main period of residency occurring during the winter months. N72’s role as a cold season shelter was inferred based on its thick and thermally efficient sod walls, its semi-subterranean living surface (although sunken floors were used in other seasons, see Section 10.2.1), the presence of moderate amounts of soapstone vessel shatter, and its location and orientation within the larger site (refer to Chapter 8.6.3). The cultural deposits excavated in 2000 and 2001 were relatively shallow, confirming Mary-Rousselière’s (2002:44) earlier assessment that the dwelling had not been used for an extended period.

In terms of the technology used to create the dwelling, the Late Dorset occupants of N72 employed a number of strategies which were widely used throughout the period (Tables 10.1 and 10.2). These include the choice of a square floor (possibly associated with a domed roof), dwelling orientation to the shoreline, creation of a midline feature (a poorly-defined central feature which was probably also oriented to the water), an interior size slightly under 15 m², and construction of a sunken floor. As was the case amongst most reported Late Dorset domestic
dwellings (Table 10.1), that floor underwent minimal preparation and was simply cleared of offending stones and other debris before occupation began (a limited number of paving stones were present but were associated only with the central feature). At least one laterally-situated sleeping area appears to have been present in the southern or rear area of the dwelling’s interior, although whether a matching one (as was commonly the case in Late Dorset, see Table 10.1) existed in the structure’s northern area could not be determined due to earlier excavations (Chapter 8.5.2).

The architects who designed and built N72 appear to have deviated from the more widely practised Late Dorset tradition of domestic architecture only where the entrance was concerned. An entry was located prior to the start of excavation in the structure’s north-eastern corner where a slight 25 cm break in the perimeter berm was identified (Chapter 8.5.8, Figure 8.12). It was presumably wider when the structure was in use but narrowed as the sod walls deteriorated; it was not invested with any obvious building elaborations (i.e. it was not a cold-trap, nor was it defined by stones or flagstones). As observed earlier in this chapter (Section 10.2.1 and Table 10.1), access points have not typically been recognised in Late Dorset domestic structures (45 of 52 dwellings analysed summarised in Table 10.1 lack indications of an entry way), and the presence of one in any form in N72 is somewhat remarkable. Further distinguishing the entrance was its location in the dwelling. All known Late Dorset doors were positioned at or very near the centre of the front wall (see Section 10.2.1), however, the one incorporated into N72, while providing the requisite water-view, was located in the north-eastern corner of the structure at the juncture of two walls (Figure 8.12).

This atypical placement seems to have been the result of two local considerations: a desire to have the door facing the shoreline (to the east), and a need to accommodate the prevailing southerly winds which dominate this area of northern Baffin Island (Chapter 8.4.1 and Table 8.1). Strub (1996:111) has discussed the effects of wind and snow on the performance of doors, noting that the position of the opening is critical to the structure’s overall performance. He remarks that doors positioned on a structure’s windward side permit chilling winds to enter whenever the access point is opened, while doors positioned on the leeward side can be frequently snowed-in as winds travelling over this area lose speed and drop much of their snow load. To avoid both
problems, he advocates the placement of entrances so that they receive a crosswind which more readily sweeps snow away from the door without blowing cold and snow-laden air into the dwelling as people enter and exit. This rationale appears to have underlain the choice to locate N72’s door at the juncture of two walls as this location provides a view of the shoreline and is neither on the lee where snow would accumulate, nor on the windward side where chilling wind incursions would be more frequent.

Concern for the effects of the prevailing wind on the dwelling’s performance probably also helps account for the difference in size between the wall berms ringing the structure. The leeward northern berm averaged about 75 cm in width, whereas the one located on the windward (southern) side was much more robust, measuring between 1.25 m and 1.5 m in width (Figure 8.12). This size disparity was not the result of differential preservation (the southern berm was a cohesive feature and not representative of a helter-skelter dismantling tied to abandonment) but denotes a real difference in the amount of material that was used in construction. In lieu of any other logical explanation, the most succinct explanation is that Dorset builders, knowing the dominant winds travelled up Navy Board Inlet from the south, built a heavier wall on the windward side where the greatest average wind loads would occur in order to both insure that the structure’s interior was insulated from cooling winds, and to anchor the covering skins and door flap more securely.

By examining each of the attributes present in this particular dwelling and then situating it within the broader realm of Late Dorset behaviour, it can be shown that N72 closely followed many of the architectural attributes which help to define a general Late Dorset technology of domestic architecture. In almost all respects the architects of N72 demonstrated building techniques which conformed to commonly practised (connaissance) methods while at the same deviating from those practises in a way which illustrates that these practitioners knew their landscape and how best to design dwellings to function in an optimal manner (savoir-faire knowledge). This again indicates that, where domestic architecture was concerned, Late Dorset practises and traditions were amenable to change while generally adhering to many core behavioural plans (see Section 10.5).
10.4.3 Insights from KdDq-7-4, Tanfield Valley, Southern Baffin Island
The dwelling feature identified at KdDq-7-4 is the most ephemeral of the three case studies used in this analysis. As described in Chapter 9.5, two broad occupational stages were identified at the locality based on stratigraphy: an earlier period which may have involved a possible semi-subterranean dwelling (Level 5); and an upper culture-bearing deposit (identified as Level 3) whose contents indicate multiple short-term occupations by people living in lightly-built surface shelters. Evidence relating to the more deeply buried feature was uncovered at the extreme margins of the excavation grid (see Figure 9.9) and additional work is required to evaluate if a dwelling is in fact present there. Given this situation, analysis is focussed on the upper deposit.

The uppermost cultural level contained a number of small and discontinuous sterile sand lenses interspersed through the black organic humus. These were interpreted as evidence for occupational hiatuses between periodic episodes of reuse (see Chapter 9.5.2) and indicated that many of the stones and other materials located in this level should not be expected to be in situ. In fact, the partial remains of only a single dwelling could be isolated in the deposits. This feature is represented by a half ring of hold-down stones indicative of a circular surface dwelling measuring approximately 1.5 m in diameter, or 1.77 m² (see Figure 9.11). A raised sandy deposit near the northern limit of the stone arc appears to have functioned as an amorphous hearth area (see discussion in Chapter 6.3.3). A small number of fat-encrusted stones and two soapstone vessel fragments were located on or adjacent to this sand and the associated matrix was rather crumbly and full of fat cinders, burnt and oil-soaked peat, and small bone fragments (Chapter 9.5 and 9.6). Two additional fire localities were also identified (Figure 9.6): one consisting of a fire-reddened stone; and the other composed of a slightly raised blubber-soaked consolidation upon which a number of pieces of a thin-walled round / oblong soapstone vessel were located. Both were located outside of the dwelling perimeter and their relationship to it is unclear.

With regards to the single habitation feature, its configuration is probably what M.S. Maxwell (1985:153) had in mind when he noted that some structures were “simply clusters of rocks ... difficult to interpret”. Everything about the feature’s architecture indicated that it was not intended to be more than a temporary shelter to be used for a relatively short amount of time during the warm months (see Chapter 9.6.5). This interpretation was based upon the fact that the
structure was built on the surface (refer to Section 10.2.1), did not use sod in construction (unlike the deeper dwelling tentatively identified in Level 5), and was located in a well-drained part of the Tanfield Valley that is sheltered from the westerly winds which prevail during the warmer months. The recovery of small amounts of fish bone and larger quantities of feathers further imply warm season use (Chapter 9.6.1).

In terms of its place within the larger technology of domestic architecture, the feature at KdDq-7-4 demonstrates that groups building even the most ephemeral of dwellings can still display their knowledge of, and adherence to, general rules of technical behaviour. When compared with the attributes listed in Table 10.1, this dwelling followed custom in lacking obvious signs of a prepared floor and in having no obvious signs of sleeping areas (34 of 52 dwellings also lack this trait). Like the majority of warm season dwellings (refer to Figure 10.2b), it was constructed on top of the ground surface and comprised a short (i.e. less than one full season) occupation period (Table 10.1). Although isolated internal fixtures occur in less than half of the structures considered in Chapter 6, the feature defined in this dwelling (a hearth area) is the most commonly recognised form added to a dwelling’s interior (Figure 10.7).

The dwelling diverged from the larger trends identified in domestic architecture in not having a midline feature (38 of 52 structures discussed in Chapter 6 and analysed in Section 10.2.1 had evidence for either an axial or central arrangement). It may be that the dwelling was occupied for such a short period of time that its occupants deemed it unnecessary to construct one and instead created the hearth area (or, alternately, that a lightly constructed feature was created but was too lightly built to survive). It is unclear if the arc of hold-down stones highlighted in Figure 9.11 can be used to accurately trace the dwelling’s size, especially considering such a small area (1.77 m²) is represented. Only six other structures fall below 9.99 m² (refer to Table 10.1) and it is difficult to imagine that this structure was capable of sheltering more than one small nuclear family or special-purpose group for any extended period.

However, the Tanfield Valley currently functions as a shortcut for hunters travelling between the community of Kimmirut and the floe-edge, situated just off of this part of the coast (see Figure 9.2), and it is conceivable that the sheltered valley was treated in a similar fashion by the Late Dorset and their predecessors commuting between different hunting areas (see Chapter
9.4.2). In a related fashion, and as I suggested in Chapter 9.7, the dwelling may have been used by people who stopped here on their way to or from one of the many longhouse aggregation sites (presumably used in the warm season) present elsewhere in the area and as such wanted only an improvised shelter.

10.5 Discussion: architecture and agency; micro-scale behaviours and macro-scale technologies

In this chapter, as throughout this study, technology has been conceived as a dynamic system of practises whose actions resulted in the creation of a given object. Although the item produced is physical, and while the particulars of its manufacture can often be recognised, the rules dictating that one technique or material was preferred over another (especially if functionally equivalent alternatives were available) are not as easily defined. One way that these rules of conduct can be recognised archaeologically is by identifying behaviours which appear again and again; traditions of action that reveal how people believed an object should be created. Such habitual actions are directed by communal knowledge that is shared between members of a society and it is these customs of behaviour, represented by their resultant material products, which have customarily been used to recognise and define discrete cultural groups (e.g. Childe 1929:v-vi).

Attribute and element analysis of Late Dorset domestic architecture indicates the presence of technological traditions with clear roots in the earlier Palaeoeskimo period, although it is equally obvious that this technology was re-organised at the start of Late Dorset as new socio-economic directives emerged. While the process remains poorly understood, it is logical to presume that both environmental and cultural forces had a hand in shaping Late Dorset society and its associated technologies, including those related to the design of dwellings. As described in Chapter 3.4, the start of Late Dorset coincides with the onset of the Mediaeval Warm Period, a time of general climatic warming and instability, and M.S. Maxwell (1985:217) has suggested a causal relationship between the two (although the process was certainly more complex). Current evidence indicates Late Dorset developed in the Foxe Basin core region and spread rapidly to re-colonise much of the Eastern Arctic, many parts of which had been abandoned centuries earlier.

While these emigrants were certainly equipped with connaissance knowledge developed from generations of experience in and around the core area, aspects of this knowledge base may
have been less appropriate in the new and ecologically disparate areas being resettled, often after centuries of abandonment. This presumably necessitated the re-evaluation and revision of various operational sequences as people encountered conditions for which traditional methods were less suited, encouraging the development of new strategies using acquired *savoir-faire* knowledge. Such was the case for the Thule Inuit, who radically re-worked winter dwellings as groups moving east from Alaska adapted to the loss of one building mainstay (driftwood) by adopting another (whale bone) (see discussion in LeMouël and LeMouël [2002]). Determining if a similar geographic and temporal development occurred in Late Dorset has proved impossible, due largely to the poorly described nature of many dwellings which makes such evaluations difficult.

Sample size also undermines efforts to determine whether differing social statuses influenced where dwellings were located on site, or who could access various building materials. Although Dorset society has long been correlated with an egalitarian social order, Friesen (2007) has recently questioned the universality of that view, suggesting that some populations (particularly those in the more densely occupied Foxe Basin) had developed an incipient form of social ranking. In contrast to the core area, Friesen (2007) suggests that ‘peripheral’ populations may have attempted to retain a more egalitarian social ordering by actively mediating and resisting inegalitarian influences through the construction of large-scale communal features at aggregation sites (such constructions have not been identified in the Foxe Basin).

If groups in and around Foxe Basin were increasingly inegalitarian, it is possible that domestic architectural technology may have been altered in subtle and not necessarily purposeful ways to reflect this. However, the lack of well-reported dwellings from the region, the most likely place for complexity to develop, makes it imprudent to assess whether social differentiation did exist and was manifested in domestic dwellings. Outside of the core area, all available information indicates that social differentiation, if present, was not expressed through domestic architecture.

Moving on from what the architectural remains cannot tell us (or can currently only suggest), what can the domestic structures reveal about Late Dorset society? From a strictly pragmatic perspective, the reorganisation of Late Dorset economic strategies, particularly the prevalence of the multi-family household, was a significant influence on domestic architecture (see also LeMoine 2003). As was made clear from the macro-scale analysis of dwellings conducted at
the start of this chapter, architectural considerations including overall dwelling size, number of fire sources, and number of lateral ‘sleeping’ zones appear directly related to whether a dwelling was intended to be used by one family group, or more than one. It is likely that the multi-family household, given its apparent pervasiveness, was the natural or *de facto* choice as builders moved about the landscape and designed their shelters. Equally important were considerations of seasonality, which dictated (especially regarding colder season structures) whether a surface or sunken floor was required. Related to season of occupation was the selection of building materials, which in a number of cool and cold season structures (including Bell House 6 and Nunguvik N72) incorporated the use of thermally efficient sods and probably also snow. In contrast, warm season and short-duration structures (such as that present at KdDq-7-4) dictated a minimalist approach in which the absence of more elaborate features, notably the midline feature, was deemed acceptable.

Season and length of occupation were also, as expected, major influences on the form of Late Dorset dwellings. While there are instances where the presence or absence of one or more architectural attributes contradicts expectations (*e.g.* the use of a sunken floor in a warm season dwelling), the larger trend indicates architectural choices were guided by concerns of dwelling comfort and performance. However, one can also find in Late Dorset architectural technology the signs of deeper and more spiritual ties to a system of ideology suggested to stretch into the Siberian Neolithic (refer to Chapter 5.3.4) and which governed at least some aspects of domestic design. The clear preference for an axial or central feature within the dwelling (73% of structures contained a midline feature) has been suggested by numerous researchers to have had both functional and symbolic purposes. For example, Gulløv and Appelt (2001) and Odgaard (2003) link the axial feature with mythological representations of a shamanic river as reported amongst many arctic hunter-gatherer groups. The preference to orient these features to the shoreline or nearest water-body, when no obviously functional rationale could be discerned, further suggests Late Dorset may have been creating a physical manifestation of their ideological beliefs each time a midline feature was created within a structure (Gulløv and Appelt 2003:157-159).

In conclusion, the analysis presented in this chapter indicates that there was in fact a general strategy or technological system of domestic architecture designed and put into operation
by the Late Dorset. Many aspects of this system are rooted in the practises of the earlier Palaeoeskimos, with whom the Late Dorset technological system originated and which provided a basic system of knowledge and a requisite set of responses from which to choose. These traditions of behaviour are evident in the actions and choices which were selected again and again across the Late Dorset period. At the same time there exists a great amount of variation in form and design, some resulting from environmental circumstances and some undoubtedly a consequence of more culturally-driven forces. It is this variability in form and design which seems to have acted as a hindrance or obstacle discouraging research on Late Dorset domestic architecture, as the ‘noise’ dissuaded attempts to better understand how architecture varied and what the underlying causes for the patterns of similarity and difference might be.

However, rather than treating variation as either insignificant or an impediment, the adoption of a *chaîne opératoire* methodology allowed variations and parallels in the design strategy to be organised and then explored in terms of their overall significance to the culturally defined technological system. By breaking dwellings down in to their core attributes and elements, it was possible to identify patterns where certain choices were or were not made and correlate them with influences including seasonality, household size, and group ideology. The case studies illustrate the importance of contextualising dwellings within their local and regional environments in order to appreciate how and why particular decisions were made, whether they followed or deviated from what might be considered general ‘standards’ of behaviour.
CHAPTER 11 – CONCLUSIONS

11.1 Introduction
In this dissertation I attempted to identify and explore the range of dwelling forms present in
domestic architecture so that patterns of similarities and differences informing on Late Dorset
society could be identified. Throughout this study, structures were first and foremost regarded as
products of a technological system of architecture, a socially-defined and learned way of
building dwellings in a particular manner in order to produce a desired product. Rather than
envisioning dwellings as monolithic predetermined types, this approach emphasised the fact that
structures were created through a process of actions and choices on the part of individual
architects. At all stages of construction those agents chose materials and selected particular
techniques, based upon their knowledge of how they would perform under anticipated
conditions, while operating within a culturally-conditioned concept of how dwellings should
appear.

In order to identify where and when those decisions were made, and what forces were
operating to influence them, I employed a chaîne opératoire approach. This methodology
emphasises that the design and creation of any artefact is a process involving sequences of
identifiable actions and preferences; it is a strategy which intentionally avoids a more traditional
and often implicit view of artefacts as finished products lacking an underlying production story.
By examining the dwellings included in this study according to their component parts, I was able
to determine the frequency with which various architectural attributes were selected, as well as
suggest underlying reasons that may have influenced those decisions. These discoveries were
made possible through the use of a multi-scalar approach that first investigated Late Dorset
architectural remains at the broadest macro level in order to locate persistent behavioural trends,
before focussing on micro-scale analysis of a small number of dwellings where the influence of
more idiosyncratic or localised know-how, reflecting individual agents, could be recognised (see
Dobres 1999a:19; Dobres and Hoffman 1999:8).

By adopting this analytical strategy, dwellings became information conduits leading to
their architects, revealing not only patterning or norms of architectural technology (communal
knowledge, or traditions), but also more unusual actions and strategies reflecting a builder’s
specific experiences and economic pursuits, as well as the influence of localised environmental
conditions. The technology of domestic architecture was in turn used to make inferences regarding the larger technological and social organisation of Late Dorset society.

11.2 Late Dorset Architectural Technology and Social Organisation
Late Dorset domestic architecture can be characterised as quite flexible or open. Although there existed a general plan, a technological system, of architectural design associated with a basic set of strategies and options (or *connaissance* knowledge) shared by all members of Late Dorset society, there was also great variation in terms of the actions taken to make a dwelling suitable (or acceptable) for a particular time, in a set place, and for a specific purpose. While the circumstances under which given options were or were not exercised are often difficult to determine, factors including structural sedentism, seasonality, household size, and general group structure were all common considerations.

Before this study, researchers were aware of the variations in form found amongst Late Dorset domestic structures, although the extent and range of similarities and differences (and where in the dwelling those tend to occur) had not been established. It was also quite difficult to determine how specific dwellings ‘fit’ within the overall range of architectural forms given the rather haphazard nature of most descriptions. Establishing whether particular behaviours were widely practised or were more limited in scope was virtually impossible, as was any attempt to appreciate how Dorset groups adapted to varied environmental conditions via their architectural technology. In addition to rectifying at least some of these shortfalls, the current study has hopefully shown that the careful documentation of architectural remains, in combination with consideration of each structure’s context (physical and socioeconomic), can enable archaeologists to identify patterns of constancy and variability in the technology, in the process treating “people as if they mattered” (Dobres 2000:97). This was accomplished in large measure by adjusting the methodological approach to better suit the variously published data, permitting the compilation of a comprehensive bank of information on Late Dorset society that had not been previously exploited.

The results of my analysis indicate that Late Dorset domestic architecture was open to some degree of technological interpretation by its practitioners, a somewhat surprising finding considering the longstanding view of Late Dorset material culture as constrained and often uniform in design and form (*e.g.* M.S. Maxwell 1985:227; McGhee 1996:200-201). Gulløv and
Appelt (2001), echoing an idea first put forth in M.S. Maxwell (1985:227), have gone so far as to suggest that this uniformity was upheld by travelling shamans who moved between regions at least in part to maintain and perpetuate material culture traditions and standards.

This pattern of emulation is echoed even in some aspects of Late Dorset communal architecture, as recently noted by Friesen (2007). He reports that at one longhouse site with multiple hearth rows, there exists a great deal of intra-row variability but a very high degree of consistency in form between hearths within the same feature. Friesen infers from this that the architects of each fireplace within a row took careful note of how their neighbour’s feature was constructed, conscientiously emulating those techniques when adding their own hearth to the communal row. Because of the high level of consistency recognised within rows, Friesen (2007:206) suggests each was probably used during a single aggregation event (with new rows constructed during successive site uses) and that the act of creation and replication was at least as important to the aggregated individuals as was the actual functionality of the hearths.

The meticulous replication of the technical steps evidenced in these hearth rows suggests that social relations were quite constrained in communal settings (see Dobres 1995a:41) and that the form of the hearths may have served as a visual indicator of group cohesion. This may be due to a tendency for populations who are normally dispersed to participate in a variety of interactions for which adherence to broadly held social constructs was demanded as a means to reinforce group unity. Such formalised interaction is often tied to ritual or socially-imbued activities, a commonly identified feature of hunter-gatherer aggregation events (e.g. Damas 1969:52; Lee 1979:447; McGhee 1996:207-208; Appelt 1999:35; Damkjar 2000:175; Park 2003:245). The remarkable consistency in hearth row architecture may have been one way in which these agreed upon standards of action were expressed. Careful examination of hearth row architecture from other sites is needed to establish whether the behaviour (and related social inferences) noted by Friesen (2007) was restricted to the Iqaluktuuq area or occurred at communal sites throughout the Late Dorset range, although indications are that this behaviour may have been widely practised (e.g. Appelt 1999). But at least at this one gathering site, it seems clear that a level of technological rigidity was enforced that is not evident in any domestic setting.

In contrast, as groups disbanded and scattered into smaller inter-related units, the need for visible reminders of cultural cohesiveness might not have been viewed as necessary. In these
more typical dispersed social settings, a variety of technical strategies for the production of domestic architecture were permissible, indicative of an increasingly open social structure where small groups of friends and family were not as tightly constrained in their technical options. While much work remains to be done before domestic and communal sites can be fully compared (especially as this regards non-longhouse features at the latter), the contrast in architectural technology strongly implies that strictly enforced standards of conduct were in effect when otherwise scattered populations gathered together, and that these principles were relaxed once groups dispersed. In this light, Rapoport’s (1969a:26) advice that “We should look for what a cultural or physical setting makes impossible, rather than for what it makes inevitable”, seems even more apropos.

11.3 Directions for Future Research
As with all studies, the present project began with a set of questions around which the research was structured. Some of these issues remain unresolved, or are only partially explained, because the data are simply not available. Others await further exploration because they are an outgrowth of the original research questions and extend beyond the scope of this dissertation. While the ideas which follow are commonly posited at a dissertation’s close, I also stress what I believe are necessary methodological changes required before architectural remains can be fully integrated into analysis of the Late Dorset socio-economic system.

The first point, and one which cannot be over-stressed, is that architectural analysis suffers tremendously when excavation strategies are poor or recording methods inadequate. The very practise of archaeology destroys sites and nowhere is this truer than with architectural remains, a class of artefact that is unique because it usually must be totally demolished in order for excavation to be complete. Because these artefacts are actually being destroyed, rather than collected for curation, excavation strategies should not simply involve the unsystematic recording of basic information about a feature with little regard for its formation processes. These processes contain the operational sequences enacted by architects to produce the dwelling, and while it is not absolutely necessary to interpret such sequences while excavation is ongoing, information must be recorded in sufficient detail so that they can be reconstructed and interpreted at a later date.
This reliance on what is essentially documentary information contrasts architectural studies with more traditional forms of analysis, which typically rely on first-hand examination of extant tools. For example, every biface or harpoon head now residing in a museum’s collection, even those with poor provenience, preserves a record of its life history that is directly available for interested researchers to examine and interpret. On the other hand, the associated formation processes that created a dwelling survive only until it is excavated, as deposits are scraped away so too is the feature’s story. Unlike the biface or harpoon head, all that remains of architectural remains at the close of excavation are the photographs, drawings, and any matrix samples taken while work was progressing. The success of any new research question or analytical goal developed subsequent to that excavation is entirely dependent on the clarity and detail of the recordings made during the initial on-site work. If needed information was not noted, either because it was overlooked or was considered irrelevant to the original research goals, the study of that feature has effectively hit a dead-end because the artefact and its related technological strategies no longer physically exist.

This is the key difference between the technology of architecture and the products of most other technological systems, and a point starkly illustrated by Dobres’ (1995b) success in examining Magdalenian organic technology using materials excavated decades previously. Dobres was forced to exclude very few artefacts from her analysis because, even though they were not considered when initially collected, she could still see the chaînes opératoires that formed the tools and constituted the technology. In contrast, in my own study I was required to eliminate a disheartening number of dwellings because they had not been reported in sufficient detail to permit the sorts of analysis I was attempting. The exclusion of structures had two consequences: the creation of regional and chronological data gaps; and the formation of sometimes small attribute datasets. As was noted in Chapters 6 and 10, this meant that some of my interpretations had to remain relatively coarse-grained or were otherwise qualified in a way that limited their overall interpretative scope and impact. Although unavoidable, this was unfortunate and particularly affected examination of factors including seasonality, structural sedentism, regional style differentiation, and temporal change. It is obvious that, if architectural technology is to be integrated into the overall study of Late Dorset society (and hunter-gatherers more generally), excavators must recognise the valuable role of these remains and strive to record data before it is lost through excavation.
On a more general and hopefully less pessimistic note, domestic architecture provides an invaluable starting point for investigating other aspects of Dorset society. Architectural remains may help determine whether or not some Late Dorset populations were beginning to develop an incipient social hierarchy (as has been suggested by Murray [1999] and Friesen [2007]). Hayden (1998) has remarked on the fact that social status differences amongst some hunter-gatherer societies can be expressed (or purposefully repressed) in a number of ways, including through structural design and the overall size of domestic dwellings (see Coupland 1985; Blanton 1994; Hayden 1997; Whitridge 2002; Maschner and Bentley 2003). I have previously noted that Dorset domestic dwellings do differ in size, construction material, and internal organisation, linking those differences to factors including overall household size. However, further investigation may demonstrate that some of those differences may also reflect the varying social positions of dwelling inhabitants within sites and/or regional contexts (examination of house contents, especially concerning identification of exotic ‘riches’, may help in this exploration).

However, in order for intra-dwelling comparisons to be truly meaningful, greater control of dwelling and site chronology is needed, something Brumfiel (2000:252) stresses is necessary in order for variability through time and across space to be recognised. This is an important point, particularly because, as Marquardt (1992:106-107) notes, people can act independently or concurrently at both scales. Finally, it will undoubtedly prove productive to examine the interior architectural layout of Late Dorset dwellings in an effort to isolate evidence for gendered or age-related divisions. LeMoine (2003) has begun this process with her analogy-based study of Late Dorset interior organisation. My analysis of Bell House 6 suggests that gender-based spatial arrangements may have been present in that dwelling as well (see Chapter 10.4.1), but the connotations of these inferences on the broader Late Dorset system must be further investigated before more general statements and interpretations can be made.

Ultimately, we will learn more about the social organisation and relations of Late Dorset society if we integrate architectural technology into the larger study of Late Dorset culture. It appears that the social processes which defined one technology (architecture) were ordered in a somewhat different manner than other aspects of that culture, if my view of domestic architectural technology as flexible and responsive to internal and external influences is correct. It is equally possible that detailed examination of other forms of Late Dorset technology may demonstrate that those too were more open or malleable than is currently supposed.
11.4 Final Thoughts
Late Dorset domestic architecture was enacted and responded to a variety of context-specific situations that do not appear to be related to geographic or temporal considerations, although the addition of more dwellings from under-represented areas, as well as greater chronological control, may alter this opinion. What is certain is that sweeping generalisations (as had been employed previous to this study) do not work. Not only do overly-broad explanations remove the actual people who built and lived in these dwellings from the picture, but they also hide the fact that individuals actively manipulate their surroundings for their own benefit. Adopting an Arctic-wide approach without also integrating a smaller scale of analysis further hides the fact that Late Dorset culture was a dynamic system which demanded its members function within certain boundaries while also allowing them the freedom to alter their behaviours so that they could design the best solution (a shelter) for their physical, social, spiritual, and economic needs. As I have argued throughout this dissertation, the careful examination of dwellings on a structure-by-structure basis is the most informative way in which to discover how and why patterns of technological variability and continuity came about.

Finally, we should begin to examine the forces which may have been operating in the Eastern Arctic leading up to the appearance of Late Dorset culture and which ultimately influenced the design of their dwellings. As Leroi-Gourhan (1945:255-257) has remarked, dwelling styles and forms tend to evolve quite slowly. This is partially because of the local environment, which tends to influence or constrain structural design, and also because, to a certain extent, architects are likely to be reluctant to alter the design of architectural attributes which have performed satisfactorily for generations. Given this conservatism, the changes in architectural form coincident with the appearance of Late Dorset culture indicate that something significant enough to warrant a redesign of that technology had occurred.

Our goal should be to identify and understand those changes by adopting methodological and analytical strategies which force us to keep in mind that the people we are studying were not exclusively concerned only with getting enough to eat, or procuring an adequate amount of raw materials and resources. These people were also thinking about things that we find harder to locate archaeologically: the social, ritual, and ideological aspects of day-to-day living. In short, they were preoccupied with being Late Dorset. We can begin to locate and address these aspects of society by remembering that domestic architecture, like other technologies, was created by
negotiating abstruse concerns with more practical considerations as space was transformed into meaningful place.

To this end, conceiving of a dwelling as the product of an entire chain of culturally and environmentally influenced choices highlights the fact that there was in fact an underlying technology responsible for its creation. This technology was developed, enacted, and maintained by agent architects who knew their needs and met them through sequences of actions which reproduced the cultural atmosphere in which they originally arose. As this study has hopefully demonstrated, considering all artefacts as the products of a process of human agency, practice, and innovation allows us to see them not only as functional entities but also as social productions in their own right.
REFERENCES CITED

Ackerman, L.

Adamczewski, J.Z., C.C. Gates, R.J. Hudson, and M.A. Price

Agger, W.A. and H.D.G. Maschner

2003 Flora of the Canadian Arctic Archipelago: descriptions, illustrations, identification, and information retrieval (Version 29; http://www.mun.ca/biology/delta/arcticf/).

Akrich, M.

Alexander, C.

Alexander, V., I. Stirling, and A.E. Derocher
1993 Possible impacts of climatic warming on polar bears. Arctic 46(3):240-245.

Alix, C.

Anderson, D.D.
1988 Onion Portage: an archaeological site on the Kobuk River, northwestern Alaska.
Anderson, D.D., and J.A. Tuck

Andreasen, C.

Andreasen, C. and H. Lange

Andrefsky, W.

Andrews, E.


Anton, E.
2003 *St. John’s Harbour 5 (HeCi-30) and an Examination of Groswater and Early Dorset Relationships in Labrador*. Unpublished M.A. Thesis, Department of Anthropology, Memorial University of Newfoundland. St. John’s.

Appelt, M.


Appelt, M. and J. Pind


Appelt, M., H.C. Gulløv, and H. Kapel


Appelt, M., and H.C. Gulløv (editors)


Arge, S.V.


Arneborg, J.


Arnold, C.D.


Arnold, C.D. and C. Stimmell

Arsenault, D., L. Gagnon, and D. Gendron

Arsenault, D., L. Gagnon, D. Gendron, and C. Pinard

Arundale, W.H.

Atlas of Canada

Audouze, F.

Audouze, F. and A. Leroi-Gourhan

Audouze, F. and A. Schnapp

Auger, R.

Badgley, I.

Balikci, A.

Banfield, A.W.F.

Banning, E.B.

Bar-Yosef, O.


Bar-Yosef, O. and P. van Peer
2009  The *chaîne opératoire* approach in Middle Palaeolithic archaeology. *Current Anthropology* 50:(1):103-132.

Barber, D.G., J.M. Hanesiak, W. Chan, and J. Piwowar

Barker, P.A.

Barlshen, W.J. and T.N. Webber
Barr, W.

Barr, W.


Barry, R.G. and R.J. Chorley

Bartley, D.D. and B. Matthews

Bell, T. and J. Macpherson

Bendix, B.

Bendix Thostrup, C.
1911  *Ethnographic Description of the Eskimo Settlements and Stone Remains in North-East Greenland.* Meddelelser om Grønland 44(4).

Bengtson, J.L., L.M. Hiruki-Raring, M.A. Simkins, and P.L. Boveng

Bergerud, A.T.
Conservation, National and Natural Resources. Morges, Switzerland.

Berton, P.

Betts, M.W.
2005 Seven focal economies for six focal places: the development of economic diversity in the Western Canadian Arctic. *Arctic Anthropology* 42(1):47-87.

Béty, J., G. Gauthier, E. Korpimäki and J.-F. Giroux

Bibeau, P.
1984 Établissements Paléoesquimaux du Site Diana 73, Ungava. *Paléo Québec* 16.

Bielawski, E.

Binford, L.R.

Bird, J.B.

Birket-Smith, K.

Bishop, P.

Blake, W., Jr.

Blanton, R.

Bleed, P.

Blehr, O.
Hyman. London.


Bliss, L.C. and N.V. Matveyeva

Blodgetts, J.

Boas, F.

Bodenhorn, B.

Boëda, E.

Boëda, E., J.M. Geneste, and L. Meignen

Bostock, H.S.

Bourdieu, P.
Press. Baltimore.

Bourque, B.J. and S.L. Cox

Bradley, R.S.

Bradley, R.S. and G.H. Miller

Braudel, F.

Bressloff, P., J. Cowan, M. Golubitsky, P. Thomas, and M. Wiener

Brice Bennett, C.

Brink, J.W.

Brink, J.W., M. Wright, B. Dawe, and D. Glaum

Brody, H.

Broughton, J.M. and J.F. O’Connell

Brumfiel, E.M.

Buckland, P.C.

Burch, E.S., Jr.

Butzer, K.W.

Byrd, B.

Cameron, C.

Canadian Ice Services
n.d.  a  Regional Median of Ice Concentration. [http://ice-glaces.ec.gc.ca](http://ice-glaces.ec.gc.ca)
n.d.  b  Fact Sheet: Sea Ice Symbols.
Cannon, M.D.

CARD - Canadian Archaeological Radiocarbon Database
n.d. www.canadianarchaeology.com/radiocarbon/card/card.htm

Carr, C.

Carsten, J. and S. Hugh-Jones

Chapman, W.L. and J.E. Walsh

Chazan, M.

Childe, V.G.

Chilton, E.S. (editor)

Cinq-Mars, J.

Cinq-Mars, J., and R.E. Morlan
Clark, A.

Clark, B.

Clark, G.

Clark, S.

Cleuziou, S., A. Coudary, J.-P. Demoule, and A. Schnapp

Collins, H.B.
1956b *The T-1 site at Native Point, Southampton Island, N.W.T. Anthropological Papers of the University of Alaska 4*:63-89.

Comer, G.
1906 *Whaling in Hudson Bay with notes on Southampton Island*. In *Boas Anniversary Volume*:


Cook, S.F.

Cooke, A.

Copeland, D.A.

Coupland, G.

Cowgill, G.L.

Cox, S.L.


Cox, S.L. and A. Spiess
Crane, R.G.

Crawford, G.W.

Dahl-Jensen, D., K. Mosegaard, N. Gundesrup, C.D. Chow, S.J. Johnson, A.W. Hansen, and N. Balling

Damas, D.

Damkjar, E.

Damon, P.E., G. Burr, A.N. Peristykh, G.C. Jacoby, and R.D. D’Arrigo

Dansgaard, W., H.B. Clausen, N. Gundestrup, C.U. Hammer, S.F. Johnsen, P.M. Kristinsdottir, and N. Reeh
Darwent, C.M.

Dawson, P.C.

Dawson, P., R. Levy, D. Gardner, and M. Walls

de Laguna, F.

Deetz, J.F.

Dekin, A.
Dery, S.J. and L.-B. Tremblay
2004 Modelling the effects of wind redistribution on the snow mass budget of Polar Sea ice. 

Desrosiers, P.
1986 Pre-Dorset surface structures from Diana-1, Ungava Bay (Nouveau-Quebec). In *Palaeo-
Eskimo Cultures in Newfoundland, Labrador and Ungava*, pp. 3-26. Memorial University of Newfoundland Reports in Archaeology 1. St. John’s.

Desrosiers, P.M., D. Gendron, and N. Rahmani

Desrosiers, P. and N. Rahmani

Devereaux, H.
1965 *The Pope’s Point site (DfBa-1), Newfoundland*. Unpublished manuscript on file at the Canadian Museum of Civilization, Gatineau.

DFO (Department of Fisheries and Oceans)

Dibble, H. and O. Bar-Yosef (editors)

Dietz, R., M.P. Heide-Jørgensen, P.R. Richard, and M. Aquarone
2001 Summer and fall movements of narwhals (Monodon monoceros) from northeastern Baffin Island towards northern Davis Strait. *Arctic* 54(3):244-261.

Dietler, M. and I. Herbich

Dobres. M.-A.


Dobres, M.-A. and C.R. Hoffman


Dobres, M.-A., and C.R. Hoffman (editors)

Dobres, M.-A. and J. Robb


Dobres, M.-A., and J. Robb (editors)

Dornan, J.L.

Douglas, M.S.V. and J.P. Smol

Duke, P.D.

Dumond, D.E.

Dunbar, M.J.

Dunbar, M.J. and K. Greenway

Dunnell, R.

Durkheim, E.

Dutil, J.-D.
1986 Energetic constraints and spawning interval in the anadromous Arctic charr (Salvelinus alpinus). Copeia 4:945-955.

Dyke, A.S. and T.F. Morris
Dyke, A.S., J. Hooper, and J.M. Savelle
1996  A history of sea ice in the Canadian Arctic Archipelago based on postglacial remains of the bowhead whale (Balaena mysticetus). *Arctic* 49(3):235-255.


Dyke, A.S., J. Hooper, C.R. Harrington, and J.M. Savelle

Dyke, A.S. and J.M. Savelle
2000 Holocene driftwood incursion to southwestern Victoria Island, Canadian Arctic Archipelago, and its significance to paleoceanography and archaeology. *Quaternary Research* 54(1): 113-120.


Dyke, A.S. and J. England

Eastaugh, E.J.H.
2002 *The Dorset Palaeoeskimo Site at Point Riche, Newfoundland: an intra-site analysis.*
Unpublished Masters thesis, Department of Anthropology, Memorial University of Newfoundland. St. John’s.

Edlund, S.A.

Edlund, S.A. and B.T. Alt
1989 Regional congruence of vegetation and summer climate patterns in the Queen Elizabeth Islands, Northwest Territories, Canada. *Arctic* 42(1):3-23.

Edmonds, M.

Edwards, P.C.
Eerkens, J.W. and C.P. Lipo

Eggertsson, Ó.

Eggertsson, Ó. and D. Laeyendecker

Elling, H.

Elliott, R.C.

England, J.H.

Environment Canada

Erwin, J.

Evans, C.
Evans, M.

Faegre, T.

Falconer, G., J.D. Ives, O.H. Løken, and J.T. Andrews

Farquharson, D.R.

Ferguson, R.

Fienup-Riordan, A.

Fitzhugh, W.W.


Fitzhugh, W.W. and H. Lamb

1985 Vegetation history and culture change in Labrador prehistory. Arctic and Alpine Research 17(4):357-370.

Fitzhugh, W.W., R. Jordan, J. Adovasio, and D. Laeyendecker


Fladmark, K.R.


Flannery, R.


Flannery, K.R.

Fogt, L.M.

Forbes, B.C.

Ford, J.A.

Freeman, M.M.R. (editor)

Freeman, M.M.R.

Freuchen, P.

Friesen, T.M.
2003  The Cadfael Site Longhouses: Late Dorset Aggregations on Victoria Island. Paper presented at the 36th Annual Meeting of the Canadian Archaeological Association, Hamilton ON.

Friesen, T.M. and C.D. Arnold

Furgal, C.M., D. Martin, and P. Gosselin

Fyles, J.G.

Gabus, J.

Gamble, C.


Gendron, D.


Gendron, D. and C. Pinard

George, J.C., L.M. Philo, and G.M. Carroll
Giddens, A.

Giddings, J.L.

Giddings, J.L. and D.D. Anderson

Gilman, P.A.

Glassie, H.

Godfredsen, A.B.

Gofman, A.

Goffman, E.

Gordon, B.C.

Gosselain, O. P.

Gould, G.

Gould, R. and J. Yellen

Govoroff, N.

Grace, S.E.

Grainger, E.H.

Gramly, R.M.

Grant, S.D.
Grøn, O.

Grønnow, B.

Grønnow, B., M. Meldgaard, and J.B. Nielsen

Grønnow, B. and J.F. Jensen

Grove, J.
1988 *The Little Ice Age*. Methuen. London.

Gubser, N.
Gulløv, H.C.  

Gulløv, H.C. and M. Appelt  

Haggblom, A.  

Hall, C.F.  
1865 *Arctic Researches and Life with the Eskimeauxs: being the narrative of an expedition in search of Sir John Franklin in the years 1860, 1861, 1862*. Harper and Brothers Publishers. New York.

Hall, E.  

Hare, F.K. and M.K. Thomas  

Harp, E., Jr.  
1975 A Late Dorset copper amulet from southeastern Hudson Bay. *Folk* 16-17:33-44.  

Harper, F.

Harritt, R.K.

Hartery, L.J. and T.L. Rast

Hassan, F.A.

Hauck, C., D. Vonder Mühll, and H. Maurer

Hawkes, E.W.


Hayden, B.
1997  The Pithouses of Keatley Creek. Harcourt Brace College. Fort Worth, Texas.

Hayden, B. and A. Cannon

Hayes, M.G., J.B. Coltrain, and D.H. O’Rourke
2005  Molecular archaeology of the Dorset, Thule, and Sadlermiut: ancestor-descendant

Hegmon, M.


Helmer, J.W.

Henoch, W.E.S.
Henry, G.H., A.S. Dyke, and J.H. England

Henshaw, A.

Hester, T.N., H.J. Shafer, and R.F. Heizer

Higgs, E.S., and C. Vita-Finzi

Hillier, B. and J. Hanson

Hillier, B., A. Leaman, P. Stansall, and M. Bedford

Hillier, B. and A. Penn

Hinnerson Berglund, M.

Hitchcock, R.K.

Hodder, I.


Hodder, I. (editor)


Hodder, I. and C. Cessford


Hodder, I. and S. Hutson


Hodges, H.


Hodgetts, L.M.


Hodgetts, L.M., M.A.P. Renouf, M.S. Murray, D. McCuaig-Balkwill, and L. Howse


Hoffman, R.S.


Holland, T.D.


Holly, D.H., Jr.

Holtved, E.

Hone, E.

Hood, B.

Howley, J.P.

Howse, L.

Hughes, C.C.

Ingold, T.
Ingstad, A. Stine

Irving, W.

Jaskson, G.D. and W.C. Morgan

Jackson, G.D. and R. G. Berman

Jacobs, J.D.

Jacobs, J., R. Barry, and R. Weaver

Jacobs, J.D. and J.P. Newell
1979 Recent year-to-year variations in seasonal temperatures and sea ice conditions in the Eastern Canadian Arctic. *Arctic* 32(4):345-354.

Jacobs, J., and D.R. Stenton

Jakimchuk, R.D. and D.R. Carruthers

Janes, R.R.

Jelinek, A.

Jenness, D.

Jensen, J.F.

Johnson, L.
1962 The relict fauna of Greiner Lake, Victoria Island, N.W.T., Canada. *Journal of the*
Fisheries Research Board of Canada 19:1105-1120.


Jolly, D., F. Berkes, J. Castleden, T. Nichols, and the Community of Sachs Harbour
2002 We can’t predict the weather like we used to: Inuvialuit observations of climate change, Sachs Harbour, western Canadian Arctic. In The Earth is Moving Faster Now: indigenous observations of Arctic environmental change, edited by I. Krupnik and D. Jolly, pp. 92-125. Arctic Research Consortium of the United States. Fairbanks.

Jones, G.

Jones, P.D. and P.M. Kelly

Jordan, R.

Julien, C.K. and M. Julien

Kahn, L., Jr.

Kamp, K.
Kapel, H.

Kaplan, S.

Karlin, C., P. Bodu, and J. Pelegrin

Karlin, C. and M. Julien

Keiser, M.B.

Kelly, R.L.

Kelly, R.L. and L.C. Todd

Kelly, R.L., L. Poyer, and B. Tucker

Kelsall, J.P.
Kemp, W.B.
1975 *The Harvest Potential of Inuit Camps: a quantitative summary of findings from research carried out in an isolated camp of Inuit hunters on southern Baffin Island.* McGill University Department of Geography. Montreal.

Kempf, C., X. Harmel, and A. Piantanida

Kennett, B. L.

Kent, S.

Kent, S. and H. Vierich

Kershaw, P., P. Scott, and H.E. Welch

Kevan, P., A.M. Derry, and S.D. Rowley
1999 Soil nutrients and vegetation characteristics of a Dorset/Thule site in the Canadian Arctic. *Arctic* 52(2):204-213.
Kleivan, I.

Knapp, A.B.

Knuth, E.
1977/78  The ‘Old Nûgdît Culture’ site at Nûgdît Peninsula, Thule District and the ‘Mesoeskimo’ site below it. Folk 19-20:15-47.

Koetje, T.A.

Kohler, J. and R. Aanes

Kopytoff, I.

Kramer, E.
1996b Akia and Nipisat: two Saqqaq sites in Sisimiut District, west Greenland. In The Paleo-
Eskimo Cultures of Greenland, edited by B. Grønnow and J. Pind, pp. 65-96. Danish
Polar Centre. Copenhagen.

Kristofferson, A.H.
2002 Identification of Arctic Char Stocks in the Cambridge Bay Area, Nunavut Territory, and
Evidence of Stock Mixing During Overwintering. Unpublished Ph.D. dissertation,
Department of Zoology, University of Winnipeg. Winnipeg.

Kroeber, A.L.
1939 Cultural and Natural Areas of Native North America. University of Califronia Press
University of California Publications in American Archaeology and Ethnology, Volume
38. Berkeley.

Kronenfield, D.B. and H.W. Decker

Kultti, S., P. Oksanen, and M. Väliranta
2004 Holocene tree line, permafrost, and climatic dynamics in the Nenets Region, east

Labrèche, Y.
2003 Habitations, camps et territoires des Inuit de la région de Kangiqsujuaq-Salluit, Nunavik.
2005 Appropriation et Conservation des Ressources Alimentaires Chez les Inuit de
Kangiqsujuaq-Salluit, Québec Arctique: perspective ethno-archéologique. Unpublished
Ph.D. dissertation, Department of Anthropology, Université de Montréal. Montréal.

Lamb, H.
1985 Palynological evidence for post-glacial change in the position of the tree limit in Labrador,

Langlais, A. and L. Gagnon
2006 Qajartalik: the place where the stone speaks for faces that have lost their voices. In
Dynamics of Northern Societies: proceedings of the SILA / NABO conference on Arctic
and North Atlantic Archaeology, Copenhagen, May 10th – 14th, 2004, edited by J.
Arneborg and B. Grønnow, pp. 145-152. Publications from the National Museum Studies
in Archaeology and History Volume 10. Copenhagen.

Larsen, H.
1956 Paleo-Eskimos in Disko Bay, west Greenland. In Men and Cultures: selected papers of
the Fifth International Congress of Anthropological and Ethnological Sciences, edited by
Larsen, H. and J. Meldgaard

Larter, N.C. and J.A. Nagy

Latour, B.

Lawrence, D.L. and S.M. Low

Le Blanc, R.J.

Le Blanc, S.

Leach, E

Lechtman, H.

Lechtman, H. and A. Steinberg

Lee, M.A. and G.A. Reinhardt

Lee, R.B. and I. DeVore

Lee, T.E.

Leechman, D.

Leem, K.

LeMoine, G.

LeMoine, G. and C.M. Darwent

LeMoine, G., J.W. Helmer, and B. Grønnow

Lemonnier, P.


Lemonnier, P. (editor)

Le Mouël, J.-F. and M. Le Mouël

Le Page, D., D.N. Nettleship, and A. Reed

Leroi-Gourhan, A.


LeRoy Ladurie, E.

Lévi-Strauss, C.

Lewis-Williams, D.

Lewis-Williams, D., and T.A. Dowson

Li, S. and M. Sturm

Lund-Rasmussen, J. Heinemeier and M. Appelt

Linnamae, U.
Longacre, W.A.
1970 *Archaeology as Anthropology: a case study* Anthropological Papers of the University of Arizona, No. 17. Tucson.

Loring, S.G. and S. Cox

Losey, R. J. And D.A. Yang

Lowenstein, T.


Lyon, G.F.

Lyons, D.

McCart, P.J. and J. Den Beste
1979 *Aquatic Resources of the Northwest Territories*. Science Advisory Board of the Northwest Territories. Yellowknife.

McCarty, A.P.
1979a Whale bone assessment. In *Archaeological Whale Bone: a northern resource. First Report in the Thule Archaeology Conservation Project Sponsored by the National Museums of Canada and Department of Indian and Northern Affairs*. University of
Arkansas Anthropological Papers No. 1. Fayetteville.


McCartney, A.P. and J.M. Savelle


McCartney, P.H. and J.W. Helmer


McCullough, K.M.


McGhee, R.


1974/75 Late Dorset art from Dundas Island, Arctic Canada. *Folk* 16-17:133-145.


McGhee, R. and J.A. Tuck

McGovern, T.

McGuire, R.H. and M.B. Schiffer

McLaren, I.A.

Macpherson, A.H.
1969 *The Dynamics of Canadian Arctic Fox Populations*. Canadian Wildlife Service Report
Mahias, M.C.

Mandel-Campbell, A.

Mansfield, A.W.

Marquardt, W.

Marshall, I.

Martijn, C.A.

Martin, T.

Mary-Rousselière, G.


n.d. d *Preliminary Report on Archaeological Investigations in Navy Board Inlet During the*


1979a A few problems elucidated and new questions raised by recent Dorset finds in the North Baffin region. *Arctic* 32(1):22-32.


Maschner, H.D.G. and R.A. Bentley


Mathiassen, T.


1933 Prehistory of the Angmagssalik Eskimos. Meddelelser om Grønland 92(4).

Matson, R.G.

Mauss, M.

Maxwell, J.B.

Maxwell, M.S.
1976a Pre-Dorset and Dorset artifacts: the view from Lake Harbour. In Eastern Arctic


1980a Dorset site variation on the southeastern coast of Baffin Island. Arctic 33(3):505-516.


Mech, L.D.


Meldgaard, J.


1977 The prehistoric cultures in Greenland: discontinuities in a marginal area. In Continuity and Discontinuity in the Inuit Culture of Greenland, edited by A.D. Klystra, pp. 19-52. Arctic
Centre, University of Groningen, The Netherlands.


Meldgaard, M.

Melling, H., Y. Gratton, and G. Ingram

Meyer, D.A.

Michea, J.P.

Miller, G.H.
1973 Late Quaternary glacial and climatic history of northern Cumberland Peninsula, N.W.T., Canada. *Quaternary Research* 3(4):561-583.

Miller, H.M.-L.

Miller, R.S.

Miller, F.L. and A. Gunn
2004 Catastrophic die-off of Peary caribou on the western Queen Elizabeth Islands, Canadian High Arctic. *Arctic* 56(4):381-390.

Milne, S.B.
2003a *Peopling the Pre-Dorset Past: a multi-scalar study of early arctic lithic technology and*


Milne, S.B. and S.M. Donnelly
2003 Going to the birds: examining the importance of avian resources to Pre-Dorset subsistence strategies on southern Baffin Island. Arctic Anthropology 41(1):90-112.

Minc, L.

Mitchell, D., and L. Donald

Møberg, T.

Møhl, J.

Moore, S.E. and R.R. Reeves

Morey, D.F. and K. Aaris-Sørensen

Morgan, L.H.
Washington.

Morlan, R. and J. Cinq-Mars

Morrison, D.

Morrison, D. and P. Whitridge

Morrison, K.

Mowat, F.

Mudie, P.J., A. Rochon, and E. Levac
2005 Decadal-scale sea ice changes in the Canadian Arctic and their impacts on humans during the past 4,000 years. Environmental Archaeology 10(2):113-126.

Müller-Beck, H.J. (editor)

Munn, H.T.

Murray, M.S.
2005 Prehistoric use of ringed seals: a zooarchaeological study from Arctic Canada.
Murray, M.S. and P. Ramsden

Nagle, C.L.

Nagy, M.
2000a Palaeoeskimo Cultural Transition: a case study from Ivujivik, Eastern Arctic. Nunavik Archaeology Monograph Series 1. Avataq Cultural Institute, Montreal.

Nansen, F.

Nash, R.J.
1972 Dorset culture in northeastern Manitoba, Canada. Arctic Anthropology 9(1):10-16.
Neiman, F.

Nelson, R.K.

Nelson, D.E. and R. McGhee

Nelson, D.E. and J. Møhl

Nichols, H.

Nichols, T., F. Berkes, D. Jolly, and N.B. Snow
2004 Climate change and sea ice: local observations from the Canadian Western Arctic. Arctic 57(1):68-79.

Noble, R.R.

Noble, W.

Nutarak, C.
O’Brien, M.J., R.L. Lyman, and R.D. Leonard

O’Bryan, D.

Odgaard, U.

Odess, D.

Odess, D., S. Loring, and W.W. Fitzhugh

Oetelaar, G.A.

Olgyay, V.
Olsen, B.

Olsson, I.U.

Oschinsky, L.

Ossenberg, N.S.

Oster, G.

Østergård, E.

Oswald, D.

Oswalt, W.H.

Ovenden, L.
Painter, T.J.

Park, R.W.
2004  *All Quiet on the Eastern Arctic Front*? Paper Presented at the 69th Annual Meeting of the Society for American Archaeology, Montréal, Québec.
2008  Contact between the Norse Vikings and the Dorset culture in Arctic Canada. *Antiquity* 82(315):189-198.

Parker-Pearson, M. and C. Richards

Parmalee, D.F., H.A. Stephens, and R.H. Schmidt

Parry, W.E.
1824  *Journal of a Second Voyage for the Discovery of a North-West Passage from the Atlantic to the Pacific: performed in the years 1821-22-23, in His Majesty’s Ships Fury and Hecla*. John Murray. London.
1845  *Three Voyages for the Discovery of a Northwest Passage from the Atlantic to the Pacific and Narrative of an Attempt to Reach the North Pole*. Harper. New York.

Pastore, R.T.
Pasztory, E.

Paton, J.

Pauketat, T.

Peary, R.E.
1894 *Northward over the ‘Great Ice’*. Frederick A. Stokes Company. New York.

Pelegrin, J.

Pelegrin, J.C., C. Karlin, and P. Bodu

Pelly, D.F.

Petersen, R.

Petréquin, P.

Petterssen, S., W.C. Jacobs, and B.C. Hayness
1956 *Meteorology of the Arctic*. Washington, D.C.

Pfaffenberger, B.

Pielou, E.C.
Pintal, J.-Y.

Pitseolak, P., and D.H. Eber

Plog, S.

Plumet, P.
1997 L’importance archéologique de la région de Kangirsujuaq au Nunavik (Arctique québécois); un centre chamanique dorsétiien? In Fifty Years of Arctic Research: anthropological studies from Greenland to Siberia, edited by R. Gilberg and H. C. Gulløv, pp. 249-260. Department of Ethnography, The National Museum of Denmark,
Copenhagen Vol. 18.

Polunin, N.

de Poncins, G.

Porsild, A.E.

Porsild, M.P.

Post, E. and M.C. Forchhammer

Price, L.W.

Przybylak, R.

Pyc, C.

Rafferty, J.E.

Ramsden, P. and J.A. Tuck
Ramsden, P. and M.S. Murray

Rapoport, A.

Rasmussen, K.

Rasmussen, E.A., K. Ninomiya, and A.M. Carleton

Rast, T.L.

Rathje, W.L.


Rathje, W.L. and C. Murphy

Ratti, C.
Reader, D.

1998 *Archaeological Excavations at Parke’s Beach (DgBm-1), 1996: Groswater Palaeoeskimo House 1 and Beothuk House 1*. Unpublished report on file at the Provincial Archaeology Office, Department of Tourism, Culture, and Recreation. St. John’s.

Reeves, R.R.
1991 *The Bowhead Whale*. Department of Fisheries and Oceans. Ottawa.

Reeves, R.R., B.S. Stewart, P.J. Clapham, and J.A. Powell

Reid, J.J., M.B. Schiffer, and W. Rathje

Reimers, E. and T. Ringberg

Reinhardt, G.A.

Renfrew, C., and E.B.W. Zubrow (editors)

Renouf, M.A.P.


Renouf, M.A.P., T. Bell and M. Teal

Renouf, M.A.P. and M.S. Murray

Reynolds, P.E.

Riedlinger, D.


Rigor, I.

Robbins, D.T.

Roots, E.F.

Roskams, S.

Ross, W.G.

Roussell, A.

Roux, V., B. Bril, and G. Dietrich

Rowley, G.

Rowley, G. and S. Rowley

Rowley, S.
1992 1991 Igloolik Field Survey. Unpublished manuscript on file at the Canadian Museum of
Civilization. Hull.


Rowley-Conwy, P.


Ryan, K.


Ryan, K. and M.W. Betts


1967 Saladin d’Anglure, B. *L’Organisation Sociale Traditionelle des Esquimaux de Kangirsujuaaq (Nouveau Québec).* Centres d’Études Nordiques, Travaux Divers 17. Université Laval, Québec.


Sater, J.E. (ed.)

Sater, J.E., A.G. Ronhovde, and L.C. VanAllen

de Saussure, F.

Savelle, J.M.

Savelle, J.M. and A.P. McCartney

Savelle, J.M., A.S. Dyke, and A.P. McCartney

Savelle, J.M. and A.S. Dyke

Savelle, J.M., and J. Habu

Savelle, J.M., A.S. Dyke, and M. Poupart

Schiffer, M.B.


Schiffer, M.B. (editor)


Schiffer, M.B. and J.M. Skibo


Schiffer, M.B., J.M. Skibo, J.L. Griffitts, K.L. Hollenback, and W.A. Longacre


Schiffer, M.B., A.P. Sullivan, and T.C. Klinger


Schlanger, N.

1994 Mindful technology: unleashing the chaîne opératoire for an archaeology of mind. In *The
Schledermann, P.
1976a The effects of climate / ecological changes on the style of Thule culture winter dwellings. *Arctic and Alpine Research* 8(1):37-47.
1990 *Crossroads to Greenland*. Arctic Institute of North America Komatik Series No. 2. Calgary.

Schledermann, P. and K. McCullough

Schwatka, F.

Sellet, F.

Sergant, J., P. Crombé, and Y. Perdaen

Service, E.B.

Shields, E.D. and G. Jones
1998 Dorset and Thule divergence from East Central Asian roots. *American Journal of

Short, S.K. and H. Nichols

Sigurdsson, G.

Silitshena, R.M.K.

Skibo, J.M. and M.B. Schiffer

Slaughter, D.C.
1982 The Point Barrow House Type: an analysis of archaeological examples from Siraagruk and other sites in north Alaska. Anthropological Papers of the University of Alaska 20(1-2):141-158.

Smith, C.S.

Smith, M. and B. Rigby

Smith, T.G.

Smith, T.J., M.O. Hammill, and G. Taugbøl
Smol, J.P.

Smol, J.P., I.R. Walker, and P.R. Leavitt

Smol, J.P. and M.S.V. Douglas

Solberg, O.

Soper, J.D.

Spiess, A.S.

Spufford, F.

Stager, J.K. and R.J. McSkimming

Stanford, D.J.

Stark, M.T.
1998b Social dimensions of technical choice in Kalinga ceramic traditions. In *The Archaeology of
Stark, M.T. (editor)

Steadman, S.R.

Steensby, H.

Stefansson, V.

Stein, J.K., J.N. Deo, and L.S. Phillips

Stenton, D.R.

Stenton, D.R. and R.W. Park

Sterner, J.

Stevenson, M.G.

Stewart, T.G. and J. England

Stimmell, C.

Stirling, I., and E.H. McEwan

Stirling, I., and H. Cleator (editors)

Stirling, I., H. Cleator, and T. Smith

Stirling, I. and T.G. Smith

Stopp, M.
Stravers, J.A., G.H. Miller, and D.S. Kaufman

Strub, H.

Sutherland, P.D.


Swanson, G.

Swinton, G.


Taçon, P.

Tanner, A.

Taylor, J.G.

Taylor, W.E., Jr.
1964b Archaeology of the McCormick Inlet site, Melville Island, N.W.T. *Arctic* 17(2):125-129.
Taylor, W.E., Jr., J.W. Helmer, and J.W. Brink

Tedrow, J.C.F.

Testart, A.

Thomson, C.


Thorpe, N., S. Eyegetok, N. Hankongak, and the Kitikmeot Elders
2002 Nowadays it is not the same: Inuit Qaujimajatuqangit, climate, and caribou in the Kitikmeot region of Nunavut. In The Earth is Moving Faster Now: indigenous observations of Arctic environmental change, edited by I. Krupnik and D. Jolly, pp. 201-239. Arctic Research Consortium of the United States. Fairbanks.

Thorsteinsson, R. and E.T. Tozer

Tilley, C.

Tremblay, L.-B., L.A. Mysak, and A.S. Dyke
Trigger, B.G.

Tuck, J.A.
n.d. *Prehistory of Atlantic Canada*. Unpublished Manuscript on file with the Department of Anthropology, Memorial University of Newfoundland, St. John’s.

Tuck, J.A. and W.W. Fitzhugh

Tuck, J.A. and R. McGhee

Tuck, J.A. and R. Pastore

Tuck, L.M. and L. Lemieux

Turner, J.E., E. A. Rasmussen, and A.M. Carleton

Tynan, C.T. and D.P. DeMaster
1997 Observations and predictions of Arctic climate change: potential effects on marine

Urquhart, D.R.

Utermohle, C.J.

van Dyke, R. M.

van der Leeuw, S. E.

van Tyne, J. and W.H. Drury

Vastokas, J.M.

Vibe, C.
1967  *Arctic Animals in Relation to Climatic Fluctuations.* Meddelelser om Grønland 170(5).


Wallace, B.L.
Ward, A.

Wenzel, G.

West, F.H.

White, R.

Whitelaw, T.M.

Whitling, J.W.M. and B. Ayres

Whitridge, P.
Wiessner, P.

Wilk, R.R. and W.L. Rathje

Williams, L.D., and R.S. Bradley

Wilson, J.T., G. Falconer, W.H. Mathews, and V.K. Prest

Wintemburg, W.J.

Winterhalder, B. and E.A. Smith

Wobst, M.

Wolfe, C.B.
Wordie, J.M.

Wright, J.V.
2001 *A History of the Native People of Canada, Volume 1 (10,000 – 1,000 B.C.).* Canadian Museum of Civilization Archaeological Survey of Canada Mercury Series No. 152. Hull.

Wylie, A.

Yates, T.

Yesner, D.R.

Zimmermann, M.

Zohar, I. and M. Belmaker

Zrudlo, L.R.
1975 User-defined housing for the Inuit of Arctic Quebec. *The Northern Engineer* 7(3):36-44.
APPENDIX

PALAEOESKIMO DOMESTIC ARCHITECTURE REMAINS

CIRCA 4500 B.P. – 1500 B.P.
<table>
<thead>
<tr>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structural Shape</th>
<th>Internal Features</th>
<th>Axial Description</th>
<th>Entrance</th>
<th>Suggested Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>GS = ground surface</td>
<td>PR = perimeter rocks</td>
<td>C/O/E = circular / oval / elliptical</td>
<td>AA = axial area</td>
<td>N = negative</td>
<td>PB = perimeter break</td>
<td>EW = early winter</td>
</tr>
<tr>
<td>SS = semi-subterranean</td>
<td>HPR = ‘heavy’ perimeter</td>
<td>R/SR/S = rectangular / sub-rectangular / square</td>
<td>AF = axial feature</td>
<td>S = slab construction</td>
<td>PE = paved entrance</td>
<td>W = winter</td>
</tr>
<tr>
<td></td>
<td>B = berm</td>
<td>D = semi-circular</td>
<td>AFR = axial feature, rear</td>
<td>US = upright slabs</td>
<td>EP = entrance passage</td>
<td>LW = late winter</td>
</tr>
<tr>
<td></td>
<td>E = erratic boulder / escarpment edge</td>
<td>Bi = bilobate</td>
<td>AAF = asymmetrically placed axial feature</td>
<td>CO = cobble construction</td>
<td>SEP = sunken entrance</td>
<td>ES = early spring</td>
</tr>
<tr>
<td></td>
<td>SD = shallow depression</td>
<td>K = ‘kidney’ shaped</td>
<td>PS = paving stones</td>
<td>CL = columnar rocks</td>
<td>AD = artefact distribution</td>
<td>S = spring</td>
</tr>
<tr>
<td></td>
<td>DD = deep depression</td>
<td>P = “pear” shaped</td>
<td>P = platform</td>
<td>SDA = slab-lined depression</td>
<td>TW = to water</td>
<td>LS = late spring</td>
</tr>
<tr>
<td></td>
<td>RW = rock wall</td>
<td>NI = none identified</td>
<td>BE = bench</td>
<td>DA = depression</td>
<td>TI = to interior</td>
<td>ESU = early summer</td>
</tr>
<tr>
<td></td>
<td>SW = sod wall</td>
<td>CBH = box hearth</td>
<td>RP = rear raised platform</td>
<td>NI = none identified</td>
<td>SU = summer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SU = stone uprights</td>
<td>CBH = central box hearth</td>
<td>EL = elevated ridge</td>
<td>SU = summer</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PH = post holes</td>
<td>RBH = rear box hearth</td>
<td>NF = narrows to front</td>
<td>EF = early fall</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PS = paving stones</td>
<td>BH3 = 3-sided box hearth</td>
<td>ER = end rocks</td>
<td>F = fall</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>OM = organic material</td>
<td>H = hearth</td>
<td>CBH = central box hearth</td>
<td>LF = late fall</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>V = vegetation</td>
<td>RH = rear hearth</td>
<td>BH = box hearth</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SC = soil change</td>
<td>PH = pentagonal hearth</td>
<td>DBH = double wall box hearth</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CA1 = one cleared / levelled area</td>
<td>SH = secondary hearth</td>
<td>EBH = elevated box hearth</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CA2 = two cleared / levelled areas</td>
<td>LS = lamp support</td>
<td>H = hearth</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SG = sand / gravel deposit</td>
<td>CK = cooking area</td>
<td>SH = secondary hearth</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AD = artefact distribution</td>
<td>SP = storage pit</td>
<td>LS = lamp support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NI = none identified</td>
<td>SA = storage area</td>
<td>BS = boiling stones</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BO = box structure</td>
<td>C = cache</td>
<td>PS = paving stones</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>APS = associated paving stones (outside feature)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CA1 = one cleared / levelled area</td>
<td>SP = storage pit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CA2 = two cleared / levelled areas</td>
<td>C = cache</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CS = crib stones</td>
<td>BO = box structure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NI = none identified</td>
<td>PW = perpendicular to water</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PLW = parallel to water</td>
<td>DW = diagonal to water</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>W = slab-defined wings</td>
<td>W+BO = wings + box structure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key to abbreviations used in the appendix.
<table>
<thead>
<tr>
<th>Location</th>
<th>Site</th>
<th>Structure</th>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peary Land, Greenland</td>
<td>Solbaken</td>
<td>6</td>
<td>SS</td>
<td>SD; B</td>
<td>C/O/E</td>
<td>3m x 2m (4.71)</td>
<td>AF; H(3)</td>
<td>US; ER?; CH?; PLW</td>
<td>NI</td>
<td>yes</td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Solbaken</td>
<td>8</td>
<td>SS</td>
<td>SD; B</td>
<td>C/O/E</td>
<td>2m x 2m (3.14)</td>
<td>CH; PS</td>
<td>NI yes?</td>
<td>S/SU</td>
<td></td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Solbaken</td>
<td>13</td>
<td>SS</td>
<td>SD; B</td>
<td>C/O/E</td>
<td>3.5m x 4.5m (12.36)</td>
<td>AF</td>
<td>US; 2.5m x 75cm; BH/CH(PS)</td>
<td>NI</td>
<td>yes</td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Memnon</td>
<td>B</td>
<td>GS?</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>CH; APS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Memnon II</td>
<td>GS</td>
<td>PR?; CA</td>
<td>C/O/E</td>
<td>4.6m diameter</td>
<td>AF</td>
<td>CO; 2.58m x 92cm</td>
<td></td>
<td>NI</td>
<td>yes</td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Walcott Delta</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>3.5m diameter</td>
<td>AA</td>
<td>US; APS</td>
<td>NI yes?</td>
<td>SU</td>
<td></td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Tokanten</td>
<td>1</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>3.5m x 4.4m (12.09)</td>
<td>AF</td>
<td>CO; US; 2.6m x 75cm; RBH</td>
<td>NI</td>
<td>yes</td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Tokanten</td>
<td>2</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>3.3m x 4.3m (11.14)</td>
<td>AF</td>
<td>CO; US; RBH</td>
<td>NI</td>
<td>yes</td>
<td>SU</td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Bob's Site</td>
<td>1</td>
<td>GS</td>
<td>B</td>
<td>C/O/E</td>
<td>no information</td>
<td>PS; CO</td>
<td>NI yes?</td>
<td>SU</td>
<td></td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Bob's Site</td>
<td>2</td>
<td>GS</td>
<td>B</td>
<td>C/O/E</td>
<td>no information</td>
<td>NI</td>
<td>NI yes?</td>
<td>SU</td>
<td></td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Bob's Site</td>
<td>4</td>
<td>GS</td>
<td>B</td>
<td>C/O/E</td>
<td>no information</td>
<td>CH</td>
<td>NI yes?</td>
<td>SU?</td>
<td></td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Bob's Site</td>
<td>5</td>
<td>GS</td>
<td>B; PR</td>
<td>C/O/E</td>
<td>no information</td>
<td>CH</td>
<td>NI yes?</td>
<td>S-SU</td>
<td></td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Skurenaes</td>
<td>SS</td>
<td>SD; B</td>
<td>C/O/E</td>
<td>no information</td>
<td>AA?, BH/CH</td>
<td>BH/CH; S</td>
<td>NI yes?</td>
<td></td>
<td></td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Pearylandville</td>
<td>1</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>3.6m diameter</td>
<td>AF</td>
<td>S; 2.5m x 60cm(est); DBH</td>
<td>NI</td>
<td>yes</td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Pearylandville</td>
<td>3</td>
<td>GS</td>
<td>NI</td>
<td>C/O/E</td>
<td>3.5m diameter</td>
<td>AF</td>
<td>CO; S; 3m x 60cm</td>
<td>NI</td>
<td>yes</td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Pearylandville</td>
<td>4a</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>7m x 4.3m (23.63)</td>
<td>AA</td>
<td>H</td>
<td>NI</td>
<td>yes</td>
<td></td>
<td>Jensen 2003</td>
</tr>
</tbody>
</table>

**APPENDIX** - Palaeoeskimo domestic architectural remains *circa* 4500 B.P. until 1500 B.P.
<table>
<thead>
<tr>
<th>Location, Greenland</th>
<th>Site</th>
<th>Structure</th>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearylandville</td>
<td>5</td>
<td>GS</td>
<td>PS</td>
<td>C/O/E</td>
<td>3.45m 3.32m (8.67)</td>
<td>AA?</td>
<td>NI</td>
<td>yes?</td>
<td>Jensen 2003</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearylandville</td>
<td>7</td>
<td>GS</td>
<td>NI</td>
<td>C/O/E</td>
<td>4m x 5.25m (16.49)</td>
<td>AF; PS</td>
<td>US; 2.3m x 50cm; DBH</td>
<td>PE?</td>
<td>yes</td>
<td>Jensen 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearylandville</td>
<td>8</td>
<td>GS</td>
<td>PS</td>
<td>C/O/E</td>
<td>4m diameter (12.56)</td>
<td>PS</td>
<td>yes?</td>
<td>Jensen 2003</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearylandville</td>
<td>10</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>2.8m x 4.5m (9.89)</td>
<td>AAF</td>
<td>US; 1.8m x 56cm; DBH; NF</td>
<td>NI</td>
<td>yes</td>
<td>SU</td>
<td>Jensen 2003</td>
<td></td>
</tr>
<tr>
<td>Pearylandville</td>
<td>24</td>
<td>GS</td>
<td>CA</td>
<td>C/O/E</td>
<td>4m x 3.3m (10.36)</td>
<td>AF</td>
<td>US; 2.54m x 65cm; PS; W</td>
<td>NI</td>
<td>yes</td>
<td>SU-EF</td>
<td>Jensen 2003</td>
<td></td>
</tr>
<tr>
<td>Pearylandville</td>
<td>26</td>
<td>GS</td>
<td>NI</td>
<td>NI</td>
<td>no information</td>
<td>AF; W?</td>
<td>US; 1.9m x 65cm; DBH</td>
<td>NI</td>
<td>yes</td>
<td>LW-ES</td>
<td>Jensen 2003</td>
<td></td>
</tr>
<tr>
<td>Pearylandville</td>
<td>28</td>
<td>GS</td>
<td>PS; FCR</td>
<td>C/O/E</td>
<td>5.5m x 3.5m (15.11)</td>
<td>AA</td>
<td>NI</td>
<td>yes</td>
<td>SU</td>
<td>Jensen 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portfjeldet</td>
<td>1</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>4m diameter (12.56)</td>
<td>BH</td>
<td>NI</td>
<td>yes?</td>
<td>Jensen 2003</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portfjeldet</td>
<td>2</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>3m diameter (7.07)</td>
<td>AF (AFR?)</td>
<td>BH</td>
<td>NI</td>
<td>yes?</td>
<td>Jensen 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portfjeldet</td>
<td>3</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>3.75m x 2.5m (7.36)</td>
<td>AF (AA?)</td>
<td>US or PS?</td>
<td>NI</td>
<td>yes?</td>
<td>Jensen 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portfjeldet</td>
<td>4</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>no information</td>
<td>NI</td>
<td>NI</td>
<td>no</td>
<td>Jensen 2003</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deltaterrass-erne</td>
<td>4</td>
<td>GS</td>
<td>B</td>
<td>C/O/E</td>
<td>no information</td>
<td>no information</td>
<td>NI</td>
<td>yes?</td>
<td>Jensen 2003</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deltaterrass-erne</td>
<td>10</td>
<td>GS</td>
<td>HPR</td>
<td>C/O/E</td>
<td>3.5m x 2.5m (6.87)</td>
<td>AF; CA</td>
<td>CO; 2.45m x 50cm; PS?</td>
<td>PE; PW</td>
<td>yes</td>
<td>Jensen 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deltaterrass-erne</td>
<td>11</td>
<td>GS</td>
<td>SD; PR</td>
<td>C/O/E</td>
<td>3m x 4m (9.42)</td>
<td>AFR; CA; PS; GS</td>
<td>US; BH (PS)</td>
<td>PE</td>
<td>yes</td>
<td>Jensen 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deltaterrass-erne</td>
<td>12</td>
<td>GS</td>
<td>B</td>
<td>C/O/E</td>
<td>3.4m diameter (9.08), est.</td>
<td>AF; PS</td>
<td>CO</td>
<td>NI</td>
<td>yes</td>
<td>SU</td>
<td>Jensen 2003</td>
<td></td>
</tr>
<tr>
<td>Deltaterrass-erne</td>
<td>13</td>
<td>GS?</td>
<td>PR; B</td>
<td>C/O/E</td>
<td>3.9m x 2.9m (8.88), est.</td>
<td>CH</td>
<td>NI</td>
<td>yes</td>
<td>Jensen 2003</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deltaterrass-erne</td>
<td>13a</td>
<td>?</td>
<td>PR</td>
<td>C/O/E</td>
<td>no information</td>
<td>SU</td>
<td>Jensen 2003</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**APPENDIX** - Palaeoeskimo domestic architectural remains *circa* 4500 B.P. until 1500 B.P.
<table>
<thead>
<tr>
<th>Location, Greenland</th>
<th>Site</th>
<th>Structure</th>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peary Land, Greenland</td>
<td>Deltaterrass-erne</td>
<td>14</td>
<td>GS?</td>
<td>PR; B</td>
<td>C/O/E?</td>
<td>no information</td>
<td>CH</td>
<td>SU</td>
<td>Jensen 2003</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Flaghøj</td>
<td>GS</td>
<td>PR</td>
<td>O-SR</td>
<td>3m x 4m (9.42)</td>
<td>AA; PS</td>
<td>no information</td>
<td>NI</td>
<td>yes?</td>
<td>SU</td>
<td>Jensen 2003</td>
<td></td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Vandfaldsnaes</td>
<td>15</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>no information</td>
<td>no information</td>
<td>NI</td>
<td>no?</td>
<td>SU</td>
<td>Jensen 2003</td>
<td></td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Midternæs</td>
<td>3</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>3.2m x 2.95m (6.28)</td>
<td>PS?</td>
<td>NI</td>
<td>yes</td>
<td>SU</td>
<td>Jensen 2003</td>
<td></td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Midternæs</td>
<td>5</td>
<td>GS</td>
<td>PR; B</td>
<td>C/O/E</td>
<td>no information</td>
<td>NI</td>
<td>NI</td>
<td>SU</td>
<td>Jensen 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Midternæs</td>
<td>6</td>
<td>GS</td>
<td>B</td>
<td>C/O/E</td>
<td>no information</td>
<td>NI</td>
<td>SU</td>
<td>Jensen 2003</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Kap Knud Rasmussen</td>
<td>6</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>no scale provided</td>
<td>AA; H; PS; P (PS;R)</td>
<td>NI</td>
<td>yes</td>
<td>S-SU</td>
<td>Jensen 2003</td>
<td></td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Killebukhus</td>
<td>GS</td>
<td>B</td>
<td>C/O/E</td>
<td>no information</td>
<td>no information</td>
<td>NI</td>
<td>yes</td>
<td>SU</td>
<td>Jensen 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Lagunhøjen</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>3.8m x 3.3m (9.84)</td>
<td>AA</td>
<td>CH</td>
<td>NI</td>
<td>yes</td>
<td>SU</td>
<td>Jensen 2003</td>
<td></td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Blæhej</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>no information</td>
<td>no information</td>
<td>NI</td>
<td>no?</td>
<td>SU</td>
<td>Jensen 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Søhuset</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>4m x 3.5m (10.99)</td>
<td>AA?</td>
<td>CH; BO; PS</td>
<td>NI</td>
<td>yes</td>
<td>SU</td>
<td>Jensen 2003</td>
<td></td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Gammel Strand Nord</td>
<td>1</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>1.5m diameter (1.77)</td>
<td>NI</td>
<td>SU</td>
<td>Jensen 2003</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Gammel Strand Nord</td>
<td>3</td>
<td>GS</td>
<td>HPR</td>
<td>C/O/E</td>
<td>3.6m x 2.8m (7.91)</td>
<td>AF; C (in perimeter wall)</td>
<td>S; 2.2m x 60cm; DWH</td>
<td>NI</td>
<td>yes</td>
<td>SU</td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Gammel Strand Nord</td>
<td>4</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>no information</td>
<td>NI</td>
<td>yes?</td>
<td>SU</td>
<td>Jensen 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Gammel Strand Nord</td>
<td>6</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>no information</td>
<td>CBH(P)</td>
<td>PE</td>
<td>yes</td>
<td>SU</td>
<td>Jensen 2003</td>
<td></td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Gammel Strand Nord</td>
<td>8</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>4.5m x 3.4m (12.01)</td>
<td>CBH</td>
<td>NI</td>
<td>yes</td>
<td>SU</td>
<td>Jensen 2003</td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>Site</td>
<td>Structure</td>
<td>Placement of Structure</td>
<td>Peripheral Marker</td>
<td>Structure Shape</td>
<td>Size and Area (m²)</td>
<td>Internal Features</td>
<td>Axial Feature Description</td>
<td>Entrance</td>
<td>Fully Excavated?</td>
<td>Suggested Season</td>
<td>Sources</td>
</tr>
<tr>
<td>---------------------------</td>
<td>--------------------------</td>
<td>-----------</td>
<td>------------------------</td>
<td>-------------------</td>
<td>-----------------</td>
<td>-------------------</td>
<td>-------------------</td>
<td>--------------------------</td>
<td>-----------</td>
<td>-----------------</td>
<td>------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Gammel Strand Øst</td>
<td>1</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>2.3m diameter (4.15)</td>
<td>H</td>
<td>NI</td>
<td>yes?</td>
<td>Jensen 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Gammel Strand Øst</td>
<td>2</td>
<td>GS</td>
<td>PR</td>
<td>R/SR/S</td>
<td>3-4m x 2.1m (6.3-8.34)</td>
<td>no information</td>
<td>NI</td>
<td>no</td>
<td>Jensen 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Gammel Strand Øst</td>
<td>3</td>
<td>GS</td>
<td>PR; B</td>
<td>C/O/E</td>
<td>no information</td>
<td>AF</td>
<td>H</td>
<td>NI</td>
<td>no</td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Kelterraserne</td>
<td>1</td>
<td>GS</td>
<td>PR; E</td>
<td>no information</td>
<td>no information</td>
<td>AA</td>
<td>NI</td>
<td>yes</td>
<td>SU</td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Kelterraserne</td>
<td>2</td>
<td>GS</td>
<td>no information</td>
<td>no information</td>
<td>no information</td>
<td>CH</td>
<td>NI</td>
<td>yes</td>
<td>SU</td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Kelterraserne</td>
<td>4</td>
<td>GS</td>
<td>PR; E</td>
<td>no information</td>
<td>CH</td>
<td>NI</td>
<td>yes?</td>
<td></td>
<td>SU</td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Kelterraserne</td>
<td>5</td>
<td>GS</td>
<td>no information</td>
<td>no information</td>
<td>AA</td>
<td>NI</td>
<td>yes</td>
<td>SU</td>
<td></td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Kelterraserne</td>
<td>12</td>
<td>GS</td>
<td>PR; E</td>
<td>C/O/E</td>
<td>2.9m x 3.2m (7.29), est.</td>
<td>AA</td>
<td>NI</td>
<td>yes</td>
<td>SU</td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Kap Peter Henrik North</td>
<td>N-2</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>4m diameter (12.56)</td>
<td>RH</td>
<td>NI</td>
<td>yes</td>
<td>Jensen 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Kap Peter Henrik North</td>
<td>N-3</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>3m x 3m (7.1)</td>
<td>CH; AA or PS?</td>
<td>NI</td>
<td>yes</td>
<td>Jensen 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Kap Peter Henrik North</td>
<td>N-4</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>no information</td>
<td>CH</td>
<td>NI</td>
<td>yes?</td>
<td>Jensen 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Adam C. Knuth</td>
<td>I,2</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>2.5m diameter (4.91)</td>
<td>BH</td>
<td>NI</td>
<td>yes</td>
<td>S/SU?</td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Adam C. Knuth</td>
<td>I, 3</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>3.5m diameter (9.62)</td>
<td>NI</td>
<td>NI</td>
<td>yes</td>
<td>S/SU?</td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Adam C. Knuth</td>
<td>II, 2</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>3m diameter (7.07)</td>
<td>CH</td>
<td>NI</td>
<td>yes</td>
<td>S/SU?</td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Adam C. Knuth</td>
<td>II, 4</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>3.6m x 2.5m (7.07)</td>
<td>NI</td>
<td>NI</td>
<td>yes</td>
<td>S/SU?</td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Adam C. Knuth</td>
<td>III, 1</td>
<td>GS</td>
<td>PR; CA</td>
<td>C/O/E</td>
<td>5.5m diameter (23.75)</td>
<td>CH; RP</td>
<td>PB</td>
<td>yes</td>
<td>YR?</td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Adam C. Knuth</td>
<td>III, 2</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>4.5m diameter (15.9)</td>
<td>AF</td>
<td>CO; S; 2.2m length (no width); RBH</td>
<td>NI</td>
<td>yes</td>
<td>YR?</td>
<td>Jensen 2003</td>
</tr>
</tbody>
</table>

**APPENDIX** - Palaeoeskimo domestic architectural remains *circa* 4500 B.P. until 1500 B.P. 562
<table>
<thead>
<tr>
<th>Location</th>
<th>Site</th>
<th>Structure</th>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peary Land, Greenland</td>
<td>Adam C. Knuth</td>
<td>III, 3</td>
<td>GS</td>
<td>PR; B</td>
<td>R/SR/S</td>
<td>4.3m x 3m (12.9)</td>
<td>AF</td>
<td>CO; S; 3m(est) x 40-50cm</td>
<td>NI</td>
<td>yes</td>
<td>YR?</td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Adam C. Knuth</td>
<td>III, 4</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>4m diameter (12.56)</td>
<td>AF</td>
<td>RBH</td>
<td>NI</td>
<td>yes</td>
<td>YR?</td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Adam C. Knuth</td>
<td>III, 5</td>
<td>GS</td>
<td>B; RW</td>
<td>C/O/E</td>
<td>5m diameter (19.63)</td>
<td>AF</td>
<td>CL; H?(PS?)</td>
<td>NI</td>
<td>yes</td>
<td>YR?</td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Den Blå Flints Boplads</td>
<td>A</td>
<td>GS</td>
<td>PR?</td>
<td>C/O/E</td>
<td>2.2m diameter (3.8)</td>
<td>NI</td>
<td></td>
<td>NI</td>
<td>yes</td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Den Blå Flints Boplads</td>
<td>B</td>
<td>GS</td>
<td>NI</td>
<td>C/O/E</td>
<td>no information CH(BH? or APS?)</td>
<td>NI</td>
<td>yes?</td>
<td></td>
<td>Jensen 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Den Blå Flints Boplads</td>
<td>D</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>no information CH(PH; PS)</td>
<td>NI</td>
<td>yes?</td>
<td></td>
<td>Jensen 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Prinsesse Ingeborg Halvø B</td>
<td>GS</td>
<td>PR?</td>
<td>C/O/E</td>
<td></td>
<td>2.5m x 3.5m (6.87)</td>
<td>NI</td>
<td></td>
<td>NI</td>
<td>yes?</td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Bache Peninsula</td>
<td>Lakeview (SjFj-3)</td>
<td>7</td>
<td>GS</td>
<td>PR; CA2</td>
<td>C/O/E</td>
<td>3.2m x 3m (8.48)</td>
<td>CA2; AF</td>
<td>S; CH</td>
<td>almost</td>
<td>Schledermann</td>
<td>1990</td>
<td></td>
</tr>
<tr>
<td>Bache Peninsula</td>
<td>Lakeview (SjFj-3)</td>
<td>30</td>
<td>GS</td>
<td>B; PR</td>
<td>C/O/E</td>
<td>4.5m x 3.5m (12.36)</td>
<td>CH</td>
<td>n/a</td>
<td>TW</td>
<td>no</td>
<td></td>
<td>Schledermann</td>
</tr>
<tr>
<td>Bache Peninsula</td>
<td>Skraeling Island ASTt-7 (SIFk-12)</td>
<td>1</td>
<td>GS</td>
<td>PR; B; SD</td>
<td>C/O/E</td>
<td>2.65m x 2.1m (4.37)</td>
<td>AF</td>
<td>S?; CH; RP</td>
<td>no</td>
<td>Schledermann</td>
<td>1990</td>
<td></td>
</tr>
<tr>
<td>Bache Peninsula</td>
<td>Skraeling Island ASTt-7 (SIFk-12)</td>
<td>3</td>
<td>GS</td>
<td>PR?</td>
<td>R/SR/S</td>
<td>3.75m x 2.8m (10.5)</td>
<td>AF</td>
<td>S; 2.8m x 48cm; CH</td>
<td>no</td>
<td>Schledermann</td>
<td>1990</td>
<td></td>
</tr>
<tr>
<td>Bache Peninsula</td>
<td>Camp View (SIFk-22)</td>
<td>1</td>
<td>GS</td>
<td>PR</td>
<td>R/SR/S</td>
<td>4.3m x 2.5m (10.75)</td>
<td>AF; CA2</td>
<td>S; 2.5m x 75cm; CH; PS?; DW</td>
<td>TW</td>
<td>no</td>
<td></td>
<td>Schledermann</td>
</tr>
<tr>
<td>Bache Peninsula</td>
<td>Camp View (SIFk-22)</td>
<td>2</td>
<td>GS</td>
<td>PR</td>
<td>R/SR/S</td>
<td>3.1m x 4m (12.4)</td>
<td>AF</td>
<td>S; 3m x 70cm; CO; RP; CH; BS; SH</td>
<td>TW</td>
<td>no</td>
<td></td>
<td>Schledermann</td>
</tr>
<tr>
<td>Devon Island</td>
<td>Port Refuge (RbJu-1) Cold Component</td>
<td>1</td>
<td>SS</td>
<td>SD</td>
<td>R/SR/S</td>
<td>3m x 2.2m (6.6)</td>
<td>AF</td>
<td>S; CO; 2m x 50cm; H; PW</td>
<td>NI</td>
<td>yes</td>
<td></td>
<td>McGhee 1979</td>
</tr>
<tr>
<td>Devon Island</td>
<td>Port Refuge (RbJu-1) Cold Component</td>
<td>3</td>
<td>SS</td>
<td>SD</td>
<td>R/SR/S</td>
<td>3.2m x 2m (6.4)</td>
<td>BH; AF?</td>
<td>S; CO; 50cm x 50cm; 1m long slab alignment (AF?)</td>
<td>yes</td>
<td></td>
<td></td>
<td>McGhee 1979</td>
</tr>
</tbody>
</table>

APPENDIX - Palaeoeskimo domestic architectural remains *circa* 4500 B.P. until 1500 B.P. 563
<table>
<thead>
<tr>
<th>Location</th>
<th>Site</th>
<th>Structure</th>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Devon Island</td>
<td>Port Refuge (RbJu-1) Cold Component</td>
<td>6</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>2m diameter</td>
<td>NI</td>
<td></td>
<td>yes</td>
<td></td>
<td></td>
<td>McGhee 1979</td>
</tr>
<tr>
<td>Devon Island</td>
<td>Port Refuge (RbJu-1) Cold Component</td>
<td>7</td>
<td>GS</td>
<td>PR</td>
<td>R/SR/S</td>
<td>3m x 2m (6)</td>
<td>NI</td>
<td></td>
<td>yes</td>
<td></td>
<td></td>
<td>McGhee 1979</td>
</tr>
<tr>
<td>Devon Island</td>
<td>Port Refuge (RbJu-1) Cold Component</td>
<td>10</td>
<td>SS</td>
<td>SD</td>
<td>O-SR</td>
<td>2.5m x 2m</td>
<td>AF?</td>
<td>EL; 2m x 60cm</td>
<td>no</td>
<td></td>
<td></td>
<td>McGhee 1979</td>
</tr>
<tr>
<td>Devon Island</td>
<td>Port Refuge (RbJu-1) Cold Component</td>
<td>19</td>
<td>SS</td>
<td>SD</td>
<td>R/SR/S</td>
<td>3.2m x 2.8m</td>
<td>AF?</td>
<td>S(1 row); EL</td>
<td>yes</td>
<td></td>
<td></td>
<td>McGhee 1979</td>
</tr>
<tr>
<td>Devon Island</td>
<td>Port Refuge (RbJu-1) Cold Component</td>
<td>21</td>
<td>SS?</td>
<td>SD?</td>
<td>R/SR/S</td>
<td>3m x 2m (6)</td>
<td>AF?</td>
<td>EL</td>
<td>yes</td>
<td></td>
<td></td>
<td>McGhee 1979</td>
</tr>
<tr>
<td>Devon Island</td>
<td>Port Refuge (RbJu-1) Cold Component</td>
<td>22</td>
<td>SS</td>
<td>SD</td>
<td>C/O/E</td>
<td>2.5m x 2m</td>
<td>BH</td>
<td>S; CO; 50cm x 50cm</td>
<td>no</td>
<td></td>
<td></td>
<td>McGhee 1979</td>
</tr>
<tr>
<td>Devon Island</td>
<td>Port Refuge (RbJu-1) Cold Component</td>
<td>26</td>
<td>GS</td>
<td>PR</td>
<td>R/SR/S</td>
<td>3m x 2m (6)</td>
<td>AF?</td>
<td>S; CO; 2m x 50cm</td>
<td>no</td>
<td></td>
<td></td>
<td>McGhee 1979</td>
</tr>
<tr>
<td>Devon Island</td>
<td>Port Refuge (RbJu-1) Cold Component</td>
<td>27</td>
<td>?</td>
<td>NI</td>
<td>?</td>
<td>?</td>
<td>AF</td>
<td>S; 1.8m x 80cm</td>
<td>no</td>
<td></td>
<td></td>
<td>McGhee 1979</td>
</tr>
<tr>
<td>Devon Island</td>
<td>Port Refuge (RbJu-1) Cold Component</td>
<td>28</td>
<td>SS</td>
<td>SD</td>
<td>C/O/E</td>
<td>2.6m x 1.8m</td>
<td>AF?</td>
<td>S; CO</td>
<td>yes</td>
<td></td>
<td></td>
<td>McGhee 1979</td>
</tr>
<tr>
<td>Devon Island</td>
<td>Port Refuge (RbJu-1) Upper Beaches Component</td>
<td>1</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>2m x 2.5m</td>
<td>BH(S; CO; 20cm x 30cm)</td>
<td>yes</td>
<td>SU</td>
<td></td>
<td>McGhee 1979</td>
<td></td>
</tr>
<tr>
<td>Devon Island</td>
<td>Port Refuge (RbJu-1) Upper Beaches Component</td>
<td>2</td>
<td>GS</td>
<td>V</td>
<td>O-SR</td>
<td>3m x 2m (4.71)</td>
<td>BH?</td>
<td></td>
<td>no</td>
<td>SU</td>
<td></td>
<td>McGhee 1979</td>
</tr>
<tr>
<td>Devon Island</td>
<td>Port Refuge (RbJu-1) Upper Beaches Component</td>
<td>3</td>
<td>GS</td>
<td>V</td>
<td>O-SR</td>
<td>3m x 2m (4.71)</td>
<td>BH?</td>
<td></td>
<td>no</td>
<td>SU</td>
<td></td>
<td>McGhee 1979</td>
</tr>
</tbody>
</table>

**APPENDIX** - Palaeoeskimo domestic architectural remains *circa* 4500 B.P. until 1500 B.P.
<table>
<thead>
<tr>
<th>Location</th>
<th>Site</th>
<th>Structure</th>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Devon Island</td>
<td>Port Refuge (RbJu-1) Upper Beaches Component</td>
<td>4</td>
<td>GS</td>
<td>V</td>
<td>O-SR</td>
<td>3m x 2m (4.71)</td>
<td>BH?</td>
<td></td>
<td>no</td>
<td>SU</td>
<td>McGhee 1979</td>
<td></td>
</tr>
<tr>
<td>Devon Island</td>
<td>Port Refuge (RbJu-1) Upper Beaches Component</td>
<td>5</td>
<td>GS</td>
<td>V</td>
<td>O-SR</td>
<td>3m x 2m (4.71)</td>
<td>BH?</td>
<td></td>
<td>no</td>
<td>SU</td>
<td>McGhee 1979</td>
<td></td>
</tr>
<tr>
<td>Devon Island</td>
<td>Port Refuge (RbJu-1) Upper Beaches Component</td>
<td>6</td>
<td>GS</td>
<td>V</td>
<td>C/O/E</td>
<td>3m x 2m (4.71)</td>
<td>AF?</td>
<td>CO; 1.5m x 50cm (est., only one row); BH (50cm x 50cm)</td>
<td>yes</td>
<td>SU</td>
<td>McGhee 1979</td>
<td></td>
</tr>
<tr>
<td>Sisimiut, Greenland</td>
<td>Akia</td>
<td>GS</td>
<td>PR</td>
<td>R/SR/S</td>
<td>7m x 4m (28)</td>
<td>BH</td>
<td>TW</td>
<td>yes</td>
<td>W</td>
<td>Kramer 1996b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sisimiut, Greenland</td>
<td>Nipisat</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>3-4m diameter (7.07-12.56)</td>
<td>CBH</td>
<td>NI</td>
<td>yes</td>
<td>SU</td>
<td>Møberg 1999</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sisimiut, Greenland</td>
<td>Angujaartorfik A4</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>no information</td>
<td>CH; AA?</td>
<td>NI</td>
<td>yes?</td>
<td>Kapel 1996</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sisimiut, Greenland</td>
<td>Angujaartorfik B5</td>
<td>GS</td>
<td>PR or K</td>
<td>C or K</td>
<td>no information</td>
<td>CH; AA?</td>
<td>NI</td>
<td>yes?</td>
<td>Kapel 1996</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sisimiut, Greenland</td>
<td>Angujaartorfik B8</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>no information</td>
<td>AA?</td>
<td>NI</td>
<td>yes?</td>
<td>Kapel 1996</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sisimiut, Greenland</td>
<td>Angujaartorfik B17</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>no information</td>
<td>CH</td>
<td>NI</td>
<td>yes?</td>
<td>Kapel 1996</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sisimiut, Greenland</td>
<td>Angujaartorfik B20</td>
<td>GS</td>
<td>HPR</td>
<td>C/O/E</td>
<td>no information</td>
<td>NI</td>
<td>NI</td>
<td>yes?</td>
<td>Kapel 1996</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sisimiut, Greenland</td>
<td>Angujaartorfik B21</td>
<td>GS</td>
<td>PR or B</td>
<td>C/O/E</td>
<td>no information</td>
<td>AA?</td>
<td>NI</td>
<td>yes?</td>
<td>Kapel 1996</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disko Bay, Greenland</td>
<td>Qeqertasussuk A8</td>
<td>GS</td>
<td>no information</td>
<td>no information</td>
<td>7m x 4m (21.98-28)</td>
<td>AF; P(2)</td>
<td>CL; PS; BS; 4m x 70 cm (est.)</td>
<td>NI</td>
<td>yes</td>
<td>Grennow 1994</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disko Bay, Greenland</td>
<td>Nivertussang-guaq II</td>
<td>GS</td>
<td>SW; AD; PS</td>
<td>C/O/E</td>
<td>4m diameter (12.56)</td>
<td>CBH (PS; BS); P; CA</td>
<td>AD</td>
<td>yes</td>
<td>Olsen 1998</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**APPENDIX** - Palaeoeskimo domestic architectural remains *circa* 4500 B.P. until 1500 B.P.
<table>
<thead>
<tr>
<th>Location</th>
<th>Site</th>
<th>Structure</th>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disko Bay, Greenland</td>
<td>Nivertussann-guaq</td>
<td>III</td>
<td>GS</td>
<td>BS</td>
<td>C/O/E</td>
<td>4m diameter (12.56)</td>
<td>NI</td>
<td></td>
<td>NI</td>
<td>yes?</td>
<td></td>
<td>Olsen 1998</td>
</tr>
<tr>
<td>Disko Bay, Greenland</td>
<td>Tupersuai I</td>
<td>I</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>4m diameter (12.56)</td>
<td>CH; AA?; PS?</td>
<td></td>
<td>NI</td>
<td>yes</td>
<td></td>
<td>Olsen 1998</td>
</tr>
<tr>
<td>Disko Bay, Greenland</td>
<td>Tupersuai II</td>
<td>II</td>
<td>GS</td>
<td>PR</td>
<td>R/S/R/S</td>
<td>1.5m x 1.5m (2.25)</td>
<td>NI</td>
<td></td>
<td>NI</td>
<td>yes</td>
<td></td>
<td>Olsen 1998</td>
</tr>
<tr>
<td>Disko Bay, Greenland</td>
<td>Tupersuai III</td>
<td>III</td>
<td>GS</td>
<td>no information</td>
<td>no information</td>
<td>no information</td>
<td>AF; P?</td>
<td>CL; 3.2m x 1m; PS; APS</td>
<td>NI</td>
<td>yes?</td>
<td></td>
<td>Olsen 1998</td>
</tr>
<tr>
<td>Disko Bay, Greenland</td>
<td>Tupersuai V</td>
<td>V</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E?</td>
<td>no information</td>
<td>P; PS; BH3</td>
<td></td>
<td>NI</td>
<td>yes</td>
<td></td>
<td>Olsen 1998</td>
</tr>
<tr>
<td>Nuuk Fjord, Greenland</td>
<td>Nuunguaq A</td>
<td>A</td>
<td>GS</td>
<td>PR</td>
<td>O-S</td>
<td>5.5m x 5m (21.59-27.5)</td>
<td>AF; P; H(2)</td>
<td>CL; 2m x 80cm; PS; ER?; H</td>
<td>TW(PE?)</td>
<td>yes</td>
<td>F</td>
<td>Appelt and Pind 1996; Appelt 2003</td>
</tr>
<tr>
<td>Nuuk Fjord, Greenland</td>
<td>Nuunguaq B1</td>
<td>B1</td>
<td>GS</td>
<td>PR+S (SW?)</td>
<td>C/O/E</td>
<td>6m x 4.2m (19.78)</td>
<td>CBH3; APS</td>
<td></td>
<td>PB; TW</td>
<td>yes</td>
<td>W+</td>
<td>Appelt and Pind 1996; Appelt 2003</td>
</tr>
<tr>
<td>Nuuk Fjord, Greenland</td>
<td>Nuunguaq D</td>
<td>D</td>
<td>GS</td>
<td>PR</td>
<td>O-S</td>
<td>4-5m diameter (12.56-19.63)</td>
<td>CBH3</td>
<td></td>
<td>PB; TI</td>
<td>yes?</td>
<td>F</td>
<td>Appelt and Pind 1996; Appelt 2003</td>
</tr>
<tr>
<td>Nuuk Fjord, Greenland</td>
<td>Nuunguaq E</td>
<td>E</td>
<td>GS</td>
<td>PR</td>
<td>O-S</td>
<td>4-5m diameter (12.56-19.63)</td>
<td>no information</td>
<td></td>
<td>TW</td>
<td>yes?</td>
<td>F</td>
<td>Appelt and Pind 1996; Appelt 2003</td>
</tr>
<tr>
<td>Nuuk Fjord, Greenland</td>
<td>Nuunguaq 1</td>
<td>1</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>6m x 5m (23.55)</td>
<td>CH; AA</td>
<td>CL; PS</td>
<td>TW</td>
<td>yes</td>
<td></td>
<td>Appelt and Pind 1996</td>
</tr>
<tr>
<td>Skjoldungen, Greenland</td>
<td>63Ø1-III-46</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>4.75m x 3.25m (12.12), est.</td>
<td>AF</td>
<td>CL; CO; 2-3m x 70cm; PS; RP</td>
<td>NI</td>
<td>yes</td>
<td>LF</td>
<td>Jensen 1996</td>
<td></td>
</tr>
<tr>
<td>Bache Peninsula, Bight (SgFm-16)</td>
<td>1</td>
<td>SS</td>
<td>B</td>
<td>C/O/E</td>
<td>4.2m x 3.1m (10.22)</td>
<td>NI</td>
<td></td>
<td>PB</td>
<td>no</td>
<td>LSU/EF</td>
<td>Schledermann 1990</td>
<td></td>
</tr>
<tr>
<td>Bache Peninsula, Bight (SgFm-16)</td>
<td>2</td>
<td>GS</td>
<td>B</td>
<td>C/O/E</td>
<td>4m x 3.5m (10.99)</td>
<td>NI</td>
<td></td>
<td>NI</td>
<td>no</td>
<td>LSU/EF</td>
<td>Schledermann 1990</td>
<td></td>
</tr>
<tr>
<td>Bache Peninsula, Lakeview (SjFj-3)</td>
<td>4</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>4.5m x 3.3m (11.66)</td>
<td>AF</td>
<td>S; CH; APS</td>
<td>NI</td>
<td>no</td>
<td></td>
<td>Schledermann 1990</td>
<td></td>
</tr>
</tbody>
</table>

**APPENDIX** - Palaeoeskimo domestic architectural remains *circa* 4500 B.P. until 1500 B.P.
<table>
<thead>
<tr>
<th>Location</th>
<th>Site</th>
<th>Structure</th>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bache Peninsula</td>
<td>Ridge (SgFm-6)</td>
<td>1</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>3.7m diameter (10.75)</td>
<td>CH?BS?SH?</td>
<td></td>
<td>no</td>
<td></td>
<td></td>
<td>Schledermann 1990</td>
</tr>
<tr>
<td>Bache Peninsula</td>
<td>Ridge (SgFm-6)</td>
<td>2</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>6m diameter (28.26)</td>
<td>AF?</td>
<td>disturbed</td>
<td>yes</td>
<td></td>
<td></td>
<td>Schledermann 1990</td>
</tr>
<tr>
<td>Devon Island</td>
<td>Port Refuge (RbJu-1) Gull Cliff Component</td>
<td>1</td>
<td>GS</td>
<td>V</td>
<td>C/O/E?</td>
<td>3m diameter (7.07)</td>
<td>NI</td>
<td></td>
<td>yes</td>
<td></td>
<td></td>
<td>McGhee 1979</td>
</tr>
<tr>
<td>Devon Island</td>
<td>Port Refuge (RbJu-1) Gull Cliff Component</td>
<td>4</td>
<td>GS</td>
<td>SD; V</td>
<td>C/O/E</td>
<td>4m x 3m (9.42)</td>
<td>NI</td>
<td></td>
<td>yes</td>
<td></td>
<td></td>
<td>McGhee 1979</td>
</tr>
<tr>
<td>Prince of Wales Island</td>
<td>Matoos (Pjld-5)</td>
<td>1</td>
<td>GS</td>
<td>V</td>
<td>C/O/E</td>
<td>1.75m diameter (2.4)</td>
<td>NI</td>
<td></td>
<td>W</td>
<td></td>
<td>Ramsden and Murray 1995</td>
<td></td>
</tr>
<tr>
<td>Prince of Wales Island</td>
<td>Matoos (Pjld-5)</td>
<td>8</td>
<td>GS</td>
<td>V</td>
<td>C/O/E</td>
<td>2m diameter (3.14)</td>
<td>NI</td>
<td></td>
<td>W</td>
<td></td>
<td>Ramsden and Murray 1995</td>
<td></td>
</tr>
<tr>
<td>Prince of Wales Island</td>
<td>Matoos (Pjld-5)</td>
<td>11</td>
<td>GS</td>
<td>V</td>
<td>C/O/E</td>
<td>2m diameter (3.14)</td>
<td>NI</td>
<td></td>
<td>W</td>
<td></td>
<td>Ramsden and Murray 1995</td>
<td></td>
</tr>
<tr>
<td>Prince of Wales Island</td>
<td>Matoos (Pjld-5)</td>
<td>13</td>
<td>GS</td>
<td>V</td>
<td>C/O/E</td>
<td>2.75m diameter (5.94)</td>
<td>NI</td>
<td></td>
<td>W</td>
<td></td>
<td>Ramsden and Murray 1995</td>
<td></td>
</tr>
<tr>
<td>Prince of Wales Island</td>
<td>Matoos (Pjld-5)</td>
<td>16</td>
<td>GS</td>
<td>V</td>
<td>C/O/E</td>
<td>2.5m diameter (4.91)</td>
<td>CH</td>
<td></td>
<td>NI</td>
<td>yes</td>
<td>W</td>
<td>Ramsden and Murray 1995</td>
</tr>
<tr>
<td>Somerset Island</td>
<td>Strand (PjLd-11)</td>
<td>2</td>
<td>SS</td>
<td>SD</td>
<td>R/SR/S</td>
<td>3.5m x 2.5m (8.75)</td>
<td>CA</td>
<td></td>
<td></td>
<td></td>
<td>Ramsden and Murray 1995</td>
<td></td>
</tr>
<tr>
<td>Somerset Island</td>
<td>Kent (PlJd-22)</td>
<td>1</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>6m diameter (28.26)</td>
<td>CA</td>
<td></td>
<td>yes</td>
<td>S/SU</td>
<td>Ramsden and Murray 1995</td>
<td></td>
</tr>
<tr>
<td>Somerset Island</td>
<td>Tasealuk (PlJv-2)</td>
<td>118</td>
<td>SS</td>
<td>DD; B</td>
<td>C/O/E</td>
<td>2m diameter (3.14)</td>
<td>AA?; SA</td>
<td>H</td>
<td>yes</td>
<td></td>
<td>Bielawski 1989</td>
<td></td>
</tr>
<tr>
<td>Somerset Island</td>
<td>Tasealuk (PlJv-2)</td>
<td>127</td>
<td>SS</td>
<td>SD; B</td>
<td>C/O/E</td>
<td>2.5m x 2.1m (4.12)</td>
<td>NI</td>
<td></td>
<td>yes</td>
<td></td>
<td>Bielawski 1989</td>
<td></td>
</tr>
<tr>
<td>Somerset Island</td>
<td>Tasealuk (PlJv-2)</td>
<td>183</td>
<td>GS</td>
<td>CA2; V; B</td>
<td>C/O/E</td>
<td>3.5m x 3m (8.24)</td>
<td>AA; H; BO</td>
<td>V (no stone)</td>
<td>AW</td>
<td>yes</td>
<td>SU</td>
<td>Bielawski 1989</td>
</tr>
<tr>
<td>Somerset Island</td>
<td>Tasealuk (PlJv-2)</td>
<td>252</td>
<td>SS</td>
<td>SD; V</td>
<td>NI</td>
<td>NI</td>
<td>AA; PS</td>
<td></td>
<td></td>
<td></td>
<td>Bielawski 1989</td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>Site</td>
<td>Structure</td>
<td>Placement of Structure</td>
<td>Peripheral Marker</td>
<td>Structure Shape</td>
<td>Size and Area (m²)</td>
<td>Internal Features</td>
<td>Axial Feature Description</td>
<td>Entrance</td>
<td>Fully Excavated?</td>
<td>Suggested Season</td>
<td>Sources</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------------------------</td>
<td>-----------</td>
<td>------------------------</td>
<td>-------------------</td>
<td>----------------</td>
<td>-------------------</td>
<td>-------------------</td>
<td>------------------------</td>
<td>----------</td>
<td>----------------</td>
<td>-------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>Pelly Bay</td>
<td>Kugarjuk IV (NdJf-1) A GS PR R/SR/S 5m x 4m (20) AA? DA (AFR?); CH (BH?) no no</td>
<td>no</td>
<td>Mary-Rousselière 1964</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pelly Bay</td>
<td>Kugarjuk IV (NdJf-1) B GS PR R/SR/S 3.25m x 2.5m (8.125) NI no no</td>
<td>no</td>
<td>Mary-Rousselière 1964</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pelly Bay</td>
<td>Kugarjuk IV (NdJf-1) C GS PR R/SR/S 5.5m x 4.5m (24.75) NI no no</td>
<td>no</td>
<td>Mary-Rousselière 1964</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pelly Bay</td>
<td>St. Mary's Hill (NdJf-2) 1 GS PR (RW?) K 4.5m x 2m (9) AA? NI yes Mary-Rousselière 1964</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melville Peninsula</td>
<td>west coast of Cape McLoughlin . GS PR R/SR/S no information AF(2); C no information no no</td>
<td>no</td>
<td>Rowley 1992, pers. comm. 2003; Rowley and Rowley 1997</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foxe Basin</td>
<td>Lyon (NiHf-2) 1 GS NI C/O/E 3m x 2.1m (4.95) H(2); PS NI yes SU Murray 1996</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foxe Basin</td>
<td>Lyon (NiHf-2) B GS NI C/O/E 3m x 2m (4.71) NI NI yes SU Murray 1996</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foxe Basin</td>
<td>Lyon (NiHf-2) D GS NI C/O/E 3m x 2m (4.71) NI NI yes Murray 1996</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foxe Basin</td>
<td>NiHf-58 1 GS AD; PS C/O/E 3.8m x 3.4m (10.14) H; PS SU Murray 1996</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foxe Basin</td>
<td>NiHf-58 3 GS AD; PS C/O/E 3.5m x 3.2m (8.79) H; PS SU? Murray 1996</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foxe Basin</td>
<td>NiHf-58 4 GS AD; PS NI 1.9m x 1.2m (1.79-2.28) H W? Murray 1996</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foxe Basin</td>
<td>NiHf-58 14 GS PR C/O/E 3m x 2.4m (5.65) H; PE PE W? Murray 1996</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foxe Basin</td>
<td>NiHf-58 24 GS AD; V C/O/E 2.4m x 1.7m (3.2) H SU? Murray 1996</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foxe Basin</td>
<td>NiHf-58 30 GS PR C/O/E 4.4m x 2.2m (7.6) H(2); PE PE SU Murray 1996</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foxe Basin</td>
<td>NcCh-69 4 GS PR no information no information AA S NI yes? S/SU Bielawski 1985</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**APPENDIX** - Palaeoeskimo domestic architectural remains *circa* 4500 B.P. until 1500 B.P. 568
<table>
<thead>
<tr>
<th>Location</th>
<th>Site</th>
<th>Structure</th>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foxe Basin</td>
<td>NcCh-69</td>
<td>29</td>
<td>GS</td>
<td>V</td>
<td>no information</td>
<td>AA? no information</td>
<td>NI</td>
<td>yes?</td>
<td>W</td>
<td>yes</td>
<td>Bielawski 1985</td>
<td></td>
</tr>
<tr>
<td>Foxe Basin</td>
<td>NcCh-69</td>
<td>30</td>
<td>GS</td>
<td>V</td>
<td>no information</td>
<td>AA? no information</td>
<td>NI</td>
<td>yes?</td>
<td>W</td>
<td>yes</td>
<td>Bielawski 1985</td>
<td></td>
</tr>
<tr>
<td>Foxe Basin</td>
<td>NcCh-69</td>
<td>31</td>
<td>GS</td>
<td>V</td>
<td>no information</td>
<td>AA? no information</td>
<td>NI</td>
<td>yes?</td>
<td>W</td>
<td>yes</td>
<td>Bielawski 1985</td>
<td></td>
</tr>
<tr>
<td>Foxe Basin</td>
<td>NcCh-69</td>
<td>32</td>
<td>GS</td>
<td>V</td>
<td>no information</td>
<td>AA? no information</td>
<td>NI</td>
<td>yes?</td>
<td>W</td>
<td>yes</td>
<td>Bielawski 1985</td>
<td></td>
</tr>
<tr>
<td>Foxe Basin</td>
<td>Kapuivik / Jens Munk (NjHa-1)</td>
<td>Ni</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>CH</td>
<td>no information</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hudson Bay</td>
<td>Seahorse Gully (IeKn-6)</td>
<td>1</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>2.44m diameter (4.67)</td>
<td>CH (LS?)</td>
<td>yes</td>
<td>Meyer 1977</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hudson Bay</td>
<td>Seahorse Gully (IeKn-6)</td>
<td>2</td>
<td>GS</td>
<td>PR</td>
<td>R/SR/S</td>
<td>3m x 3.4 (10.2)</td>
<td>AF? LS</td>
<td>yes</td>
<td>W? Meyer 1977</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hudson Bay</td>
<td>Seahorse Gully (IeKn-6)</td>
<td>4</td>
<td>GS</td>
<td>PR</td>
<td>R/SR/S</td>
<td>2.44m x 3m (7.32)</td>
<td>NI</td>
<td>yes</td>
<td>Meyer 1977</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hudson Bay</td>
<td>Seahorse Gully (IeKn-6)</td>
<td>5</td>
<td>GS</td>
<td>PR</td>
<td>R/SR/S</td>
<td>4.25m x 3m (12.75)</td>
<td>CH (LS?)</td>
<td>yes</td>
<td>Meyer 1977</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hudson Bay</td>
<td>Seahorse Gully (IeKn-6)</td>
<td>6</td>
<td>GS</td>
<td>PR</td>
<td>R/SR/S</td>
<td>6m x 3.66m (21.96)</td>
<td>AF CO CH</td>
<td>yes</td>
<td>Meyer 1977</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hudson Bay</td>
<td>Seahorse Gully (IeKn-6)</td>
<td>7 (north)</td>
<td>GS</td>
<td>PR</td>
<td>R/SR/S</td>
<td>4.6m x 3.7m (17.02)</td>
<td>AF CO</td>
<td>yes</td>
<td>Meyer 1977</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hudson Bay</td>
<td>Seahorse Gully (IeKn-6)</td>
<td>8</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>4m x 3m (9.42)</td>
<td>NI</td>
<td>yes</td>
<td>Meyer 1977</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hudson Bay</td>
<td>Seahorse Gully (IeKn-6)</td>
<td>10</td>
<td>SS</td>
<td>SD</td>
<td>C/O/E</td>
<td>3.66m diameter (10.52)</td>
<td>PS</td>
<td>yes</td>
<td>W? Meyer 1977</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hudson Bay</td>
<td>Seahorse Gully (IeKn-6)</td>
<td>11</td>
<td>SS</td>
<td>SD; CA; PR</td>
<td>C/O/E</td>
<td>3.4m x 4m (10.68)</td>
<td>PE</td>
<td>no</td>
<td>Meyer 1977</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hudson Bay</td>
<td>Seahorse Gully (IeKn-6)</td>
<td>12</td>
<td>SS</td>
<td>SD; PR</td>
<td>C/O/E</td>
<td>4.11m diameter (13.26)</td>
<td>CH</td>
<td>yes</td>
<td>Meyer 1977</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hudson Bay</td>
<td>Seahorse Gully (IeKn-6)</td>
<td>13</td>
<td>SS</td>
<td>SD; PR</td>
<td>C/O/E</td>
<td>4.9m x 3.1m (11.92)</td>
<td>CS</td>
<td>yes</td>
<td>Meyer 1977</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**APPENDIX** - Palaeoeskimo domestic architectural remains *circa* 4500 B.P. until 1500 B.P.
<table>
<thead>
<tr>
<th>Location</th>
<th>Site</th>
<th>Structure</th>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belcher Islands (Hudson Bay)</td>
<td>Tuurnagasiti-2 (HdTg-2)</td>
<td>.</td>
<td>GS</td>
<td>CA</td>
<td>C/O/E</td>
<td>4.5m diameter (15.9)</td>
<td>AA</td>
<td>CBH; DA; PS</td>
<td>NI</td>
<td>yes</td>
<td>S/SU</td>
<td>Harp 1997</td>
</tr>
<tr>
<td>Belcher Islands (Hudson Bay)</td>
<td>Tuurnagasiti-4 (HdTg-4)</td>
<td>.</td>
<td>GS</td>
<td>CA</td>
<td>C/O/E</td>
<td>no information</td>
<td>AA</td>
<td>CBH; DA; PS</td>
<td>NI</td>
<td>yes</td>
<td>S/SU?</td>
<td>Harp 1997</td>
</tr>
<tr>
<td>Belcher Islands (Hudson Bay)</td>
<td>Renouf-2 (HdGt-2)</td>
<td>.</td>
<td>GS</td>
<td>CA</td>
<td>C/O/E</td>
<td>no information</td>
<td>AA</td>
<td>CBH; DA; PS</td>
<td>NI</td>
<td>yes</td>
<td>S/SU?</td>
<td>Harp 1997</td>
</tr>
<tr>
<td>Kuujjuarapik (Hudson Bay)</td>
<td>Poste-de-la-Baleine (GhGk-4)</td>
<td>A</td>
<td>SS</td>
<td>SD; B</td>
<td>C/O/E</td>
<td>4m x 2.6m (8.16)</td>
<td>AF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Plumet 1976</td>
</tr>
<tr>
<td>Kuujjuarapik (Hudson Bay)</td>
<td>Poste-de-la-Baleine (GhGk-4)</td>
<td>B</td>
<td>SS</td>
<td>SD; B</td>
<td>C/O/E</td>
<td>4.8m x 4m (15.07)</td>
<td>AF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Plumet 1976</td>
</tr>
<tr>
<td>Kuujjuarapik (Hudson Bay)</td>
<td>Poste-de-la-Baleine (GhGk-4)</td>
<td>E</td>
<td>GS</td>
<td>CA; V</td>
<td>C/O/E</td>
<td>4m diameter (12.56)</td>
<td>NI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Plumet 1976</td>
</tr>
<tr>
<td>Kuujjuarapik (Hudson Bay)</td>
<td>Poste-de-la-Baleine (GhGk-4)</td>
<td>F</td>
<td>GS</td>
<td>CA; V</td>
<td>C/O/E</td>
<td>4m diameter (12.56)</td>
<td>NI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Plumet 1976</td>
</tr>
<tr>
<td>Kuujjuarapik (Hudson Bay)</td>
<td>Poste-de-la-Baleine (GhGk-4)</td>
<td>G</td>
<td>GS</td>
<td>CA</td>
<td>C/O/E</td>
<td>3.5m x 4m (10.99)</td>
<td>NI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Plumet 1976</td>
</tr>
<tr>
<td>Kuujjuarapik (Hudson Bay)</td>
<td>Poste-de-la-Baleine (GhGk-4)</td>
<td>H</td>
<td>SS</td>
<td>DD</td>
<td>C/O/E</td>
<td>5m x 4m (15.7)</td>
<td>AF</td>
<td>CO</td>
<td></td>
<td></td>
<td></td>
<td>Plumet 1976</td>
</tr>
<tr>
<td>Kuujjuarapik (Hudson Bay)</td>
<td>Poste-de-la-Baleine (GhGk-4)</td>
<td>I</td>
<td>SS</td>
<td>DD</td>
<td>C/O/E</td>
<td>3m x 3m (7.07)</td>
<td>AF</td>
<td>CO</td>
<td></td>
<td></td>
<td></td>
<td>Plumet 1976</td>
</tr>
<tr>
<td>Kuujjuarapik (Hudson Bay)</td>
<td>Poste-de-la-Baleine (GhGk-4)</td>
<td>J</td>
<td>SS</td>
<td>SD</td>
<td>C/O/E</td>
<td>3m x 4m (9.42)</td>
<td>NI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Plumet 1976</td>
</tr>
<tr>
<td>Kuujjuarapik (Hudson Bay)</td>
<td>Poste-de-la-Baleine (GhGk-4)</td>
<td>K</td>
<td>SS</td>
<td>DD</td>
<td>C/O/E</td>
<td>5m x 5m (19.63)</td>
<td>AF</td>
<td>CO</td>
<td></td>
<td></td>
<td></td>
<td>Plumet 1976</td>
</tr>
<tr>
<td>Kuujjuarapik (Hudson Bay)</td>
<td>Poste-de-la-Baleine (GhGk-4)</td>
<td>L</td>
<td>SS</td>
<td>SD</td>
<td>C/O/E</td>
<td>4.5m x 4m (14.13)</td>
<td>NI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Plumet 1976</td>
</tr>
<tr>
<td>Kuujjuarapik (Hudson Bay)</td>
<td>Poste-de-la-Baleine (GhGk-4)</td>
<td>M</td>
<td>SS</td>
<td>DD</td>
<td>C/O/E</td>
<td>5.4m x 4.4m (18.65)</td>
<td>AF</td>
<td>CO</td>
<td></td>
<td></td>
<td></td>
<td>Plumet 1976</td>
</tr>
</tbody>
</table>

**APPENDIX** - Palaeoeskimo domestic architectural remains *circa* 4500 B.P. until 1500 B.P.  570
<table>
<thead>
<tr>
<th>Location</th>
<th>Site</th>
<th>Structure</th>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kuujjuarapik (Hudson Bay)</td>
<td>Poste-de-la-Baleine (GhGk-4)</td>
<td>R</td>
<td>GS</td>
<td>CA</td>
<td>C/O/E</td>
<td>3.6m x 3.2m (9.04)</td>
<td>NI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Plumet 1976</td>
</tr>
<tr>
<td>Kuujjuarapik (Hudson Bay)</td>
<td>Poste-de-la-Baleine (GhGk-4)</td>
<td>S</td>
<td>GS</td>
<td>SD?</td>
<td>C/O/E</td>
<td>3.6m x 3m (8.48)</td>
<td>NI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Plumet 1976</td>
</tr>
<tr>
<td>Mansel Island</td>
<td>Arnapik (JiGu-9)</td>
<td>not reported</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>no information</td>
<td>no information</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Taylor 1968</td>
</tr>
<tr>
<td>Mansel Island</td>
<td>Arnapik (JiGu-9)</td>
<td>not reported</td>
<td>SS</td>
<td>SD</td>
<td>C/O/E</td>
<td>no information</td>
<td>no information</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Taylor 1968</td>
</tr>
<tr>
<td>Mansel Island</td>
<td>Arnapik (JiGu-9)</td>
<td>37</td>
<td>SS</td>
<td>SD; B; CA; AD</td>
<td>C/O/E</td>
<td>no information</td>
<td>NI</td>
<td>yes?</td>
<td></td>
<td></td>
<td></td>
<td>Taylor 1968</td>
</tr>
<tr>
<td>Baffin Island</td>
<td>Closure (KdDq-11)</td>
<td>Loci 6+50</td>
<td>GS</td>
<td>CA; AD</td>
<td>C/O/E</td>
<td>4.6m x 3.4m (12.28)</td>
<td>H</td>
<td>PB; AD</td>
<td>yes</td>
<td>S/SU</td>
<td>Dekin 1976</td>
<td>M.S. Maxwell 1973</td>
</tr>
<tr>
<td>Baffin Island</td>
<td>Man Rock Island (KdDq-15)</td>
<td>.</td>
<td>GS</td>
<td>AD</td>
<td>C/O/E</td>
<td>1.52m diameter (1.81)</td>
<td>NI</td>
<td>no</td>
<td></td>
<td></td>
<td>M.S. Maxwell 1973</td>
<td></td>
</tr>
<tr>
<td>Baffin Island</td>
<td>Tungatsivvik Area Q (KkDo-3)</td>
<td></td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>2m x 2.5m (3.93)</td>
<td>H</td>
<td>PB; AD; TW</td>
<td>yes</td>
<td></td>
<td>Milne 2003b</td>
<td></td>
</tr>
<tr>
<td>Nunavik</td>
<td>Mangiuk (KcFr-7N)</td>
<td>AI</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>3m diameter (7.07)</td>
<td>H</td>
<td>PB</td>
<td>yes</td>
<td></td>
<td>Nagy 2000a</td>
<td></td>
</tr>
<tr>
<td>Nunavik</td>
<td>Mangiuk (KcFr-7N)</td>
<td>AJ</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>2.5m x 3.2m (6.28)</td>
<td>AA?</td>
<td>CO</td>
<td>no</td>
<td></td>
<td>Nagy 2000a</td>
<td></td>
</tr>
<tr>
<td>Nunavik</td>
<td>Mangiuk (KcFr-7N)</td>
<td>D</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>4m diameter (12.56)</td>
<td>NI</td>
<td>no</td>
<td></td>
<td></td>
<td>Nagy 2000a</td>
<td></td>
</tr>
<tr>
<td>Nunavik</td>
<td>Mangiuk (KcFr-7N)</td>
<td>E</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>3m x 4m (9.42)</td>
<td>NI</td>
<td>no</td>
<td></td>
<td></td>
<td>Nagy 2000a</td>
<td></td>
</tr>
<tr>
<td>Nunavik</td>
<td>Mangiuk (KcFr-7N)</td>
<td>G</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>3m diameter (7.07)</td>
<td>NI</td>
<td>no</td>
<td></td>
<td></td>
<td>Nagy 2000a</td>
<td></td>
</tr>
<tr>
<td>Nunavik</td>
<td>Tivi Paningayak (KcFr-8)</td>
<td>BA</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>3.5m diameter (9.62)</td>
<td>NI</td>
<td>S/SU</td>
<td></td>
<td></td>
<td>Nagy 2000a</td>
<td></td>
</tr>
<tr>
<td>Nunavik</td>
<td>Tivi Paningayak (KcFr-8)</td>
<td>BB</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>4m diameter (12.56)</td>
<td>NI</td>
<td>S/SU</td>
<td></td>
<td></td>
<td>Nagy 2000a</td>
<td></td>
</tr>
<tr>
<td>Nunavik</td>
<td>Tivi Paningayak (KcFr-8)</td>
<td>BC</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>4m diameter (12.56)</td>
<td>NI</td>
<td>S/SU</td>
<td></td>
<td></td>
<td>Nagy 2000a</td>
<td></td>
</tr>
</tbody>
</table>

**APPENDIX** - Palaeoeskimo domestic architectural remains *circa* 4500 B.P. until 1500 B.P.
<table>
<thead>
<tr>
<th>Location</th>
<th>Site</th>
<th>Structure</th>
<th>Placement of Structure</th>
<th>Peripheral Markers</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nunavik</td>
<td>Tivi Paningayak (KcFr-8)</td>
<td>BD</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>2.5 diameter (4.91)</td>
<td>NI</td>
<td></td>
<td></td>
<td>S/SU</td>
<td>Nagy 2000a</td>
<td></td>
</tr>
<tr>
<td>Nunavik</td>
<td>JhEv-44</td>
<td>5</td>
<td>GS</td>
<td>PR</td>
<td>BI</td>
<td>no information</td>
<td>AF</td>
<td>CO; CH</td>
<td>NI</td>
<td>yes</td>
<td>Gendron and Pinard 2000</td>
<td></td>
</tr>
<tr>
<td>Diana Bay, Nunavik</td>
<td>Couchant (JfEl-3) boulder field</td>
<td>A</td>
<td>SS</td>
<td>SD;PR</td>
<td>C/O/E</td>
<td>AF</td>
<td>AF</td>
<td></td>
<td></td>
<td>yes</td>
<td>Plumet 1994</td>
<td></td>
</tr>
<tr>
<td>Diana Bay, Nunavik</td>
<td>Diana-1 (JfEl-1)</td>
<td>G</td>
<td>GS</td>
<td>PR</td>
<td>BI</td>
<td>5m x 3m (15)</td>
<td>AF; SP?</td>
<td>CO?; CH</td>
<td>NI</td>
<td>yes</td>
<td>Desrosiers 1986</td>
<td></td>
</tr>
<tr>
<td>Diana Bay, Nunavik</td>
<td>Diana-1 (JfEl-1)</td>
<td>L</td>
<td>SS</td>
<td>SD</td>
<td>C/O/E</td>
<td>3m diameter (7.07)</td>
<td>CH</td>
<td></td>
<td></td>
<td>yes</td>
<td>Desrosiers 1986</td>
<td></td>
</tr>
<tr>
<td>Diana Bay, Nunavik</td>
<td>Diana-1 (JfEl-1)</td>
<td>R</td>
<td>GS</td>
<td>AD?</td>
<td>R/SR/S</td>
<td>3m x 3.5 m (est.) (10.5)</td>
<td>H(2);</td>
<td>NI</td>
<td>yes</td>
<td>Desrosiers 1986</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diana Island,</td>
<td>DIA.23-68 (JeEl-20)</td>
<td>.</td>
<td>SS</td>
<td>DD</td>
<td>R/SR/S</td>
<td>6m x 2.5m (15)</td>
<td>NI</td>
<td></td>
<td>no</td>
<td>Plumet 1976</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ungava Bay</td>
<td>UNG.20-70 (JeEk-3)</td>
<td>.</td>
<td>SS</td>
<td>DD</td>
<td>C/O/E</td>
<td>2m diameter (3.14)</td>
<td>NI</td>
<td></td>
<td>Ni</td>
<td>no</td>
<td>Plumet 1976</td>
<td></td>
</tr>
<tr>
<td>Labrador</td>
<td>Green Island 3 (HJCk-4)</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>3m-4m diameter (7.07-12.56)</td>
<td>AF</td>
<td>CO; 4m x 1m; SH</td>
<td></td>
<td></td>
<td></td>
<td>Cox 1977</td>
<td></td>
</tr>
<tr>
<td>Labrador</td>
<td>Sipukat Bay 1 (HJCn-1)</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E or BI</td>
<td>5m diameter (19.63)</td>
<td>AF</td>
<td>CO; 2m x 1m; PLW</td>
<td></td>
<td>Ni</td>
<td>?</td>
<td>Cox 1977</td>
<td></td>
</tr>
<tr>
<td>Labrador</td>
<td>Nusornak 2 (HiCl-1)</td>
<td>FS-2</td>
<td>GS</td>
<td>NI</td>
<td>?</td>
<td>not determined</td>
<td>AF</td>
<td>CO; 2m x 1m; PLW</td>
<td>Ni</td>
<td>no?</td>
<td>Cox 1988, 2003</td>
<td></td>
</tr>
<tr>
<td>Labrador</td>
<td>Nusornak-2 (HiCl-1)</td>
<td>S-4</td>
<td>GS</td>
<td>PR</td>
<td>O - SR</td>
<td>5m x 3m (12.56)</td>
<td>AF</td>
<td>CO; 3.25m x 50cm; DW</td>
<td>Ni</td>
<td>yes</td>
<td>LF/W</td>
<td></td>
</tr>
<tr>
<td>Labrador</td>
<td>Nusornak-2 (HiCl-1)</td>
<td>S-26</td>
<td>GS</td>
<td>PR</td>
<td>BI (D?)</td>
<td>3m diameter (7.06)</td>
<td>AF</td>
<td>CL; 2.5m x 60 cm; PLW</td>
<td>Ni</td>
<td>yes</td>
<td>LF/W</td>
<td></td>
</tr>
<tr>
<td>Labrador</td>
<td>Koliktalk 8 (HdCg-25)</td>
<td>GS</td>
<td>CA2</td>
<td>BI</td>
<td>no information</td>
<td>AF; CA2</td>
<td>CO; PS; H</td>
<td></td>
<td>Ni</td>
<td>Fitzhugh 1976c</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labrador</td>
<td>Dog Bight L. 5 (HdCh-5)</td>
<td>1</td>
<td>GS</td>
<td>NI</td>
<td>C/O/E</td>
<td>no information</td>
<td>AF</td>
<td>CO; PS; H</td>
<td>Ni</td>
<td>Fitzhugh 1976c; Cox 1978</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labrador</td>
<td>Dog Bight L. 5 (HdCh-5)</td>
<td>2</td>
<td>GS</td>
<td>NI</td>
<td>C/O/E</td>
<td>no information</td>
<td>AF</td>
<td>CO; 3m x 1m; PS; H; APS</td>
<td>Ni</td>
<td>Fitzhugh 1976c; Cox 1978</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

APPENDIX - Palaeoeskimo domestic architectural remains *circa* 4500 B.P. until 1500 B.P.

572
<table>
<thead>
<tr>
<th>Location</th>
<th>Site</th>
<th>Structure</th>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labrador</td>
<td>Dog Bight L. 5 (HdCh-5)</td>
<td>3</td>
<td>GS</td>
<td>NI</td>
<td>C/O/E</td>
<td>AF</td>
<td>CO; PS; H</td>
<td>NI</td>
<td>Fitzhugh 1976c; Cox 1978</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labrador</td>
<td>Imilikuluk 8 (HdCg-36)</td>
<td>GS</td>
<td>C/O/E</td>
<td>no information</td>
<td>AF</td>
<td>no information</td>
<td>NI</td>
<td>no</td>
<td>Fitzhugh 1976c</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labrador</td>
<td>Nukasusutok 2 (HcCh-5)</td>
<td>S-1</td>
<td>GS</td>
<td>PR</td>
<td>BI</td>
<td>5m x 4m (15.7)</td>
<td>AF</td>
<td>CL; 2.5m x 60cm; APS; BH; W; ER; PW</td>
<td>PB (n=2)</td>
<td>no</td>
<td>Fitzhugh 1976c, 2002</td>
<td></td>
</tr>
<tr>
<td>Labrador</td>
<td>Nukasusutok 2 (HcCh-5)</td>
<td>S-2</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>no</td>
<td>CL; 2m x 60cm; APS; BH; W; ER; PW</td>
<td>NI</td>
<td>no</td>
<td>Fitzhugh 1976c, 2002</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newfoundland</td>
<td>Cow Head (DlBk-1)</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>CO; S</td>
<td>NI</td>
<td>no</td>
<td>Tuck 1978</td>
<td></td>
</tr>
</tbody>
</table>

**INDEPENDENCE II**

<table>
<thead>
<tr>
<th>Location</th>
<th>Site</th>
<th>Structure</th>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peary Land, Greenland</td>
<td>Engæs</td>
<td>1</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>3m x 4.5m (10.6)</td>
<td>AA</td>
<td>S; EBH; PS</td>
<td>PB</td>
<td>yes</td>
<td>SU</td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Engæs</td>
<td>4</td>
<td>GS</td>
<td>PR?</td>
<td>C/O/E</td>
<td>4.2mx 3.75m (12.36), est.</td>
<td>AA; C;PS</td>
<td>S; 3m x 60cm; BH</td>
<td>NI</td>
<td>yes</td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Engæs</td>
<td>5</td>
<td>GS</td>
<td>PS; PR?</td>
<td>?</td>
<td>2m x 2m (4) minimum</td>
<td>AA or BH?</td>
<td></td>
<td>NI</td>
<td>yes?</td>
<td>SU?</td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Deltaterrass-erne</td>
<td>5a</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>2.5m x 4m (7.85)</td>
<td>AAF; CA(2); CS; W+BO</td>
<td>US; APS; SDA; 2m x 30cm/2m x 55-60cm; PW</td>
<td>PB(2?)</td>
<td>yes</td>
<td>SU? W?</td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Deltaterrass-erne</td>
<td>18</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>4.75m diameter (17.71)</td>
<td>AF; W+BO(PS)</td>
<td>US; 3m x 50cm; CBH(PS); APS</td>
<td>NI</td>
<td>yes</td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Vandfaldsnæs</td>
<td>9</td>
<td>GS</td>
<td>R/SR/S</td>
<td>3.25m x 4.75m (15.44)</td>
<td>AF(AA?)</td>
<td>US; APS; PS</td>
<td>NI</td>
<td>yes</td>
<td>SU</td>
<td>Jensen 2003</td>
<td></td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Vandfaldsnæs</td>
<td>10</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>1.5m x 2.7m (3.18)</td>
<td>AA</td>
<td>PW</td>
<td>NI</td>
<td>yes</td>
<td>S/SU</td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Vandfaldsnæs</td>
<td>11</td>
<td>GS</td>
<td>PR</td>
<td>no information</td>
<td>no information</td>
<td>NI</td>
<td></td>
<td>NI</td>
<td>no</td>
<td>Information S/SU</td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Peary Land, Greenland</td>
<td>Kap Mylius- Erichsen</td>
<td>1a</td>
<td>GS</td>
<td>NI</td>
<td>no information</td>
<td>no information</td>
<td>AF</td>
<td>US; CH(BH?); 2.36m length</td>
<td>NI</td>
<td>yes?</td>
<td>SU</td>
<td>Jensen 2003</td>
</tr>
</tbody>
</table>

**APPENDIX** - Palaeoeskimo domestic architectural remains *circa* 4500 B.P. until 1500 B.P.  

573
<table>
<thead>
<tr>
<th>Location</th>
<th>Site</th>
<th>Structure</th>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peary Land,</td>
<td>Kap Mylius-Erichsen</td>
<td>5</td>
<td>GS</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>AF</td>
<td>CL; 5m x 62cm</td>
<td>NI</td>
<td>yes?</td>
<td>SU</td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Greenland</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>6</td>
<td>SD</td>
<td>SD; PR</td>
<td>C/O/E</td>
<td>no information</td>
<td>AA</td>
<td>CO; S; US; CL; 2.3m (length); H; ER?</td>
<td>NI</td>
<td>yes</td>
<td>S/SU</td>
<td>Jensen 2003</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>2.8m x 2.5m (5.5)</td>
<td>PS</td>
<td>PE (TW)</td>
<td>yes</td>
<td></td>
<td>LS/ESU</td>
<td>Jensen 2003</td>
</tr>
<tr>
<td></td>
<td>Kap Ludovika</td>
<td>GS</td>
<td>PR?</td>
<td>C/O/E</td>
<td>no information</td>
<td>AF</td>
<td>US; S; PS; RBH; CH</td>
<td>PB</td>
<td>yes</td>
<td>S/SU</td>
<td>Jensen 2003</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hvaltarrasserne</td>
<td>A</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E?</td>
<td>no information</td>
<td>AF</td>
<td>US; 2m x 60cm (?); PS(rear)</td>
<td>NI</td>
<td>yes?</td>
<td>S/SU</td>
<td>Jensen 2003</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E?</td>
<td>no information</td>
<td>AF</td>
<td>US; 2m x 60cm (narrow in middle); CH?; PS(rear)</td>
<td>NI</td>
<td>yes?</td>
<td>S/SU</td>
<td>Jensen 2003</td>
</tr>
<tr>
<td></td>
<td>Lolland Sø</td>
<td>A</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>4.25m x 3m (10.01)</td>
<td>AF; W</td>
<td>US; PS; 2m x 80cm; APS; CBH</td>
<td>PB</td>
<td>yes</td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td></td>
<td>Kap Holbæk</td>
<td>11a</td>
<td>GS</td>
<td>NI</td>
<td>E-SR</td>
<td>4.5m x 3.5m (12.36)</td>
<td>AF; W</td>
<td>DUS; CO; 2.25m x 80cm; PS</td>
<td>NI</td>
<td>yes?</td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td></td>
<td>Site C, Qitleq site</td>
<td>1</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>no information</td>
<td>CH</td>
<td></td>
<td>NI</td>
<td>yes?</td>
<td></td>
<td>Jensen 2003</td>
</tr>
<tr>
<td>Devon Island</td>
<td>Port Refuge</td>
<td>1</td>
<td>GS</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>AF; V</td>
<td>S (1 row); 1.2m length; PW</td>
<td>NI</td>
<td>yes</td>
<td>S/SU?</td>
<td>McGhee 1981a</td>
</tr>
<tr>
<td></td>
<td>(RbJu-1) Lower</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beach Component</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Devon Island</td>
<td>Port Refuge</td>
<td>2</td>
<td>GS</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>AF; V</td>
<td>1.2/2.5m x 60cm; BH (30cm x 60cm)</td>
<td>NI</td>
<td>yes</td>
<td>S/SU?</td>
<td>McGhee 1981a</td>
</tr>
<tr>
<td></td>
<td>(RbJu-1) Lower</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beach Component</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Devon Island</td>
<td>Port Refuge</td>
<td>3</td>
<td>GS</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>AF; V</td>
<td>S; 1.1m x 40cm</td>
<td>NI</td>
<td>no</td>
<td>S/SU?</td>
<td>McGhee 1981a</td>
</tr>
<tr>
<td></td>
<td>(RbJu-1) Lower</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beach Component</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**APPENDIX** - Palaeoeskimo domestic architectural remains *circa* 4500 B.P. until 1500 B.P.
<table>
<thead>
<tr>
<th>Location</th>
<th>Site</th>
<th>Structure</th>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Devon Island</td>
<td>Port Refuge (RbJu-1) Lower Beach Component</td>
<td>4</td>
<td>GS</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>AF; V</td>
<td>S; 1m x 50cm (minimum length); BH (20cm x 20cm)</td>
<td>NI</td>
<td>no</td>
<td>S/SU?</td>
<td>McGhee 1981a</td>
</tr>
<tr>
<td>Devon Island</td>
<td>Port Refuge (RbJu-1) Lower Beach Component</td>
<td>5</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>AF?</td>
<td>S; 1.9m x 50cm(?)</td>
<td>NI</td>
<td>no</td>
<td>S/SU?</td>
<td>McGhee 1981a</td>
</tr>
<tr>
<td>Devon Island</td>
<td>Port Refuge (RbJu-1) Lower Beach Component</td>
<td>6</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>AF</td>
<td>S; 1.4/2m x 40cm; BH?</td>
<td>NI</td>
<td>no</td>
<td>S/SU?</td>
<td>McGhee 1981a</td>
</tr>
<tr>
<td>Devon Island</td>
<td>Port Refuge (RbJu-1) Lower Beach Component</td>
<td>7</td>
<td>GS</td>
<td>CA; V</td>
<td>R/SR/S</td>
<td>4.2m x 3.4m (14.28)</td>
<td>AF</td>
<td>S; 2m x 60/80cm; BH?</td>
<td>NI</td>
<td>yes</td>
<td>S/SU?</td>
<td>McGhee 1981a</td>
</tr>
<tr>
<td>Devon Island</td>
<td>Port Refuge (RbJu-1) Lower Beach Component</td>
<td>8</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>4m x 3m (9.42)</td>
<td>AF</td>
<td>S; 2m x 60cm; BH (20cm x 20cm); PS?</td>
<td>NI</td>
<td>no</td>
<td>S/SU?</td>
<td>McGhee 1981a</td>
</tr>
<tr>
<td>Devon Island</td>
<td>Lower Cape Hornby (RbJu-3)</td>
<td>1</td>
<td>GS</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>AF?</td>
<td>S (1row); 2.5m</td>
<td>NI</td>
<td>no</td>
<td></td>
<td>McGhee 1981a</td>
</tr>
<tr>
<td>Devon Island</td>
<td>Lower Cape Hornby (RbJu-3)</td>
<td>5</td>
<td>GS</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>AF; V</td>
<td>S; 2m x 50cm</td>
<td>NI</td>
<td>no</td>
<td></td>
<td>McGhee 1981a</td>
</tr>
<tr>
<td>Devon Island</td>
<td>Port Refuge (RbJu-1) Skull Component</td>
<td>5</td>
<td>GS</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>AF</td>
<td>S (1 row); 2.3m x 50cm(?) ; BH</td>
<td>NI</td>
<td>yes</td>
<td></td>
<td>McGhee 1981a</td>
</tr>
<tr>
<td>Devon Island</td>
<td>Majendie (RbJu-2)</td>
<td>1</td>
<td>GS</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>AF; PS?</td>
<td>S; 2.3m x 80cm; W?</td>
<td>NI</td>
<td>yes</td>
<td></td>
<td>McGhee 1981a</td>
</tr>
<tr>
<td>Devon Island</td>
<td>RbJr-2</td>
<td>1</td>
<td>GS</td>
<td>PR</td>
<td>R/SR/S</td>
<td>3m x 4m (12)</td>
<td>AF</td>
<td>S; 2.3m x 60cm; BH; BO</td>
<td>NI</td>
<td>no</td>
<td></td>
<td>McGhee 1981a</td>
</tr>
<tr>
<td>Somerset Island</td>
<td>Phalarope (PaJs-39)</td>
<td>14</td>
<td>GS</td>
<td>CA</td>
<td>C/O/E</td>
<td>2.1m x 2.7m (4.45)</td>
<td>NI</td>
<td>AA defined by AD</td>
<td>no</td>
<td></td>
<td></td>
<td>Damkjar 2003</td>
</tr>
<tr>
<td>Somerset Island</td>
<td>Phalarope (PaJs-39)</td>
<td>15</td>
<td>GS</td>
<td>CA; PR</td>
<td>C/O/E</td>
<td>2.9m x 3.5m (7.97)</td>
<td>AA</td>
<td>defined by AD</td>
<td>no</td>
<td></td>
<td></td>
<td>Damkjar 2003</td>
</tr>
</tbody>
</table>

APPENDIX - Palaeoeskimo domestic architectural remains *circa* 4500 B.P. until 1500 B.P. 575
<table>
<thead>
<tr>
<th>Location</th>
<th>Site</th>
<th>Structure</th>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Somerset Island</td>
<td>Phalarope (PaJs-39)</td>
<td>21</td>
<td>GS</td>
<td>CA</td>
<td>C/O/E</td>
<td>2.5m x 4m (7.85)</td>
<td>CH; LS</td>
<td></td>
<td>no</td>
<td></td>
<td>Damkjar 2003</td>
<td></td>
</tr>
<tr>
<td>Somerset Island</td>
<td>Phalarope (PaJs-39)</td>
<td>28</td>
<td>GS</td>
<td>CA; V; SD</td>
<td>R/SR/S</td>
<td>2.2m x 3.6m (7.92)</td>
<td>LS; AA</td>
<td>H?; DA</td>
<td>no</td>
<td></td>
<td>Damkjar 2003</td>
<td></td>
</tr>
<tr>
<td>Somerset Island</td>
<td>Phalarope (PaJs-39)</td>
<td>29</td>
<td>GS</td>
<td>CA2; PR</td>
<td>C/O/E</td>
<td>2.9m x 3.4m (7.74)</td>
<td>AFR</td>
<td>S; 2.1m x 50/60cm; ER; H; PW</td>
<td>TW</td>
<td>no</td>
<td>Damkjar 2003</td>
<td></td>
</tr>
<tr>
<td>Somerset Island</td>
<td>Phalarope (PaJs-39)</td>
<td>39</td>
<td>GS</td>
<td>CA2; B; PR</td>
<td>C/O/E</td>
<td>2.8m x 3.5m (7.69)</td>
<td>AFR</td>
<td>S; 2m x 50/60cm; ER; CH?</td>
<td>TW</td>
<td>no</td>
<td>S/SU Damkjar 2003</td>
<td></td>
</tr>
<tr>
<td>Somerset Island</td>
<td>Phalarope (PaJs-39)</td>
<td>45</td>
<td>GS</td>
<td>NI</td>
<td>NI</td>
<td>2.5/3m x 3.5/4m (8.75-12)</td>
<td>AF?; LS</td>
<td></td>
<td>yes?</td>
<td>S/SU Damkjar 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Somerset Island</td>
<td>Phalarope (PaJs-39)</td>
<td>54</td>
<td>GS</td>
<td>PR; CA2</td>
<td>O-SR (BI?)</td>
<td>3m x 4m (9.42-12)</td>
<td>AFR; LS</td>
<td>S; 2m x 40/45cm; DA</td>
<td>TW</td>
<td>no</td>
<td>S/SU Damkjar 2003</td>
<td></td>
</tr>
</tbody>
</table>

**GROSWATER**

<table>
<thead>
<tr>
<th>Location</th>
<th>Site</th>
<th>Structures</th>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nunavik</td>
<td>JgEj-3</td>
<td>seven</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>no information</td>
<td>present, no information</td>
<td>yes</td>
<td></td>
<td>Gendron, pers. comm. 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nunavik</td>
<td>JgEj-3</td>
<td>eight</td>
<td>SS</td>
<td>SD; B</td>
<td>R/SR/S</td>
<td>4m x 5m (20)</td>
<td>present, no information</td>
<td>yes</td>
<td></td>
<td>Gendron, pers. comm. 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labrador</td>
<td>Nusornak 2 (HiCi-1)</td>
<td>S-1</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>6m diameter (28.26)</td>
<td>AF</td>
<td>S; SO; BH; DW</td>
<td>NI</td>
<td>yes</td>
<td>S/SU Cox 2003</td>
<td></td>
</tr>
<tr>
<td>Labrador</td>
<td>Nusornak 2 (HiCi-1)</td>
<td>S-3</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>5m diameter (19.63)</td>
<td>AF</td>
<td>S; CO; CL; PS; CH (BH?); LS?; PW</td>
<td>NI</td>
<td>yes</td>
<td>S/SU Cox 2003</td>
<td></td>
</tr>
<tr>
<td>Labrador</td>
<td>Voisey's Bay (HbCi-3)</td>
<td>.</td>
<td>GS</td>
<td>PR</td>
<td>not identified</td>
<td>no information</td>
<td>H?</td>
<td></td>
<td>yes?</td>
<td></td>
<td>Loring 1983</td>
<td></td>
</tr>
<tr>
<td>Labrador</td>
<td>St. John's Harbour 5 (HeCi-30)</td>
<td>.</td>
<td>GS</td>
<td>CA (2)</td>
<td>not identified</td>
<td>no information</td>
<td>AF</td>
<td>S; 2m x 1m; CH; L</td>
<td>NI</td>
<td>no</td>
<td>Fitzhugh 1981; Anton 2003</td>
<td></td>
</tr>
<tr>
<td>Labrador</td>
<td>Postville Pentecostal (GfBw-4)</td>
<td>1</td>
<td>GS</td>
<td>PS</td>
<td>C/O/E</td>
<td>5m diameter (19.63)</td>
<td>AA; PS; SP; SA</td>
<td>SDA; 1.3m x 60cm; PS; BH; ER; PLW</td>
<td>NI</td>
<td>yes</td>
<td>Loring and Cox 1986</td>
<td></td>
</tr>
<tr>
<td>Labrador</td>
<td>Postville Pentecostal (GfBw-4)</td>
<td>2A</td>
<td>GS</td>
<td>PS</td>
<td>C/O/E</td>
<td>4m x 2m (6.28)</td>
<td>BH; CA(3)</td>
<td></td>
<td>yes</td>
<td></td>
<td>Loring and Cox 1986</td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>Site</td>
<td>Structure</td>
<td>Placement of Structure</td>
<td>Peripheral Marker</td>
<td>Structure Shape</td>
<td>Size and Area (m²)</td>
<td>Internal Features</td>
<td>Axial Feature Description</td>
<td>Entrance</td>
<td>Fully Excavated?</td>
<td>Suggested Season</td>
<td>Sources</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------</td>
<td>-----------</td>
<td>------------------------</td>
<td>------------------</td>
<td>----------------</td>
<td>-------------------</td>
<td>-------------------</td>
<td>------------------------</td>
<td>----------</td>
<td>-----------------</td>
<td>--------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Labrador</td>
<td>Postville Pentecostal (GfBw-4)</td>
<td>2B</td>
<td>GS</td>
<td>PS</td>
<td>C/O/E</td>
<td>4m x 2m (6.28)</td>
<td>BH</td>
<td></td>
<td>yes</td>
<td></td>
<td></td>
<td>Loring and Cox 1986</td>
</tr>
<tr>
<td>Labrador</td>
<td>Postville Pentecostal (GfBw-4)</td>
<td>8</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E (BI?)</td>
<td>3.5m x 4m (10.99)</td>
<td>AA</td>
<td>CH</td>
<td>NI</td>
<td>yes?</td>
<td></td>
<td>Loring and Cox 1986</td>
</tr>
<tr>
<td>Newfoundland</td>
<td>Phillips Garden East (EeBi-1)</td>
<td>F-12</td>
<td>GS</td>
<td>AD</td>
<td>C/O/E</td>
<td>5m diameter (19.63)</td>
<td>PS; P?</td>
<td>NI</td>
<td>yes?</td>
<td></td>
<td></td>
<td>Renouf 1994, 2002</td>
</tr>
<tr>
<td>Newfoundland</td>
<td>Phillips Garden West (EeBi-1)</td>
<td>F-25</td>
<td>GS</td>
<td>PH</td>
<td>C/O/E</td>
<td>3.5m x 3m (8.24)</td>
<td>H</td>
<td>PB</td>
<td>yes</td>
<td></td>
<td></td>
<td>Renouf 1994, 2002</td>
</tr>
<tr>
<td>Newfoundland</td>
<td>Factory Cove (DiBk-3)</td>
<td>A</td>
<td>GS</td>
<td>PR</td>
<td>R/SR/S</td>
<td>4m x 4m (16)</td>
<td>H</td>
<td></td>
<td>yes</td>
<td></td>
<td></td>
<td>Auger 1984</td>
</tr>
<tr>
<td>Newfoundland</td>
<td>Factory Cove (DiBk-3)</td>
<td>B</td>
<td>GS</td>
<td>PR; CA(2)</td>
<td>BI</td>
<td>4.4m x 2.6m (8.98)</td>
<td>AA; CA(2)</td>
<td>no information</td>
<td>yes</td>
<td></td>
<td></td>
<td>Auger 1984</td>
</tr>
<tr>
<td>Newfoundland</td>
<td>Factory Cove (DiBk-3)</td>
<td>C</td>
<td>SS</td>
<td>CA</td>
<td>R/SR/S</td>
<td>3m x 2.6m (7.8)</td>
<td>H</td>
<td></td>
<td>yes</td>
<td></td>
<td></td>
<td>Auger 1984</td>
</tr>
<tr>
<td>Newfoundland</td>
<td>Factory Cove (DiBk-3)</td>
<td>D</td>
<td>GS</td>
<td>PR; AD</td>
<td>BI</td>
<td>4.7m x 3m (11.07)</td>
<td>AA</td>
<td>no information</td>
<td>yes</td>
<td></td>
<td></td>
<td>Auger 1984</td>
</tr>
<tr>
<td>Newfoundland</td>
<td>Factory Cove (DiBk-3)</td>
<td>E</td>
<td>GS</td>
<td>PR</td>
<td>R/SR/S</td>
<td>no information</td>
<td>NI</td>
<td></td>
<td>yes</td>
<td></td>
<td></td>
<td>Auger 1984</td>
</tr>
<tr>
<td>Newfoundland</td>
<td>Parke's Beach (DgBm-1)</td>
<td>1</td>
<td>GS</td>
<td>AD</td>
<td>C/O/E</td>
<td>5m x 5m (19.63)</td>
<td>H</td>
<td>PB</td>
<td>yes</td>
<td></td>
<td>Reader 1997, 1998</td>
<td></td>
</tr>
<tr>
<td>Newfoundland</td>
<td>Cow Cove-1 (EaBa-14)</td>
<td></td>
<td>GS</td>
<td>P; AD</td>
<td>BI</td>
<td>BH; P?; SP?</td>
<td>NI</td>
<td>no</td>
<td></td>
<td></td>
<td>Erwin 2003b</td>
<td></td>
</tr>
</tbody>
</table>

**LAGOON**

<table>
<thead>
<tr>
<th>Location</th>
<th>Site</th>
<th>Structure</th>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banks Island</td>
<td>Lagoon (OjRl-3)</td>
<td>Area A</td>
<td>GS</td>
<td>PH; SD</td>
<td>R/SR/S</td>
<td>1.6m x 3m (4.8)</td>
<td>H(3)</td>
<td></td>
<td>yes</td>
<td></td>
<td>LS/ESU</td>
<td>Arnold 1980, 1981a, 1981b</td>
</tr>
</tbody>
</table>

**TRANSITIONAL**

<table>
<thead>
<tr>
<th>Location</th>
<th>Site</th>
<th>Structure</th>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bache Peninsula</td>
<td>Three Sisters (SfFj-23)</td>
<td>5</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>4m x 3.5 (10.99)</td>
<td>CH; SH?</td>
<td></td>
<td>no</td>
<td></td>
<td>Schledermann 1990</td>
<td></td>
</tr>
<tr>
<td>Bache Peninsula</td>
<td>Skraeling ASTI (SfFk-23)</td>
<td>5</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>4m x 3m (9.42)</td>
<td>CH; SH?</td>
<td></td>
<td>no</td>
<td></td>
<td>Schledermann 1990</td>
<td></td>
</tr>
<tr>
<td>Bache Peninsula</td>
<td>Delta Point (SfFk-14)</td>
<td>1</td>
<td>GS</td>
<td>PR</td>
<td>R/SR/S</td>
<td>3.8m x 2.8m (10.64)</td>
<td>AF</td>
<td>BH; 2.8m x 75cm</td>
<td>no</td>
<td></td>
<td>Schledermann 1990</td>
<td></td>
</tr>
<tr>
<td>Bache Peninsula</td>
<td>Delta Point (SfFk-14)</td>
<td>2</td>
<td>GS</td>
<td>PR</td>
<td>P</td>
<td>4.1m x 3.1m (12.70)</td>
<td>AF</td>
<td>CO; 3.1m x 1.1m</td>
<td>no</td>
<td></td>
<td>Schledermann 1990</td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>Site</td>
<td>Structure</td>
<td>Placement of Structure</td>
<td>Peripheral Marker</td>
<td>Structure Shape</td>
<td>Size and Area (m²)</td>
<td>Internal Features</td>
<td>Axial Feature Description</td>
<td>Entrance</td>
<td>Fully Excavated?</td>
<td>Suggested Season</td>
<td>Sources</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------</td>
<td>-----------</td>
<td>------------------------</td>
<td>-------------------</td>
<td>----------------</td>
<td>-------------------</td>
<td>-------------------</td>
<td>------------------------</td>
<td>-----------</td>
<td>----------------</td>
<td>---------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>Bache Peninsula</td>
<td>Delta Point (SFk-14)</td>
<td>3</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>3.3m diameter (8.55)</td>
<td>AF</td>
<td>CO</td>
<td>no</td>
<td></td>
<td>Schledermann 1990</td>
<td></td>
</tr>
<tr>
<td>Bache Peninsula</td>
<td>Delta Point (SFk-14)</td>
<td>4</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>3m x 2.3m (5.42)</td>
<td>AF</td>
<td>CO; BH?</td>
<td>no</td>
<td></td>
<td>Schledermann 1990</td>
<td></td>
</tr>
<tr>
<td>Bache Peninsula</td>
<td>Skraeling Island ASTt-5</td>
<td>1</td>
<td>GS</td>
<td>NI</td>
<td>NI</td>
<td>2.9m length</td>
<td>AF</td>
<td>S; 1.7m x 65cm</td>
<td>no</td>
<td></td>
<td>Schledermann 1990</td>
<td></td>
</tr>
<tr>
<td>Bache Peninsula</td>
<td>Skraeling Island ASTt-5</td>
<td>2</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>2.5m x 3m (5.89)</td>
<td>AF</td>
<td>H</td>
<td>no</td>
<td></td>
<td>Schledermann 1990</td>
<td></td>
</tr>
<tr>
<td>Nunavik</td>
<td>Ohituk (KcFr-3A)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Taylor 1962;</td>
<td>Nagy 2000a</td>
<td></td>
</tr>
<tr>
<td>Nunavik</td>
<td>Pita (KcFr-5)</td>
<td>A</td>
<td>GS</td>
<td>SW</td>
<td>R/SR/S</td>
<td>3.5m x 3m (10.5)</td>
<td></td>
<td></td>
<td>W?</td>
<td>Nagy 2000a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nunavik</td>
<td>Pita (KcFr-5)</td>
<td>B</td>
<td>GS</td>
<td>SW</td>
<td>R/SR/S</td>
<td>3.5m x 2.5m (8.75)</td>
<td>NI</td>
<td></td>
<td>W?</td>
<td>Nagy 2000a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nunavik</td>
<td>Pita (KcFr-5)</td>
<td>C</td>
<td>GS</td>
<td>SW</td>
<td>C/O/E</td>
<td>3m x 4m (9.42)</td>
<td>H</td>
<td></td>
<td>S/SU?</td>
<td>Nagy 2000a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nunavik</td>
<td>Pita (KcFr-5)</td>
<td>D</td>
<td>GS</td>
<td>SW</td>
<td>C/O/E</td>
<td>3m x 3.5m (8.24)</td>
<td>H</td>
<td></td>
<td>S/SU?</td>
<td>Nagy 2000a</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**EARLY DORSET**

<table>
<thead>
<tr>
<th>Location</th>
<th>Site</th>
<th>Structure</th>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disko Bay, Greenland</td>
<td>Anertusuaq-qap Nuua</td>
<td>GS</td>
<td>PS; AD; RW?</td>
<td>C/O/E</td>
<td>5m x 2.5-3m (9.81-11.78)</td>
<td>PS; AA; RW?</td>
<td>N; 2.5m x 70cm</td>
<td>NI</td>
<td>yes</td>
<td>Jensen 1998</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disko Bay, Greenland</td>
<td>Innartalik I</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>4m diameter (12.56)</td>
<td>AF</td>
<td>CL; 2m x 70cm; PS; APS; CBH; RH</td>
<td>NI</td>
<td>yes</td>
<td>Jensen 1998</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skjoldungen, Greenland</td>
<td>6301-il-56</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>4m x 2m (6.28), est.</td>
<td>AA</td>
<td>CHB; 2m x 70cm</td>
<td>NI</td>
<td>yes</td>
<td>LF-W</td>
<td>Jensen 1996</td>
<td></td>
</tr>
<tr>
<td>Bache Peninsula</td>
<td>Tusk Lower Component (SFk-6)</td>
<td>1</td>
<td>GS</td>
<td>PR; SD</td>
<td>R/SR/S</td>
<td>4.2m x 2.9m (12.18)</td>
<td>AF</td>
<td>CL; 2.9m x 45-60cm; RP; CH</td>
<td>NI</td>
<td>no</td>
<td>Schledermann 1990</td>
<td></td>
</tr>
<tr>
<td>Karluk Island</td>
<td>QJLd-22</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>3m x 3m (7.07)</td>
<td>CH</td>
<td></td>
<td>NI</td>
<td>yes?</td>
<td>Helmer 1980</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Victoria Island</td>
<td>Ballantine (NI Ng-3)</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E?</td>
<td>3m x 2.5m (5.89)</td>
<td>H?</td>
<td></td>
<td>no</td>
<td></td>
<td>Taylor 1972; Friesen pers. comm 2003</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**APPENDIX** - Palaeoeskimo domestic architectural remains *circa* 4500 B.P. until 1500 B.P.  

578
<table>
<thead>
<tr>
<th>Location</th>
<th>Site</th>
<th>Structure</th>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Victoria Island</td>
<td>Newnham (NgNc-5)</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>no information</td>
<td>no information</td>
<td>no</td>
<td>PB</td>
<td>yes</td>
<td>S/SU</td>
<td>Taylor 1972</td>
<td>Taylor 1972; Friesen pers. comm. 2003</td>
</tr>
<tr>
<td>Victoria Island</td>
<td>Ferguson Lake</td>
<td>SS</td>
<td>SD; PR; SU</td>
<td>R/SR/S</td>
<td>4.5m x 5m (20/25)</td>
<td>NI</td>
<td>PB</td>
<td>yes</td>
<td>S/SU</td>
<td>Taylor 1967; Friesen pers. comm. 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Victoria Island</td>
<td>Peetuk (NiNg-15)</td>
<td>SS</td>
<td>SD; B</td>
<td>R/SR/S</td>
<td>6.4m x 7m (44.8)</td>
<td>no information</td>
<td>yes</td>
<td>Taylor 1967; Friesen pers. comm. 2003</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dolphin and Union Strait</td>
<td>Bernard Harbour 1</td>
<td>GS</td>
<td>PR; V</td>
<td>C/O/E</td>
<td>2.4m x 3.1m (5.84)</td>
<td>no information</td>
<td>yes?</td>
<td>Taylor 1972</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dolphin and Union Strait</td>
<td>Bernard Harbour 1</td>
<td>GS</td>
<td>PR; V</td>
<td>R/SR/S</td>
<td>6.4m x 7m (44.8)</td>
<td>no information</td>
<td>yes?</td>
<td>Taylor 1972</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Somerset Island</td>
<td>Tasealuk (PfJv-2)</td>
<td>214</td>
<td>GS</td>
<td>C/O/E; CA(2)</td>
<td>4m x 3m (9.42), est.</td>
<td>AA; CA(2); CH; H; CO (1 line)</td>
<td>LS or EF</td>
<td>Bielawski 1989</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foxe Basin</td>
<td>NiHi-47</td>
<td>18</td>
<td>SS</td>
<td>SD; B</td>
<td>3.68m x 4.95m (14.30)</td>
<td>AF; PS</td>
<td>US; BH(2); PS</td>
<td>NI</td>
<td>yes</td>
<td>ES-W</td>
<td>Rowley 1995, pers. comm. 2003; Murray 1996</td>
<td></td>
</tr>
<tr>
<td>Foxe Basin</td>
<td>unknown</td>
<td>SS</td>
<td>SD; B</td>
<td>R/SR/S</td>
<td>5m x 4m (20)</td>
<td>H; B</td>
<td>no</td>
<td>Meldgaard 1954a, 1954b, 1960a</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foxe Basin</td>
<td>NiHi-23</td>
<td>GS</td>
<td>PR</td>
<td>R/SR/S</td>
<td>no information</td>
<td>no</td>
<td>no</td>
<td>Rowley and Rowley 1997; Rowley pers. comm. 2003</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hudson Bay</td>
<td>Seahorse Gully</td>
<td>1</td>
<td>GS</td>
<td>PR; PS</td>
<td>6.7m x 7.3m (48.9)</td>
<td>PS</td>
<td>yes</td>
<td>Nash 1969, 1972, 1976</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hudson Bay</td>
<td>Seahorse Gully</td>
<td>2</td>
<td>GS</td>
<td>PR; PS</td>
<td>5.2m x 3.1m (16.1), est.</td>
<td>PS</td>
<td>yes</td>
<td>Nash 1969, 1972, 1976</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hudson Bay</td>
<td>Seahorse Gully</td>
<td>3</td>
<td>GS</td>
<td>PR; PS</td>
<td>4.1m x 3.7m (15.2)</td>
<td>PS; BH(CH)</td>
<td>yes</td>
<td>Nash 1969, 1972, 1976</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hudson Bay</td>
<td>Seahorse Gully</td>
<td>4</td>
<td>GS</td>
<td>PS</td>
<td>5.5m x 6.1m (33.6)</td>
<td>PS</td>
<td>no</td>
<td>Nash 1969, 1972, 1976</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hudson Bay</td>
<td>Seahorse Gully</td>
<td>5</td>
<td>GS</td>
<td>PR; PS</td>
<td>6.7m x 6.7m (44.9)</td>
<td>AA; US; 6.7m x 90cm</td>
<td>yes</td>
<td>Nash 1969, 1972, 1976</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**APPENDIX** - Palaeoeskimo domestic architectural remains *circa* 4500 B.P. until 1500 B.P.
<table>
<thead>
<tr>
<th>Location</th>
<th>Site</th>
<th>Structure</th>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southampton Island</td>
<td>Tunirniut-1 (KkHh-1)</td>
<td>M</td>
<td>SS</td>
<td>SD; B</td>
<td>C/O/E</td>
<td>7m x 4.5m (24.73)</td>
<td>PS</td>
<td></td>
<td>yes</td>
<td>yes?</td>
<td></td>
<td>Collins 1956a, 1956b, 1957</td>
</tr>
<tr>
<td>Baffin Island</td>
<td>Tanfield (KdDq-7-1)</td>
<td>GS</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td></td>
<td></td>
<td></td>
<td>NI</td>
<td>yes?</td>
<td>W</td>
<td>M.S. Maxwell 1973</td>
</tr>
<tr>
<td>Baffin Island</td>
<td>Bare Rock (KdDq-7-2)</td>
<td>GS</td>
<td>PR</td>
<td>R/SR/S</td>
<td>NI</td>
<td></td>
<td></td>
<td></td>
<td>NI</td>
<td>yes</td>
<td>SU</td>
<td>M.S. Maxwell 1973</td>
</tr>
<tr>
<td>Baffin Island</td>
<td>Morrison (KdDq-7-3)</td>
<td>SS</td>
<td>DD</td>
<td>R/SR/S</td>
<td>6m x 7m, est. (42)</td>
<td>B(2); CK (5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>M.S. Maxwell 1980, 1985</td>
</tr>
<tr>
<td>Labrador</td>
<td>Komaktorvik 1 (IhCw-1)</td>
<td>SS</td>
<td>SD; PR</td>
<td>C/O/E</td>
<td>6m diameter (28.26)</td>
<td></td>
<td></td>
<td></td>
<td>NI</td>
<td>no</td>
<td></td>
<td>Nagle 1984; Cox 2003</td>
</tr>
<tr>
<td>Labrador</td>
<td>Shuldham Island 6 (IdCq-19)</td>
<td>1?</td>
<td>GS</td>
<td>PR</td>
<td>no information</td>
<td>no information</td>
<td>PS; AF?</td>
<td>no information</td>
<td>NI</td>
<td>yes?</td>
<td>Thomson 1981</td>
<td></td>
</tr>
<tr>
<td>Labrador</td>
<td>Shuldham Island 6 (IdCq-19)</td>
<td>2?</td>
<td>GS</td>
<td>PR</td>
<td>no information</td>
<td>no information</td>
<td>PS</td>
<td></td>
<td>NI</td>
<td>yes?</td>
<td>Thomson 1981</td>
<td></td>
</tr>
<tr>
<td>Labrador</td>
<td>Iluvektalik Island 1 (HhCk-1)</td>
<td>SS</td>
<td>SD</td>
<td>R/SR/S</td>
<td>insufficient information</td>
<td></td>
<td></td>
<td></td>
<td>NI</td>
<td>yes?</td>
<td>LW</td>
<td>Cox 1977, 2003</td>
</tr>
<tr>
<td>Labrador</td>
<td>Nukasusutok 12 (HcCh-14)</td>
<td>1</td>
<td>GS</td>
<td>SG</td>
<td>R/SR/S</td>
<td>6m x 3.5/4m (21-24)</td>
<td>AF; SG</td>
<td>CL; 5m x 75/100cm; ER; H(2); LS; LS?; DW</td>
<td>NI</td>
<td>yes</td>
<td></td>
<td>Hood 1986</td>
</tr>
<tr>
<td>Labrador</td>
<td>Nukasusutok 12 (HcCh-14)</td>
<td>2</td>
<td>GS</td>
<td>AD; PR?</td>
<td>O-SR?</td>
<td>5m x 4m (15.7)</td>
<td>AF</td>
<td>S; 4m x 70cm; ER; CH; H(1-2); LS; PS?</td>
<td>NI</td>
<td>yes</td>
<td></td>
<td>Hood 1986</td>
</tr>
</tbody>
</table>

**MIDDLE DORSET**

<table>
<thead>
<tr>
<th>Location</th>
<th>Site</th>
<th>Structure</th>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Whale River</td>
<td>GhGk-63</td>
<td>6</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>3.8m x 3m (8.9)</td>
<td>H</td>
<td></td>
<td>NI</td>
<td>yes</td>
<td></td>
<td>Desrosiers and Rahmani 2003</td>
</tr>
<tr>
<td>Great Whale River</td>
<td>GhGk-63</td>
<td>7</td>
<td>GS</td>
<td>PR</td>
<td>BI</td>
<td>4.2m x 2.6m (15.2)</td>
<td>AF</td>
<td>CL; 2.3m x 60cm; H</td>
<td>PB</td>
<td>yes</td>
<td></td>
<td>Desrosiers and Rahmani 2003</td>
</tr>
<tr>
<td>Great Whale River</td>
<td>GhGk-63</td>
<td>8</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>3m diameter (7.1)</td>
<td>NI</td>
<td></td>
<td>NI</td>
<td>yes</td>
<td></td>
<td>Desrosiers and Rahmani 2003</td>
</tr>
</tbody>
</table>

**APPENDIX** - Palaeoeskimo domestic architectural remains *circa* 4500 B.P. until 1500 B.P. 580
<table>
<thead>
<tr>
<th>Location</th>
<th>Site</th>
<th>Structure</th>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Whale River (Hudson Bay)</td>
<td>GhGk-63</td>
<td>9</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>5.2m x 5m (20.4)</td>
<td>PS (H?)</td>
<td></td>
<td>PB; EP</td>
<td>yes</td>
<td></td>
<td>Desrosiers and Rahmani 2003</td>
</tr>
<tr>
<td>Nunavik</td>
<td>Tivi Paningayak (KcFr-8A)</td>
<td>A</td>
<td>SS</td>
<td>SW</td>
<td>R/SR/S</td>
<td>4.5m x 3m (13.5)</td>
<td>LS?</td>
<td></td>
<td>EP?</td>
<td></td>
<td>S-EW</td>
<td>Nagy 2000a</td>
</tr>
<tr>
<td>Nunavik</td>
<td>Tivi Paningayak (KcFr-8A)</td>
<td>B</td>
<td>GS</td>
<td>SW</td>
<td>R/SR/S</td>
<td>2m x 2m (4)</td>
<td>NI</td>
<td></td>
<td></td>
<td></td>
<td>S-EW</td>
<td>Nagy 2000a</td>
</tr>
<tr>
<td>Nunavik</td>
<td>Tivi Paningayak (KcFr-8A)</td>
<td>F</td>
<td>GS</td>
<td>AD</td>
<td>C/O/E?</td>
<td>3m diameter (7.1)</td>
<td>NI</td>
<td></td>
<td></td>
<td></td>
<td>S-EW</td>
<td>Nagy 2000a</td>
</tr>
<tr>
<td>Nunavik</td>
<td>Tivi Paningayak (KcFr-8A)</td>
<td>K</td>
<td>GS</td>
<td>AD</td>
<td>R/SR/S</td>
<td>2.5m x 4m (10)</td>
<td>NI</td>
<td></td>
<td></td>
<td></td>
<td>S-EW</td>
<td>Nagy 2000a</td>
</tr>
<tr>
<td>Nunavik</td>
<td>Gagnon / DIA.73 (JfEl-30)</td>
<td>A</td>
<td>GS</td>
<td>B; PR</td>
<td>C/O/E</td>
<td>6.9m x 4.58m (interior) (24.8)</td>
<td>CH; PS</td>
<td></td>
<td>PB</td>
<td>yes</td>
<td>LSU-EF</td>
<td>Bibeau 1984, 1986</td>
</tr>
<tr>
<td>Baffin Island</td>
<td>Kemp (KdDq-8-2)</td>
<td></td>
<td>GS</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td></td>
<td>NI</td>
<td>yes?</td>
<td>W</td>
<td>M.S. Maxwell 1973</td>
</tr>
<tr>
<td>Labrador</td>
<td>Avayalik 2 (JaDb-1)</td>
<td></td>
<td>GS</td>
<td>PR</td>
<td>R-BI</td>
<td>5.85m x 3.15m (18.4)</td>
<td>AA</td>
<td>CO; S; 3.25m x 1m</td>
<td></td>
<td>yes</td>
<td></td>
<td>Jordan 1980, 1986</td>
</tr>
<tr>
<td>Labrador</td>
<td>Avayalik 7 (JaDb-18)</td>
<td></td>
<td>SS</td>
<td>PR; SD</td>
<td>C/O/E</td>
<td>3.4m x 3.4m (7.1-12.56)</td>
<td>AF</td>
<td>no information</td>
<td>EP</td>
<td>yes</td>
<td></td>
<td>Jordan 1980</td>
</tr>
<tr>
<td>Labrador</td>
<td>Rose Island Site Q Band 1 (IdCr-6)</td>
<td>.</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>no information</td>
<td>NI</td>
<td>S; US?</td>
<td>NI</td>
<td>yes</td>
<td>Tuck 1975</td>
<td></td>
</tr>
<tr>
<td>Labrador</td>
<td>Shuldhman Island 9 (IdCq-22)</td>
<td>House 2</td>
<td>GS?</td>
<td>PR</td>
<td>C/O/E</td>
<td>AF</td>
<td>CO; PS; P(2); CK(2)</td>
<td></td>
<td>yes</td>
<td></td>
<td>Thomson 1981</td>
<td></td>
</tr>
<tr>
<td>Labrador</td>
<td>Igulusuaticalik 4 West (HhCj-5)</td>
<td>.</td>
<td>SS</td>
<td>SD; OM; SC</td>
<td>R/SR/S</td>
<td>5.5m x 3.5m (19.25)</td>
<td>AF; SH/PS; CA(2)</td>
<td>S; PS; APS; CBH</td>
<td>EP</td>
<td>yes</td>
<td></td>
<td>Cox 1977, 2003</td>
</tr>
<tr>
<td>Labrador</td>
<td>Koliktalik 1 (HdCg-2)</td>
<td></td>
<td>SS</td>
<td>SD; B</td>
<td>R/SR/S</td>
<td>4m x 4m (16)</td>
<td>AA; CK</td>
<td>SP; AD; D</td>
<td>CTE</td>
<td>no</td>
<td></td>
<td>Fitzhugh 1976c; Jordan 1986</td>
</tr>
<tr>
<td>Labrador</td>
<td>St. John's Island 3 L-4 (HeCf-1)</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>6m diameter (28.26)</td>
<td>AF; CA(2)</td>
<td>S</td>
<td>NI</td>
<td>no?</td>
<td></td>
<td>Nagle 1984</td>
<td></td>
</tr>
<tr>
<td>Labrador</td>
<td>Black Island (HeCl-16)</td>
<td>GS</td>
<td>PR</td>
<td>C/O/E</td>
<td>no information</td>
<td>NI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Nagle 1984</td>
</tr>
</tbody>
</table>

**APPENDIX** - Palaeoeskimo domestic architectural remains *circa* 4500 B.P. until 1500 B.P.
<table>
<thead>
<tr>
<th>Location</th>
<th>Site</th>
<th>Structure</th>
<th>Placement of Structure</th>
<th>Peripheral Marker</th>
<th>Structure Shape</th>
<th>Size and Area (m²)</th>
<th>Internal Features</th>
<th>Axial Feature Description</th>
<th>Entrance</th>
<th>Fully Excavated?</th>
<th>Suggested Season</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labrador</td>
<td>Snack Cove Island West 1 (FkBe-5)</td>
<td>GS</td>
<td>PR</td>
<td>CO/E</td>
<td>4m diameter (12.56)</td>
<td>AA; PS(P?)</td>
<td>CO</td>
<td>no?</td>
<td>Wolfe 2003</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newfoundland</td>
<td>Peat Garden North (EgBf-18)</td>
<td>GS</td>
<td>RR (RW?)</td>
<td>CO/E</td>
<td>5m x 4m (15.7)</td>
<td>AA</td>
<td>CO</td>
<td>NI</td>
<td>yes</td>
<td>Hartery and Rast 2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newfoundland</td>
<td>Phillips Garden (EeBi-1)</td>
<td>House 2</td>
<td>SS</td>
<td>PR (RW?); DD</td>
<td>R/SR/S</td>
<td>7.6m x 8.4 (63.84)</td>
<td>AA; CA(RP?)</td>
<td>SP; PW</td>
<td>NI</td>
<td>yes</td>
<td>Harp 1976; Renouf and Murray 1999; Renouf 2006</td>
<td></td>
</tr>
<tr>
<td>Newfoundland</td>
<td>Phillips Garden (EeBi-1)</td>
<td>House 5</td>
<td>SS</td>
<td>SD</td>
<td>CO/E</td>
<td>5.9m x 3.3m (15.29)</td>
<td>CA</td>
<td>NI</td>
<td>yes?</td>
<td>Harp 1976</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newfoundland</td>
<td>Phillips Garden (EeBi-1)</td>
<td>Feature 1</td>
<td>SS</td>
<td>PR(RW?); DD</td>
<td>CO/E</td>
<td>9.2m x 7m (50.55)</td>
<td>AA; CA(2); RP</td>
<td>SP; LS; PLW</td>
<td>PB(2)</td>
<td>yes</td>
<td>Harp 1976; Renouf and Murray 1999</td>
<td></td>
</tr>
<tr>
<td>Newfoundland</td>
<td>Phillips Garden (EeBi-1)</td>
<td>Feature 14</td>
<td>SS</td>
<td>PR(RW?); DD</td>
<td>CO/E</td>
<td>12m x 7.5m (70.65)</td>
<td>AA; RP</td>
<td>SP; LS; PW</td>
<td>EP(1); PB(1)</td>
<td>yes</td>
<td>Renouf 1987</td>
<td></td>
</tr>
<tr>
<td>Newfoundland</td>
<td>Phillips Garden (EeBi-1)</td>
<td>Feature 42</td>
<td>GS</td>
<td>PH</td>
<td>CO/E</td>
<td>5m x 6m (23.55)</td>
<td>AF</td>
<td>S: 2.3m x 1.3m; PLW</td>
<td>NI</td>
<td>yes</td>
<td>Renouf 1991, 2002</td>
<td></td>
</tr>
<tr>
<td>Newfoundland</td>
<td>Phillips Garden (EeBi-1)</td>
<td>Feature 55</td>
<td>SS</td>
<td>PR(RW?); DD; PH</td>
<td>CO/E</td>
<td>6m diameter (28.26)</td>
<td>AF</td>
<td>S: 6m x 75cm</td>
<td>PB(2)</td>
<td>yes</td>
<td>Renouf 1993b, 1999, 2002</td>
<td></td>
</tr>
<tr>
<td>Newfoundland</td>
<td>Point Riche (EeBi-20)</td>
<td>8</td>
<td>SS</td>
<td>B; DD</td>
<td>O-R</td>
<td>7m x 5.5m (30.22-38.5)</td>
<td>AF; H(P)</td>
<td>S: 2.5m x 1m; PLW</td>
<td>NI</td>
<td>yes</td>
<td>Renouf 1992, 2002</td>
<td></td>
</tr>
<tr>
<td>Newfoundland</td>
<td>Point Riche (EeBi-20)</td>
<td>30</td>
<td>SS</td>
<td>B; DD</td>
<td>CO/E</td>
<td>6.5m diameter (33.17)</td>
<td>AF; H(P); RP</td>
<td>CO: 1.4m x 78cm; PLW</td>
<td>PB</td>
<td>yes</td>
<td>Eastaugh 2002</td>
<td></td>
</tr>
<tr>
<td>Newfoundland</td>
<td>Cape Ray (CjBt-1)</td>
<td>GS</td>
<td>CA; AD; R</td>
<td>R/SR/S</td>
<td>5m x 5.5m (27.5)</td>
<td>AF(2); PS; RP</td>
<td>EP</td>
<td>yes</td>
<td>W</td>
<td>Fogt 1998</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newfoundland</td>
<td>Stock Cove (CkAj-3)</td>
<td>Feature 3</td>
<td>GS</td>
<td>CA; PS</td>
<td>R/SR/S</td>
<td>6m x 2.5m (15)</td>
<td>AA; BH; PS</td>
<td>CO: 2m x 1m; PW</td>
<td>NI</td>
<td>yes</td>
<td>Robbins 1985</td>
<td></td>
</tr>
<tr>
<td>Newfoundland</td>
<td>Dildo Island (CjAj-2)</td>
<td>House 2</td>
<td>GS &amp; SS</td>
<td>SD; PS</td>
<td>R/SR/S</td>
<td>8.6m x 4m (34.4)</td>
<td>AA; CK (3); LS</td>
<td>CO: 1.9m x 1m; LS</td>
<td>PB</td>
<td>yes?</td>
<td>LeBlanc 1996, 2003</td>
<td></td>
</tr>
<tr>
<td>Newfoundland</td>
<td>Frenchman's Island (CjAj-1)</td>
<td>GS</td>
<td>PS</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>NI</td>
<td>Evans 1981</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

APPENDIX - Palaeoeskimo domestic architectural remains circa 4500 B.P. until 1500 B.P. 582