“...for the Good of His Majesty’s Service”

The archaeology of Fort Dundas, 1824 – 1829

FORT DUNDAS, MELVILLE ISLAND

Fort Dundas – From the sketchbook of John Septimus Roe
(Batty Library, 543A-5)

Caption top left reads:

“View from the SW Bastion of Fort Dundas, Melville Island, across King’s Cove. November 6, 1824. The Settlement having at that period been established 1 month”

The ships in view are (L > R) HMS Tamar, Countess of Harcourt and Lady Nelson (Partly obscured behind northern Turret)

Thesis submitted for a Degree of Master of Arts by Research,
Faculty of Law, Business & Arts,
Charles Darwin University

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September, 2006
DECLARATION:

The research and the text of this thesis "...for the Good of His Majesty’s Service: The archaeology of Fort Dundas 1824 – 1829" is the work of the candidate, Colin De La Rue, undertaken during candidacy for a degree of Master of Arts by Research at Charles Darwin University.

Any material drawn from other sources or the work of other researchers is specifically acknowledged within the text.

I certify that the work embodied in this thesis has not already been accepted in substance for any other degree, and is not being currently submitted in candidature for any other degree.

Colin De La Rue
January, 2007
ABSTRACT:

THE ARCHAEOLOGY OF FORT DUNDAS, 1824 – 1829

This thesis describes an historical archaeology programme designed to investigate and interpret apparent anomalies between the documentary accounts of the 1824–1829 British settlement on Melville Island and the information conveyed by its physical position and material construction, as demonstrated in the remaining ruins of the settlement.

Information gained through a part-time project of four years of historical study, and three seasons of archaeological investigation of the settlement is compiled and presented. The archaeological work concentrated particularly on the stronghold, Fort Dundas, to evaluate the military component of the settlement. Both archival and archaeological evidence is considered, and the influences of the world and regional geopolitical context bearing on the British venture are evaluated.

The thesis argues that, while the documentary evidence outlining the planning for the Melville Island outpost speaks in great part of the establishment of a commercial trading port, the implementation of the project by the Admiralty took the form of constructing an imperialist military station. Examination of the ruins of Fort Dundas and consideration of its geographical location reveal little orientation toward commercial activity, but considerable preparation for defence.

This interpretation of the Melville Island venture throws doubt on its common description as a ‘failed settlement of the north’. Fort Dundas may more accurately be seen as the instrument of a military gambit, which served its purpose in British imperialist strategy and was retired once its function had been served.
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All photographs and drawings are by the author unless otherwise acknowledged.
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- The residents of Pirlangimpi, particularly Deacon Peter Brogan and his family, and Mr. Patrick Puruntatameri. They greeted our presence with friendship and interest, sharing information and family anecdotes of the British settlement.
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My sincere thanks to you all.

Colin De La Rue
“..for the Good of His Majesty’s Service.”

The archaeology of Fort Dundas, 1824 – 1829

CHAPTER ONE

INTRODUCTION
INTRODUCTION

On the 17th February 1824 Earl Bathurst, the Secretary for War and Colonies in the government of Great Britain initiated the establishment of the first British settlement in Australia's tropical north. On that day he instructed the Lords Commissioners of the Admiralty to despatch a Ship-of-War to New Holland to take formal possession of a tract of the north coast including Bathurst Island, Melville Island¹ and the eastern side of Cobourg Peninsula. There the Commander of the expedition was to form an establishment at a site "...best calculated for the Good of His Majesty's Service." (Bathurst, 1824b, p 759), choosing, in the first instance - if conditions were suitable – a site on Apsley Strait, between Bathurst and Melville Islands.

In due course, Captain Sir J J Gordon Bremer, with his little fleet, HMS Tamar, the chartered merchantman Countess of Harcourt and the Colonial brig Lady Nelson arrived in Apsley Strait on the 26th September 1824. Judging the conditions suitable, the party began construction on the Melville Island shore of Apsley Strait, the narrow and tortuous channel separating Bathurst Island to the west from Melville Island to the east. Here, on a low headland known as Punata to the Tiwi traditional owners, but named Point Barlow by the British, a stronghold, Fort Dundas (Figure 1), and a small settlement were built².

For some four and a half years, from 1824 to 1829, this settlement housed a military garrison and the support group of volunteer convict workers posted there to assert the British Imperial claim to a vast and arbitrarily defined section of the Australian continent. The tiny community of about one hundred and twenty men, women and children endured and adapted to the alien environment. Some died in the struggle to accommodate the inappropriate practical and cultural experience of their origins to the conditions and resources of the land, learned by Aboriginal families over millennia.

¹ For geographical and environmental background information on Melville Island see Appendix 1
² The contemporary accounts refer to the settlement generally as 'Melville Island' and only the Fort building itself as 'Fort Dundas'. This distinction is maintained here.
Now, some one hundred and eighty years later, amongst the regrown monsoon forest of Point Barlow, relatively untouched and unobscured by later human landscape developments, lie the ruins of Fort Dundas and its community (Figure 2). This thesis presents an account of the planning and performance of an archaeological and historical research project carried out on the Fort Dundas stronghold over the years 2001 - 2005. It offers some conclusions as to the nature and function of this desperately isolated imperial outpost.

**Significance**

From the perspective of the development of British colonialism in Australia, the attempt to establish a settlement on Melville Island may appear insignificant. It was a venture that had no lasting sequel: no continuity of development into a modern city. It remains a brief episode, peripheral to the
mainstream of Euro-Australian progress. Nevertheless, it embodied a number of innovations in the style and intent of Australian colonial

**Figure 2**

Point Barlow from Garden Point

"View of the settlement of Fort Dundas founded by HM Ship Tamar in Port Cockburn, Melville Island N°

Coast Australia.

1 November, 1824. Taken from Tamar EV in Kings Cove.  

The footnotes read (from l.)

Commissariat Officer’s huts
Fort Dundas
Officer’s Quarters
(Indecipherable)
Old William giving out bread (vertical text)
Wharf with boat unloading by a derrick
Blacksmith’s hut
Point Barlow
Point Herbert

(Other notes within picture describe the coast and vegetation)
J S Roe sketchbook (Roe, 1824)

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3 Our earliest known representations of the Melville Island settlement (Figures 1 & 2) come from the sketch-book of John Septimus Roe, Bremer’s first officer. Roe, having been with Philip Parker King on his surveying voyages between 1818 and 1822 (King 1827, passim) was already acquainted with the area and appears to have been posted to the Tamar for his navigational experience in these North Australian waters (Roe 1824c).
settlements. The motivation for undertaking this venture was not the extension of the penitentiary / land settlement process in New South Wales, but a response to the activities and interests of the Asian north.

Geoffrey Blainey, developing his concept of early Australian settlements as 'Limpet Ports', contends that Britain was, at this time, more interested in the seas around Australia than in the continent itself (Blainey, 1966, p 73). This was perhaps more demonstrably true in the case of the Melville Island settlement than any other. The archival records in Sydney dealing with its establishment, concentrate on the issues of potential trade with the islands to the north and the need to secure British maritime interests. Earl Bathurst's stated 'objects' for the mission (Bathurst, 1824a) concentrate on commercial and military prospects. There is little declared interest in, or expectation of, significant benefits accruing from the settlement and development of the land itself.

Many new and baffling problems faced the party at Melville Island. This settlement was the first attempt by Britain to initiate a European community in the tropical monsoon terrain of the north coast - conditions that had not been previously experienced by the Australian colonists. New approaches to work organisation, health, domestic architecture, horticulture and animal husbandry had to be devised by the settlers.

Melville Island was also the first European attempt on the Australian continent to develop a settlement other than a penal colony. Due to its location outside the British territorial claim of New South Wales, convicts could not initially be assigned there as part of their sentence, and the convict workers who provided the settlement's workforce were volunteers (Bremer, 1824a, p 785 + Note 166). Melville Island was not, in fact, an 'Island of Incarceration' in a strict sense; as implied by Reid in his article included in

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4 The Bathurst Papers contain a surprising note, cited by Thompson, N. (1999) Earl Bathurst and the British Empire, Leo Cooper, Barnsley (South Yorkshire). (p. 195), indicating that in early 1826 Earl Bathurst rejected a suggestion that Melville Island become the site of a new penitentiary on the grounds that: "The best disposed (prisoners) would not much relish such a banishment, & the worst will require an additional force to protect the settlers".
Pearn and Carter's book of that title (Reid, 1995, pp 38 ff). The settlement is not even known to have possessed any formal prison building, mention only being made of the construction of "huts for the soldiers and prisoners" (Bremer, 1824c, p 784). Convicts were not transported to Melville Island for punishment, but were attracted there as volunteers, by offers of concessions, to provide their skills and labour.

Because of these unique characteristics, an examination of the Melville Island settlement and its development has much to tell us. It offers an extraordinary perspective on the evolution of the European vision of the exploitation of Australia and its region.

Moreover, for the Aboriginal people of the Tiwi Islands, the advent of this European settlement in their midst and the activities of the settlers provide important components in their traditional history. The continuity of the local indigenous culture during and after the short period of British settlement ensures an Aboriginal historical identification with this site. Through the features and relics left upon the landscape, all Australians of Aboriginal or of migrant extraction can connect to these forebears and relate to their lives and experiences. The Melville Island settlement is a symbol in both Aboriginal and European-Australian heritage and is incorporated into the traditions of the Tiwi custodians of the islands as validly as into the traditions of European-descended Australians (Fredericksen, 2002b).

The Tiwi history of the period of European settlement and of their ancestors' reaction to, and interpretation of, these events provides a rare glimpse of the antithesis to the Euro-centric history of Australian colonisation. The record of interactions that took place on this location presents a vignette of the bilateral tension that exists, unrecorded or unrecognised, over much of the Australian landscape, incorporating as it does both Aboriginal and European heritage significance.

Through their joint presence in this place and through their dealings with each other, the two cultures demonstrated a range of human effort and
aspiration that we can see as continuous with our own lives. By examining the site of their contact and interpreting their interaction within the features of the landscape, both natural and artificial, we are able to see more clearly the human dimension of the historical episode.

Figure 3

Chart of northern Apsley Strait (Inset: Fort Dundas)
Port Cockburn and St Asaph Bay (King, 1827, Vol 2, p 236)

Archaeological Resources

The British presence on Melville Island began in October 1824 (Bremer, 1824b) and the settlement was abandoned in April 1829 (Mulvaney & Green, 1992, p 149). This short duration, together with its small population and the
wide dispersal of its buildings, has resulted in a very thin and discontinuous occupation layer of archaeological evidence. Nevertheless, as there has been very little later activity on the site, other than the natural bush regrowth, it is possible to trace a good deal of the layout of the settlement. The remaining features and their configuration make it possible to interpret some of the settlers’ activities from the material evidence on the ground.

In the one hundred and eighty-plus years since its abandonment the ruins of the Melville Island settlement have been subjected to little archaeological investigation. Eleanor Crosby’s 1975 accomplishment in clearing and surveying the site and conducting two small excavations has provided the fullest general published account of the archaeology of the settlement (Crosby, 1978). Apart from Crosby’s report there has been no published archaeological information to supplement the historical analyses of the Melville Island settlement until the recent activities by Northern Territory University (now Charles Darwin University).

It is known from some incidental reports and the existence of small collections of artifacts deposited with the Museums and Art Galleries of the Northern Territory (Fort Dundas collections, 1975, 1978 and 1986) that other archaeological activities have taken place. Allen (1969, p 5) conducted an exploratory excavation in 1967. The 1975 and 1978 collections of artifacts arose from excavations in those years by Crosby, while the 1986 collection was made by an “Operation Raleigh” archaeological survey and site development venture led by Robert Reynolds in that year.

A professional survey of the site was undertaken on behalf of the Northern Territory Department of Lands (Pengelly, 1986) and the survey map and Field Books are available through the NT Place Names Committee.

The excavations have provided limited collections of artifacts, however no reports of these expeditions (apart from Crosby’s 1978 article) have been published. A further small collection of artifacts, said to be glass and ceramic fragments gathered by the American anthropologist Arnold Pilling in 1953 –
54, is held in the Phoebe Apperson Hearst Museum of Anthropology at the University of California, Berkeley (Fredericksen, 2002a, p 2). No certain details of this material are presently available.

In 1999 discussions between staff of the Faculty of Law, Business and Arts at the then Northern Territory University and members of the Tiwi Land Council led to the initiation of the Fort Dundas Project (Fredericksen, 2002b). The Project was designed to expand and bring together anthropological, archaeological and historical information and research scholarship to contribute to heritage management decisions regarding the Melville Island settlement. Such knowledge will inform the Tiwi Land Council and the Pirlangimpi Community Council in their deliberations regarding the future of this historic site, laying a sound basis for preservation decisions and guiding any plans for exploitation or development of the area.

Through the Fort Dundas Project, archaeological investigation seasons involving site surveys and detail excavations concentrating on various features have been conducted by Northern Territory University / Charles Darwin University staff and students from 1999 to 2003 inclusive, and archival and historical research into the settlement has been undertaken. This has resulted in further publications by Dr. Clayton Fredericksen (Particularly, in this context, 2000, 2002a, 2002b).

The initial Northern Territory University / Charles Darwin University field season on Melville Island (30 September – 7 October 1999) was an exploratory examination of the site and involved a short excavation of the stone walled terrace to the south of the wharf position which was, at that time, thought to be the site of the Commissariat Store (Fredericksen, 2000b).

In the 2000 field season (14 June – 6 July) a larger party undertook excavations on features believed to be the sites of the Commandant’s House and the Hospital. A detailed survey was also made to establish a datum line and a site grid. A pattern of topographical points within and around the Fort ruin was recorded to provide data for the possible future development of 3D
imaging. Clearing sighting lines for this survey also began the process of clearing the Fort area, which continued each year, providing a view over the ruin unobstructed by undergrowth and allowing a ready assessment of suitable areas for excavation.

The archaeological resources available to this research project, apart from the site itself, consisted of:

- Crosby's report of 1978,
- The artifacts collected in 1975, 1978 and 1986,
- The field notes and survey map compiled by Pengelly,
- Fredericksen's papers, (including a useful register of artifacts gathered from 1975 to 1999 held in the Museum & Art Gallery of the NT (Fredericksen, 2000b)),
- The artifact collections gathered by the University expeditions of 1999, and 2000.

Of these resources only a portion of Crosby's Report, dealing with her excavation trench through the east curtain and ditch (Crosby, 1978, pp 19 - 23 and illustrations) deal specifically with the fort itself.

Some further material bearing indirectly upon the archaeology of Fort Dundas, but of use due to the close relationship of the settlements in period and location, is available in relation to the Raffles Bay settlement 1827 - 1829. The booklet Fort Wellington, Raffles Bay (Historical Society of the Northern Territory, 1971) is an account of an expedition undertaken in 1966 to inspect the ruins of this second British settlement begun on Cobourg Peninsula in 1827. While providing a useful synopsis of the history of the settlement, this report contains slight archaeological information and the party apparently did not distinguish between the 1820's ruins and several later Portland cement features that appear to be tanning and pickling vats dating to the pastoral lease operated in the area in the 1870's.

Slightly further removed in time from the Fort Dundas period is the settlement of Victoria on Port Essington (1838 - 1849), which, like Fort Wellington, is on
Cobourg Peninsula. This site has been subjected to archaeological research and analysis by Jim Allen, being the subject of his PhD Thesis (1969) and subsequent articles (e.g., Allen, 1972, 1980). While the Port Essington settlement was begun some fourteen years after Melville Island was established, there are some analogous features in their conception and formation. Both settlements were initiated in Britain and were established by the Admiralty, both were presented publicly as commercial centres for trade to Australia’s north. Neither settlement was conceived as a colony and provisions for private settlement and land acquisition were negligible.

Allen’s analysis of Port Essington provides a useful background against which to consider Melville Island. His exploration of the validity of the commercial basis for the settlement and of Blainey’s ‘limpet port’ concept (Allen, 1972, (Blainey, 1966, pp 71 ff)) provide important insights into the motivation for the British north Australian settlements.

**Historical Resources**

The historical component of the research programme involved firstly the scrutiny of archival primary sources to obtain a clear picture of the declared intentions, the procedures of the British settlement of Melville Island and any contemporary information covering the practical implementation of the settlement’s creation. As insufficient funds were available for overseas travel to consult the British Public Record Office or the Bathurst Papers, archival research was conducted solely at repositories within Australia. Because of this limitation, the microform copies of British Public Record Office material acquired through the Joint Photocopying Project and held by the State Records of New South Wales and the National Library, were particularly valuable.

The Commonwealth Parliament Library Committee’s transcriptions of papers relating to the settlement of North Australia in *Historical Records of Australia*, particularly Series III, Vols. V & VI provided a sound backbone of information for the project. It was also possible to supplement the material in *Historical*
Records of Australia with other contemporary material such as log books and diaries of some participants, newspaper reports and private correspondence.

Much material was held locally by the Charles Darwin University Library, the Northern Territory Library Service, the Northern Territory Archives Service and the Darwin office of the National Archives of Australia. As the Melville Island settlement is so significant an element in Northern Territory heritage, these institutions have excellent holdings of both published and unpublished material dealing with the settlement. In the few cases where a published item was not locally available, particularly in areas of political and military history, Inter-Library Loans overcame the lack.

Some archival material needed to be sought in repositories outside the Northern Territory. In 2003 a Northern Territory History Grant assisted with a visit to Canberra and Sydney for research in the National Library of Australia, the Australian War Memorial Library, the Mitchell Library of the State Library of New South Wales and State Records of New South Wales at Penrith, where microfilms of British Public Record Office material and Sydney newspaper files of the 1820's were available, together with the Colonial Secretary's Office correspondence.

Again, in 2005 a further Northern Territory History Grant assisted with a visit to Perth to consult the Roe papers in the Battye Library. John Septimus Roe's involvement with the exploration of the north coast of Australia under Philip Parker King and his participation, as first officer to Captain Bremer, in the establishment of the Melville Island settlement made his log books and correspondence particularly important records. His sketch book has proved to be highly informative about the fabric of Fort Dundas.

Keyword searches under all proper nouns related to the Melville Island settlement were conducted in the catalogues of these repositories. Information was compiled by photocopy or notation in hardcopy files and the bibliographic data were entered in an EndNote 7 database for the
development of text references and the processing of a detailed bibliography.

Primary sources are limited very largely to the official despatches of the British Government officials involved in the establishment and administration of the settlement. Some personal accounts or items of private correspondence are available, for example: (Campbell, 1834, Ennis, 1825), and among the Roe Papers in the Battye Library and the Piper Papers in the Mitchell Library.

Some period newspaper reports also exist, as in the *Sydney Gazette* (*Sydney Gazette*, 1825) but these are, in most cases, the work of the same class of officers and administrators who wrote the official correspondence. This limited perspective may have promoted a misleading or biased picture of the settlement and its affairs. It is clear, for example, that only a limited portrayal is given in the official despatches of the lives of the rank-and-file military and the convicts, and virtually no mention at all is made of the presence, let alone the activities of the women and children.

This official discrimination has been reflected in the historical accounts. It has been argued that historically relevant material regarding the experience and activities of the convict contingent at Melville Island can be derived from the written record (Marshall, 1991). Nevertheless, the fact remains that there is extremely limited written material, either by or about these people, and our understanding of their lives is restricted to more or less speculative interpretations based on official archives, such as Proceedings of the Bench of Magistrates at Melville Island (Archives Authority of New South Wales, no date)

There are moreover, some unfortunate gaps in the contemporary records. Two reports to the Colonial Secretary; numbers three and four from Major Campbell, the Commandant of the Melville Island settlement, covering the period from December 1826 to April 1827, cannot be located. It seems likely that these reports, along with some maps and plans alluded to, have been
lost, possibly *en route* to Sydney on the Brig *Anne* (Campbell, 1827a). Although the despatch of duplicate reports is mentioned, no copies of these despatches have been found.

A further category of information examined for this project was a general coverage of the background political, economic and military concerns of the European imperialist nations which dominated this region following the Napoleonic wars. This included British foreign policy, Dutch East Indies history and administration, early nineteenth century maritime strategy, design of fortifications, military tactics and technology, and the international commerce and finance of the period. The information sources for these matters were pursued through archival catalogues, library catalogue searches, Library Information Search services and Internet subject searches. These sources located documents providing a broad range of material for consideration.

A very few traveller’s accounts of Melville Island in the late 19\textsuperscript{th} and early 20\textsuperscript{th} century contain some information relating to the settlement and to the fort itself (for example; Fisher, 1876, Searcy, 1895, Kirkbride, 1905-1914, Spencer, 1928). These accounts are certainly valuable, but do not generally extend our knowledge of the settlement greatly, mainly alluding to the obvious physical features, such as the piles of bricks at Garden point and the ditch of the fort. It is important to have corroboration of the existence of the now vanished piles of bricks and kiln remains at Garden Point, which according to local oral information appear to have been largely taken for fill in the construction of the Garden Point barge landing in the 1940’s. However, some of this traveller’s information can be confusing where earlier observations conflict with the present material evidence.

Spencer’s account (1928, pp 904ff) describing the fort as having a ‘horseshoe shaped ditch, enclosing a series of zigzag fortifications made of brick’ cannot be reconciled with the situation on the ground. The ditch is fully rectangular and, while bricks may have been salvaged from Point Barlow as well as Garden Point, there is only one later mention of a single brick wall
within the fort (Crosby, 1978 p 11) and it is difficult to envisage how the fortifications mentioned could have been arranged. It is possible that, writing some sixteen years after his visit in 1912, Spencer may have misinterpreted his notes.

To explore the scope of insight and interpretation that has been advanced about the venture, it was also necessary to consult the historical accounts and analyses of the settlement made by recent scholars who had studied Melville Island. Several historical accounts dealing with the Melville Island settlement have been written and are cited in the Bibliography, some being commented on below. Of these histories, possibly the most useful overview is Dora Howard’s account “The English Activities on the North Coast of Australia in the First Half of the Nineteenth Century” (Howard, 1933).

There has been a tendency for historical research to deal with the settlement as an example or a case study of aspects of a broader topic. The Melville Island settlement has had little examination in its own right. This has led to it being, to some extent, subsumed inadequately - if not misleadingly - under the label of ‘one of the failed settlements of the north’ (e.g., Bach, 1976), together with one or all of the other short-lived settlements at Raffles Bay, Port Essington and Escape Cliffs.

The major themes under which the Fort Dundas settlement has been considered are:

- Aboriginal-European contact issues - (Cameron, 1998, Krastins, 1972, Morris, 1999)
- British imperialist motivation - (Cameron, 1989, Graham, 1967)
- Nineteenth century trade and economics - (Coltheart, 1982, Howard, 1933)
- Tropical disease propagation - (McIntosh, 1958, Reid, 2004, Reid, 1992)
- Tropical horticulture and farming - (Calley, 1998, Curteis, 1965)
The lack of a definitive history of the Melville Island settlement in and of itself is no doubt understandable when the small size and short duration of the venture and the limited group of authors of primary sources of information is considered. The result of this however, is that the researcher seeking an account of the settlement, particularly the historical archaeologist interested in information regarding its physical features and arrangements, having consulted the primary historical sources available, has to sift information portraying the settlement from the 'special interest' treatments, which may prove misleading due to their focus being away from the narrative of the settlement.

These special interest treatments of Melville Island tend to see the short life of the settlement as denoting failure, this being partially (or in some cases exclusively) the result of a weakness or problem identified within their particular sphere of study. This provides something of a plethora of diagnoses to explain the death of the Melville Island settlement, but there is much more unanimity concerning its birth. Most writers echo, more or less, Dora Howard's brief summing up of the motivation of all the British northern settlements; "... commerce, followed by national rivalry as a close second" (Howard, 1933, p 23). The adequacy of this historical interpretation in the light of an archaeological investigation of the material qualities of Fort Dundas becomes the topic of this thesis.

**Project Outline**

The archival records, and consequently most of the historical accounts, of the British motives for establishing the settlement emphasise one or other of the two themes presented by Howard: creating an emporium for British trade with the eastern archipelago of the Netherlands East Indies, particularly the spice-rich Moluccan Islands, and forestalling any moves by the Dutch or French to lay claim to territory in northern Australia. However, the archival material provides an inadequate perspective on the community. Preliminary historical research and a site survey of the settlement’s material remains, made by parties from the Northern Territory University (now Charles Darwin
University) during the 1999 and 2000 seasons, suggested that military interests may have overridden mercantile concerns, or any intentions of civilian settlement. Many characteristics of the location, layout and equipment of the Melville Island settlement supported an interpretation that strategic military concerns were the dominant reason in establishing Fort Dundas.

Among the anomalies noted during the preliminary on-site and documentary research in 1999 and 2000 were:

- Why was the navigationally difficult Apsley Strait the Admiralty's preferred site for the settlement? - (Bathurst, 1824b, p 759)

- Why was an ostensible trading settlement established away from the known routes of the projected Macassan customers? - (King, 1827, Vol.1, pp 75ff)

- Why were the known Dutch regulations preventing their subjects trading in foreign ports ignored? - (Larpent, 1823b, pp 747 - 749)

- Why was no adequate wharf or warehousing provision made for trading vessels? - (Campbell, 1826b, p 680)

- Why was there no arrangement to provide land for private purchase? - (Barlow, 1825, p 647)

- Why was an earth-walled fort constructed rather than the palisade favoured through North American experience? (Stotz, 1958)

- Why was the stony, inhospitable Point Barlow chosen for the settlement, rather than Garden Point, with better soil and flatter land?

These considerations presented the possibility that a carefully focussed archaeological investigation, particularly of the key military feature, Fort
Dundas itself, might provide material evidence to shed light on and to clarify the intentions behind the selection of the site and also to provide a fuller picture of the activities of at least the military contingent, which formed the largest party among the settlers. The amount of effort required for the construction and operation of the Fort Dundas stronghold indicates that this fortification was the major undertaking of the British expedition, and that serving the Fort and its guns was directly or indirectly, the primary responsibility of the whole community.

As indicated above, historical accounts, gathered from the documentary evidence, give only partial glimpses of the activities of articulate and authoritative citizens, and the historical analyses frequently concentrate on explicating some general issue which touches Melville Island only incidentally. In this case the information that can be gathered by archaeological research could provide an invaluable supplement and possibly a corrective to the historical record. The material relics of a community may be quite informative about the activities and experiences of all members of the community, and the shaping and adaptation of the material context shown by these relics may go far to explaining the motivation and aspirations of the community’s creators.

The research programme presented in this thesis was developed to examine the hypothesis that the location, construction and occupation of the settlement on Melville Island was the product of a conscious and specific military strategic purpose, not primarily an attempt at colonisation nor the development of a trading post. The commercial preoccupation documented in the correspondence of the East India Trade Association and the British Colonial Office (for example, material included in Historical Records of Australia, Series III, Volumes V and VI), describing the establishment of a trading emporium on the north Australian coast, was translated in its implementation by the Admiralty into the construction of a military strongpoint.

The rationale of archaeology is, of course, based on the concept that it is possible to draw information about the lives of past communities and
sometimes individuals, from an examination of the material remains of their activities. However, the significant material remains may range from the minutiae of individual personal possessions, such as a single bead or button, to the broad settings of societal activity such as, say, the design of a national defence network. Such a range of material characteristics relating to Fort Dundas will be considered here to determine the purpose and achievement of the settlement. This thesis will argue that the siting of the settlement, both within the geopolitical region and relative to the geography of Melville Island itself, are significant factors indicating the military rôle of the settlement. The material remains of the site also indicate that the British government's interpretation of "...the Good of His Majesty's Service" in this somewhat forlorn military outpost was oriented toward political rather than commercial imperialism.

Ivor Noël Hume (Noel Hume, 1968, p 15) points out the importance of having, in undertaking historical archaeology, a '...thorough knowledge of the history and objects of the period and site being dug.' This must include not only handling the immediate products of an excavation such as identifying the style, date and origin of an artifact, it must also include recognising the political, economic and social context of the site and its inhabitants. The topographical and functional relationships of any centre of human activity are significant contributions to its definition. In the case of a military installation, such as that on Melville Island, the factors influencing its nature extend over a much greater area than would be the case with many civilian centres.

As a military strongpoint providing a possible base for the Royal Navy, Fort Dundas potentially interacted with the whole of the Indo-Pacific region. Certainly its influence extended throughout the Timor and Arafura Seas. The dynamics of this sphere of influence are significant formative factors in the style of the British presence at Melville Island. By examining the geopolitical environment of the settlement it is possible to interpret more accurately many features that may otherwise be unrecognised or obscure.
Charles Orser (1996, pp 57ff) formalises these considerations in the four qualities (which he somewhat obscurely terms ‘haunts’) that he nominates as distinguishing the concerns of historical archaeology: Colonialism, Eurocentrism, Capitalism and Modernity. These qualities, Orser maintains, need to be taken into account in the archaeology of any historical site, as they create situations and shape inputs within the archaeological record, not readily recognisable from the immediate material evidence:

- Colonialism has been a dominating relational factor over much of the globe during the last four centuries, generally regarded as the ‘historical’ period in archaeology. This relationship has dictated conditions of materials trade, political allegiance, distribution of wealth and population movements.

- Eurocentrism, reflecting the long technological dominance of Europe and the continuing influence many European cultural patterns spread around the world, has influenced cultural development, social mores and national identity.

- Capitalism has shaped, in its practise, modification or rejection, the economic relationships in the modern world and created distinctive life-style and work patterns.

- Modernity is a somewhat more slippery concept, and seems less readily related to archaeological concerns. Orser regards this as the trend in recent times toward the breaking with traditional forms and the acceptance of the desirability or inevitability of a process of development. Possibly a more apt term might be ‘pragmatism’.

Each of these trans-national or trans-cultural qualities can govern, in various ways, the features and artifacts found on a particular historical archaeology site. Certainly the presence of many materials and the forms of much cultural material could not be fully explained without recognising their influence. This concept emphasises the important fact that the material evidence of an historical site cannot be adequately assessed without taking into account factors that lie well beyond its immediate geographical boundaries.
The inspiration and motivation for settling on Melville Island, and the forms and qualities exhibited by the ruins derive from Britain and the political and economic situation of Europe following the Napoleonic Wars. The settlement was also created in the context of European imperialist exploitation of Asia. Melville Island was not an operation that related directly to the seizure and colonisation of the east coast of Australia, but to Australia's location adjacent to other imperial economic systems. Thus an interpretation of the settlement's ruins must involve some examination of the interactions of the imperialist nations of the early nineteenth century, particularly within the Indo-Pacific region.

The excavation programme has concentrated on Fort Dundas itself to seek corroborative evidence supporting the apparent dominance of the military aspect of the settlement's composition, despite the stated goal of establishing a trading emporium. This has involved a review of the previous archaeological work done by Crosby and others, and three seasons of fieldwork have been undertaken on Melville Island, surveying and examining the Fort ruin, excavating the west rampart curtain of the Fort, the southwest turret and the sunken magazine chamber.

Salient points of the organisational infrastructure developed for the project are included in Appendix Two. The areas chosen for excavation were each selected for the possibility of their providing evidence of a serious imperialist military motive governing the settlement's creation:

- The west curtain wall was selected for excavation because this was expected to confirm that the fortifications were designed with an eye to resisting European-style artillery bombardment, rather than repelling lightly armed Malay or Aboriginal attackers. It also had the advantage that comparisons could be drawn with Crosby's findings in her 1975 excavation of a section of the eastern curtain.

- The south-western turret was chosen in order to determine whether the Fort was built as an adequate gun platform for a serious artillery
battle. The nine-pounder long guns had been mounted in the turrets, and unlike the Carronades elsewhere, they were expected to need specific and identifiable infrastructure if they were to function successfully. This excavation was undertaken to determine the practicality of the Fort's long-range armament.

- The magazine excavation was undertaken to determine from the size and appointments of the rock-cut chamber, whether the fort provided a realistic store for adequate munitions and also to estimate the expertise of the settlement party in designing and constructing such a critical and technically demanding installation.

These excavations, linked with the topographical and geopolitical information, provide the basis for comparison with the historical documentation to arrive at a clearer understanding of the purpose and the achievement of the Melville Island settlement.

Archaeological work on Melville Island is both expensive and logistically difficult to organise. Similar problems, particularly expense, also apply to conducting archival research in repositories in Sydney, Canberra and Perth from a base in Darwin. It was necessary to develop the research programme 'in instalments' for a period of over four years as funding became available and travel could be organised. Due to these limitations, long-term project planning to integrate the components of the excavation and the research activities, and to clarify interim goals and progress, became very important in maintaining a coherent and informative programme (Appendix Two). Operating in this way resulted in developmental changes in the programme as funding became available to undertake phases of the work and archaeological evidence and archival information was compiled. It became obvious from early in the programme that, as Allen observed (1969, p 412), approaching a research programme with such widespread and unassimilated sources required frequent modification of research techniques to cope with the situation of expanding knowledge and developing insights.
This has influenced the structure of this thesis. It has been necessary to follow a partly thematic, partly chronological treatment of the research programme to cater for the shifts in emphasis or direction that became desirable as information was gathered and new insights developed.
“..for the Good of His Majesty’s Service.”

The archaeology of Fort Dundas, 1824 – 1829

CHAPTER TWO
HISTORICAL BACKGROUND
HISTORICAL BACKGROUND

Figure 4
Nineteenth century British settlements in the top end.

Britain in North Australia
Prior to the permanent settlement of the Northern Territory’s capital, Palmerston, on Darwin Harbour in 1869 (later, in March 1911, to be renamed Darwin), four short-lived settlements were established on the Northern Territory Top End coast. Three of these; Fort Dundas (1824 - 1829), on Apsley Strait, Melville Island; Fort Wellington (1827 - 1829) on Raffles Bay, and Victoria (1838 - 1849) on Port Essington (both the latter on the north coast of Cobourg Peninsula) were set up by the British Government.
The fourth, Escape Cliffs (1864 - 1867) on Adam Bay near the mouth of the Adelaide River was, like the Port Darwin development of 1869, a project of the South Australian Government, which had annexed the Northern Territory in 1863.

The Melville Island settlement has a slight priority in time over Fort Wellington, but the two settlements were closely linked, being not only near neighbours geographically and largely contemporaneous, but also essentially creations of different aspects of the British imperialist preoccupations of the period. While the Melville Island settlement exhibits every indication of being planned as a secure potential Naval base, Raffles Bay, with its wooden stockade (Fort Wellington) on a broad, open bay had far more the complexion of a civil settlement. The settlement Victoria on Port Essington, being significantly later, was developed in a somewhat different global context to its forbears. While Britain's concerns when Fort Dundas was built were chiefly to secure a foothold on northern Australia against Dutch interests based in the East Indies, the apprehension in 1838 was a possible resurgence of Dutch and French interest in the Australian continent itself (Cameron, 1999, Introduction).

**Melville Island**

The pioneering attempt by the British Government to establish a settlement on Melville Island appears to have had its genesis in London in 1823, through promotion by a Mr. William Barns (sometimes spelled Barnes). Barns claimed extensive experience as a trader in the East Indies and approached Earl Bathurst, the Secretary for War and the Colonies, outlining a case for a commercial settlement on the coast of the Gulf of Carpentaria to promote trade with visiting Macassan trepang fishermen as a means of circumventing Dutch restrictions on British trade in the East Indies (Graham, 1967, pp 406 ff).

Barns provided most attractive financial estimates of the potential for trade of such a settlement and also somewhat alarmist opinions as to Dutch territorial ambitions and intentions to restrict the activities of foreign traders in the region (Barns, 1823). The case was strongly supported by the East India
Trade Committee, a somewhat loose body of independent traders that had come together following the British seizure of the Dutch East Indies in 1810 and 1811, to lobby the Foreign Office regarding limitations on East Indies trade. Indeed, Barns appears to have been closely associated with, even employed by, one member trading house, Palmer, Wilson & Co. (Howard, 1933, pp 75 ff).

At that time the East India Trade Committee was greatly concerned over a number of factors influencing trade in the Indian Ocean region. The Honourable East India Company had had its monopoly on British trade in the area qualified in the renegotiation of its charter in 1813, which opened the Indian trade to all British shipping (Wong Lin Ken, 1960, p 18). Nevertheless, the Company still held an exclusive right to trade with China, and British access to the East Indies was being constrained by the return of these wartime conquests to the Netherlands following the London Convention of August 1814 (Wong Lin Ken, 1960, p 22). It also appeared likely that the new burgeoning free trade centre of Singapore might be ceded to the Netherlands in the negotiations for the Anglo-Dutch Treaty (to be finally signed in March 1824 (Cameron, 1989, p 275)).

The East India Trade Committee continued its pressure on the Colonial Office through 1823. In December, after consultations with Captain Phillip Parker King, recently returned from his 1818 - 1822 survey of the north Australian coast, the Committee presented Earl Bathurst with a proposal, based on commercial and military grounds for the establishment of a settlement at Port Essington on Cobourg Peninsula (Larpent, 1823a, pp 742 ff).

In January 1824 Robert Horton, the parliamentary under-secretary of the Colonial Department was in discussion with John Barrow, Second Secretary to the Admiralty. Barrow strongly supported the establishment of a settlement in north Australia, not particularly for its commercial potential, which he saw being better served by Britain retaining Singapore, but as a move toward extending the British claim to Australia beyond the east coast settlements
(Barrow, 1824, p 751). As the co-operation of the Admiralty would be essential in undertaking any overseas settlement, particularly one so distant, the Colonial Office decided that, with this support, it would be advantageous to go ahead with the creation of a settlement in north Australia.

Earl Bathurst accordingly instructed the Commissioners of the Admiralty to provide suitable vessels and crew to undertake the venture (Bathurst, 1824b) and wrote to Sir Thomas Brisbane, governor of New South Wales, informing him of the decision (Bathurst, 1824a) and directing him to provide further support and personnel. It is in this letter that Bathurst outlined the 'objects' of the venture to Brisbane as, firstly, to open a market for the disposal of British goods in the Eastern Archipelago and secondly, to provide a military station for the protection of British trade in the area and of the eastern sea route to India and China. He also stipulated that the preferred site for the settlement was to be, if no prior European claim had been made, on Apsley Strait between Bathurst and Melville Islands.

In February 1824 HMS Tamar, under Captain Sir J J Gordon Bremer, embarked a supernumerary contingent of Royal Marines in Plymouth, doubling to twenty-six men the usual number of troops for a vessel of that size, and proceeded to Sydney to gather further personnel and the necessary supplies and equipment to establish the settlement. In August 1824 the Tamar, accompanied by the transport ship Countess of Harcourt and the brig Lady Nelson left Sydney to convey the settlement party to the north coast.

Bremer formally took possession of the North Australian coast from longitude 135° east, the western limit of the New South Wales territory, to 129° east, at the western end of Bathurst Island. He examined Port Essington, which had been proposed as a possible site for a second settlement had he sufficient resources, but failed to find adequate water there. The party arrived in Apsley Strait on the 26 September. In three days a water supply was located and a site for the settlement chosen.
Descriptions of the party’s activities and the construction of the Melville Island settlement are given in Bremer’s despatches (1824b, 1824c) and by Henry Ennis, supernumerary purser on the Tamar (Ennis, 1825, pp 12 ff). A further similar account, apparently written by an officer on the Countess of Harcourt, appeared in the Sydney Gazette (10 March, 1825). The fort, wharf, commissariat store and accommodation for the party were largely completed by 9 November 1824, and on 13 November, Bremer departed with the Tamar and the Countess of Harcourt, leaving a little party of some one hundred and twenty people to maintain their wilderness post.

The prospects on Melville Island appeared to be excellent. The clearing of the immediate area on Point Barlow and the erection of the main structures had proceeded very rapidly. Bremer’s assessment of the site had been fulsome in its praise of the climate, location and potential of the settlement. Nevertheless, problems soon arose.

As the party could not be self-supporting with food for some time, it had been intended to ship supplies of fresh food and farm stock from nearby East Indies islands, but early in 1825 both the supply ship attached to the settlement, the Lady Nelson, and the trading schooner Stedcombe, which had been chartered to transport buffalo from Timor were lost to pirates (Spillett, 1982, p 3).

There were also problems within the settlement itself. The horticulture and stock-rearing attempts were not coming out well, nor was the settler’s fishing and hunting very successful, so without a means for a regular fresh food supply, hunger and disease, particularly scurvy, took hold during 1825. Even when the supply lines were once more established, it appears that in early 1827 malaria was introduced to the settlement, probably through supply ship

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5 Bremer, 1824c, p. 789, lists the party on shore under Captain Barlow as 112: One subaltern and 23 men of the 3rd Regiment, one subaltern and 26 men of the Royal Marines, three Commissariat staff, an Assistant Surgeon, 44 convict labourers, three free mechanics and ten crew of the Lady Nelson, attached to the settlement. Ennis, 1825, p. 23 gives a count of 125 persons, including four women and four children who were apparently ignored by Bremer as being ‘followers’.
contact with the East Indies, and there was widespread illness resulting in a number of deaths (Reid, 2004, p 51).

Added to these problems it had become clear that the trepang fleets did not frequent the Tiwi Islands, so trading with the Macassans could not readily be conducted from this base and the Aboriginal population remained unfriendly and frequently actively hostile. In 1826 the Colonial Office undertook the establishment of a further settlement on the mainland coast to the east of Melville Island (Hay, 1826). This settlement, named Fort Wellington, was situated on the east side of Raffles Bay on the Cobourg Peninsula.

With the establishment of the Raffles Bay settlement in June 1827, development of Melville Island was curtailed, with a view to possibly transferring the community to the new settlement (Campbell, 1827b, p 697). Both settlements continued to experience supply and health problems, although with the arrival of the energetic and capable Captain Collet Barker as Commandant of Raffles Bay in September 1828 the conditions and prospects of that settlement began to improve considerably (Mulvaney & Green, 1992, pp 46 ff).

In July 1828 orders were sent to Melville Island for the transfer of the party and equipment to Raffles Bay and the evacuation was completed in April 1829 (Mulvaney & Green, 1992, p 149). However, despite this move, reports received in Sydney during 1828 from Commandants Campbell on Melville Island and Smythe at Raffles Bay had proved so discouraging that Governor Darling expressed grave doubts of the usefulness of retaining any settlement in the north, and in November 1828 the Colonial Office ordered the abandonment of Raffles Bay (Howard, 1933, p 89). On 29 August 1829 Captain Barker and the last party of settlers left Raffles Bay and the first phase of European settlement in northern Australia was over.
“..for the Good of His Majesty’s Service.”

The archaeology of Fort Dundas, 1824 – 1829

CHAPTER THREE
THE ENVIRONMENT
THE ENVIRONMENT

Melville Island in its region

Figure 5

Melville Island and the Arafura region.

‘Map of the North Pacific’ – (Norie, 1821)
(Dated 1821, but showing amendments to at least 1826)
The title is misleading. The map sheet shows the central Pacific and the Indian Ocean, rather than the North Pacific.

Detail from National Library Map O/W PH 5063
Regional environment

British Australia

The primary factor bearing on the status of Fort Dundas within the Indo-Pacific region is its significance as the representation of a British territorial claim within the area. John Barrow, Second Secretary of the Admiralty, had clearly introduced that concept in the early discussions of the scheme and regarded the settlement as something of a corner-post in the 'ring fence' of settlements that he hoped to set up around Australia marking out British ownership (Cameron, 1989, p 288). While there was no recognition, or apparently comprehension, of any title to the land by the Aboriginal inhabitants, the imperialist European powers were sensitive to each other’s claims. Britain had established a presence on the east coast of “New Holland” overriding any Dutch rights based on priority of discovery so, in line with the principle thus introduced, Bremer’s declaration of possession of the North Australian coast from longitude 135° east to 129° east, also needed to be endorsed by Britain actually being in possession (Barrow, 1824).

The western limit of New South Wales defined in Sir Thomas Brisbane’s commission was the 135° east meridian. Melville Island, lying roughly 131° east, required an extension of Britain’s sphere. Earl Bathurst’s instructions to the Admiralty (Bathurst, 1824b) stipulated carefully that the officer in charge of the expedition should formally take possession of Bathurst Island, Melville Island and Cobourg Peninsula to cater adequately for the new settlement.

In the event, rather than leave an unclaimed area between the New South Wales boundary and the newly claimed territory, Captain Bremer exceeded his instructions in that he claimed for Britain the whole of the north coast between the 135th and 129th east meridians (Bremer, 1824b). This extended Britain’s possessions of the Australian coastline and an indeterminate depth of hinterland through six degrees of longitude and related the Melville Island settlement firmly to the overall British interest. The jurisdiction of the Governor of New South Wales was extended to the new territory in July 1825.
The Melville Island settlement therefore, represented both a realistic settlement unit and a demonstration of the official territorial claim of His Britannic Majesty. Its position on an extremity of northern Australia, confronting the Netherlands East Indian possessions, gave it significance as a territorial marker of a British Australia, in a similar context to other contemporary settlements at Western Port Bay (1826) and King George Sound (1826), inspired by fear of possible French interest in Australia following the scientific expeditions of Baudin and of de Freycinet in the early nineteenth century.

While the party stationed at Melville Island was not so numerous as to constitute a town, or even a large village, it certainly suggested more permanence, and was of greater size and official standing than a casual sealers’ or whalers’ camp. With half its population British armed forces manning a significant fortified strongpoint and with the senior officer exercising powers of administration and command delegated by the British Crown through the Governor of New South Wales, its official status was clear. The Melville Island settlement was suitably located and of sufficient stature that it could not be disregarded or misinterpreted as anything other than an assertion of British possession and interest in the area.

Archaeological implications:

Seen in the light of Orser’s “haunts” of historical archaeology (Orser, 1996, pp 57 ff) mentioned above, this official status of the settlement links it firmly to the broad Colonial and Eurocentric qualities he proposes. While not encouraging, or for that matter allowing, civil settlement or development similar to the New South Wales colony, Melville Island was an expatriate British community and its origins lay firmly in Europe. The archaeological features and materials discovered at the site must be expected to be importations or adaptations of contemporary British norms and the affiliations and connections of both its people and institutions would be basically European.
These qualities must be born in mind when interpreting the archaeological materials related to the fort, as the correspondence to, or divergence from, British / European military standards may be informative about the installation and its administration.

**Netherlands East Indies**

The settlement was closely adjacent to the Netherlands East Indies empire. Melville Island lies less than six hundred kilometres south-east of Timor and less than five hundred south of Tanimbar, the closest major island. The important Dutch Spice Island possessions of the Moluccas were within a few days’ sail of Melville Island. The East Indies, approximating to the present Republic of Indonesia, had, from a beginning in 1602, been dominated by the Netherlands. Until 1799 this domination had been exercised through its trading monopoly, the Vereenigde Oost-Indische Compagnie, (commonly, ‘Dutch East India Company’), but since the Company’s insolvency in that year, it was administered directly by the Stadtholder. After the 1816 union of the Netherlands provinces and Belgium, colonial matters were administered by the King of the newly created Kingdom of the United Netherlands.

King William I of the United Netherlands was very sensitive about his East Indies possessions. These islands, which had once been the source of the Netherlands’ wealth and power, had been seized by the British in 1810 and 1811 during the Napoleonic Wars as a result of Holland’s alliance with France. Despite undertakings at the Anglo-Dutch Convention of 1814 to return these possessions (Harfield, 1984, p 96), Britain only finally undertook full restitution and recognised them as the preserve of the Netherlands in 1816 under the terms of the Treaty of Vienna.

The pressure of British naval dominance after the Napoleonic wars and of the high-volume production of the British mechanised industries caused grave disquiet to the Dutch, who were striving to rehabilitate and protect their commercial empire (Overweel, 2002, pp 4,5). Meanwhile British and Indian based traders, whose activities were now being limited by Dutch regulation of
East Indies trade, were becoming strongly antagonistic to the Dutch hegemony.

In 1823-24 Britain and the Netherlands were negotiating a treaty to regularise the access of both nations to the East Indies when the Melville Island settlement was created. This move was alarming to the Netherlands. Although the settlement did not contravene the 1824 Treaty of London, the implication of its position was that Britain could be poised for possible activities in the Moluccas or New Guinea. This appeared to be a direct threat to the hard-won Dutch trade monopoly status in the Moluccas that had been negotiated in the treaty with Britain.

The proximity to the Netherlands East Indies was a factor that dictated a military theme for the settlement. While the 1824 Treaty of London was still in negotiation, and while it remained, in its early years, an untested restraint on the British and Dutch nations, both parties adopted a military posture where their imperial spheres of influence made contact. This brought about the perceived need for the military strongholds, Fort Dundas at the Melville Island settlement and Fort Du Bus at the Dutch settlement Merkus-oord on Triton Bay, West Papua (Overweel, 2002, passim).

Archaeological implications:
The result of this potential rivalry is that the primarily military nature of the Melville Island settlement must be recognised and Fort Dundas must be expected to be an installation designed to counter an European-style attack. It must also be recognised that, as Swann indicates ((Swann, 1999), also see Appendix Three), Fort Dundas must be seen as a particular type of military area. It was potentially a battlefield, and the nature of its position and construction will reflect this. This will result in particular styles of military material and activity (i.e. those relevant to fighting battles according to the European tradition) being evident in the archaeological record.
Maritime support

The growing New South Wales community was developing into a significant link in the British trading networks in the eastern seas (Blainey, 1966, pp 53 ff) and a settlement on the north Australian coast was also viewed with favour by some interests involved in the Australian trade.

Figure 6

Nineteenth century Indo-Pacific trade routes. (after Cameron, 1985)

Such a settlement could provide a support base for vessels travelling the developing sea route from Sydney through Torres Strait to the East Indies and beyond (Cameron, 1989).

Following Flinders’ and King’s explorations this eastern passage to the Indies was proving to be a viable (Begbie, 1823), though still a difficult course, particularly during the season of the north-west trade winds. North bound vessels from Sydney were saved the long haul around New Guinea, or the even longer western passage around Australia allowing Sydney traffic access to island South-East Asia and beyond through the Makassar, Karimata and Malacca Straits.
Such a station could moreover, provide a refuge for mariners wrecked in Torres Strait and a supply base for British ships in the region (Allen, 1980, p 33). It could fill a role similar to that of Penang, which provided a base and refuge for British mariners on the route between India and China along the west coast of the Malay peninsula (Hall, 1964, pp 459 ff).

Archaeological implications:
In the case of a maritime support station one could expect to find vestiges of arrangements for the docking and repair of Naval and merchant vessels. These could include facilities for safe anchorage, careening provisions, the sites of materials storage and workshops. There should also be facilities for victualling and servicing vessels, possibly also land accommodation for crews. The fort itself must be capable of defending the whole anchorage and the facilities, which can be ascertained from its location and the coverage of its armaments.

Regional trade
The principal motive advanced in the representations by Barns and the East India Trade Association (Barns, 1823) for the British government to undertake a settlement on the north Australian coast, was to provide a base for trading with the Macassan trepang fishers who visited the coast annually with the north-west monsoon to harvest this delicacy for the Chinese market. The seasonal voyages of the Macassans were well known to the British from the beginning of the nineteenth century and the extensive scope of the trepang industry has been well documented by Macknight (1976, passim).

The apparent charm of Barns’ plan was that trade with these voyagers would not only provide a market for British goods, but the responsibility for handling - or avoiding - the complex duties and restrictions of Netherlands Indies commerce would be transferred from the British to the Malay traders. It also, as was discussed in the Sydney Gazette of 9 September 1824, resonated with the ideas that had earlier been put forward by John Crawfurd, recently
the British Resident in Java. By providing a secure exchange in the region, Britain would be saving traders the complexities and dangers of negotiating notoriously pirate-infested waters and dealing piecemeal with many small native trading centres. Moreover, by acquiring the trepang catch through their dealings, British merchants would be possessing themselves of an item much in demand in China, improving their position in the very rich tea trade with that country.

No doubt was entertained by Barns, or expressed by any of the other participants in the planning, that the Macassans, and further Malay or Chinese traders to be attracted in the future, would be eager to avail themselves of a north Australian emporium under British protection. Governor Brisbane’s instructions to Captain Barlow on his appointment as Commandant of Melville Island, sums up this mercantile philosophy in a somewhat lyrical panegyrical on imperialist *laissez-faire* capitalism. Barlow need only provide security and protection to visiting Malays at this market, he claimed, ‘Then, ultimately, will British and Indian Capital in union waft silently, but with more certainty than any further attempts at vain negotiations, the Manufactures of the United Kingdom into the heart of China and Japan, and effectively pave the way for the final introduction among millions of human beings of the political institutions and Religion of Europe’ (Brisbane, 1824).

**Archaeological implications:**

The development of a significant maritime trading centre would require a safe anchorage, extensive wharfage, cargo storage warehouses and quays, roads, *etc.* for handling cargo. These and the secure compounds of ‘factories’ would be evident to an archaeological inspection of the settlement ruins. As with the consideration of the fort’s likely maritime support rôle, the key implication for the fort itself is that it must be able to defend the anchorage from penetration by a hostile force in order to protect shipping and storage facilities. A survey of the fort’s style and configuration will indicate whether this was possible.
Local environment

Melville Island

In his first submission to the Colonial Office, William Barns advocated the establishment of a settlement on the Gulf of Carpentaria (Barns, 1823, p 738). Following discussions with Phillip Parker King, whose surveys between 1817 and 1823 had covered much of the north and north-west coast, the East India Trade Committee began advocating Port Essington as a settlement site (Begbie, 1823, p 742). It was known from King’s and Flinders’ voyages that the Macassans frequented the north coast, mainly from Cobourg Peninsula to the east.

Nevertheless, when Bremer was given his instructions by the Admiralty he was specifically ordered, on taking possession of the north coast including Bathurst Island, Melville Island and the Cobourg Peninsula, to form the primary settlement on Apsley Strait, on either Bathurst or Melville Islands. If he found a European nation in prior occupation of the site, he was then to explore the Liverpool River area for possible settlement. If he were able to obtain sufficient personnel and resources in Sydney he was also to examine Port Essington with a view to setting up another base additional to Melville Island (Bathurst, 1824b, p 759). No reason was given for this relegation of the highly recommended Port Essington site to a secondary place, or for ignoring the known areas of Macassan activity.
The position chosen by the Admiralty for this outpost had distinct similarities to other British maritime settlements in the Indo-Pacific region. Like Penang (established 1786) and Singapore (1819) the Melville Island settlement was on an island, facing onto a navigationally difficult channel. At the cost of awkward and somewhat hazardous access, a settlement in such a position has the advantage of being secure and highly defensible for a minimum cost in fortifications and armaments.

The southern reaches of Apsley Strait were essentially inaccessible to un-powered nineteenth century vessels of any size greater than luggers. The numerous shoals and reefs and the fast and turbulent currents meant that only very shallow-draught vessels could safely negotiate that end, and then
only with difficulty (Searcy, 1895). Port Cockburn, the northern, navigable area of Apsley Strait, although lying very nearly north-south, requires entry from the west through a narrow channel lying between the extensive Mermaid Shoal to the north and Bathurst Island to the south (Figure 3). Tides run very strongly through the channel and the port. In times of uncertain wind the current makes the handling of a sailing vessel in these close, shallow waters very difficult. This awkward entrance was alluded to by Bremer in his first report of his mission to the Admiralty (Bremer, 1824b, p 779). He suggested that twelve navigational buoys should be deployed to mark the channel should the port receive much use, although he does not appear to regard this as a major problem.

On the north side of Point Barlow, Kings Cove provides an anchorage having fifteen fathoms of water close by the shore. A shelving mud beach is exposed at the head of the cove for some distance at low tide. George Windsor Earl (1846, p 4) cites the rise and fall of the tide here as the chief reason for choosing this site for the settlement, as it was suitable for constructing a dry-dock. Earl claims the tide range as twenty-four feet (some 7.3 metres), however Roe’s chart (Figure 3) records a rise of tide of fourteen feet (4.2 metres).

The anchorage is well protected from the weather, but the strong current and muddy bottom allowed vessels to drag their anchors on occasions (Campbell, 1827c). This anchorage and the width of the whole Strait at this point were covered by the guns of the Fort. Moreover, a further anchorage exists on the southern side of Point Barlow, where Roe’s chart gives soundings showing the presence of a deep water cove protected from the tidal currents of the Strait6.

Some hopes were entertained that the woodland covering Melville Island might provide timber for naval construction and repair (Bremer, 1824b, p 777,8) and samples of local timber were gathered by Major Campbell to

6 This is regarded as so promising a site by the company presently operating forestry plantations on Melville Island that they have developed it as their timber shipping port.
forward to Sydney (Campbell, 1826a, p 664) and by Captain Laws RN to despatch to England for assessment by the Commissioners of the Navy (Wilson, 1835, p 154). No results of any such examinations have been located. As no efforts were initiated to establish any dockyard or refitting facility at Melville Island it seems likely that all interest in the matter lapsed.

**Archaeological implications:**

The archaeological assessment of Melville Island as a settlement site must determine what features it possessed, that were not present at Port Essington and which would have appealed to the Admiralty as suitable “for the Good of His Majesty’s Service”. This needs to be examined in the context of the expectations that prompted the construction of a strongpoint of the nature of Fort Dundas.

**Point Barlow**

Two early maps: J S Roe’s 1824 chart of Apsley Strait (Figure 3) which shows the land area of the settlement, and a map held in the National Library, entitled ‘Map of the North Pacific’ and dated 1821 (Figure 5), providing similar insets of the Melville Island settlement, give us some idea of the original lay-out of the ‘town’. In recent years the settlement has also been surveyed as part of an archaeological investigation performed by Eleanor Crosby (Crosby, 1978). Later surveys have also been undertaken by Pengelly in 1986 and Fredericksen in 2000/01 providing comprehensive information on the settlement ruins.
There is also a map dated 1827, (Figure 9). This map portrays the settlement at a later stage of development than that shown by Roe, and in some detail. It is cited by Crosby (1978, p 5 & Map 2) as the authority for the identification
of some built features, however some of the structures shown (e.g. the apparent position of the Commissariat Store) are different from the positions noted on Roe’s 1824 sketches of the settlement. Crosby also used an extensive ground search and survey to locate and identify occupation features which she then related to the names found in the records of the settlement and on the 1827 map.

**Figure 9**

"The British Settlement of Fort Dundas on Melville Island. In Lat. 11° 24’ 55” S & Lon. 130° 28’ 25” E 24 April 1827."

(Surveyor General, 1827 (SR map 2675))

Although this map must be considered our most promising guide to the mature layout of the settlement and the identification of features, both Roe’s 1824 chart and the recent surveys by Crosby, Pengelly and Fredericksen indicate that the map has a more or less random distortion, allowing the features on the ground to be only approximately related to the map’s depiction. The proportions of many features on the map are also
exaggerated. The size of the Fort, as shown, is considerably greater than is
the case, as demonstrated by the size of the ruins.
Nevertheless, information derived from these maps and an inspection of the
ground, allow a reasonably clear outline of the settlement on Point Barlow to
be developed. The existence of the numerous features identified by Crosby
can be confirmed, although subsequent information may cause some to be
identified differently. The Garden Point site, where the settlement’s garden
and brick kilns were established on the deep, sandy soil of that area, has
become the site of the modern town Pirlangimpi, and no significant signs of
1820’s occupation can be located there, other than a few bricks from the Fort
Dundas period lodged in the earth cliff on Apsley Strait, some kilometre to the
north of the town.

The material existing on the ground at Point Barlow confirms some of the
features shown on the early maps and some general aspects of the
settlement:

- The general position and shape of the Fort is confirmed by the readily
  identifiable remains.
- The rather sprawling layout of the settlement buildings is confirmed by
  the remaining artificial features of the landscape and the deposits of
  artifacts found on Point Barlow.
- Quantities of handmade iron nails found at many identified building
  sites suggest that many of the buildings were largely or wholly, of
  wooden construction.
- The recovery of numerous fragments of slate, chiefly in the northern
  area of the settlement, indicates some use of imported slate roofing.
- A stone quarry has been located in the coastal breakaway cliff at a
  point northwest of the Fort. The single stone building ruin identifiable
  in the area, located some six hundred metres east-southeast of the
  Fort, was built of rubble set in what appears to be mangrove mud.
  Limestone for mortar is not available on Melville Island, nor are there
  extensive shell middens to burn for lime as around Darwin harbour.
  (However, see Ennis (1825), page 22)
• Dry-stone walls are evident in some locations, e.g. forming the revetments of the terrace to the south of the wharf area. Photographs in the Kirkbride Album (1905 - 1914, various photographs), indicate the presence of dry-stone walls, since vanished, in the wharf area. (This disappearance may be due to stone being gathered on Point Barlow to build the barge landing ramp at Garden Point about the time of World War Two, as stated by several elderly Pirlangimpi residents.)

• There are numerous historical references to bricks being found on Melville Island (e.g., Fisher, 1876) and accounts of brick kilns being located at Garden Point (Spencer, 1928, p 904). The Kirkbride Album cited above, includes photographs of extensive piles of bricks, and an apparent small oven or furnace constructed of loose bricks. No above-ground remains of brick buildings have so far been located. Remaining bricks and brickbats found within the Fort are very poor, friable quality.

Archaeological implications:

The available maps and sketches of Point Barlow, together with the visible ruins on the site, can provide information regarding the military defence arrangements related to the fort. The distribution of buildings and the sturdiness or otherwise of their construction can be related to the type of attack that was anticipated by the designers. If an assault by a marine landing party or raiding by the Macassans or the Tiwi was the primary concern, the builders would be expected to construct strong buildings, closely spaced around the fort to provide some degree of defence in depth and optimum fields of small arms fire. If an attack by naval gunnery were the major concern, the fort itself would be the key defence, and buildings would be scattered at some distance from its walls, both to command wider fields for artillery fire and to have non-combatants well out of the way.
The single contemporary plan of Fort Dundas reproduced in Figure 10 is held in the State Library of New South Wales. This, together with the contemporary descriptions and sketches, provides the most important reference for the original arrangement of the Fort. The plan sheet is inscribed in the upper left corner:

‘An Hasty sketch of
Fort Dundas.
Port Cockburn, Melville Island.
For Sir Thos Brisbane KCB
With Captn Bremer best Compliments’

It is undated, but must relate to the initial construction, as it is addressed by Bremer who left Melville Island in November 1824. No scale or legend is
given, but from comparison with the measurements given in Bremer's and Ennis's descriptions below, and those made on the site during this programme, the drawing proportions appear to be reliable 7.

Other contemporary sources for the form and construction of Fort Dundas are descriptions provided by Captain Bremer and Henry Ennis, purser on the Tamar. Bremer, particularly in his report from Melville Island to Earl Bathurst, 12 November 1824, outlines his intention with the lay-out of the Fort, stating in an aside in this despatch: ("...which considering the known treachery of the Malays, and the numbers in which they come on the Coast, as well as the probable hostility of the Natives, I determined should be as strong as I could from circumstances render it...") (Bremer, 1824c, p 784)

He goes on to describe the Fort and its armament:

'Fort Dundas, which is now completed with the exception of a portion of the ditch. Is built of Timber of great hardness and solidity (some of the Trees being two feet ten Inches in diameter and of immense weight) in layers five feet thick, the ditch, ten feet deep and fifteen wide, the height of the work inside being six feet. On it are mounted two 9 Pounder Guns, and four 18 Pounder Carronades with a 12 Pounder Carronade to shift on occasion, and which will answer for the Lady Nelson Colonial Vessel if it should be necessary to detach her on Service. The Fort is Rectangular its sides being 75 yards by 50; the Guns are those from the Quarter Deck of the Tamar and each provided with Fifty rounds of round shot, and Eight of Grape and Case. I have also supplied the Settlement with every other description of Ordnance Store, which I thought might be useful, and which I was enabled to spare from the Ship'

(Bremer, 1824c, p 784)

There is a similar passage in Bremer's report to Secretary Croker of 11 November 1824, which gives some further details, including the comment

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7 The details of this sketch are quite accurate when compared with the Fort Dundas ruin. Detail in the sketch even distinguishes between the long guns in the turrets and the carronades elsewhere. The plan's 'hasty sketch' description presumably refers to the lack of cartographic formality, not inaccuracy.
that 'houses for the Commandant and the Officers of the Garrison' are within
the Fort. (Bremer, 1824b, p 772)

Henry Ennis, supernumerary purser on the Tamar, also described the Fort as
it was being erected in November 1824:

'Fort Dundas, which commands the whole anchorage, is
rectangular, seventy-five yards in length, by fifty yards wide; with
turrets⁸ en barbette at each angle, surrounded by a ditch fifteen feet
wide by ten feet deep, with a drawbridge on the land side. The curtain
at the base is seven feet in width, and five at the top, and is about
seven feet high; and is armed with four 18-pounder and one 12-
pounder carronades, and two long 9-pounders; the latter will do
execution on Bathurst Island, crossing the outer edge of Harris's
Island in its course; and is built with the same strong durable materials
as the pier' [i.e. 'enormous pieces of timber...the interstices filled with
masses of sandstone rock']

(Ennis, 1825, p 22)

We are not given information in the available records as to who designed the
fort, or what precedent or theory of fortification guided the architect or
builders. Correspondence has been preserved indicating that the senior
officer of the Marine contingent, Second Lieutenant Charles Cartwright
Williamson was appointed as engineer for the settlement (Bremer, 1824e, pp
787/8). At this period however, as indicated by the text of the appointment
notice, the task of a field engineer was more that of works foreman,
organising equipment and work schedules, rather than that of a designer.
The person with the final say as to the design of Fort Dundas was the
commander of the expedition, Captain Bremer, probably with input from his
industrious First Officer, John Septimus Roe.

⁸ It has been customary in recent discussions to refer to the circular gun positions at the south-west and north-west
corners of Fort Dundas as 'bastions'. This is not technically correct. As Ennis indicates, the term 'turrets' is more
accurate for the round, raised fortifications. The fortification terminology used throughout is based on definitions
provided in Muller, 1746 and Duffy, 1975.
The ruins of Fort Dundas remain the dominant feature in the settlement landscape. The ditch and rampart of the Fort are readily identifiable, even in the reforested setting of Point Barlow. The elevation of the turrets still provides commanding views over Port Cockburn. The style and position of this structure demonstrates the type of operation the British saw themselves involved in.

**Archaeological implications:**

This research programme is based on the hypothesis that the Melville Island settlement was primarily a military installation, intended to establish a British claim in the region against other European imperialist powers. An analysis of the ruin of Fort Dundas will provide the major detailed evidence to support or disprove this proposition. While Bremer, in the passage quoted above, cites his concern over the hostility of the Malays and the natives, the actual form given the fort will provide a pragmatic statement as to the type of conflict that was the major concern of the designer.

There seems little doubt that Bremer, as a serving Naval officer, was fully acquainted with the views of the Second Secretary to the Admiralty, John Barrow. Barrow's imperialist goal of keeping Australia British, against any claim of the Netherlands (Barrow, 1824, p 752) must have influenced Bremer's attitude to the settlement's defence, and this will be shown in the physical form of the fort.
“..for the Good of His Majesty’s Service.”

The archaeology of Fort Dundas, 1824 – 1829

CHAPTER FOUR
THE FORTIFICATIONS
THE FORTIFICATIONS

Fort surface survey
Rapid Wet Season re-growth of spear grass and some of the scrub and
weeds covering much of Point Barlow required the site to be burned each
season for access before work could begin. This practice had been followed
for three years in succession by the 2001 season, and the area of the Fort
was perhaps clearer than at any time since the British party left the site. This
ensured that a reasonably detailed surface survey could be conducted.

Apart from the general deterioration of the Fort's fabric over time, some
differences in detail from the plan shown in Figure 10 were noted:
The plan shows triangular extensions of the ditch dug out before the gun
positions in the centres of the west and north curtains. There is no evidence
on the ground that these extensions were ever made.
The drawbridge mentioned by Ennis in the passage quoted above as giving
access over the ditch on the land (or east side) of the Fort to the entrance
through the rampart, has been replaced at some time by a bridging earth
bank.

In the 2000 and 2001 seasons the Fort Dundas Site Grid covering the
Melville Island settlement area was developed and a base line surveyed
through Point Barlow (Appendix Two). A detailed survey of the Fort Dundas
ruin and its immediate surroundings was also undertaken at this time,
following the extensive clearing of undergrowth from the Fort ruin, so it
became much easier to locate the remaining physical features of the Fort to
compare them with the contemporary accounts and the plan of the Fort's
construction.

The survey recorded the positions of some hundreds of points within and
close outside the Fort. It concentrated on identifying and recording, as
accurately as possible, the inner edge and top of the existing mound of earth
comprising the ruin of the rampart, the estimated inner and outer edges and
the bottom of the ditch. While this process had still to rely on estimations of edges and boundaries, it was anticipated that the great number of readings would, to some extent, cancel the greatest variations due to erosion and subsidence and that the averaging effect of plotting the many readings would provide acceptable accuracy.

In general terms, the features and proportions of the Fort that are given in the descriptions and shown in the 1824 plan above were confirmed by the survey and a scrutiny of the remaining features. However, as noted by Crosby (1978, p 11), erosion over more than one and a half centuries would have impaired any detail symmetry and neatness of the outlines of the Fort to an unknown extent. Subsidence of the earthworks and damage through the growth and destruction of vegetation has blurred many features, which, considering the hastiness of its construction, may not have originally been very precise.

The ditch surrounding the Fort was dug both as a defensive feature in itself and to provide, in the material removed during its excavation, the bulk of the fill for the ramparts and the cavaliers within the turrets and landward corners of the Fort. The ditch of the Fort is cited by Bremer as being ten feet (about 3.00 metres) deep and fifteen feet (about 4.50 metres) wide. The present measurements are difficult to assess for comparison with the record, as there appears to have been much minor erosion and collapse of the earth at the lip of the ditch.

In some places, particularly around the turrets, the ditch appears to exceed five and a half metres (18 feet) in width, and in its present state it appears to be considerably shallower than the depth stated in the description of its construction. As Crosby records (1978, p 20) the present vertical depth in many places is only about 1.50 metres (5 feet), although nearing two metres around the turrets. This variation may be due to the slumping of material from the ramparts into the ditch, thus raising the bottom, but there is also an uncertainty as to whether vertical measurement, or measurement along the scarp of the ditch is being cited by Bremer.
The plan of the Fort (Figure 10) and also Roe's sketch (Figure 1) indicate that a narrow berm was provided between the edge of the ditch and the rampart scarp, however this cannot now be detected, probably due to subsidence of the rampart. This makes the ground surface-level hard to determine for accurate vertical measurement of the ditch. Also, the outer (counterscarp) edge of the ditch shows some evidence of the construction of a glacis, not readily distinguishable from the natural topsoil, further confusing the estimation of the original depth. It is uncertain from what level the depth of the ditch should be measured and the limited excavation so far performed of the ditch bottom (Crosby, 1978, pp 19 ff) did not allow a reliable generalisation as to the overall contour of the bottom.

At certain points along the ditch alignment the sandstone bedrock has reached near, or up to, the surface. As these stone faces, still bearing the pick or bar marks of the 1824 workmen, preserve the original scarp/counterscarp angle, it was possible to measure them for inclination and compare the uniformity of the excavation (See Figure 11). While the angle of the measurable faces averages about forty degrees from the vertical, the variations recorded range from thirty to fifty-seven degrees, indicating quite a wide tolerance. Working on the average slope of forty degrees evident on the ditch scarp and counter-scarp, the ditch, being about fifteen feet (4.60 metres) wide at the surface, would be about six feet (1.80 metres) deep vertically, but would be very close to ten feet (3.05 metres) measured along the slope of the scarps.
Figure 11

Fort Dundas showing research project activities and features cited in text.

(After Figure 10)
For short sections along the inner side of the northern, eastern and western curtains of the rampart (see Figure 11) there are single lines of undressed stones, approximately 200mm in maximum dimension, which appear to retain a slightly higher level (about 300mm) of earth along the inner side of the rampart. These lines are discontinuous, all lying some 3 - 3.50 metres in from the ditch edge and inside the mound of subsided rampart material. It is likely that the stones mark the inner edge of a low banquette for defenders manning the ramparts. In this case, assuming a banquette of about three feet (~1 metre) width, we arrive at an estimate of the likely thickness of the rampart as 2 - 2.50 metres, which coincides reasonably with Ennis’ record of the curtain being seven feet thick at the base.

A considerable volume of fill has been used to build up the floors of the turrets on the southwest and northwest corners of the fort. Each turret being about ten metres in overall diameter at the top and raised about a metre above the level of the Fort interior. Similarly, earth fill has been used to raise the surface level of the triangular area included in the southeast and northeast angles of the ramparts. Compared to the surrounding area of Point Barlow, the Fort interior appears to have been cleared of sandstone outcrops and probably artificially levelled in detail. The land surface, despite vegetation re-growth is relatively uniform and smooth, with a slight fall to the west, or Apsley Strait, side.

Some groups and formations of loose stones toward the southern side of the Fort interior appear to relate to the Officers’ accommodation buildings shown in Figures 1 & 2. Some stones showing marks of squaring lie in this area, but do not form any recognisable patterns. There are also smaller scatters of rocks that may indicate other buildings or installations further toward the south-eastern corner. These concentrations of rocks inside the Fort do not lie in any obvious configurations, probably having been displaced by the dense growth of scrub that was found in the area in 1999. Apart from the remnants of lines of rocks along the inside edge of the rampart ruins, there are no recognisable surface indications of building footings, demarcation lines or walls.
Crosby notes the presence within the northern section of the west curtain of ‘...a hollow with the remains of a brick wall on the north and east sides.’ (Crosby, 1978, p 11) At the time of this research programme no sign of the brick wall could be found, other than perhaps four or five small scattered brickbats within the hollow. Several of the older people from Garden Point agreed that the wall had been visible until about fifteen or twenty years ago, but its fate was unknown. After the removal of a large fallen tree, the hollow, with the few brick fragments scattered within it, was easily identifiable. This feature immediately attracted interest, as the location appeared to be ideal for an expense magazine, or locker for ready-use ammunition.

The cavaliers included in the turrets and in the landward corners of the ramparts served to raise the guns mounted in them to a more commanding position to cover the approaches to the Fort. As the fort was equipped with naval guns firing from very low carriages, the cavalier arrangement allowed them to be, as illustrated in Roe's sketches, mounted 'en barbette' (firing over the parapet, not through embrasures), without lowering the parapet overall to such an extent as to expose all of the interior of the Fort to enemy fire. Another advantage of the 'en barbette' mounting, as opposed to firing through embrasures, was that the guns could be trained over a wider area and more readily brought to bear on targets lying at oblique angles.

Even where stones or the few surface brickbats which might have outlined architectural features within the fort are visible (e.g. close to the south wall) the groups are usually too small, or too obviously disturbed to provide a clear guide as to the nature of the building or earthwork of which they may have formed a part. It is possible that future area excavations covering the scatters may reveal more information.

**Excavation of west curtain of the rampart**

This research programme required an excavation of the Fort rampart, to examine what the design and materials indicated about the nature of the action it was expected to fight, and to assess the construction competence
and the tactical insights of the designers and builders in preparing to meet that expectation. The preferred excavation site was a section of the western curtain between the turrets. This face of the rampart overlooks Port Cockburn and thus would be almost certain to be in action in event of an attack and therefore likely to have been more carefully constructed.

As contemporary accounts by Bremer and Ennis indicate that the rampart was six or seven feet high (1.80 - 2.10 metres) - and in fact formed a parapet in itself - it would be necessary for a banquette one to two feet high (300 - 600mm) to have been provided to allow the defenders to fire comfortably over the top in event of an attack.

![Figure 12](image)

View along the inner face of the west rampart. Looking toward north-west turret

Similarly, a berm, to prevent slumping of the rampart into the ditch, would be expected on the outer face of this type of earth and wood fortification. The existing ruin of the Fort rampart is a largely featureless mound of earth and rocks some three to three and a half metres wide rising to a maximum of about one metre high in relation to the interior ground level of the fort. There is little sign of a banquette, or fire-step, on the inner side of the rampart; only the few short lines of rough stone (Figure 11) indicating that this may have been provided, at least in some places. Similarly, there is no visible sign of a
berm at the ditch edge. Either berm and banquette, however are likely to have been obscured by subsidence of earth from the body of the rampart.

In order to further explore the composition and construction of the rampart and the further question of the existence - or otherwise - of a banquette and berm, a section of the western curtain was chosen for excavation. This area lay about midway between the central gun embrasure and the northern turret (Figure 11). Choosing this location also provided for a ready comparison with the results of Crosby's rampart excavation, which was undertaken directly opposite, on the eastern curtain in 1975.

Crosby conducted an excavation of the rampart and ditch, cutting a two metre wide trench across the curtain mound and the debris in the ditch near the north-east corner (Crosby, 1978, pp 19-23 & illustrations). This excavation revealed horizontal, longitudinally laid logs of some 200mm diameter laid on a bed of 100 - 150mm stones within the body of the earth of the mound, and larger, 300 - 500mm stones toward the inner edge. (Crosby, 1978, Figure 1). An interpretation of the possible original configuration of the wall is provided (Crosby, 1978, Figure 2), showing the stones and logs discovered as the foundation of the rampart and a banquette. The original form of the rampart is interpreted as extending upward from the foundation of these logs as an earth core between inner and outer log cladding.

It is important to note that for clarity the Figures provided by Crosby have their vertical component exaggerated by a factor of two. As the conjectural surface cladding timbers are shown as circular tree-trunk sections, rather than elongated in proportion, this has resulted in an exaggeration of the numbers of timbers employed and also gives a deceptively thin lateral appearance to the illustrated rampart and parapet section. This matter will be discussed further in relation to the findings of the west wall excavation when considering the Research outcomes.
A datum line had been surveyed more or less longitudinally through Point Barlow during the 2000 season as the major reference for the Fort Dundas Grid (Appendix Two). In 2001 Grid stations were established in the turrets, and they and the south-east and north-east (i.e. inland) corners of the Fort rampart were marked with star pickets. A local site datum line was laid out from station 6000 in the north-west turret and marked by star pickets along the Fort Dundas Grid (Appendix Two) line E184, close inside the western curtain wall of the Fort. Based on this line, from the point E184, N808 a perpendicular was laid out to the west crossing the wall and the ditch to guide an excavation trench. This line, E171, N808 - E184, N808 lies along bearing 230º, crossing the wall and ditch at a slight angle.

An interim height datum for the excavation was provided with a picket set in the top of the rampart mound at E178, N808 and levelled at 0.48 metres above the general height datum of the Fort interior surface. In order to preserve the integrity of the primary pickets and lines, the one metre wide trench was pegged and marked out between lines N806.5 and N 807.5, extending across the full width of the rampart.
The excavation was conducted in approximately 100mm. spits (as permitted by obstructions in the earth due to stones and tree roots) descending vertically from the top of the mound. The first two spits descended through featureless, friable brown soil containing a number of small (less than 200mm diameter) jagged stones. At the bottom of Spit Three, 180mm above the Fort interior surface datum, the ends of several lengths of carbonised wood were encountered extending from the southern face of the excavation. The charcoal forms indicated that these had been two rounded logs, about 200mm in diameter. The north side of the excavation contained possible fragments of split or sawn boards about 20mm thick, but of indeterminate width, level with, but not connected to the log forms. These charcoal forms were lying horizontally and longitudinally within the earth and stone fabric of the rampart and extending about 500mm into the excavation. They were surrounded with bright orange sandy soil (See Appendix One).

On descending to Spit Four, (about 50 - 100mm above the Fort surface level), somewhat larger stones (up to 250mm on the longest axis), and more charcoal were encountered, slightly to the west of the upper deposits.
These resolved into the remains of three more logs, two spaced approximately 200mm apart to the west of those initially located. The third proved to be the remains of a large log, originally some 400 - 500mm diameter which was buried only some 100mm inside the western face of the rampart mound. The bottom of this large log lay at the bottom of Spit Seven of the excavation, therefore it was sunk some 200 - 220mm beneath the height datum of the Fort interior surface.

In Spit Seven the nature of the earth matrix changed. Above this level the earth was brown, with numerous jagged rocks of approximately 100-250mm sides; beneath this level the earth was pink with small, rounded pebbles mostly below 50mm major dimension. This pink earth with rounded pebbles has been encountered elsewhere on Point Barlow and appears to be the undisturbed subsoil over most of the area.
Figure 15

Drawings of rampart excavation
This subsoil layer was traced further to the west in order to determine the position of the original inner edge of the ditch. The pink earth appeared to form the bed of the large westernmost log and then to fall away at about 30° - 35° from the horizontal into the ditch. However, the interface of the brown topsoil and pink subsoil was too blurred and irregular to be certainly identified.

Results of the excavation:

The charcoal forms of the logs, and possibly boards, that were encountered, provide an accurate indication of the size and position of some of the timbers used in constructing the rampart. Where logs have burned underground in an oxygen-starved atmosphere, the carbon content of the xylem does not reduce to carbon dioxide, but remains as charcoal after volatile components of the wood have been consumed. This preserves the shape and structure of the original timber as a carbon form (Appendix One). Wood burning above the ground, or where oxygen is freely available, is consumed entirely to a powdery ash. This appears to be the explanation as to why there is no sign of the external log cladding of the rampart shown in Roe’s sketch (Figure 1) and implied in Bremer’s (Bremer, 1824c) and Ennis’ (Ennis, 1825, p 22) accounts of the Fort.

The volume of earth in the rampart mound does not, in itself, provide a sufficient quantity of material for a suitable protective curtain, so it seems certain that a large amount of timber was used both as cladding and for reinforcing the internal earth and stone core. The charcoal residue of the logs within the mound indicates that there were at least two layers of longitudinal logs within the earth of the curtain, although possibly there were more internal layers higher in the fabric that, with subsidence, became exposed enough to be burned away completely.

No sign was found of transverse timbers being used to stabilise the longitudinal timbers, as may be indicated in Roe’s sketch, which appears to show the round ends of logs interspersed here and there in the horizontal cladding. As there have been only two narrow, two- and one-metre trenches cut through the rampart, it is quite possible that the signs of any transverse
timbers may have been missed, but it is also possible that, due to the protrusion of their ends from the earth core, any such timbers may have burned away entirely.

The earth observed in this excavation appears to have three main features. The bulk of the rampart mound is the friable brown sandy loam containing numerous jagged rock fragments. The compact pink earth with rounded pebbles which was found below the log charcoal deposits at about the Fort ground level has been found to be the usual subsoil of the area and the configuration of its surface can be accepted as the undisturbed foundation of the rampart. The orange soil observed around the burned logs within the mound has been found by experiment (Appendix One) to be due to a colour change in the sandy soil when it is subjected to high and prolonged heat, as when logs smoulder underground.

The evidence of the excavation trench through the west curtain of the Fort appears to largely confirm the historical records available. The rampart appears to have been a composite structure of earth and timber of no great height. The estimates of six feet (Bremer) and seven feet (Ennis), with a base seven feet thick, rising to a parapet thickness of four feet is consistent with the volume of the mound of earth remaining, in consideration of the heavy timber cladding illustrated by Roe and the excavated evidence that timber was used within the body of the rampart.

This excavation produced no certain evidence of a banquette behind the rampart at this point, although the stated height would have made this necessary. It remains a possibility that the banquette may have been a log sill which has now burned away and the very amorphous nature of Melville Island soil has concealed any signs. It is possible that further excavation elsewhere around the rampart may clarify this.

The existence of an earth berm before the rampart is not conclusively confirmed. The charcoal form of a large log at the edge of the ditch could indicate either that a heavy timber has been built into the wall base as a
foundation or was used to reinforce a berm at the foot of the wall. Roe’s sketch, (Figure 1) however, does show some form of narrow berm along the base of the west rampart. The log may have been placed on the berm as added reinforcement at a later time, when the rampart started to deteriorate. However, as the ditch scarp at this point is soil rather than bedrock, it may have been an original foundation component of the outer scarp of the rampart and the berm material that originally extended beyond it has subsided into the ditch until a satisfactory angle of repose was reached.

The horizontal lie of the external cladding, as depicted by Roe (Figure 1) cannot be confirmed archaeologically, but it is consistent with earth fort design of the period and no sign of the stringers or footings required for a sloping, upright cladding (as apparently depicted in the engraving in King (1827, facing p 237)) was found. The view of the Fort in King appears to be taken from the 1824 sketch by Roe (Figure 2). Roe is unequivocal in his illustrations in showing the revetment of the rampart as horizontal timbers. It is likely that the appearance of near-vertical palings in the King version is merely the engraver’s convention for presenting the sloping scarp of the rampart.

The rampart excavation provided useful information on the strength and the tactical intentions of the fort. In conjunction with the discoveries of Crosby’s excavation, supplemented with information from Roe’s sketches, it is now possible to form a clear picture of the wall construction.

The Fort Dundas rampart was a simplified adaptation of the fairly standard artillery-resistant British frontier fort style rampart as discussed by Stotz (1958, passim).
Excavation of south-west turret

The two turrets attached to the north-western and south-western corners of the rampart of the Fort were without any doubt constructed as gun positions.
Information gathered in archival research indicates that the guns mounted were the nine-pounders mentioned in Bremer’s account of the ordnance provided for the Fort (Bremer, 1824b). This interpretation is supported by the depiction of long guns in the turrets in the plan of the fort (Figure 10) and by the sketches of John Septimus Roe (Figures 1 & 2), also depicting long guns in the turrets.

The task of excavating the south-west turret was undertaken to interpret the construction method used for the turret features and to search for information regarding the mounting and serving of the guns. This was a further development of the research programme examining the practicality of the fortifications, in conjunction with the excavation of the Fort rampart. From the study of the general earthwork construction style, the archaeological research now concentrated on examining a feature with a specialised defence rôle. The excavation was not only to determine details of its materials and design, but also to seek information to interpret the scope and tactical significance of its lay-out and the activities that were conducted there.

Figure 17
South-west turret before excavation, looking west. (ditch in middle distance)
It was expected that an excavation of the turret would uncover the foundation of the parapet around the perimeter, thus making it possible to ascertain the size of the working area within, and the thickness and composition of the parapet. It was also expected that the turret would bear some evidence of a paved gun deck and of installations such as anchor points for breeching ropes and side tackle that were usual on ship-borne guns to control recoil. It was also speculated that the guns would need to be provided with a hard surface or floor built into the turrets, as the cannon carriages took up the recoil of firing by rolling back across the deck. The working floor might be identifiable by marks of footings or stumps in the earth, remnants of paving or decking, or alternatively, discoloured or compacted areas in the earth indicating frequent treading. The layout and any use-wear identifiable in the turret might provide insights as to how the guns were served.

The turrets are conspicuous features of the Fort, from which the artillery mounted could command Port Cockburn. They are circular in plan, with a surface diameter of some ten metres. The interior surface is raised approximately a metre above the level of the Fort interior, sloping up to a rough, tumbled ring of earth and rocks, assumed to be the remains of a low parapet, lying around the outer rim. The exact size of the turrets, and their construction is difficult to assess accurately, due to the slumping of the rampart at the edge and the unevenness of the slope of the inner face of the ditch around the greater part of their circumference.

A segmental excavation plan was adopted as the most flexible method of examining the circular structure. It would provide an economical coverage of an appropriate area to search for evidence of use, and could be readily integrated with the Fort Dundas Grid for topographical accuracy. The excavation could also be easily altered or extended using the basic reference system related to the Grid bearings.

In the process of surveying Fort Dundas in 2000, steel star pickets had been permanently located and recorded in the north-east and south-east corners of the rampart and the approximate centres of the turrets at the north-west
and south-west corners. The reference picket in the south-west turret (point 5000) was adopted as the centre for the radial configuration adopted for the excavation and also as the height datum point for vertical measurement. Lines were laid out north, south, east and west along the cardinal compass points of the Fort Dundas grid previously established (320° = Grid North). The four segments described were designated clockwise from the north line, A, B, C, and D.

After clearing surface vegetation debris, the levels of points from zero to six metres along each radius were measured with a dumpy level and oblique and vertical photographs of the surface of the turret were taken. Segment A (north-east quadrant) was pegged out for an excavation extending four metres along the north and the east radius leaving a 250mm baulk allowance inside the radii.

This segment was taken down to 300mm below the datum in approximately 100mm spits. The earth throughout was an amorphous, very dusty brown loam. It contained numerous small, irregular stones (up to 100mm or so in greatest dimension). In first appearance the earth was somewhat granular, in about 3mm. grains. However, when touched the grains fell apart into fine dust with a high content of fine humus.

No signs of a working floor were discovered at this depth, but four small green glass shards and a fragment of blue-on-white transfer patterned china were found. Two joining pieces of thick, curved dark green bottle glass and the transfer pattern china are typical of the 1820’s artifacts found throughout the site, but the two thinner, lighter green pieces of glass cannot definitely be ascribed to any date. All were found between 200mm and 300mm below the height datum.
The contemporary sketches of the Fort available when the excavation was planned (e.g., King, 1827, facing p 237) and the known construction of Naval gun and carronade carriages of the period - together with the information that the guns were presented *en barbette* - indicated that the floor within the turret should be high in relation to the overall parapet height. As no sign of any working floor or deck construction had emerged at this point, which was estimated to be well below the original working surface, it was decided to measure one metre into segment A from both the north and east radii and lay
out a one metre square excavation in the corner so described. This would allow excavation to proceed more quickly and could be readily extended, at need, to examine any evidence of the construction methods found.

At approximately 450mm. below the datum a flat mass of charcoal some 200 x 100mm. was found. Although cracked and distorted, the lie of the grain and the uniform thickness suggested that this may have been a short section of board about 12mm (½ inch) thick. However, no nails or distinctive shaping beyond the uniform thickness could be found to confirm this.

The one metre square was excavated 300 and 400mm. below the datum. Two more small pieces of thin, curved, light green glass and one thin, flat colourless piece (all less than 20mm maximum axis) were recovered, also one 30mm. piece of off-white stoneware with a fawn glaze, this appears to be very similar to nineteenth century ginger beer bottle ceramic.

Figure 19

One metre square test pit

With the pit excavated to 350mm. and again at 550mm. the bottom and sides were cleaned of the powdery, loamy soil and photographed.
A further mass of charcoal, about 150 x 100mm. was also uncovered in the south wall of the excavation, extending from about 450 to 600mm deep. The pit was enlarged 0.5m south to investigate this deposit. From the grain structure of the charcoal deposits it appeared that the timber had lain horizontally, so the charcoal was unlikely to be the remains of floor stumps. The two charcoal deposits discovered had no obvious connection to each other.

The charcoal uncovered in the extension of the pit proved to be a much larger mass than the apparent board fragment in the pit proper. It resolved itself into two fully carbonised billets about 450mm. and 250mm. long by 200mm. diameter lying side-by-side. The grain direction shows the original wood to have been quite accurately oriented east – west.

The sand and pebbles immediately around and below this charcoal deposit were orange coloured from heating and some adjoining stones showed blackened, greasy marks, so the wood appears to have burned in situ (Figure 20). No burned orange layer had been evident when working down from on top of the charcoal, so it may have only been partly buried when fired,
although the colour may have leached down in the ensuing one hundred and seventy-odd years. No nails, drill holes or artificial shaping of the billets was evident, apart from the neatness of the western ends, which indicated a likelihood that they had been cut with a saw. These billets do not represent any recognisable structural function in the turret and may be the remains of timber off-cuts left under the fill during construction.

There were some small deposits of charcoal nearby, but none were identifiable as having been artifacts, nor were they continuous with the large masses. Close against the southern side of the largest charcoal mass an irregular, round fragment of pale green glass, apparently an added-on seal blob, or prunt, from the shoulder of a bottle, was found.

![Figure 21](image)

French wine bottle prunt - "-ucru -Julien" (Du cru / St Julien)

This seal was badly crazed, presumably from the heat of the wood’s combustion. It carried an incomplete moulded inscription with a partial word "-ucru" above and the full word "- Julien" below.

Shards of thin, pale green curved glass were found higher in this excavation and these may belong to a bottle from which the seal blob comes, but there
are insufficient pieces to form any restoration of the original shape and the colour and thickness of the pieces varies, making any identification dubious.

Below the deposits discussed above, a stratum of pink soil with numerous small, rounded pebbles was reached. This appeared to be the same stratum as the sub-soil encountered in other parts of the site below a thin (~50mm.) surface layer of humus and grass roots. While some of this earth may have been thrown up into the turret structure from the excavation of the Fort ditch, its compactness, its appearance at this depth, and its continuation as a sterile layer for the 250 – 300mm. that the excavation was taken below this level, indicated that the excavation had reached the original ground surface. At this point the excavation in segment A did not appear likely to yield any further information and it was lined with plastic film for future identification and re-filled.

A further excavation was undertaken cutting a 500mm wide trench along the north side of the west compass bearing from the datum peg (Segment D). This trench was undertaken to cut through the raised ring of rubble on the outer edge of the turret to reveal a section of the parapet. The outer edge of the turret is higher than the interior by some 300 – 500mm., with the surface sloping in to the centre which then slopes down further to the north-east into the Fort enclosure.

This excavation revealed that the outer ring of rubble was composed of stones somewhat larger than those encountered in the excavation of segment A, being approximately 100 – 200mm in maximum dimension. These stones tended to have angular, jagged shapes, suggesting that they were material excavated from the ditch, which at this south-west corner is cut largely through solid bedrock. No artifacts were found in this trench and no indication of the parapet inner edge or the foundation of a working deck could be identified.
Results of the excavation:
The round turrets of Fort Dundas are distinctly different to the rectangular or diamond-shaped bastions that the British military science of the day dictated for mounting guns in fortified positions (Muller, 1746, Stotz, 1958). They appear to have more design affinity with South-East Asian fortifications. John Septimus Roe, Bremer's First Officer is known to have previously visited Asian ports (Burton Jackson, 1982, pp 8 ff), and he may well have contributed to the design from an acquaintance with such fortifications.

The material of the turret revealed by the excavations indicated that the cavalier mounting was almost certainly built up with earth and stone fragments largely, or wholly, excavated from the ditch around the Fort. There is evidence (the remains of tree stumps and roots, hollows with displaced stone where trees have fallen, existing trees on the site) that a number of trees have grown on the turret over the years. This may well explain some of the disorder of the materials and the lack of identifiable stratigraphy or any pattern in the soil colour and texture. However, the failure to find any clear colour or texture demarcations in the earth indicating the positions of working surfaces, parapet or equipment footings may also be due to a natural amorphous quality in the earth (Appendix One).

On examining the present overall shape of the turret it seems possible that some material from the outer face of the structure may have slumped outward into the ditch. The turret is not very high and the outer rim, which would have been surmounted by the parapet, presents only a low irregular mound. The scarp of the inner ditch face which the turret surmounts is not steep (about 50°) and would provide very little obstacle for attacking troops. In view of the trouble taken to construct a ditch and rampart to protect the Fort, it seems unlikely that the turret would have been left as vulnerable to infantry attack as the present contours of the feature indicate, supporting the belief that the present ditch face at the turret is, in part, a talus of rampart material. Similarly, the absence of the berm shown in early illustrations of the Fort may be explained by material subsiding from the rampart covering it completely.
As the bedrock is quite close to the ground surface at this point – less than 0.50m below the Fort datum judging from the counter-scarp of the ditch – the earth forming the turret, mounded on this spur of rock created by the almost fully encircling ditch, may have settled and spilled from the prominence to form the low shape and shallow ditch we now have. In doing so the original form of the parapet and the stratification of the structure may have been irretrievably confused. The fine sandy loam of the turret and the loose rock fragments are very ‘fluid’ and, as noted in the excavation process, do not retain a steep-faced shape very well. Large-scale area excavation across the turret and ditch to investigate this was not possible with the time and resources available.

No artifacts that relate to military activities were recovered in this excavation of the turret position. Such artifacts as were found comprised a sparse scatter of small glass and ceramic fragments which seem to have little, if any, spatial or (apart from the wine bottle seal) intrinsic significance. It seems possible, from their apparently random horizontal and vertical distribution, that these artifacts may have been a secondary deposition. Fragments of some objects broken and discarded in the earliest days of the settlement may have subsequently been caught up randomly in the construction material of the turret.

The charcoal deposits within the earth of the turret appear to lie upon the original ground surface of the area. It is conceivable that the charcoal billets are the remains of a camp fire from a period before the building of the Fort and buried during construction.

The bottle seal - and possibly some of the thin glass shards, which may have come from the same bottle - must date to the period of the large charcoal forms, therefore the earliest European occupation period. Some implications of this wine bottle seal will be discussed further in the Research Outcomes below.
No evidence of a gun deck, gun serving equipment or activities (or any other military equipment) were found in this excavation, beyond the overall lay-out of the feature. The failure to find any nails or other structural hardware suggested strongly that no wooden structures had occupied the turret. The sketch by Roe (Figure 1), subsequently located in the Battye Library confirmed the archaeological information: the turret had had no specific preparation or furniture as a gun platform other than the cavalier and parapet construction. This will be discussed further in Research Outcomes.
“..for the Good of His Majesty’s Service.”

The archaeology of Fort Dundas, 1824 – 1829

CHAPTER FIVE
THE MAGAZINE
THE MAGAZINE

Magazine excavation - first season 2001

Due to the turret excavation taking less time than was anticipated, a few days available at the end of the 2001 excavation season allowed a preliminary exploration of the hollow close under the western curtain of the Fort. This hollow was mentioned by Crosby (Crosby, 1978, p 11), and was noted during the 1999 survey of the Fort as a likely site for an expense magazine, according to the fortification design prevalent in the 1820's.

Figure 22

‘Hollow’ surface before excavation, looking south along inside of western rampart
(Scale - 1.5m set square)

As proposed in the Introduction, this archaeological research programme was devised to interpret the archaeological evidence of the military strategic and tactical preparedness of Fort Dundas, to ascertain the expectations and proficiency of the garrison in developing their base. Through this, it would
then be possible to identify and assess more clearly the intended function of
the settlement. This short exploratory investigation resulted in the discovery
of the Fort Dundas magazine, offering a great deal of information for this
purpose. The significance of the size, construction and functionality of the
magazine would provide an excellent gauge of the practicality of the Fort as a
military installation.

In 2001 the site of the magazine and armoury of Fort Dundas was not
definitely known. The 1824 'hasty sketch' (Figure 10) in the Mitchell Library,
which confirmed that a magazine had been situated at about the site of the
hollow, had not, at that time, been located through the historical research of
the programme and the only feature nominated as the settlement's magazine
or armoury was a stone structure (Crosby S62), (Figure 53), some six
hundred metres from the Fort; a rather impractical distance for a magazine in
the case of an attack. This building ruin was variously suggested as the
magazine (Crosby, 1978, p 15), or a church (Searcy, 1895)

Initially in 1999, the hollow was largely obscured by a thick growth of scrub
and a large tree, felled from the rampart mound by a recent cyclone. By the
2001 expedition, regular burning had cleared the hollow of much of its
vegetation and dead wood, and its potential could be more fully assessed.
Such a marked irregularity in the interior surface of the fort was anticipated to
be artificial. Initial surface measurement established that it was some eight
metres long from north to south and about four metres wide from the inside of
the rampart. The width was hard to determine accurately due to the
disturbance of the earth by the falling of the tree. The lowest point of the
hollow was about 500mm below the level of the surrounding surface of the
Fort interior. After a surface clean-up of ash and debris, fragments of three or
four poorly fired, handmade bricks were found in the eastern slope of the
hollow.

No indication of building foundations could be observed, nor of the brick wall
mentioned by Crosby. The hollow, lying in the otherwise smooth parade
ground of the Fort suggested some form of sunken feature. The excavation in
2001 was a short exploration to determine the nature of the somewhat ambiguous hollow in the expectation that it might have housed an expense magazine locker. Work was begun by laying out an excavation grid close under the inside of the west curtain, approximately mid-way between the north-west turret and the central gun mounting position.

![Fort Dundas magazine site](image)

**Figure 23**
Plan of 'Hollow' (magazine) excavation.

A permanent site datum peg was established at E185 N803 on the Fort Dundas Grid (Appendix Two), with a star picket driven in level to the fort surface south and east of the hollow to provide a reference point for three-dimensional recording of the excavation. From this peg, a line was extended to Grid North and a grid of four one-metre squares (Figure 23) was laid out
for an excavation covering the lowest point of the hollow and extending up its eastern and western slopes.

Some 25 - 30mm below the surface above the eastern edge of the hollow, (square E185, N806) a north-south line of brickbats emerged forming a kerb arrangement with the square ends of the broken bricks facing to the east (Figure 24). The western side of the line was tentatively interpreted as the ‘retained’ side of a raised garden bed or the like, while the uniform, unbroken ends formed the visible kerb (e.g. of a path).

![Figure 24](Image)

**Figure 24**

Brickbat Kerb, east side of Hollow feature.

(Im square scale)

The ground on both sides however, was found to be composed of brown earth densely packed with rock and brick fragments at a similar level. Neither side appeared to differ significantly from the other. The line of this row of brickbats was followed by opening shallow excavations to the north and south of the initial square. The ‘kerb’ showed signs of being disrupted by tree
and shrub roots and neither end showed clear definition of a terminal or corner. The existing row of bricks was a single course throughout, but nearby scatters of other brickbats may have come from a second course above. No mortar or cement was visible. At the southern end of the line, a small paved area comprising some six or eight near-complete bricks was discovered, but extensive root disruption made its definition hard to determine.

This single line of brickbats did not appear sturdy enough to have been the footing of a building, and seemed most likely to have been the edging of a path lying to the east side of the line. It was also thought likely that it could have formed a kerb around the base of a building lying to the west. Some fragments of thin green glass found upon the surface of the excavation appeared to be modern; being of the style and colour of e.g. Strongbow cider bottle glass. However, three joining pieces of fine fawn-yellow glazed china, probably from a saucer, found at E185.10, N806.40, D0.13, just west of the line of bricks may belong to the 1820’s, as other similar fragments were found in the terrace near the wharf (Crosby 1978, uncatalogued artifacts) and appear to be too deep in the soil for recent picnic breakage.

It was decided not to excavate through the line of brickbats until there was reason to think that something significant lay beneath. Excavation was next concentrated on the bottom of the hollow. The land surface here was very disturbed due to earth displaced by the uprooting of the large tree that once stood on the rampart along the western slope of the hollow. The tumbled brown soil and sandstone fragments from the rampart were removed and the earth beneath was found to be a fine grey sand. After a partial terracing-back of the rampart material to prevent further subsidence, a grouping of complete bricks was uncovered in the western side of the hollow bottom (E181.90, N805.00, D0.40), lying at an angle of about 45° from the vertical back toward the west.

These bricks formed a substantial regular surface that appeared, from the casual coursing and the layout of the bricks, to be a displaced pavement or similar horizontal surface, rather than tilted vertical architectural masonry.
The brick bonding was irregular, with anything from a 5mm to a 20mm gap and an irregular overlap. The fill in the spaces between the bricks was a soft, grey sandy loam, identical to the surrounding earth and quite unlike mortar, raising doubts that they had ever formed any sort of upright wall. Probing at the foot of the brick face indicated that the bricks probably continued downward at a similar slope for at least some 0.4m There were however, numerous hard obstructions in the earth.

The sand lifted off the brick surface, yielded, on sieving two 50mm hand-made copper nails. As the surface was uncovered further, (squares E182, N804 & E182, N805) numerous loose bricks and brickbats were uncovered to the east of the apparently intact surface. All the bricks are hand-made and very soft and friable. Most show clear ‘swipe’ marks where the material has been pressed into an open mould. They have no frog and have been baked to a rose or yellow terra-cotta colour, with some brickbats showing grey,
unbaked cores. Five of the bricks recovered were intact, allowing their dimensions to be checked. Their mean size (confirmed by later checks) is 225mm x 105mm x 65mm, with a maximum variation of +/- 5mm on the longest dimension.

The area of the excavation was enlarged, as above, to cater for following the brick surface. The slope of the surface continued down to the east and a large number of scattered bricks were uncovered. Extending the excavation over a greater area was undertaken in the hope that any significant order in the distribution of the bricks could be recognised.

![Figure 26](image)

**Figure 26**

Opposing faces of bricks in excavation, viewed from south.

The large numbers of bricks found and the style of their arrangement strongly suggested that they belonged to some structure, not merely a stack or dump. The discovery of numbers of copper nails (ten) and lead musket balls (three), apparently randomly scattered through the earth among the bricks, supported the belief that the area had been used as a munitions or armaments store. Searching for the foundation or floor of the structure became the main
concern, in order to assess what sort of building or installation had been erected at this point.

Following the slope of bricks, which was found to be the upper of two similar layers, the excavation had gone to an unexpected depth without reaching bedrock. As stated earlier, the soil is quite shallow over most of Point Barlow, and the ditch scarp immediately west of the excavation shows bedrock virtually to the ground surface. Nevertheless, this excavation had reached 700mm depth with no sign of bedrock appearing.

Examination of the configuration of bricks that had been uncovered in squares E182 / 183, N804 / 805 after five days work on the site, prompted the interpretation that they had formed a cover for the roof of a sunken chamber which had since collapsed, leaving the bricks in the configuration found. This interpretation presented the captivating possibility that this feature was not merely the site of a simple surface-built or slightly sunken ammunition locker, but of a possibly quite extensive underground magazine, which had not previously been known to exist.

As all archaeological work for the 2001 season had to be concluded in three days, when passages were booked to leave Melville Island for the season, it was decided at this point to abandon the broad excavation so far pursued and to concentrate on a deep sounding to determine the depth of the feature and ascertain whether it had been a fully underground or only partly sunken chamber.

A 0.5 x 2.00 metre rectangle was laid out at E 182.80-E184.80, N806.20-N806.70, a point slightly north and east of the main brick deposits to minimise the disturbance of the material in the site. This appeared to be an adequate size to allow exploration of what lay beneath the supposed brick roof cover and would allow a considerable depth to be achieved, if necessary, in the time available.

Numerous broken brickbats, apparently tumbled in disorder, were located as the excavation progressed and further discoveries of eight copper nails, two
corroded iron nails and a musket ball were made. At a depth of 94mm a charcoal deposit was found. Due to its relative flatness and the straight right-angle cut of the end of the deposit, it was interpreted as the carbonised remains of a short board about 350mm long, 150mm wide and 12 - 15mm thick. The deposit had one 12mm round hole through it, appearing to be the result of a hole drilled through the original board. There was no sign of any connecting or related woodwork or fittings.

Figure 27
Brick configuration viewed from north.
?Collapsed roof of sunken chamber?

This pit was shortened as it descended, in order to avoid disturbing various concentrations of bricks that emerged to the west. Further musket balls and copper nails were found, and at E183.50, N807.10, D1.55, fragments of an oxidised circular flat iron sheet, some 200 mm in diameter were uncovered. At this point it was noticed that the fine, sandy soil was becoming more compact and a little damper than it had been above. The test pit reached the bedrock floor of the chamber at 1.60m below the height datum.

Brickbats, brick debris and occasional small (< 3mm) pieces of charcoal had continued in the earth fill to the bottom. There was a shallow (about 50mm
deep) layer of coarse grey sand containing small (< 10mm) rough sandstone fragments immediately on top of the floor. This sand is a mix of black and white grains as found in the unweathered bedrock, and appears to have been scraped or abraded from the rock into which the chamber is cut, presumably during the excavation. It is somewhat coarser than the very fine sand above and perhaps served as a levelling or smoothing layer on the rough-cut stone floor.

In removing the fragments of the corroded sheet steel disc mentioned above, it was found that it had been lying at an angle between the floor and the base of the eastern wall of the chamber. Extending the eastern side of the test pit revealed a sloping section of this wall at E183.80, N807.20-N807.70, with the pick marks of its original excavation clearly visible in the stone surface. The bedrock lies some 450 - 500mm below the Fort ground surface at this point and the chamber is cut some 1.20m deep into the bedrock. The wall of the bedrock cutting had a distinct batter, leaning back 350mm from the vertical to the east in the 1.20 metre depth.
Results of the Excavation:
At the end of the 2001 season the area of the sunken chamber remained unknown, no clear surface indications of its size could be traced. As the hollow was approximately eight by three or four metres it was considered that the chamber could be anything up to that size, so any further exploration would require more time than was available that season. The dimensions of the chamber and the nature of any remaining contents would have to be determined when future excavation was possible. On the 5th September the
excavation was lined with plastic film and refilled for preservation until a further expedition could be mounted to continue the examination.

Throughout this excavation the surface stratum was a thin (<100mm) layer of brown sandy top soil containing a large amount of organic matter, except in the west side adjacent to the rampart, where a tumble of denser brown loam and rough rock fragments was scattered due to disruption by vegetation. Beneath this was a very fine dense sand, without any pebble or rock content, which, when freshly excavated and slightly damp, held the wall faces of the excavation quite well. Once dry, however, it tended to drift. There was a large number of plant roots in the upper half-metre of the earth, some of them quite large (25mm + diameter), which needed to be cut away carefully to avoid bringing down sections of the excavation walls.

Artifacts recovered within the chamber totalled:
- Thirty-five copper nails or fragments of nails, ~ 32, 50 & 60mm (1¼", 2" & 2½") long
- Four corroded iron nails
- One hand-cut 50mm brass wood screw
- seven lead musket balls
- One fragmentary sheet iron disc, 200mm diameter.

Uncovering the collapsed brickwork in this excavation resolved, to some extent, one puzzle regarding the Melville Island settlement. Historical material (Fisher, 1876, Searcy, 1895, Spencer 1928) and local oral accounts allude to brick kilns and piles of thousands of bricks made at Garden Point by the settlers. Until this season there was very little evidence of this, as only a few fragments of bricks had been found, with only six or seven brickbats observed around the Fort. The large numbers of bricks and brickbats in this excavation are evidence that not only was brick-making a significant operation in the community, but that some bricks at least, were destined for use in the military installation.
The dimensions of the Melville Island bricks are quite uniformly 225 x 105 x 65mm. (corresponding to 8 3/4" x 4 1/8" x 2 1/2"). This is marginally smaller than the English standard of the period, which was 235 x 114 x 70mm (9 1/4" x 4 1/2" x 2 3/4"). These bricks are very poor quality. Many, if grasped carelessly, will crumble between one’s fingers. This appears to be due to both the materials available and to the manufacturing technique. There is no clay readily available on Melville Island (Appendix One), so a fine, sandy silt, probably local soil from Garden Point, was used for brick making. The colouring of the bricks, ranging across rose, yellow, fawn and grey, often with grey, unbaked cores, indicates that the firing was very variable and done at a low temperature - certainly too low to fuse the silica in the sand.

The layout of those bricks which appeared to be still in their original relationships to each other, posed a problem for interpretation. They were not coursed in a manner that could form a wall. Moreover, no mortar or cement could be found in the joints. The construction of the one stone building in the Melville Island settlement (Crosby S62) shows that a binder, apparently of a coarse sandy mud, possibly mangrove mud, was used for the rubble masonry. The presence of some broken shells in this mud may indicate that some poorly burned shell lime was mixed with the mud, but the resulting binder has very little clinging power. The bricks found in the magazine however, show no sign of any binding material. The irregular joints contain the same fine sandy soil as their surroundings.

The conclusion reached was that the bricks were arranged in the style of paving, in two separate, unbonded layers. They were laid on their edges - the narrower long side - and gaps between the bricks had filled with overlying sand. The evidence of the arrangement of the bricks, the configuration into which they had fallen and the matrix of grey sandy soil, different to the brown, high humus content, dusty sand and pebbles of the earth elsewhere in the Fort, all combined to support the following interpretation of the sunken chamber.
It was concluded that the chamber was the main ammunition magazine of the Fort. It had originally been roofed with wooden beams and planks, possibly laid flat, but very likely pitched, to provide more head-room inside and to shed rain more readily. The bricks were laid like paving in a double layer on the wooden roof and this in turn was covered with a mound of fine sand. This arrangement would have been very suitable for a military magazine, where the sturdy roofing would resist the impact of ordnance and the depth of sand would smother shell fragments, thus protecting the contents from enemy fire in the event of hostilities. Following the abandonment of the settlement in 1829 the timber of the roof was attacked by termites or possibly by fire and finally collapsed, allowing the overlying bricks and sand to slump into the chamber, filling it almost completely.

The distribution of the bricks as excavated is consistent with this interpretation. A large number of the bricks to the western side of the excavation lie in a comparatively ordered configuration, while those to the east side are tumbled much more randomly. (Figure 26) If layers of bricks and a sand mound were lying upon a wooden pitched roof frame and the eastern rafters were to become weakened and give way, the eastern brick and sand cover would tumble into the chamber in disorder. The western face of the roof, with its timbering still intact, would no longer be supported by the opposing rafters and would tend to collapse en bloc into the chamber, partly on top of the wreckage of the eastern face, but with its timbers and brick layers still largely in order.

Among the artifacts found during this excavation was the number of copper nails\(^9\); thirty-five were recovered, as compared with four iron nails found near the surface. The nails are clearly hand-made in the style of the early nineteenth century. The presence of these copper nails is significant, both in indicating that some form of sturdy wooden structure had existed within the chamber and also because copper, although relatively costly, was normally

\(^9\) When a small sample from the copper nails was analysed in the University's SEM / EDAX, it was found that they are not pure copper, but an early form of British Navy bronze, being approximately 80% copper, 5% tin, 5% zinc and 5% lead, with various minor impurities.
used extensively in magazine construction and fitting as a safety measure. Copper compounds do not give off sparks when struck by other minerals, as iron compounds can do.

Figure 29
Copper nails from the magazine excavation. Two showing preserved wood lenses.

Many of the longer copper nails showed evidence of having been clinched through two 25mm (one inch) pieces of wood. This could be determined, as copper salts from the nails had impregnated small sections of wood around the nail holes and thus preserved these wood lenses, although the rest of the wood had disappeared entirely. This may indicate also, that the wooden structure within the underground chamber was destroyed by rotting or the action of termites, as fire would have been indifferent to salt impregnation in these small pieces of timber and they would have been destroyed.

This is supported also by the very small quantities of charcoal found in this excavation. Had wood burned underground in this sandy earth there would tend to be clear, discrete masses of charcoal, and also distinctive bright orange discolouration of the sand by the heat, as found in the west curtain excavation. Only one charcoal deposit, accompanied by discoloured sand, was found and it shows no obvious relation in size or position to the timbers.
indicated by the lenses of wood on the copper nails. While many very small (1 - 2mm) charcoal fragments were found throughout the sand fill in the chamber, this appeared to be material that may have lain on the surface of the overlying sand mound and become mixed in when it collapsed.

A number of unused lead musket balls (nine) was also recovered during the excavation. They were scattered apparently randomly through the excavation, as if a few balls may have been spilled from a bulk box or cask onto the ground surface above the magazine and been scuffed aside. They showed no accompanying remnants of paper casing or black powdery charcoal deposits to indicate that they had been incorporated into cartridges.

The diameter and weight of the musket balls found is quite uniform, despite each being more or less corroded. The balls measured between 17.60mm. and 18.00mm in diameter, and the complete specimens weighed between 30.50 and 30.60 grams. Each specimen had slight irregularities and some are deeply pitted with corrosion. On most, the mould joint and sprue mark were clearly visible. Analysis of some balls showed a somewhat irregular composition, indicating poor refining of the metal. Spot readings on an individual ball were found to vary between 91% and 98% lead with various impurities \(^{10}\).

The size of these balls corresponds with the standard for 'Brown Bess' musket balls. It is notable that they are significantly smaller than the bore of the 'Brown Bess' - the New Land Pattern or India Pattern muskets that would have been the issue to the troops at Fort Dundas. Those weapons were nominally 0.75" bore, or very slightly over 19mm. This one millimetre of windage, or looseness of the ball in the bore ensured quick and easy muzzle loading and hence rapid fire, but resulted in very poor accuracy by modern standards (Hughes, 1974, pp 10, 11).

\(^{10}\) One surprising discovery in the musket ball EDAX analysis was the presence of up to 2.6% of strontium. This was certainly not intentional, this metal being unrecognized at that time. It may well be an impurity in the ore from which the lead was extracted, and could serve as a marker to identify the source of the lead.
The corroded iron disc found at the bottom of the chamber sounding appeared to be the end of a large steel canister, some 200mm (8 inches) in diameter. On examination, the edge of the disc appeared to have a form of rolled crimp and a white oxidation, apparently of sealing solder, was visible in the crimp. Slight irregularities in the oxidised metal of the crimp may indicate where the wall of the can was cut away, but the completely corroded condition of the artifact makes it impossible to be certain of this. If, indeed the edge irregularities do indicate the use of a rolled crimp, this is somewhat surprising, as machinery to do this task automatically had not been developed at that period, and it would require time-consuming hand work.

The sandy earth matrix of this excavation was significantly different to the soil encountered elsewhere in the Melville Island settlement area. There are some points nearby where the bedrock rises to the surface and, particularly on the southern side of Point Barlow, a number of areas with deposits of heavy ironstone laterite soils. Most of the immediate settlement area has a thin surface layer of brown dusty loam, usually no more than 100mm. thick. From this to the bedrock, which may be anything up to about a metre deep, the earth is a hard, compacted pink subsoil, very fine grained, but having very little clay. This soil contains large numbers of rounded sandstone pebbles, which appear to have been eroded from the bedrock and stained pink by the iron content of the soil.

Within the sunken chamber however, the brown loamy topsoil gives way after 50 - 100mm to a fine grey sand, with a very large number of bricks and fragments of bricks, but with no rocks or pebbles. There is no doubt that this sand is an introduction. It does not naturally occur in the immediate area of the Fort. It appears to be similar in grain size and clinging characteristics to the fine reddish sand found in the lower country at the head of King's Cove, where the run-off drainage of water from this part of the island has built up a deep, porous sandy soil. It is possible that a quantity of this sand was brought to the Fort as a suitable material to provide a protective mound over the magazine, and that the new environment, particularly due to the many
tiny fragments of charcoal found throughout the sand in the chamber, has changed its colour.

Magazine excavation - second season, 2002

The 2002 Melville Island Field Season (18 July – 23 August) was the largest operation undertaken by the Northern Territory University / Charles Darwin University on that site, involving four to six people for five weeks. This season’s plan concentrated on excavating and recording part of the magazine chamber located during 2001. In view of the importance of excavating a hitherto unknown feature within a site of such significance as Fort Dundas, an Excavation Manual (Appendix Two) was developed to systematise the excavation and recording procedures and to guide the workers.

The goals of the excavation were:

- To trace the dimensions of the chamber in order to estimate its practicality as a store for - at least - the quantity of ammunition that was recorded by Bremer (Bremer, 1824c) as having been provided for the Fort.
- To locate the entrance to the chamber to assess its security and the tactical awareness shown in the construction.
- To excavate a significant portion of the magazine fill, (a minimum two metre square excavation was planned) to search for evidence of the construction techniques and to recover artifacts that might contribute to an understanding of the activity patterns involving the magazine.

Sightings were taken from survey point 6000 (E184 N825) in the north-west bastion of the Fort to confirm the datum point and grid lines established the previous year and to extend the excavation area. Levels were taken over the area considered likely to be occupied by the magazine. Pegs and string lines marked out one-metre excavation squares conforming to the Fort Dundas Grid (Grid north 320°) covering and extending the area that had been subject to preliminary exploration last season. The initial task was to relocate the
short section of the eastern side of the chamber cutting in the bedrock that had been reburied for preservation following the previous season. Excavation was begun in one metre squares laid out at E183,N807; E183.50,N805; E183.50,N806 and E184,N807; E184,N808; E184,N809, which would approximate to the line of the cutting determined last season. Once this eastern cutting wall was located, it would be possible to estimate suitable areas for excavation to trace the overall perimeter of the chamber.

Tracing the perimeter of the magazine chamber where it was cut into the subsoil or bedrock would determine its area and configuration and the process should also locate the entrance. The entrance was expected to be a sloping ramp from the surface to the floor of the chamber, probably in this eastern wall.

**Figure 30**

Excavation plan for magazine chamber
(Diagram from field notes, 20/07/02)
It was also expected that, in common with other military installations that may be sensitive to enemy fire, the entry passage would have a dog-leg corner to arrest the entry of projectiles or shell fragments. The ramp, the entrance, and the area immediately inside the magazine were expected to be likely areas for artifact finds that might help reconstruct the use of the magazine. A further task to be undertaken this season was to investigate the body of the magazine chamber to try and determine the original form and composition of the roof and to reconstruct the process of the subsidence or structural collapse that had brought about the filling of the chamber.

On the 21 July the section of magazine wall uncovered last season was located and the plan for the excavation was amended slightly to follow the perimeter of the cutting as closely as possible. Excavation was extended to square E183, N806.

At the surface the brown sandy topsoil of the area is similar inside and outside the magazine, so these excavations had to be taken to various depths to find clear demarcation between the magazine fill and the surrounding natural earth. In some squares of the excavation the bedrock was much deeper than the sounding last season had indicated. In these deeper areas the subsoil above the bedrock is a very hard-packed mixture of pink, fine soil and small, rounded rocks and pebbles. It was not initially possible to tell whether the soil had been rammed or artificially compacted in order to strengthen the wall of the chamber.

In order to investigate the body of the magazine a 2m x 2m square area (squares E182 N807, E182 N808; E183 N807 and E183 N808) immediately west of the eastern wall line (therefore expected to be within the body of the magazine chamber) was marked out and shored for excavation to the full depth of the cutting. This would provide a detailed record of the fill of the chamber and would reveal any artifacts that may have been trapped in the fill or on the floor.
The presence of the expected artifacts (copper nails and lead musket balls) was restricted almost exclusively to the earth within the magazine chamber. Copper nails appeared frequently, many with lenses of preserved wood attached. Two copper nails and one musket ball however, were recovered from the topsoil outside the eastern wall of the chamber.

The two metre square excavation was taken down in approximately 100mm spits, but the considerable number of bricks and brickbats in the earth made precision difficult. While most of the bricks encountered were broken and appeared to be tumbled randomly, some small groups of six to eight bricks, often unbroken, were found in Square E183, N808. They appeared to be retaining regular positions, as if a small section of a roof had fallen in *en bloc* and retained a limited integrity. The bricks appeared to be in a loose, two, sometimes three layer arrangement, spaced irregularly 5mm to 20mm apart. There was no sign of mortar between any of the bricks.

By 26 July much of the eastern wall of the magazine had been opened up in squares E183.50 N805 and E183.50 N806, but no indication of an entrance had been discovered. The squares E182 N808 and E183 N808 within the two-metre square marked out in the magazine had been excavated to 600mm below the horizontal datum and had produced a large number of brick fragments in a fine sand matrix. At the western edge of E182 N808 and the eastern edge of E183 N808 a number of sandstone rocks were found. Some of these rocks were small, loose fragments, less than 150mm in major axis. Some, much larger and firmly fixed, proved to be bedrock outcrops.
By 28 July the excavation of the two-metre square had been levelled at 700 mm below the datum. It was now becoming clear that the northern wall and part of the western wall of the magazine were emerging in squares E182 N808 and E183 N808. The two faces of the east and west walls of the cuttings in the bedrock were only two metres apart and sloped inward toward the bottom, indicating that the magazine was little more than some six feet wide (1.83 metres) at floor level. The walls exposed to that point showed distinct pick marks of their original excavation. There was no sign of any artificial brick or stone masonry, or any indication of footings for wooden walls extending the bedrock up to (or beyond) the surface, to provide a support for a raised magazine roof.
Within the magazine chamber the fine sand and brick / brickbat fill continued. Musket balls and copper nails continued to be found in this matrix. Two very large copper nails or spikes (150mm long) were found in square E183, N808, but with no indication as to what they had been used for. No wood fragments were attached to them, and although they show some iron oxide staining along the shanks, no iron has been found in the matrix with them and the marks probably come from the iron content of the soil.

Excavation was continued in one metre squares from E183, N805 and E182.50, N804 to trace the extension of the eastern wall cutting of the magazine. These squares had been excavated to 650mm below the datum but a confused picture was emerging. The earth was composed of a pink, fine soil with many sandstone rocks, which appeared to indicate that this excavation was in undisturbed sub-soil outside the magazine area. As the wall could be traced through most of square E183 N805, work was concentrated on the northern-eastern quadrant of square E182 N804 in the hope that the magazine’s south-east corner was located there. The earth continued to be pink soil with both rounded and roughly broken rocks, but no bricks.
In following the artificially cut edge of the bedrock into square E183 N805 a vertical channel or mortice was located at E183.20 N805.28 D 0.75. The surrounding earth had not filled this mortice, which held a loose dust, apparently decomposed wood. A copper nail was found lying on the rock surface at the bottom. It appeared likely that this obviously artificial feature may have housed a post, now rotted away, forming part of the magazine structure. The excavation was extended by a 0.50m x 1.00m rectangle from E182.50, N804 to explore this possible corner marked by the mortice in the bedrock.

The northern end of the E182.50, N804 half-metre extension proved to lie within the magazine chamber and copper nails were found there in a grey sandy matrix. A junction between sand / brick soil to the north and pink soil / stone and pebble soil to the south was clear. The pink soil appeared to contain some large (150mm+) rough broken stones as well as the smooth eroded pebbles.

By 6 August the two-metre square excavation had reached a depth of 1.50m and changes in the fill were appearing. Patches of orange coloured sand among the bricks accompanied by a small quantity of charcoal appeared, indicating that there had been a fire affecting an area of some 0.5m diameter in square E182, N807. Neither the coloured area of sand nor the charcoal deposits present a recognisable pattern to indicate what had been burned here. The fire seems to have been much smaller than an overall conflagration consuming the wooden raftering or lining of the whole chamber. Two bent sections of barrel hoop iron, apparently two parts of a single hoop from a small keg or tub, were found at E183.20, N807.60, D1.47.
This area also produced the four gunflints recovered from the dig. As will be discussed later, finding gunflints in a magazine was most unexpected. These flints, however, were somewhat above the floor of the magazine (at 1.60 m below datum) which may indicate that the magazine was no longer being maintained for the store of munitions and the floor had begun to build up with sandy debris by the time the flints were dropped there.
By 9 August the two metre square excavation was concluded and the northern end of the magazine had been cleared. In the last soil deposits in the north-east corner of the chamber (E183.95, N808.17, D1.52) a circular iron disc was recovered. This was similar in size (200mm diameter) and gauge to the disc found in fragments during the 2001 season against the east wall about one metre south.

This disc may also represent the end of a canister, but it is dished evenly to about 15mm depth in the centre, and may possibly be a shallow bowl. Three musket balls were found on the floor beneath the disc.
Other iron artifacts were found on the floor of the chamber: an iron gate hinge pintle was found at E182.18, N807.25, D1.37, lying in the corner between the floor and the west wall and a thick, short, pyramidally pointed iron spike (~18 mm x 145 mm) was uncovered at E183.15, N808.20, D1.39.
The excavation tracing the eastern wall of the magazine cutting appeared to reach a point where the sand and brick fill of the chamber met a loose pink soil and rock deposit in the south-west quadrant of square E183, N805, where the apparent mortice was discovered in the eastern bedrock. There was however, no clear rock-cut southern wall.

Figure 37
Magazine excavation plan, 12/08/02
Excavation was begun in new squares marked out at E181, N805; E182 N804/805. to determine how the southern end of the magazine had been arranged. The new excavations opened up a section of bedrock floor sloping upwards at some thirty degrees toward the surface to the south.

This cutting surface bore clear marks of tools and was obviously the magazine access ramp that we had been seeking. The width of the ramp proved to extend the full six feet four inch (1.93 metres) width of the magazine, as compared to the measurement of the northern end.

The evidence of the mortice in the east wall rock face, and a continuation of this cut in the bedrock surface of the ramp floor lying at some metre depth indicated that the southern end of the magazine was arranged quite differently to the area uncovered at the northern end. The bedrock floor was at a much shallower level than at the northern end, and the mortice, continuing as a gutter across the floor of the ramp and up the cutting in the bedrock at the west side, indicated that a brattice, or probably a wall with a post-and-lintel door, may have closed the magazine at this side.

The centre of the bottom run of the mortice had a shallow, square-cut channel at right angles to the mortice and leading north toward the chamber, possibly to serve as a drain to a sump within the magazine. This drain channel formed the lowest point of the ramp and it held a quantity of charcoal and a cluster of musket balls. Twenty four musket balls were removed in clearing the drain to the edge of the excavation, with an unknown number remaining in the standing face. The group also included two smaller balls (15mm diameter), presumably for a pistol. Charcoal deposits lay in the sand above the mortice and three copper nails were found held in the sand between 100 and 150mm above the mortice, with their points uniformly pointing south (i.e. toward the ramp), suggesting that they still occupied the positions they had held in a wooden wall. Unfortunately, the nails were too few and in too limited an area to provide a clear picture of the original structure.
The earth filling over the ramp was quite unlike the fill in the magazine north of the line of the mortice. It comprised pink soil with a great number of sandstone fragments. Many of the stones were quite large (250mm or more, major axis) and jagged, apparently excavated from the magazine or the ditch surrounding the Fort. Where gaps occurred in the bedrock, the surface of the ramp was composed of the natural pink, compacted soil containing sandstone pebbles. Recognition of the interface between the natural earth sections of the ramp surface and the pink soil fill depended on the fill being slightly less compacted and containing some larger, jagged-edged rocks.

![Figure 38](image)

**Figure 38**

Musket ball concentration in gutter

As the floor level of the ramp at the mortice is considerably higher than the floor in the excavated northern half of the magazine a small excavation 500 x 500mm was opened at E183, N805.50 to determine whether the slope of the ramp continued beyond the mortice, or whether the floor stepped down to a level comparable to the northern half of the magazine. The floor was found to step down vertically immediately north of the mortice channel. The inner floor depth is 1.60m below the height datum, and so corresponds reasonably in depth to the northern end of the magazine chamber.
This concluded the 2002 excavation of the Fort Dundas magazine. Further surveying and measuring was done to confirm the dimensions and orientation of the magazine and drawings and photographic records were made of the full extent of the excavation. Finally the excavation was lined with plastic film and re-filled in order to preserve the surfaces uncovered.

Figure 39
Charcoal deposit and copper nail in situ above mortice gutter

Results of the Excavation:
Magazine construction: The overall achievement of the season’s excavation at Fort Dundas was the clarification of the size and some aspects of the construction of the magazine. The magazine chamber was smaller than expected on the basis of the dimensions of the surface hollow in the earth. Before the earth was disturbed in this area, the hollow was noted to be some eight metres north to south along the inside of the western rampart and to extend approximately four metres east from the inside slope of the rampart.
The excavation demonstrated that the floor dimensions of the chamber, though somewhat irregular, were approximately 3.05 metres (10 feet) long and 1.93 metres (6 feet, 4 inches) wide. The depth of the chamber averaged 1.60 metres below the Fort ground level. The walls had a batter, or outward slope of roughly 300mm. The entry ramp was almost the full width as the chamber - 1.55 metres (5 feet, 1 inch) and sloped at a shallow, slightly irregular angle - about thirty degrees - upwards from a step in the east wall of the chamber half a metre above the floor. The ramp extended some three metres to the surface, south of the magazine. The length of the chamber is oriented along 346°, not quite parallel to the western rampart of the Fort which lies along 335°.

The earth into which the magazine had been excavated comprised a variable layer of brown humus topsoil which varied from 50mm to 200mm in the deeper parts of the hollow. Below this topsoil the earth within the chamber boundaries was a fine grey sand, containing many bricks, mostly broken. Outside the magazine chamber the earth below the topsoil consisted of irregular outcrops of sandstone bedrock, lying within 50 - 100mm of the surface or as much as a metre deep. Among the bedrock outcrops a hard, compacted subsoil was found. This is a fine, pink soil containing numerous rounded sandstone pebbles.

In the interstices of the bedrock this subsoil formed portions of the walls of the magazine chamber. The subsoil at the chamber walls was found to be so hard and compact that it was considered possible that it may have been rammed or consolidated in some way by the builders. However, small test excavations to the south of the magazine and over the rampart to the west encountered subsoil of a similar texture, indicating that its compactness is probably natural (Appendix One).
The curved pattern of pick strokes in the rock walls indicated that the diggers had worked essentially from the south. They probably began their task by digging the ramp down and then working along the floor when the desired depth was reached, back-cutting the floor to form the half-metre step up to the ramp.

The work appeared to be rather roughly executed, without any great care being taken to achieve smoothness and accuracy. The angle between the floor and the eastern wall is noticeably rougher than the west; probably because a right-hander working from the south wielding a pick could not be as precise working to this side, and no trouble was taken to back-cut the angle.
A major question tackled by the season’s dig was: ‘How had the magazine been roofed?’ The concentration of attention on the edges of the chamber cutting in the ground had not only been to determine the size and configuration of the magazine, but also to locate evidence for the type of roof constructed. Following the 2001 exploratory excavation it had been speculated that the brick and sand fill in the chamber indicated that a roof covered with bricks and a protective sand mound had collapsed, allowing the overlying material to fill the chamber. The form of this roof was not clear. A flat roof laid at ground level would have created a magazine only some 1.6 - 1.7 metres high, which seems inconveniently low. A vaulted roof, which would have been consistent with the quantities of bricks found and some aspects of traditional magazine design, seemed to be ruled out because the bricks showed no evidence of the mortar or masonry bonding patterns that would be required to construct a vault.
Following the 2002 season's excavation the alternatives considered most likely were that the magazine had either a wooden planked skillion roof, rising toward the south, or a planked pitched-roof design, with the eaves lying at ground level. No evidence was discovered in the excavation indicating that the walls of the cutting for the magazine had been extended above ground with a brick or timber framing to lift the roof to a convenient height. Either skillion or pitched roof designs would give adequate head room in part, at least, of the chamber and would allow the rather casually coursed protective brick layers to be laid conveniently on sloping boards, to be covered by a sand mound.

The expectation that there may have been walls extending the magazine cutting upwards had been supported, to some degree, by the observation of Eleanor Crosby (Crosby, 1978) where she records the presence of 'remains of a brick wall on the north and east sides' of a hollow within the Fort (Crosby, 1978, p 11). Older people from Pirlangimpi have also been quite circumstantial in describing a damaged brick wall, something less than knee high, on the north side of the hollow excavated. Unfortunately, no trace of this wall remains, and the excavation of the magazine cutting walls showed no sign of the preparation of any footing or foundation for masonry.

While the former existence of this brick wall cannot reasonably be doubted, without it being available for inspection or being described in detail, it is impossible to be sure whether it was a masonry wall to support a roof, a boundary retaining wall of loose bricks to retain the edges of a sand mound, or perhaps the edges of the brick covering of the magazine roof, that, having overlapped the walls of the magazine chamber, were left on the edge when the roof collapsed. The lack of any evidence of foundations for a masonry wall and the extreme fragility of the bricks themselves, cast doubt on the idea that this could have been a structural wall built to support the magazine roof. It would seem very unlikely that these bricks could support the weight of a brick- and sand-topped roof.
The lack of any detectable foundation for a wall is a problem for any speculation regarding the roof. One would expect some sturdy footings for a roof carrying the weight of two or more layers of bricks and topped with a mound of sand, but no foundation of any sort can be recognised. This may reflect a degree of flimsiness, even 'jerry-building' that seems to be evident elsewhere on the Melville Island site (e.g. the quality of the bricks made, nails damaged in driving). It seems likely that the perimeter of the magazine roof was mounted on timber bearers laid flat upon the levelled ground surface and not on stumps or trenched-in wall plates.

One of the few possible hints as to the roof lay-out is to be found in the north wall of the magazine chamber in square E182, N808 (Figures 32 & 40) where a roughly squared mortice or socket has been cut into the upper face of the rock wall. The hole could accommodate the end of a timber up to 150 x 100mm (6" x 4"), although being very rough and irregular. This socket could have held the end of a central stringer for a skillion roof, or a ridge pole of a pitched roof, sloping up to a gable end over the magazine door. The stone above the socket is cracked in a manner consistent with a beam set in the hole having been borne down, causing the north end to pivot up in the socket and crack the rock. This would be a possible scenario if a roof beam broke in the centre and the weight of the overlying bricks and sand bore down heavily on it in its collapse.

The provisional interpretation of the style of the magazine roof is that it was a low angle, pitched roof design. The ridge pole rose from the socket in the northern wall to the brattice wall at the base of the ramp at the south end, where it was supported, at a convenient height for an entry door. From the ridge pole, planks were laid at a low angle to the ground surface - or to stringers laid on the ground - along the east and west sides of the magazine. These planks were then covered with a double layer of bricks, followed by a sand mound to protect the magazine contents from artillery fire.

The long-sought entrance to the magazine emerged as a simple ramp, some six feet (1.8m) wide, leading down at roughly 30° slope, to a step entry down
into the southern end of the magazine. It extended almost the full width of the chamber, presumably for ease of access in the original digging. Securing the entrance appears to have involved a simple wooden partition set in the mortice cut in the bedrock at the foot of the ramp. A doorway could have been set in a wall at the base of the ramp, taking advantage of the pitch of the roof to enable a door of convenient height to be swung inward, probably on heavy gate hinges indicated by the hinge pintle found in the magazine chamber.

Figure 42

Excavating the entrance ramp

Magazine fill: The excavation confirmed last season’s impression of the sand fill in the chamber. It is a grittier sand than either the topsoil or subsoil of the area, and the quantity in the magazine could only have come from a quite extensive source. In excavating a little over half the magazine some six cubic metres of fill was removed. All the fine fill among the bricks was, apart from some colour difference adjoining charcoal deposits, the same fine, grey sand. This colour difference, an orange toning, arises when the sand is heated, particularly by wood burning deep underground.

There appeared to be the remains of a small fire at about E182 N807 D1.50 as mentioned above, with charcoal fragments and two pieces of a barrel
hoop among several bricks. The sand around the charcoal was strongly
tinged orange - red, a phenomenon which has been observed in other areas
on the site. It may be that, at some time prior to the complete collapse of the
chamber some small pieces of wood, possibly staves from the barrel or tub to
which the broken hoop belonged, were burned there, colouring the sand.
However it has been noticed elsewhere in the magazine fill, that very
occasionally bricks that are baked to a very bright rose colour (as are the
bricks among this charcoal deposit) may leach some colour into the sand
immediately beneath them, so it is possible that the scale of the fire may
have been exaggerated by colour leaching from the bricks.

No form of mortar, or even mud binder, has been identified between any of
the configurations of bricks uncovered. Their apparent coursing was irregular
and without any discernable bonding pattern, it seems most likely that these
bricks are the remnant of a simple paving-laid roof covering, as discussed
above. Several groups of six or eight bricks were uncovered, that appeared
to retain some degree of their original configuration, however no more
elaborate configuration than simple, edge-on dry stacking is indicated.

Copper nails: A great number of copper, or strictly speaking bronze (see
Footnote 8), nails were found in this excavation, 253 in total. Almost
exclusively the nails were found with the brickbats within the grey, sandy
magazine fill. The four nails found outside the magazine area were from the
surface topsoil and may well have been scuffed there from the magazine fill.
The nail distribution was recorded three-dimensionally, but does not suggest
the shape of any readily identifiable wooden construction, although many
nails bear small lenses of preserved wood, some indicating that they have
been clinched through two 25mm. timbers.

As was noted in the account of last season’s dig, copper or bronze
furnishings were customarily used for powder magazines. Ferrous metal can
readily spark in contact with stone or other iron, creating a serious risk of an
explosion. Similarly it was customary to line magazines with wood, making
sure all stone or brick surfaces were covered, again to minimise the danger
of sparks or local heat from friction against such surfaces (Duffy, 1975, pp 76 ff). It was expected that this magazine would have had a whole or partial copper-fixed, wooden lining, although unfortunately the disturbance of the fill makes it impossible to reconstruct its form, from the distribution of the nails and the wood fragments.

Although a large number of nails was found, it seems unlikely to be enough to fix a full lining for the chamber, and it would be expected that nails fixing lining to walls would tend to be found in deposits along the base of the walls. This is not the case here, the nails appearing to be randomly distributed through the fill. If there was a wooden floor and wall cladding in the magazine, as ‘best practice’ would dictate, then it has been removed and we have only the nails from the roofing within the chamber. It seems most likely that the magazine was a rough, unlined job, not really up to minimum specifications.

Many of the nails found (some fifteen percent) are grotesquely bent & battered (Figure 43). Some show clear signs that they have been bent while being driven, but instead of drawing and straightening the nail, the workman has continued to uselessly hammer the bent nail into the surface of the wood. Presumably this is an insight into the quality of the workmen available at the settlement and perhaps also an indication that Bremer was in haste to get the settlement established and leave.
Musket balls: One hundred and thirty one lead musket balls were found during this excavation, together with two smaller balls, likely to be for pistols. The greatest quantities were located in the gutter at the foot of the magazine entry ramp. In the centre of the ramp a shallow square gutter, some 180mm across and 20mm deep, was cut through the bottom mortice leading into the body of the magazine. This may have been a gutter to lead run-off water into a sump at the southern end of the magazine chamber. This slot, and points along the mortice gutter held eighty-nine of the balls recovered, including the pistol balls, giving the impression that a cask or bag of balls may have broken while being carried in or out of the magazine. Balls then rolled to the lowest point and were overlooked or neglected and left behind.

A problem arising from the distribution of the forty-four musket balls found in the northern end of the chamber is that only five of them were actually on the floor. Like the copper nails, they appeared to be randomly mixed among the brickbats in the sandy fill. While there has been disturbance of the earth by
tree roots, particularly by the uprooting of trees during cyclones, this does not appear to be so extensive, or to have penetrated so deeply into the soil, as to explain the distribution.

The most likely explanation must be that some balls were already in the sand mound before it fell into the magazine. If a number of balls had been dropped on a loose sand mound, it is quite likely that some would be scuffed into the sand and lost. When the sand later fell into the magazine chamber they would be distributed more or less randomly through the fill.

**Figure 44**
Musket balls *in situ*

Gunflints: Four gunflints were found during this excavation, all in a small volume at E183.60, N807.60, D1.45. All the flints are of a size suitable for use in the ‘Brown Bess’ musket. One appeared to be in perfect condition, with the others showing a greater or lesser degree of breakage or wear damage. All flints are the dark “Brandon” type of British flint (Kenmotsu, 1991), worked by the double-bevelled blade technique common in Britain at the time.

No other firearm furnishings or accoutrements were found with the flints. They appear to be an assortment that could have been dropped from a soldier’s pouch rather than spillage of new store items. One would not expect
to find ‘stray’ flints in a magazine, as they would be altogether too great a risk as a source of sparks.

Iron artifacts: Contrary to expectations, several ferrous artifacts were found in the magazine fill. All were widely scattered and, with the exception of the hinge pintle mentioned above, had no obvious application in the function of the magazine. Any iron fittings, like the flints mentioned above, would be a potential danger close to stored gunpowder and it is possible that some, at least, were introduced after the magazine ceased to be used for munitions. All iron artifacts found in the magazine excavation were heavily oxidised.

Twelve iron nails were found, all reduced to iron oxide, making identification and estimation of their size uncertain. All appeared to have been light gauge and two inches (50 mm) or less in length, which is very small for any architectural use. They may have been used in making a crate or similar small fitting, but their wide distribution made it unlikely that they had been shed from an intact construction.
The iron hinge pintle and a thick iron spike mentioned above (See Figure 36) were on the floor of the magazine. The hinge may well be a structural part of the magazine fabric and have carried the access door or hatch of the chamber. It is possible that the spike may be the broken point of a tool, such as a gad or a percussion drill.

The sections of hoop iron found in the magazine pose a minor puzzle. They were found among brickbats and charcoal resting slightly (about 100mm) above the floor of the chamber. Due to this, they are unlikely to be fragments discarded into the magazine at the abandonment of the settlement. Being above the surface seems to indicate that they must have been mixed in the fill. The discovery of the hoop-iron together with some charcoal, raises the question as to whether a tub or similar wooden vessel was broken up and burned at some stage. If that were so, it is unlikely that the vessel was a complete barrel. One hoop would not be sufficient to secure the staves of a barrel satisfactorily. It might be possible, however, for a wooden bucket or small tub to be seized by one band.

While no conclusions can be reasonably drawn from the combination, we have here, in one spot, on top of a shallow layer of the sandy fill in the chamber, the charcoal remnants of a fire, and the materials - flints and hoop iron - eminently suitable for starting the fire. It may be remotely possible that the magazine, which would have been perhaps the only roofed structure remaining after the abandonment of the settlement, may have briefly housed some occupant who built a fire on a hearth of sand and loose bricks, before time finally collapsed the roof on the evidence.
The dished iron plate is circular, about 200mm (8") in diameter and may, arguably, be a small plate or bowl, although with its fully curved base it would be an awkward, unstable design. The crimp around the edge does appear to grip jagged fragments of iron sheet, as if a cylindrical wall were cut away along this edge. The forming of the crimp toward the inside, rather than the outside of the ‘dish’ also argues against it being designed as a bowl, as such a crimp would be an obstruction in use.

The most likely interpretation seems to be that this object, like the similar but much more corroded one found nearby last season, is the end of an iron canister. At present no canister of eight inch diameter likely to have been used in this 1820’s site has been identified. The reason for this disc being dished, while the other was substantially flat also remains a mystery. It would seem unlikely that it could be part of the furnishing of the magazine in its original function, because of the explosion risk.

The excavation of the Fort Dundas magazine has provided useful information bearing on the nature and purpose of the fort. Discovering the magazine, constructed in a style and a place within the body of the fort to resist artillery
bombardment gives support to the hypothesis that Fort Dundas was created as a serious military outpost. The size of the magazine and the amount of effort involved in placing it underground indicates that it was a practical adaptation of military science, despite the problems of moisture that it must have encountered.

![Iron disc](image)

**Figure 47**
Iron disc

While no great variety of artifacts was retrieved from the magazine, the quantities of copper nails and the musket balls strongly support this interpretation of the function of the underground chamber. The absence of specifically domestic artifacts indicates that it did not serve any civilian function, such as a cellar. Further speculations about the magazine will be discussed in the next chapter.
CHAPTER SIX
RESEARCH OUTCOMES
RESEARCH OUTCOMES

In this chapter I wish to sum up the archaeological information gathered by this research programme and to outline the conclusions reached regarding Fort Dundas. The exploration of the material context and relics of the Fort through the archaeological investigation, has provided a body of information supplementing the document-based historical analysis. The value of the material evidence is substantial and it has expanded, and on some issues corrected, the historical interpretation.

The broad historical reconstruction of the activities that comprised the establishment, organization and termination of the Melville Island settlement is clearly born out by the archaeological evidence. Archaeology however, does not support some of the interpretations of intention, attitude and activity that have gained currency about the settlement. Some aspects of the archaeological investigation suggest that significant revisions of our understanding of the Melville Island settlement are required. When viewed as a military outpost rather than a trading settlement, Fort Dundas may, in some respects, have been far better and more successfully adapted “for the Good of His Majesty’s Service” in that period and part of the world than it has commonly been given credit for.

Regional geopolitics

At this period the British claim to the Australian continent as a whole was being asserted through a number of settlements at strategic locations; Westernport in the south-east and King George Sound in the south-west, as well as Melville Island. The concept developed by John Barrow of a ‘ring fence’ of stations around Australia to fend off French or Dutch incursions, was clearly an exercise in imperialist politics rather than an immediate commercial or economic mechanism (Fleming, 1998, p 279).

The Melville Island settlement was not initially seen by Britain as being integral with her existing Australian possessions. The geographical
discontinuity of territory between the area defined in Bremer’s instructions as the territory for the northern settlement (Bremer, 1824b, p 770) and the existing claimed area of the east coast, demonstrates that it was not thought of as the next step in a progression of Australian colonialism, but as an altogether different venture. As suggested by Geoffrey Blainey (1966, p 73), this settlement was much more related to events taking place in the seas around Australia than to the land itself.

Nevertheless, the relationship of the Melville Island settlement to the concept of a British Australian continent was evident in the consideration introduced by Barrow, and implemented by him through his role of second secretary of the Admiralty (Barrow, 1824, p 752). Barrow saw the presence of a base in the north as an essential step in securing the British claim to the land, to which the Netherlands could also, arguably, lay a claim based on prior discovery. This consideration introduced a more serious military component of territorial defence into the nature of the settlement envisaged, rather than just securing commerce against piracy in turbulent times.

Building a fort infused some muscle into the territorial declaration that Britain was making in moving into the area. Fear of French or Dutch encroachment on Australia, perhaps unrealistic in view of French weakness following the Napoleonic Wars and Dutch absorption in their East Indies possessions and the administration of their new Kingdom of the United Netherlands, was nevertheless a lively fear. Fort Dundas provided a solid statement of British presence and of a commitment to defend what was held. Thus, despite the dominance of commercial arguments in the documentary record of the northern settlement, the politico-military considerations were a real formative factor.

From the point of view of the Netherlands, their trading empire in the East Indies, particularly the Moluccan spice Islands, was vital to the economic viability of their newly created United Kingdom. This trading empire was being encroached upon by the thriving commerce of Singapore, and now
potentially by trading activities from the Melville Island settlement and (after 1827) Raffles Bay.

In 1825 King William I of the United Netherlands had sought advice from his Minister for Colonial Affairs, C T Elout, as to the significance of the Melville Island settlement for their interests (Overweel, 2002, p 10). When Melville Island was followed in 1827 by the settlement on Raffles Bay, the Netherlands, fearing that the next move of containment would be a claim in western New Guinea, hastened to head-off any further British encroachments that might draw trade away from their spice monopoly territories. In August 1828 the Netherlands claimed the west coast of New Guinea from Longitude 141° east, establishing the settlement Merkus-oord and its strong point Fort Du Bus on Triton Bay. This settlement too, took a military form, although, like Melville Island its ostensible purpose was commercial; to develop the trade opportunities in the area.

Thus Britain and the Netherlands, even while negotiating the London Treaty (signed in 1824) to resolve conflicts in their trade and shipping activities, were becoming involved in a series of manoeuvres designed to exclude each other from neighbouring territories regarded as important to their national interests. This rather speculative series of geo-political moves and counter-moves resulted in the settlements of both nations assuming a significant degree of military posture in relation to each other (Overweel, 2002, p 9).

The military interest in Australia's north extended farther than the need to provide tactical defence for a commercial centre that might be seen as a threat by competitors and as an attractive prey by pirates. As Graham observes, there were also strategic considerations should any conflict with the Netherlands arise (Graham, 1967, p 408-9). A northern settlement was seen as potentially providing a base to protect British shipping and interests in the area, in the same manner as Georgetown and Fort Cornwallis on Penang Island supported the British traffic in the Bay of Bengal. This indeed, may have been part of the thinking behind Governor Brisbane's proposal of Penang rather than Singapore as a model for Captain Barlow's
administration in his instructions for developing the new northern settlement (Brisbane, 1824).

The port of Penang was established in 1786 by Captain Francis Light of the East India Company as a refuge and support for Company shipping in the Bay of Bengal. During the season of south-east trade winds there was no safe harbour for British ships on the Bay and their nearest base for refitting was Bombay. This gave the French or Dutch fleets effective command of the area for much of the year. Penang was intended to remedy this. The possession of the island of Pulau Pinang was negotiated from the Sultan of Kedah, and the settlement of Georgetown was established, together with its stronghold Fort Cornwallis overlooking the highly defensible narrow strait between the island and the mainland (Bastin, 1959, pp 5 - 8).

The location and style of the Melville Island settlement show many similarities to Penang. The safety of an insular site was preferred to the mainland harbours proposed for settlement by Barns or King; a highly defensible port on a narrow, navigationally difficult strait was selected; a reasonably well-armed fort was built at the outset, with its guns commanding the whole anchorage. Moreover, as George Windsor Earl points out (Earl, 1846, p 4), the rise and fall of Apsley Strait tides provided conditions favourable for building a dry dock in King’s Cove, a consideration similar to Penang’s development of shipbuilding and repair facilities.

The Melville Island settlement may not have been consciously built as a copy of Penang, but it certainly derived from the same imperialist maritime philosophy. The correspondence between major features of the two settlements justifies a consideration of the goals and intentions of Penang as possible explanations of the less explicitly stated motives and processes of Melville Island. While certainly not very close to the eastern sea lanes from Sydney to India, or convenient as a refuge for shipwrecked mariners from the dangerous Torres Strait passage, Melville Island was not, in fact, too prohibitively distant to serve either purpose. Hitherto many Torres Strait castaways had made just as long a passage to Timor. In the event of
hostilities, Melville Island, as the only British port in the region, would have become very attractive as a only safe refuge and port of call.

As summed up by Allen (1972, p 341,2), there is a large degree of consensus among writers on the Melville Island settlement that the primary reason for this establishment was to provide a commercial emporium for trade with the East Indies, with a subsidiary reason being pre-emptive occupation to forestall other European imperial rivals. Consequently, the lack of success in this trading enterprise has been advanced as a most significant, perhaps decisive, reason for its closure. While the military component of the settlement is readily identifiable, the identification of this much-discussed regional commercial dynamic in the archaeology of the Melville Island settlement has proved to be a most mystifying problem.

Much of the relevant contemporary correspondence (as in Historical Records of Australia), and a good deal of the argument in the historical analyses, presents trade with the Macassans as the primary purpose of the settlement. Melville Island, it is asserted, was expected to become a node in the Indies trade network and develop into ‘another Singapore’ (Barrow, 1825, p 793).

There seems, however, as will be discussed further below when treating the Melville Island context and the settlement in more detail, to have been practically no provision in the material structure for this. Despite the extensive and detailed historical writing covering the commercial intentions of the settlement, nothing in the position, construction or layout of the settlement indicates any preparations for volume trade or shipping.

The settlement building programme included no facilities for handling or storing any significant volume of cargo. The wharf was not accessible at all stages of the tide, and apart from the Government's own Commissariat Store there was no bulk storage available. It was not until December 1826, two years after the establishment of Melville Island, that the newly appointed Commandant, Major Campbell, suggested the extension of the wharf to be useable at all tides, and the construction of “...a Government Warehouse, in
order that the first traders who venture here may find a place of safety in which to deposit their goods” (Campbell, 1826a, p 680). Only in February 1828, with the arrangements for establishing the Raffles Bay settlement, is there is any suggestion that the staff of the northern settlements might be provided with goods themselves in order to initiate trade with the Macassans (Darling, 1827, p 316).

Moreover, apart from the complete lack of any provision for commerce in the initial establishment on Melville Island, there is also ample evidence in the situation of the Macassan trepangers and the maritime policies of their colonial master, the Netherlands, that there was unlikely to be any possibility that a Macassan entrepreneur trade could have developed. In a significant article dealing primarily with the activities of George Windsor Earl, C A Gibson-Hill (1959, pp 116 - 120) describes circumstances which would have made commercial success on the basis of trade with the Macassans impossible. The trepang fishery was a low status pursuit, in the hands of captains without sufficient capital to set up as traders themselves. These men were under contract to Chinese investors for their voyages to north Australia, and their catch was not their property to trade. Moreover, the Macassans were licensed for fishing voyages by the Netherlands authorities on condition that no trade was undertaken in foreign ports, with severe penalties for any infringement.

These constraints could not have been totally unknown to the British, who at that time were negotiating the terms for the Anglo-Dutch treaty (1824), dealing with just such trade restrictions. Indeed, it seems certain that the restriction forbidding native mariners trading with foreign ports was well known to the planners of the settlement. Chairman Larpent of the East India Trade Committee, in his letter of 16 December 1823 to Under Secretary Horton of the Colonial Office, encloses a synopsis of recent Dutch decrees. Number 4, as listed, states that the trading privilege given to native craft to trade is applicable only to native products (Larpent, 1823b, p 748).
The issue of a 'Southern Singapore' trading post, channelling British textiles and industrial products into the East Indies, may, of course, have been more abstract. The British Government may have seen the establishment of a military base, a potential centre of operations against the need to subdue other imperialist nation's activities in the area, (and the activities of the ever-present pirates) as the extent of their responsibility. The traders were then expected to set up their own infrastructure and quite possibly their own separate settlements to meet their trading needs - which would essentially amount to sponsoring native smuggling into Netherlands possessions - once the defence coverage had been provided.

Such an arrangement would have suited His Britannic Majesty's Government excellently well. Like the Singapore settlement under the British East India Company's administration, one or more trading posts set up by private interests on Australia's north coast could conduct a trade that could not be officially condoned. Meanwhile Britain, on the grounds that this was a matter of the private trading arrangements of Netherlands nationals, could (more or less plausibly) deny that she was encouraging criminal activity to the detriment of the Netherlands state. Such a scenario as this however, firmly places the Admiralty-sponsored Melville Island settlement as a military post.

Local landscape.

Apsley Strait, the preferred site for the British settlement in the north, could be a difficult channel to negotiate, as noted by Bremer in his early reports (Bremer, 1824b). Nevertheless, this was the preferred spot stipulated in Bremer's instructions. The likely reasons for this choice, against the recommendation of an experienced and reputable explorer like Phillip Parker King and contrary to the suggestion of the East India Trade Association, were both its position as a political claim peg at more or less the extreme north-west of the continent, and the eminent defensibility of a settlement sited there. A settlement on the Apsley Strait shore of Melville Island, like Georgetown on Penang Island, faced onto a narrow harbour, providing the degree of security and military potential that was sought by Britain for its frontier posts.
The initial impression on viewing the settlement landscape on Point Barlow is its unpromising nature for any self-supporting community. Point Barlow is a stony, dry headland rising to some thirty metres maximum elevation above sea level. The soil is shallow and unsuitable for horticulture or stock rearing and the size and shape of the headland would have restricted any considerable town development on the site.

From the outset, as Roe's 1824 maps indicate, the settlement's gardens were located about a kilometre to the north across King's Cove. This northern shore comprises a large tract of deeper, sandy soil and is the site of the modern town of Pirlangimpi, which for many years retained the name 'Garden Point'. The greater attractiveness of Garden Point as an area to settle has helped to preserve the ruins on Point Barlow, as no one has been tempted to build any modern structures on the unappealing early site.

Thus the location of Fort Dundas and its settlement appears to be something of an anomaly, the site is inhospitable and the very important gardens for the settlement were at an inconvenient, even dangerous, distance. There would seem to be every reason for the settlement to have been laid out on the flat ground at Garden Point, which was at least equally close to the water supply at Johns River and where there was plenty of space to develop gardens, farms and, at need, commercial 'factories'.

The reason for Bremer's choice of the Punata / Point Barlow townsitewould appear to be the same as the Admiralty's choice of general location - defence. Placing the settlement and fort on an eminence like Point Barlow allowed the fort's guns full coverage of the anchorage. The fort was also far enough from the water and high enough, at some twenty metres elevation above mean sea level, to be at a great advantage in the case of a naval attack.

The settlement shows no sign of planning as a colonial nucleus, a commercial entrepot, or an urban centre. It was a garrison town, there solely
to support the Fort. Even the opportunity to develop hunting, fishing and any significant form of 'living off the land' to supplement their diet did not exist for the settlers, as the population could not neglect the Fort, or undertake any significant move from it. The planned horticulture extended no further than gardening, and the stock rearing was limited largely to a 'feed lot' arrangement.

Site examination

The detailed survey of the Fort and excavations of selected areas have been integrated with an analysis of the broader material influences that shaped the purpose, conception and style of the Melville Island settlement. The macrocosmic influences of some geopolitical and geographical dynamics on the settlement have been identified and evaluated; now the minutiae of the style and distribution of internal features of the Fort, and the implications of residual artifacts must be considered.

Fort Dundas should not be thought of as akin to a castle or a fortified town. Its position and style indicate that it was tailored for fighting off naval raids on the port, not designed to withstand a siege or investment while providing a refuge for the local population. The major well and the Commissariat Store were both outside its walls, most of the garrison was quartered outside the Fort and there was no effort to provide accommodation for the civilian community in time of conflict. Fort Dundas was a fort in the classical sense defined by John Muller, the Professor of Artillery and Fortification at Woolwich in the eighteenth century: "Fort, is a small fortification, made in a pass, near a river, or at some distance from a fortified town; to guard the pass, or to prevent the approach of ships, or an enemy by land." (Muller, 1746, pp 221).

The style of construction used in Fort Dundas is something of a surprise when viewed simply as a frontier fort. Since the 1750s Britain’s expeditionary forces had, through the experience of their North American campaigns, been instructed to avoid the expense and labour of building earth or masonry forts.
Where the position was expected to face lightly armed native attackers and not a bombardment with European artillery, wooden stockades or palisades were to be preferred (Stotz, 1958, pp 78 ff). This indeed, was the style adopted for Fort Wellington on Raffles Bay only some two-and-a-half years later (Smyth, 1827, p 771). Nevertheless, Bremer authorised, or possibly designed himself, a relatively sophisticated - and expensive - earthwork fort for the settlement.

Bremer’s remark about making the Fort ‘as strong as he could …render it’ (Bremer, 1824b, p 772) does not fully account for the style or materials adopted. It was known that the Macassans would have, at the most a few small guns, unlikely to be more than two or three pounders, and a few muskets, as noted by Flinders in 1803 (Macknight, 1969, p 66), which would be no challenge to a stout palisade. The Tiwi, of course, having only spears and throwing sticks as projectile weapons.

Fort Dundas was a relatively sturdy earthwork, its ramparts cored and faced with timber reinforcing, a design suitable for resisting a European cannon barrage, but not, with its rough, slightly battered scarp, for keeping out lightly armed, agile skirmishers, who could easily climb it. A tall wooden palisade, as built at Raffles Bay, would have been a much simpler and more effective barrier against Malay or Tiwi attackers. The construction materials and the lay-out of Fort Dundas were orientated toward meeting an attack by European warships forcing entry to Port Cockburn.

The design of the Fort, with its two round turrets, rather than the sharply angled bastions of classical European military architecture, appears to have affinities with the Asian forts of the period. Colonel Welsh in his ‘Military Reminiscences’ (Welsh, 1830, passim), includes plans and drawings of numerous forts scattered throughout South-East Asia. Among these, earth or

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11 There is an intriguing diary note by J H Ricketson (~1900, (MN 1280)) from around the turn of the 20th century, to the effect that the Tiwi Islanders also used slings. No evidence has been found to support this.
masonry ramparts with round gun turrets rather than bastions is the dominant style.

Throughout the seventeenth, eighteenth and into the nineteenth centuries, South-East Asian states were passing through a period of turbulence, suffering from brigandage, skirmishing and warfare among themselves and against foreign imperial powers (Haythornthwaite, 1995, passim). The gun foundries and armouries of Europe, India, Japan and Thailand were supplying the weapons, and the rulers and their engineers were erecting fortifications both to defend their territories and to provide bases for the advancement of their interests. The round gun turret style developed and spread through much of south and west Asia. It appears to have some virtues of tactical flexibility, allowing a limited number of guns to be deployed and re-deployed to best advantage. Thus the round turrets and the guns mounted ‘en barbette’ provided optimum flexibility for the rather limited long range armament of Fort Dundas.

Even allowing for uncertainties as to the degree of erosion and subsidence that has taken place in the Fort fabric, no great precision was employed in constructing the earthworks. The varying angles of the ditch scarps indicate that there would have been significant differences in the quantities of earth removed from place to place. In many places on the outside edge of the ditch a glacis appears to have been laid, somewhat confusing the depth measurement (viz, Crosby, 1978, fig 2, p33). At this period of fortification design a narrow glacis such as can be found at Fort Dundas, was intended to provide an upward sloping area before a rampart so that in the event of the fort being bombarded, any low shot might be deflected over the fortification without doing damage, rather than ploughing into the ramparts.

The low angles of the scarp of the ditch and its shallowness indicate that, even surmounted on the inside by a six or seven foot rampart, it would not in itself present a serious barrier to a determined infantry attack. However, the earth and stone excavated from the ditch would contribute bulk and stability to the rampart if it were subjected to cannon fire, supporting the contention
that the Fort was built with an eye to its capability of resisting attack by European artillery.

The position of the settlement as a whole is well adapted to artillery defence and the Fort provides an excellent platform for gunnery. It is close enough to the water to bring the whole anchorage within range of the nine-pounder guns mounted in its turrets, supported by the shorter-range but highly destructive, eighteen-pounder carronades in the middle of the west and north curtains. It was elevated enough for the Fort’s defenders not to be vulnerable to plunging musketry from the rigging of ships and also to be a difficult target for naval guns with limited elevation. It was adequately armed and protected at the east and south sides to resist any likely landing parties.

West curtain excavation
The west curtain of the Fort was chosen for excavation to examine the design and materials used for indications of the action it was expected to fight and to assess the construction and tactical skills of the builders. In 1975 Eleanor Crosby conducted an excavation on the mound of the eastern curtain close to the north-east corner. (Crosby, 1978, p 19 ff - drawings fig 1 & 2). The scale used in the reconstruction resulting from this excavation (Crosby, fig 2), exaggerates the vertical component, thus showing a disproportionate number of timbers in the rampart revetment. Nevertheless, it makes a sound case for a rampart built with a scarp and internal face of large logs laid horizontally against an earth core, with log and stone reinforcing in the earth within the body of the rampart.

To some extent this interpretation is supported by J S Roe’s sketch (Figure 1). However Crosby’s reconstruction does not portray a berm above the ditch, while the presence of the banquette that she shows inside the rampart does not seem to be confirmed by Roe’s sketch, which appears to show a low, relatively thick rampart without any raised fire step. The surface survey of the fort interior discovered short lines of rocks at some points along the inside of the rampart ruins. These appear to be serving as kerbs retaining a
very low banquette or walk-way along the inside of the rampart (Figure 11),
but seem to be local corrections for lower areas in the Fort surface adjoining
the rampart, rather than a formal, continuous fire-step.
I find I cannot confirm the calculations provided by Crosby (Crosby, 1978, p
22) regarding the contours of the ditch, or the comparisons of the volume of
material excavated with the quantity used as fill in the rampart. I do not find
sufficient evidence in her work or my own for an assumption of the ditch
being “more or less flat bottomed…nearly 2m wide at the base” (Crosby,
1978, p 22) (surely a misprint for 0.2m viz. her Figures 1 & 2). My estimates
of the volumes of earth and rubble removed from the ditch and present in the
ramparts and the cavaliers built within the turrets to raise the gun positions of
the fort, are too inconclusive to be relied on, due to variations in the
configuration of both the ditch and the fortification ruins and the unknown
degree of compaction or ramming of the earth features.

There is also the matter of logs being built into the body of the rampart, as
well as laid as a revetment. The excavation of the west rampart suggests that
there may have been several layers of timbers set within its fabric to reinforce
the bulk of the curtain. In practical terms, as there are no significant borrow
pits nearby, it seems that the ditch material, with an adaptation of added
timber, was made to suffice for the rampart.

The excavations of the rampart conducted by both Crosby and by the present
research programme only opened narrow sections through the surviving
mound, so it is quite possible that some features of the construction that
would be revealed by more extensive excavation may have been missed.
The horizontal log and earth fortification illustrated as the typical style of
wilderness defence in British North America at the period (Stotz, 1958, p 81)
shows earth-filled longitudinal log faces strengthened at points by transverse
log bracing. Similarly, the sketch by Roe (Figure 1) appears to show some
short, rounded sections distributed in the timber facing of the Fort Dundas
rampart that may well be the ends of transverse bracing logs.
Such bracing timbers would be important factors in the stability of the rampart, but while their presence may be reasonably expected, it cannot be confirmed at present, as none has been found in excavation. This may be due to the narrow excavations missing their positions or it may be due to the destruction of such timbers by fire (Appendix One). A slight indication that transverse timbers may have been present was encountered in the rampart excavation of this programme, where the apparently burned-off ends of two substantial longitudinal logs were discovered within the earth of the rampart. The partial destruction of these logs may have been due to a transverse timber burning from its exposed ends into the earth and igniting sections of the longitudinal timbers with which it was in contact. Because of their depth in the earth the longitudinal timbers did not burn completely to ash, but left charcoal forms of the rest of their length. This excavation did not locate any wood per se within the ruin of the rampart, but the charcoal forms of logs encountered appeared to retain the shape and many details of the original wood.

The historical documents and the excavation discoveries indicate that the ramparts of Fort Dundas, although small examples of their type, were designed to resist artillery fire, rather than provide a barrier to attacking troops.

**Turret excavation**

The excavation of the south-west turret was undertaken to gather information about the standard of military preparedness of the fort and the practicality of the provisions made for gunnery. The accounts of the fort's construction cited above and the 1824 plan (Figure 10) confirmed that the long-range nine-pounder long guns were deployed in the turrets.

The major reason for excavating the turret was to seek information on the mounting and handling of these guns, which may be regarded as the primary armament of the fort. It was expected that they would have been mounted on a prepared deck, with established arrangements for storing equipment and
serving the guns. The Roe sketch (Figure 1), which was not located in the Battye Library until after the excavation, endorses what the lack of discoveries in the excavation strongly suggested. It shows the nine-pounder guns in the turrets placed directly on the earth, with no indication of a deck or of any provision for breeching ropes, side tackle, expense magazine lockers or the like.

Mounting the long nine-pounders on an earth floor rather than a solid deck would appear to make their handling difficult. The softer surface would make the guns harder to return to position after recoil and loading, and the use of handspikes to position and train the guns would soon cut up the earth, making handling increasingly difficult. We know, however, that the nine-pounders were fired from this base, ranging across Apsley Strait to Bathurst Island (Ennis, 1825, p 22), and there are anecdotal tales from Garden Point that round-shot have been recovered from the cliff face of Bathurst Island. Apparently the greater space available around a single gun in a comparatively roomy turret, and the greater number of personnel who could have access to the space to serve the gun, made it unnecessary to set up the ship-board handling gear necessary to control the recoil of a gun and to load and retrain it in the confined space aboard ship.

In view of the original expectation that some form of wooden deck would have been the most likely arrangement for mounting the guns, it was initially baffling that no nails were found in the turret. Other sites within the settlement have provided large numbers of nails (Fredericksen, 2000b) made of both iron and of copper, but none at all were retrieved here, arguing from the outset that no wooden decking or structures were used.

We have clear statements from the accounts of Bremer and Ennis of the guns mounted in the Fort and archaeologically we can confirm the existence of these positions. We have no information however, as to who served the guns. This duty was almost certainly handled by the Royal Marines. Bremer had embarked a double contingent of Marines in Britain and, although no confirmation of this has been found so far, it is open to speculation that one
or both of these contingents may have been Artillery Marines, rather than Light Infantry Marines.

The Royal Marine Artillery was established by the Royal Navy in 1804 to cope with the development of 'Bomb Vessels' which mounted heavy mortars, and this corps rapidly developed great competence in artillery work (Field, 1924, pp 259 ff). Inexperience or mishandling serving a muzzle-loading gun was very dangerous. It could very easily lead to - at least - the loss of an arm by the gun crew member loading the weapon, so it seems most unlikely that untrained troops were assigned to Fort Dundas. This may explain why the Marine contingent was retained at Fort Dundas, being the only group with artillery expertise.

The *en barbette* deployment allowed guns to be brought to bear over a much wider field than was possible if they were firing through narrow embrasures in a parapet. It allowed maximum scope for a limited number of guns by increasing their fields of fire and also allowing more weapons to be trained on a specific target. This arrangement however, provided poor protection for the gun crew. The crews serving these guns, on low naval carriages, worked behind a parapet that was little more than knee-high. In action they would be dangerously exposed to small-arms fire if attacking troops came within range.

It is perhaps significant that the nine-pounder cannon, with their comparatively light, but long range projectiles, are *en barbette* -mounted on turret cavaliers, while the two heavy, short-range eighteen-pounder carronades mounted in the centres of the western and northern ramparts are arranged to fire through embrasures. This would allow the longer range weapons the broadest deployment against vessels entering the anchorage, but if the Fort were to be approached by troops, the vulnerable long gun positions could be abandoned and the better protected carronades brought into use, together with musket fire from the cover of the curtain.

The artifact presenting unexpected information of interest (though not of military significance) is the bottle shoulder seal or prunt noted above (Figure
The partial inscription seems certain to be in whole “Du cru / St. Julien”, indicating a Bordeaux wine from the estate or district of St Julien. This labelling convention was in use early in the 19th century and for some time afterward in the Bordeaux region (Simon, 1958). The presence of a French wine bottle in a British settlement so soon after the Napoleonic Wars presumably indicates that political postures did not greatly influence drinking habits.

It should be noted that Allen (1969, p 259), records the discovery of five similar shoulder seals of Bordeaux wine bottles in a rubbish pit at Port Essington. Allen relates these seals persuasively to the dinner enjoyed by officers of the visiting French contingent of Dumont D’Urville and the garrison in April 1838. However, it seems likely from the discovery of such a seal from an 1824 context at Fort Dundas, that a traffic in French wine to the British military was also established by other mechanisms at a quite early date.

**Magazine excavation**

The excavation of the Fort Dundas magazine was undertaken in order to gather information regarding the tactical soundness of the Fort’s construction and military preparedness, also to seek signs of artifacts and use patterns which might shed light on the activities of members of the party. Some issues arising from the magazine’s construction and evident use are significant indicators, bearing on some of the activities anticipated by the planners and actions undertaken by the settlers. The number of artifacts found throughout the fort site, while quite large in number, was not great in variety, the vast preponderance being copper nails - 288 in all, and lead musket balls totalling 140. The comparatively ‘swept clean’ state of the floor of the magazine in this respect, no doubt reflects the ‘dynamic of desertion’ (Appendix Four) arising from the planned withdrawal from the settlement.

The interpretation of the underground chamber excavated during 2001 and 2002 as being the Fort Dundas magazine appears well supported by the evidence, although it must be noted that there are significant departures from
the style of magazine customary in British fortifications. While the strength of the magazine to resist bombardment was crucially important, it was also vital, due to the moisture sensitivity of the black powder of the period, that the magazine be kept dry (Duffy, 1975, pp 76 ff).

Because of these requirements, magazines of fortifications were commonly sited in extensive raised masonry constructions and not buried underground, where the control of moisture became very difficult. Charles Stotz (1958, pp 79 ff) in his descriptions of North American late 18th century fortifications, illustrates the custom of building the fort magazine into the fabric of a bastion, where advantage could be taken of the heavy earthwork or masonry required to raise the gun platform by building the magazine into its core.

In constructing this magazine Bremer and his officers were confronted with conflicting requirements for security and drainage and had very poor resources to meet them. Even had they sufficient skilled workers, the Melville Island contingent was at a profound disadvantage with masonry construction, as there was no suitable clay to make hard bricks and no lime for making mortar (Appendix One). Some of the adaptations employed for the magazine in order to overcome these problems are evident in the archaeological record, as are some of the difficulties that arose in consequence. While the limitations of materials and skills in the Melville Island operation must have made the compromise of a sunken magazine attractive as a safety precaution, the monsoon Wet Season, upon them soon after construction, posed real problems for the storage of ammunition and powder.

It is significant that in designing the magazine the need for security was granted priority and, as massive masonry could not be used to achieve this, it was built underground, accepting the risks of moisture as a lesser evil. This is an interesting comment on Bremer's interpretation of the imperatives of the settlement. His primary goal with the construction of the magazine, as with the design of the ramparts of the Fort and the deployment of the guns in raised turrets, was to achieve preparedness against a naval bombardment.
Disposed in the north-west quadrant of the Fort, the magazine is certainly best positioned to serve the major guns, which are deployed along the north and west ramparts. Being placed close under the west rampart it is in the best position for protection from enemy gunfire which would be expected to come from ships forcing the entrance to the port, which lies immediately to the north-north-west. While there are still uncertainties as to the exact form of roof over the magazine, the great quantities of sand and bricks within the chamber appear to indicate clearly that a massive protective roof and mound was provided. The entrance ramp, leading in from the south is facing away from any likely round-shot fire and was also reasonably safe from shell bursts, even though a ‘dog-leg’ entrance passage would be more secure with a right-angle bend to intercept any shell fragments.

A significant issue related to the entrance ramp is that the fill that concealed it was quite different to that in the chamber. While the fill in the magazine is fine sand and brickbats that can be accounted for by postulating a collapsed roof, the fill over the ramp does not seem to be attributable to that. It is a mixture of pink subsoil and comparatively recently cut, sharp-edged rock fragments that may have originally been dug from the ditch or from the magazine itself. This appears to be a fill that would be readily available nearby, not having to be carried at least some three or four hundred metres like the fine sand favoured for the splinter muffling mound over the magazine. As accidental subsidence seems impossible in regard to the ramp, no nails or structural artifacts being found in the fill, the ramp must have been deliberately filled during the occupation of the Fort, raising questions as to whether the access to the magazine chamber had to be changed, and whether the chamber’s use was changed completely.

The likely reason for the changes must lie with the climate of Melville Island. The Fort, and presumably its magazine, were built in October 1824, at the beginning of the Wet Season. In a very short time the monsoonal rains would have started and the entrance ramp would have become a channel to conduct water into the sensitive powder magazine. It seems very likely that once this became evident the ramp was filled with earth against the wooden
brattice and door and a small hatch entrance cut in the high skillion wall or gable end above ground level.

Whether this would have been a satisfactory solution seems unlikely, as the Wet Season rains are heavy and penetrating. While it seems certain that this magazine was built to store munitions, it may not have continued in that role during the Wet, and a more ephemeral, above-ground storage may have been adopted. It is worth noting that in August 2002, well into the Dry, when the bottom of the north end of the magazine was cleared there was a slight seep of water for two or three days, not enough to pool, but sufficient to wet the slight sand residue in the north-west corner of the chamber.

An early question related to the magazine was the estimation of its capacity. Was the magazine practical; large enough to house at least the known quantity of powder and ammunition left by Bremer for the Fort’s guns, or might it be only an auxiliary expense magazine? Bremer records that “...each (gun) was provided with Fifty rounds of round shot, and Eight of Grape and Case. I have also supplied the Settlement with every other description of Ordnance Store, which I thought might be useful, and which I was enabled to spare from the Ship” (Bremer, 1824c, p 784).

These munitions were typically naval issue and heavily biased toward naval action, not anti-personnel use. Round-shot was the staple, general-purpose projectile and the most commonly used against wooden ships; grape-shot was for use against boats or small installations, while case-shot was used at short range against bodies of men. No shell or shrapnel was provided as would have been the case with field weapons, such innovations were only at this time beginning to be considered for naval use (Pope, 1965, p 176).

A rough calculation confirms that the magazine, although appearing painfully small when partially excavated, was quite large enough to house the Fort’s munitions. The volume of space provided in the chamber is estimated at some 9.5 cubic metres, not allowing for a raised roof. Estimating that the cannon and carronade charges would have a maximum volume of four litres
each, they would require approximately 1,850 litres in a magazine volume of some 9,500 litres, which should leave space for such racks and shelving as might be needed and to hold ample priming powder and quills, small-arms cartridges, and a good supply of bulk powder for blasting etc.

However, this was not a large quantity of ammunition and could not have sustained a long battle. A British nine-pounder field gun carried one hundred and sixteen rounds into battle on the gun carriage and limber (Hughes, 1974, p 36), so it would appear that the designers of Fort Dundas envisaged it fighting an artillery engagement of no more than about half a day, although this period may well have been sufficient for a decisive outcome against any attack an intruder could mount against so well situated a fortification.

The unresolved question arising with the Fort Dundas magazine is the problem as to how it was roofed. While the speculation advanced in the excavation report; a sloping, pitched roof, overlaid with layers of bricks and a mound of sand - does appear to conform to the evidence available so far, it cannot be proven incontestably. It is to be hoped that future excavation, or documents yet to be located may resolve this, possibly casting light on other issues that relate to the magazine use.

Another puzzle arising from the excavation results is why the artifacts, particularly the musket balls (apart from the concentration in the mortice gutter at the bottom of the entry ramp), should be mixed apparently randomly through the fill, rather than concentrated in limited areas or, as one would expect, scattered over the floor.

A scrutiny of the distribution of the fill in the magazine (for example: Figures 26 & 27) suggests that there was much greater disturbance of the sand and bricks in the northern end than in the southern end of the chamber. While this may be merely an effect of subsidence, or disturbance by vegetation, it does give rise to speculation that the chamber may have collapsed partly or wholly while the magazine was still in use. After the collapse, the magazine was partly excavated to salvage buried munitions and during the exercise a
canister or keg of balls was damaged and several were spilled out and lost. After the salvage operation the chamber was filled over and totally abandoned, leaving the wild disorder of artifacts in the northern half. Perhaps a future excavation of the southern half may produce some evidence to bear on this.

Consideration must also be given to the possibility that the magazine has been partly excavated by some unrecorded archaeological or treasure-hunting expedition. This does seem unlikely, as either party would be unlikely to ignore the musket balls in the fill, which have both archaeological and monetary value. It is also very unlikely that such an operation could have taken place without being observed by local people living in the nearby Pirlangimpi township, who are frequently in the area hunting and fishing and are very observant.

A final speculation related to the magazine chamber concerns its possible rôle in an important issue in the relationship between the Tiwi people and the British party. As noted by Fredericksen (2002b, p 296ff), there are reports and traditions from both British and Tiwi sources concerning the capture by the British of Tambu Tipungwuti, an important Tiwi leader. His capture, the Tiwi revenge for this (the spearing of Surgeon Gold and Commissariat Clerk Green) and Tambu’s subsequent escape, form a very dramatic vignette in the Melville Island story. While the British record is largely silent on details of Tambu’s imprisonment, the Tiwi account states that he was put in chains and kept in a ‘hole in the ground’. This ‘hole’ has been taken to be the settlement well, to the east of the Fort, which seems an awkward and unlikely prison.

If the magazine had proven too wet for powder storage and had its entrance blocked off with earth filling the ramp, being only accessible through a small door or trap high in the southern wall - or even through the roof - it might well have occurred to someone that it was now an excellent prison cell. It may be possible, though it is difficult to envisage how this could ever be confirmed, that the magazine so laboriously cut into the bedrock of Punata as an element of the British striving for military domination, was reduced
ignominiously to serve as the prison, for a short time, of a dignitary of the people to whom the whole island belongs.

The concept behind the military posture of Fort Dundas can be appreciated by applying the categories proposed by Swann (Swann, 1999) and discussed in Appendix Three. Fort Dundas was not designed for the military accommodation and organisational functions of a home base plant, nor was it simply a barracks for the strategic accumulation of military resources and personnel; it was established as a potential battlefield installation, with minimal resources, a scratch garrison and a limited tactical rôle. It was essentially a minimalist gun platform, similar to a redoubt, built to command the Port Cockburn anchorage and approaches with its artillery.

While Muller’s text-book square fort is a robust behemoth some two hundred metres square, with ramparts twenty metres high and a ditch twenty to twenty four metres wide (Muller, 1746, p 197), the miniature fort constructed by Bremer was adapted to his resources and the needs of the situation as he interpreted them, which do not appear to be simply defence against Malay or Aboriginal raiders, but to provide resistance to European naval artillery. The Fort presented a solid, though limited, assertion of the British presence, even though it was small and lightly built. It commanded its approaches with reasonably heavy artillery, and although only mounting seven guns in total and carrying limited ammunition, its position was tactically sound and could not easily be overrun by an attack, despite its garrison being little more than a skeleton force.

The archaeological evidence does indicate that Fort Dundas, while potentially strong, had limited actual power, a situation that can be summed up by an analogy: the establishment of Fort Dundas was a move by the British Government similar to playing a pawn’s gambit in a game of chess. The piece itself is quite weak and its ability to defend itself, while real, is limited. However it asserts a claim to an area of the game board, and it is backed up by more powerful pieces that can enter the play should it be taken by the opponent.
Britain's real military power at this period lay with her Navy. Since the
destruction of the Dutch fleet in the Anglo-Dutch Wars of the eighteenth
century, and of the French fleet in the Napoleonic Wars, Britain really did rule
the waves. It was within the power of the British Navy to defend, reinforce,
recapture (if necessary) or to abandon Fort Dundas at will, according to
strategic need from time to time. While this station existed, Fort Dundas was
a pressure point applying British power in the region and a token of the much
greater military machine that lay behind it. It could, in very short order, be
converted from a battlefield outpost to a significant base plant for Naval
operations.

In a discussion of Fort Dundas' anomalous strength in location and design
principles, but weakness in detail execution, a colleague observed that it
appeared to be "something of a cardboard cut-out" (Walters, 2003). This is
perhaps too slighting a remark. Fort Dundas could be better described as a
set piece, where the real strength of the Fort lay in its political symbolism.
There may well have been an element of psychological intimidation in setting
up a fort with certain apparent features of strength, while economising in
some less visible areas. Nevertheless, although the Fort was small, the
construction of its rampart was light, it mounted few guns and it had a small
garrison, these weaknesses could be easily supplemented should Britain
ever consider it necessary to activate the port as a Naval base.

Once it became apparent that the French were looking to South East Asia
and the Pacific for their southern empire, the Anglo-Dutch Treaty of 1824 was
largely effective in reducing friction between the British and Dutch in the East
Indies, and it was clear that, far from planning territorial adventures, the
Kingdom of the United Netherlands was totally caught up in trying to order
the difficult administration of its Belgian state and its existing overseas
empire, the need for Fort Dundas disappeared. Having served its purpose it
was, like the obsolete weapon it had become, honourably retired.
Its military presence no longer needed, Fort Dundas' personnel, its stock and its equipment were transferred to Fort Wellington on Raffles Bay to support the newer settlement there. Some months later Raffles Bay was also abandoned: the troops were returned to their units, and people and materials were sent on to support settlements at the Swan River and King George Sound which, in time, became the cities of Perth and Albany. Point Barlow once again became Punata, in the hands of the traditional Tiwi owners who hold it to this day.
“...for the Good of His Majesty’s Service."

The archaeology of Fort Dundas, 1824 – 1829

APPENDICES
A most useful source of general information regarding Melville Island is the following report (post-1998?)

*The History and Natural Resources of the Tiwi Islands, Northern Territory*, Prepared for the Tiwi Land Council by Parks and Wildlife Commission of the Northern Territory with assistance from Environment Australia, no author, no date.

It contains an introductory description of the islands, and chapters on:
- Culture & History
- Tiwi Ethnobiology
- Vegetation Communities
- Fauna
- Sustainable use of Wildlife

It also includes an extensive sixty page bibliography.

This report provides most relevant background information on conditions on Melville Island.

**Figure 49**
Map of the Tiwi Islands

The immediate environment of Punata (Point Barlow) and Pirlangimpi (Garden Point) is, like some 85% of the Top End of the Northern Territory, tropical woodland (Clark & Traynor, 1987). The higher sandstone areas such as Point Barlow are dry, dominated by eucalypt tree species. Lower sandy
areas such as Garden Point carry a denser growth of scrubby grevillea and Banksia species, with dense acacias wherever the soil has been disturbed. The botanical landscape appears to be maintained by the periodic Dry Season fires lit casually by the Tiwi people. There is a strong annual growth of tall spear grass and small shrubs with some scrambling vines, making surface movement and examination of the area difficult unless burning has been undertaken.

However, from the point of view of this research programme, there were a number of detail local factors influencing the archaeological conditions that needed to be taken into account. The characteristics of the environment influence both the archaeological materials and the nature of the archaeological record. The effects of climate, vegetation, soil chemistry, highly variable moisture content and repeated seasonal burning must be taken into account in interpreting archaeological evidence.
Figure 50
Modern town of Pirlangimpi, situated on the ‘Garden Point’ of the 1824 settlement. The headland above it is Punata / Point Barlow, over King’s Cove. The Fort Dundas ruin is among the trees on central Point Barlow, in line with the moored vessel at top.

Photograph courtesy of ‘The Sunday Territorian”

a. Melville Island is subject to occasional tropical cyclones. When these storms - such as Cyclone Thelma in 1998 - pass over the Point Barlow site, they uproot many trees. The roots of these fallen trees lift quantities of earth and fragmented bedrock (Figure 51) which, on weathering and the burning of the dead tree in the Dry Season fires, leave low mounds of earth and loose stone that may be readily taken to be the ruins of hearths of buildings, or possibly grave mounds.

In line with an undertaking to the Tiwi Land Council, none of these mounds has been excavated or examined in detail. The only distinguishing feature of the natural mounds so far observed is that most, or all, appear to have a hollow in the earth beside the mound from which the mound material was raised by the tree roots, and there are more small pebbles among the stones on the mounds, than on the known hearths.
b. In studying the soil profile on Point Barlow, the University was unable to provide or acquire Munsell charts for detailed recording. For the purposes of this programme the soil strata variations were considered sufficiently distinctive for descriptive purposes. Soil samples were gathered from excavation sites for any future reference.

Throughout the site the following soil strata qualities have been observed to be quite uniform:

- Surface topsoil is a fine brown loam, containing a good deal of humus and very loose from the action of insects and plant roots. This topsoil varies in depth from about 100mm to 250mm
- Subsoil is pink, very compact and fine textured, containing many rounded sandstone pebbles and some ironstone laterite. It appears to have very little clay content, but forms a hard, solid mass. The subsoil overlies the bedrock, and has been found up to at least 1.50m deep.
• Bedrock is a grey, coarse sandstone, which is very variable in depth, in some areas rising to the surface. It is a good deal broken up and many detached pieces of bedrock merge into the subsoil.
• Areas nearby, at the head of King's Cove and at Garden Point have a deep, red, sandy soil, presumably laid down by water action.

Evidence from other excavations and discussions with soil scientists working on sylviculture operations on Melville Island indicate that the soil on the island is very amorphous. In most cases the marks of any disturbance disappear within a year. A consequence of this has been that no occupation stratification has been observable in the earth on the site. No trodden areas or earth floors differentiated by colour or texture have been found.

Exposed surfaces of the sandstone bedrock of Point Barlow appear to weather quite rapidly on surface exposure, until a hard ‘skin’ is formed by chemical action. Examination of stone known to have been cut by the British party shows that, since the 1820’s, sufficient erosion has taken place to blur sharp edges of cut stone. It appears also that the stone may break up when weathered or subject to the heat of seasonal fires (Fig. 52). These factors can make the distinction between worked and natural stone difficult to discern.
Despite Ennis’ optimistic statement concerning bricks and mortar (1825, p 22), there is no suitable clay for bricks in the Point Barlow area, nor is there any limestone for mortar. There appear to have been limited shell mounds on the mangrove-fringed coasts, and there is no record or evidence on site of any quantities of shells being burned for lime. The binding used in the rubble walls of the Stone Building (Crosby 1978; S62 & Figure 53) appears to have been a sandy mud, with possibly a small quantity of partly burned shell mixed in.
c. Wood will burn underground in the soil of Point Barlow for ten days or more, frequently leaving the shape of the wood in the ground as a charcoal ‘form’. This phenomenon has been observed with tree roots burning after clearing fires during the archaeological field seasons. On the surface, where oxygen is available, wood will burn away to a light ash, but when starved of oxygen underground the carbon of the xylem remains, retaining the shape of the timber.

When the topsoil or subsoil is heated strongly, as when a tree trunk burns above or below ground, the sandy component of the soil changes to a bright orange colour. This colour is also to be observed in many of the bricks from the site. They are chiefly yellow, orange or rose coloured, apparently depending on the heat of their firing. There is some indication that this colour,
no doubt due to the reduction of iron compounds in the sand, will leach down in the earth, as the sand immediately beneath some bricks shows an orange tinge.

Figure 54
Heat discoloured sand.
APPENDIX TWO

FORT DUNDAS PROJECT INFRASTRUCTURE

The documents included in this appendix outline some background structures that were adopted or developed to provide consistency to the methods used in the field and to the recording of information.

PROJECT PLAN
This is a synopsis of the basic planning exercise used in initiating the research programme.

EXCAVATION MANUAL
An Excavation Manual was developed to formalise procedures for the excavations undertaken in Fort Dundas. The copy included below was used in 2002 for the guidance of the voluntary assistants who came on the dig. This expedition of some five weeks during July and August, was the major fieldwork operation of the research programme.

FORT DUNDAS GRID CO-ORDINATE SYSTEM
This system was developed by Dr. Clayton Fredricksen in 2000. It provides a uniform formula for recording the positions of features and artifacts throughout the Punata / Point Barlow site. This explanation was provided for the excavators to ensure the accurate recording of finds.

CATALOGUE MANAGEMENT
The background and purpose of this paper is largely explained on the introductory page. It covers the details of the dedicated database devised for the Fort Dundas and wider Melville Island artifact material.
PROJECT PLAN
Fort Dundas Archaeological Research Programme
This project was developed following two seasons of archaeological investigation of the 1824-1829 Melville Island settlement by teams from the Northern Territory University (since 2004, Charles Darwin University). In 1999 and 2000 NTU conducted survey and excavation work on the site as part of the university’s Fort Dundas Project.

Initial planning for this research programme was based on observations made during those expeditions, the report by Eleanor Crosby (1978) on her work on the site in 1975, primary historical material contained in Historical Records of Australia and the accounts of Ennis (1825), King (1827) and various recent historical treatments of the settlement.

The choice of the settlement’s military stronghold, Fort Dundas, for investigation was based on a perception of a number of apparent anomalies between the material realities of the site and the historical interpretations presented. It was considered that an archaeological investigation of this key feature could provide information clarifying the purpose and achievements of the settlement venture, and may well cast light on the methods and adaptations of the British settlement techniques employed.

The initial Project Plan, included in synopsis below, was drawn up to govern the programme and ensure coverage of the large amount of dispersed and unexamined information about the site. As the archaeological and historical information was gathered and assimilated, and additional resources became available, the plan underwent considerable modification to accommodate the changing perspective - with at least annual reviews until 2005 when the programme concluded.

The Plan proved sufficiently adaptable to integrate changes of activity emerging consequential to developments of the research programme such as:

- The discovery of the sunken magazine of the fort in 2001, which led to a change of the 2002 programme from the projected excavation of the officer’s quarters in the fort to explore this important installation.
• The piecemeal availability of funds to support travel to Canberra, Sydney and Perth to consult archival resources.
• Development of a database and thesaurus to systematise the record of the Melville Island artifacts.
• The limitations of equipment for archaeological work and difficulties of access to Melville Island.
Project Plan Synopsis

June 2001

Enrolment - July 2001
Course duration - Four years part-time
Completion - June 2005 (extended to January 2006)

Aims:

- Undertake archaeological and historical research on Fort Dundas, Melville Island.
- Interpret and explain the significance of the British settlement on Melville Island.
- Present the research process and conclusions as a thesis for Charles Darwin University MA by research.

Significance:

- Information gathered will extend knowledge of early nineteenth century British approaches to settlement in Australia.
- The programme will augment or correct existing historical interpretations of the role of the Melville Island settlement.
- Background material will be available for heritage management decisions by the Tiwi Land Council and the Pirlangimpi Community Council.

Resources:

**Archaeological**

- Tiwi Land Council permission to study and excavate Fort Dundas site.
- Artifact collections held by Museums and Art Galleries NT (Fort Dundas collections; 1975, 1978, 1986).
Historical

- Primary archival sources: Public Records Office documents available through Joint Photocopying Project, Colonial Secretary's Office correspondence, Historical Records of Australia.
- Contemporary records: Sydney Gazette, Piper papers in Mitchell Library, Roe papers in Battye Library, Ennis (1825), King (1827), Campbell (1834).
- Historical treatments, for example: Bauer (1964), Cameron (1989), Howard, (1933).
- Background material: Writings on early nineteenth century imperialist politics, military technology and tactics, trade and commerce, Indo-Pacific region history and development.

Material

- CDU archaeology laboratory and equipment.
- Maps and survey records, for example: Pengelly (1986)
- Funding organisations, for example: NT History Grants.

Methods:

Archaeological:

- Study material culture of period
- Excavate selected features of Fort Dundas:
  - Rampart curtain
  - Cannon turret
  - Officer's quarters
- Record and catalogue artifacts.
- Analyse significance of artifacts and features discovered.

Historical:

- Internet / library catalogue searches under keywords relevant to Melville Island.
- Visit archival repositories and reference libraries.
- Review and study relevant literature.

Constraints:
- Limited funds for archaeological fieldwork.
- Limited travel funds for archival and library research.
- Lack of archaeology laboratory equipment at CDU.
- Inadequate database and record keeping framework.

**Exclusions:**

- Lack of funds for overseas travel or research assistance (for example: to consult PRO material and Bathurst Papers in Britain) dictates that only material in Australian repositories or accessible through Inter-Library Loan will be available for this programme.
CURRENT POSITION

In 2001 the NTU Fort Dundas Research Project team located an underground feature immediately inside the western (seaward) wall of the Fort, between the central western gun position and the north-western bastion. Both archaeological and historical evidence suggests that this is the Fort magazine.

From surface indications the chamber may be some eight metres long (N - S) and four metres wide (E - W). A pilot excavation has determined that it is roughly 1.80m deep from the present ground surface within the Fort, with the
lower 1.60m cut into the sandstone bedrock. A very short section of the east wall of the chamber (about 0.40m) was uncovered.

So far no stratification of the soil filling the chamber has been detected and few remains of organic material have been discovered. A number of Pb musket balls and Cu nails have been retrieved from the pilot excavation. The area opened in 2001 has been lined with plastic film and the excavation re-filled.

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**POINTS TO NOTE**

- We are undertaking the excavation of a highly significant, probably unique, Australian historical site. We must be precise and thorough in excavation and recording to ensure that our work provides any future researchers with clear and adequate information.

- The feature is not a domestic site, but a military installation. It will be unlikely to yield significant numbers of 'household' objects (glass, crockery, etc). Features and artifacts cannot be interpreted by the same standards as a domestic site; so all recording must be very thorough to provide for probable variant interpretations.

- Excavation of the feature is complicated by the very fine, friable, sandy soil fill, which is difficult to section cleanly, the presence of a considerable number of loose, soft bricks, (thought to be from the chamber roof), and disturbance of the soil by the growth and dislodgment of a large number of tree and shrub roots.

- Where wood has burned on or under the ground the sand immediately surrounding tends to take a white, shading to orange (ie. terra-cotta) colour. The appearance of these colours in the soil may indicate the presence of charcoal, so will need to be approached with care. The orange colour is also sometimes found where the soft, locally made bricks have decomposed.

- Buried wood has survived in other localities on the site and may be encountered here. The edges of the bedrock around the chamber and the chamber fill may carry evidence of wooden roofing construction. The magazine may also contain small wooden artifacts; tool handles, containers, etc. which should be preserved if possible.
• Any very black deposits in the soil may be important. Even fully carbonised material may preserve the shape of the original article. If a black deposit is detected in conjunction with a musket ball or cannon ball it may be due to the decomposition of a black powder cartridge and, as such, would be most important to record in detail.

2002 GOAL
To determine details of the construction and use of the collapsed underground chamber located inside the west wall of the Fort Dundas ruin.

ACTIVITIES
• From the wall section excavated in 2001, trace the east wall of the chamber to its corners to determine the north-south dimension.

• From the corners located, trace one or both of the east-west walls of the chamber to determine the east-west dimension.

• Locate and excavate the entrance, expected to be a ramp cut through the bedrock into the east wall of the chamber.

• Seek evidence of the chamber roof construction on the rock surface surrounding the edge of the walls.

• Undertake one or more excavations within the chamber area to determine construction features and recover artifacts.

TASKS
• Using the established Fort Dundas grid (Attached below), lay out a sequence of 1m squares covering the anticipated line and extent of the east wall.

• Excavate the east wall line to north and south corners, revealing the top of the chamber cutting in the bedrock, noting particularly any sign of the location of the entrance.

• Examine the wall line revealed for evidence of the roof construction.

• From one corner lay out 1m squares aligned to reveal extent of the east-west dimension of the chamber.

• Lay out a suitable excavation area to investigate the entrance feature and determine its construction.
• Lay out 2m x2m squares within the magazine chamber to investigate its construction and recover artifacts.

**METHOD**

**Excavation:**

• All excavation pegging and location will be in terms of one-metre intervals on the Fort Dundas site grid (320° = North). - See attached explanation of the grid.

• Due to the extreme friability of the soil, excavations will be shored up to protect the edges of the pits from collapse.

• Measurements of artifact locations will be taken East and North within grid squares - from the bottom left hand corner - and recorded to two decimal places (i.e. to the centimetre) where possible.

• Depth measurements will be taken from an established height datum (also to two decimal places).

• As far as obstructions in the soil allow, excavation will be undertaken in 10cm spits from the height datum line.

• No stratification of the deposit has been noted so far, but if strata are detected the excavation technique will be changed to excavating stratigraphically, rather than by arbitrary 10cm spits.

• All soil from the excavations will be sieved, as it has been found that Cu nails in particular take the colour of the soil and are difficult to detect during excavation.

• Soil will normally be taken from the excavation in 10-litre buckets. This is a convenient load for the sieves and will allow 'finds' to be related to a fairly small volume of the spit if care is taken while excavating.

• Each artifact found will be bagged separately, unless clearly related fragments are discovered in close conjunction.

• All artifacts are to be bagged together with a 'Find Record' slip (example below) filled out and initialled by the discoverer.
Recording:

- The field notes will be updated each evening and will include a Site Diary, or general record of the 'dig' and the development of planning and interpretation. This will also include a 'Finds Register' and a 'Photograph Record'.

- At the end of each day all artifacts recovered will be allocated a serial number and entered up in a Find Register together with details from the 'Find Record' slip and any further relevant information.

- Normally as each spit or stratum is excavated it will be photographed vertically with a boom-mounted 35mm. camera. As a back-up oblique photographs will also be taken with both 35mm. and digital cameras.

- Significant features and 'finds' are to be photographed in situ and noted in the Photograph Record to relate the photo to the artifact and its context in the 'Find Register'. This will be undertaken with 35mm and digital cameras.

Safety

There are no known specific risks or dangers arising in this excavation. However, we will be working in the bush, not an ordered rural or urban site, so everyone will be expected to exercise appropriate care. Moreover, archaeological excavations abound in string lines, pegs, trenches and numerous traps for unwary feet, which also requires some caution.
Very large numbers of sand flies were encountered on the site during the preliminary visit, so insect repellent will be a necessity. The following recommendations should be born in mind:

- Stout clothing and shoes and shady hats should be worn.
- Plenty of your preferred insect repellant and sunscreen should be brought.
- Drinking water will be provided, but bringing your own water bottle may be a good idea.
- Unfamiliar tools or equipment should not be used until their operation has been demonstrated.
- Tools and equipment should not be left lying randomly to be tripped over or damaged, but stood out of the way or re-packed when not in use.
- Safety equipment (gloves, glasses, etc.) will be available and should be used whenever required.

As mentioned in preliminary information, snakes have been seen in the area. The excavation site is relatively clear and there is little broken ground nearby, so no particular problems are anticipated. One or more of the party will be trained in First Aid and First Aid kits will be available.

**General**

The Fort area is heavily overgrown, but it has been fired and should be reasonably easy to tidy up for the excavation. A number of trees have fallen across the track to the Fort, so our first job will be to clear access to the site.

As far as possible we should start our work days fairly early and finish early, leaving for the site about 0730 a.m. and finishing about 1600. This will give time for writing up the day’s activities, various domestic tasks and occasional visits to the Club.

The information gathered during the ‘dig’ can be made available to those wishing to do their own research on Fort Dundas, but everyone is encouraged to keep their own diaries of the excavation and take their own photo’s etc.

Two one-bedroom flats in Garden Point have been booked for our use. This will give us two kitchens, bathrooms etc. and extra beds will be available at need. There appears to be only one washing machine for the flats, so we may have to organise our laundry arrangements. Public telephones are available in the community.
Facilities at Garden Point are limited. The store has short opening hours (mainly while we are 'on site') and is not very widely stocked. There is a bakery and a takeaway food stall, which similarly seem be open only during the middle of the day. In the past the Craft Centre has been open, but was closed during our preliminary visit and we are uncertain whether it will be functioning while we are over there.

The Social Club is open from 4.00 p.m. to 7.00 p.m. Monday to Saturday and beer and some soft drinks are available (together with deafening music). Garden Point is otherwise a 'dry' community and we are not permitted to bring alcohol with us.
FORT DUNDAS GRID CO-ORDINATE SYSTEM

INFORMATION ON THE CO-ORDINATE SYSTEM USED IN THE
NORTHERN
TERRITORY UNIVERSITY INVESTIGATION OF FORT DUNDAS

Clayton Fredericksen

July 2002

A co-ordinate system has been developed to allow surveyed features, excavation trenches and material retrieved through excavation to be locked into an overall conceptual grid. By adopting this system all excavation trenches will be oriented in the same direction, with pegs having unique reference co-ordinates, and all artefacts will, in the case of point provenance recording, have their own unique grid co-ordinates. In effect the entire Fort Dundas settlement is considered as one site and conceptually gridded out accordingly.

The co-ordinate system is based on a site baseline that extends 395m from the vicinity of the commissariat store site (S2 in Crosby’s classification system) to the hospital site (S31). The baseline is oriented 320°, which for ease of use is called "site north". This bearing was chosen rather than magnetic north for the practical reason that the peninsula is closer to 320° than 0°, thereby allowing for a single baseline to extend along at least the northern part of the site. The baseline is physically marked by 11 short steel pickets placed at regular intervals along the bearing of 320°. The northernmost peg is hidden beneath a rock under a tree near the commissariat store site. This peg has been given the coordinates E 160, N 942, which are arbitrary co-ordinates for the conceptual site grid.

The best way to envisage the co-ordinate system is to think of a topographic map based on the Australian Map Grid. The vertical lines on the map are the Eastings and the horizontal lines the Northings. The bottom left hand corner (i.e. SW corner) of the map is the origin from where all co-ordinates are read, thus:
The X is located at co-ordinates E 3.50, N 2.50 (always place Eastings first when writing down coordinates).

The same system has been employed for Fort Dundas, except that it is not based on the Australian Map Grid but one invented by Clayton Fredericksen. In the Fredericksen system the bottom left hand (SW) corner of the conceptual map for Fort Dundas is somewhere in Apsley Strait, south of Harris Island. (It is actually 160m west and 942m south of the baseline peg near the commissariat store remember the co-ordinates for this peg?). This corner of the conceptual map has been given the co-ordinates E0.00 N0.00. The system is based on a metre grid. As we move eastward toward the peninsula on which Fort Dundas is located the Eastings increase, and as we move northward toward Garden Point the Northings increase. The site baseline is aligned along an Easting of 160m from our imaginary E0.00 N0.00. The Northings for the baseline will of course vary according to how far along the line you are, but the Easting will remain 160. If we were to move the baseline five metres west this would give an Easting of 155, five metres east would give an Easting of 165. If we walked 10 metres along the baseline from the picket near the commissariat store (i.e. coordinate E160, N942) we would arrive at coordinate E160, N932; 50 metres along would be E160, N892, etc, etc.

All four excavations so far undertaken have been laid out by reference to this co-ordinate system. This has been done by surveying transects at right angles to the baseline, and at the end of each placing a steel picket that serves as an excavation site datum. The pickets will of course have an Easting and Northing. Squares and trenches are then laid out oriented (where possible) to site north (320°). Artefacts are recorded according to either the square they came from or their exact location (point provenance). In the case of the latter the artefact will have a co-ordinate to cm. accuracy - e.g. E181.56, N635.17. If artefacts are recorded by square then the co-ordinates for the peg in the SW corner of the square will identify the appropriate square where they came from (i.e. the same corner as used for reading a topographic map). The default square is 1m x 1m. If you decide to record by 0.5 x 0.5 squares (e.g. if you are recovering a large amount of material you may choose to do this to provide better spatial accuracy) then you MUST indicate on the bag and/or on the forms that you have adopted this system. Again, use coordinates for the SW corner of the square to identify the square.
This year you are excavating a likely magazine inside the fort itself. The site baseline cuts through the trench of the SW bastion of the fort (see accompanying plan, which is not overly accurate in terms of the location of the fort vis-a-vis the baseline, as the perimeter of features such as the bank are impressionistic). The entire fort has been digitally surveyed, with in excess of one thousand points taken. Within the fort are four steel pickets, one in each corner. Two further pickets are located along the baseline immediately west of the fort. Owing to slowness in analysing the digital data from the 2000 survey I have yet to arrive at an accurate location for two of the pickets inside the fort. But the other four are shown on the plan. The Fredericksen system coordinates for the two on the baseline are:

Station No 1003: El60 N817
Station No 1004: El60 N792

Co-ordinates for the two pickets within the fort are:

Station No 6000: El84 N825
Station No 7000: E 221.5 N812

The first step in this year’s investigation will be to cross-check the distance of Station 6000 from the baseline to ensure that it is indeed offset 24m east of the line. Once this has been established we can be sure of the co-ordinates for this picket and use it as our site excavation datum for this year’s work, and use it as a reference for setting up other pegs in laying out trenches. It may also be worthwhile establishing coordinates for Station No 5000, which is located on the SW bastion of the fort and may be a good secondary reference datum.
CATALOGUE MANAGEMENT

ARCHAEOLOGICAL CATALOGUE MANAGEMENT
FORT DUNDAS RECORD

INFORMATION DATABASE
The system used for recording archaeological finds recovered from the Fort Dundas site was designed to serve two distinct major purposes. It must describe the item found and the location of its finding with sufficient detail and clarity to provide researchers with accurate information for analysis of the site-forming activities. It must also provide a record allowing ready computer sorting and searching of the information.

It is also important that interpreting and applying the terminology is readily handled by people who do not have highly specialised knowledge of material sciences. Identifying and recording archaeological materials needs to be handled with reasonable accuracy and consistency by workers in the field when specialist analysts, laboratories and libraries are not available.

A Microsoft Access database was chosen for the catalogue, as this was already in use for earlier records of materials recovered by Eleanor Crosby’s 1975 and 1978 expeditions.

THESAURUS
The thesaurus used is adapted from the Archaeological Artefacts Management Guidelines produced by Heritage Victoria on the 28th August 2001. The keywords and definitions have undergone some amendments, as below. Many definitions have been modified in line with the usages stated in the Macquarie Dictionary, Second Edition.

Care has been taken to select a nomenclature that will adequately cover objects likely to be discovered at the Fort Dundas site and an attempt made to limit the keyword definitions to terms which discriminate readily recognisable qualities of the objects. For example, in most cases in the ‘Metal’ category the basic metal is named, but not any alloys, as these are frequently hard to distinguish in the field. Copper is designated, but not
bronze which is commonly very similar. Brass however is cited, as it is generally readily recognisable by its different colour.

Specific detailed insights can of course, always be recorded in the 'Comments' field.

The classifications and definitions are not scientifically precise and exclusive. Indeed it seems impossible that any such classification could ever be other than arbitrary and idiosyncratic to a greater or lesser extent. The aim has been to achieve a manipulable, functional record; something that will work reasonably as a recording and research tool, rather than a precise taxonomy. It is highly likely that more keywords will be found to be needed to expand these sets. Any additions must be selected carefully and promptly added to the lists to ensure that a complete and accurate thesaurus for sorting is maintained.
<table>
<thead>
<tr>
<th>FIELD NAME</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITEM NUMBER</td>
<td>Sequential number in find catalogue. Normally each object found receives an individual serial number.</td>
</tr>
<tr>
<td></td>
<td>This is composed thus: MI-03-001</td>
</tr>
<tr>
<td></td>
<td>MI – Melville Island identifier</td>
</tr>
<tr>
<td></td>
<td>'03 – Identifies 2003 expedition (With added letter a, b, etc, if more than one expedition was undertaken in the year)</td>
</tr>
<tr>
<td></td>
<td>001 – serial number. (first find of expedition, etc.)</td>
</tr>
<tr>
<td>OBJECT</td>
<td>Identifying description of object</td>
</tr>
<tr>
<td></td>
<td>The description must be sufficiently clear to allow ready recognition of the object &amp; ideally discriminate it from other finds.</td>
</tr>
<tr>
<td>COUNT</td>
<td>Number of pieces where joining is recognised.</td>
</tr>
<tr>
<td></td>
<td>This field is only used where pieces which obviously join to form a recognisable whole or greater part are found in close proximity.</td>
</tr>
<tr>
<td>CO-ORDINATES</td>
<td>Three dimensional co-ordinates of object's location to cm.</td>
</tr>
<tr>
<td></td>
<td>These co-ordinates relate to the grid established for the site. They comprise Eastings, Northing &amp; Depth readings taken normally to two decimal places of a metre from the established data points of the site grid.</td>
</tr>
<tr>
<td></td>
<td>Eg. E240.75, N33.62, D1.54.</td>
</tr>
<tr>
<td>SQUARE</td>
<td>Co-ordinates of one metre square on the Fort Dundas Grid</td>
</tr>
</tbody>
</table>
| FEATURE | Identifying number of nearest major feature. (As in 1975 Crosby survey map).  
  
  *Eg. S4 = Fort feature* |
|---|---|
| RELATIONSHIP | Find location in relation to the nearest feature.  
  
  *Eg. 10 metres south-west of SW bastion of S4* |
| MATRIX SIEVED | Sieve mesh size in mm. Include sampling formula, if used. |
| MATERIAL | Ceramic, Glass, Metal, Mineral, Organic, Plastic, Unclassified |
| MATERIAL CLASS 2 | Detail on material from keywords for Material Classes listed below. |
| FUNCTION | Architectural, Domestic, Equipment, Personal, Socio-religious, Implement, Unclassified. |
| FUNCTION CLASS 2 | Detail on function from keywords for Function Classes listed below. |
| DIMENSIONS | Length x Width x Height of object in mm.  
  
  *This applies particularly where shards or fragments of objects are concerned.*  
  
  *Length = Greatest dimension of object, normally in mm.*  
  
  *Width = Greatest dimension at right angles to length  
  
  *Height = Greatest dimension vertical to L x W plane* |
| WEIGHT | Weight of object in grammes. |
| IMAGE / ANALYSIS | Photograph / drawing reference, EDAX or other analysis.  
  
  *Record the reference number in the Photo. Record or Lab. Reference of analysis etc.* |
| COMMENTS | Further information or speculation relevant to the object. |
THE FOLLOWING FIELDS ARE DESIGNED FOR SORTING THE DATA:

ITEM NUMBER - (Primary Key Field)
SQUARE
FEATURE
MATERIAL CLASS
MATERIAL CLASS 2
FUNCTION CLASS
FUNCTION CLASS 2
MATERIAL CLASS KEYWORDS

CERAMIC GLASS MINERAL METAL ORGANIC PLASTIC UNCLASSIFIED

MATERIAL CLASS KEYWORD DEFINITIONS

<table>
<thead>
<tr>
<th>KEYWORD</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceramic</td>
<td>Hard, brittle, heat and corrosion resistant material produced by shaping non-metallic compounds, usually clay, and firing them at high temperatures.</td>
</tr>
<tr>
<td>Glass</td>
<td>Hard, brittle, transparent or translucent material composed of amorphous silica.</td>
</tr>
<tr>
<td>Metal</td>
<td>Various elementary materials or their alloys which are usually opaque, lustrous, ductile and electrically conductive.</td>
</tr>
<tr>
<td>Mineral</td>
<td>Natural, inorganic material having a definite chemical composition and usually crystalline structure.</td>
</tr>
<tr>
<td>Organic</td>
<td>Materials derived from, or related to, living organisms.</td>
</tr>
<tr>
<td>Plastic</td>
<td>Any of a range of artificial materials capable of being moulded or shaped in the plastic state and hardened.</td>
</tr>
<tr>
<td>Unclassified</td>
<td>Any materials which cannot be identified, or which are complex mixtures or combinations of substances.</td>
</tr>
</tbody>
</table>

MATERIAL CLASS 2 KEYWORDS

<table>
<thead>
<tr>
<th>CERAMIC</th>
<th>GLASS</th>
<th>METAL</th>
<th>MINERAL</th>
<th>ORGANIC</th>
<th>PLASTIC</th>
<th>UNCLASSIFIED</th>
</tr>
</thead>
<tbody>
<tr>
<td>brick</td>
<td>crystal</td>
<td>aluminium</td>
<td>agate</td>
<td>bark</td>
<td>bakelite</td>
<td>Unidentified</td>
</tr>
<tr>
<td>earthenware</td>
<td>glass</td>
<td>brass</td>
<td>asbestos</td>
<td>bone</td>
<td>celluloid</td>
<td>materials.</td>
</tr>
<tr>
<td>pipe clay</td>
<td>optical</td>
<td>copper</td>
<td>basalt</td>
<td>charcoal</td>
<td>nylon</td>
<td></td>
</tr>
<tr>
<td>porcelain</td>
<td>glass</td>
<td>gold</td>
<td>concrete</td>
<td>coal</td>
<td>PVC</td>
<td>(May also include</td>
</tr>
<tr>
<td>stoneware</td>
<td>iron</td>
<td>granite</td>
<td>horn</td>
<td>leather</td>
<td>PVA</td>
<td></td>
</tr>
<tr>
<td>terracotta</td>
<td>stained</td>
<td>lead</td>
<td>gemstone</td>
<td>leather</td>
<td>vulcanite</td>
<td>composite</td>
</tr>
<tr>
<td>tile - glazed</td>
<td>glass</td>
<td>nickel</td>
<td>limestone</td>
<td>paper</td>
<td>objects)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>pewter</td>
<td>marble</td>
<td>textile</td>
<td>wax</td>
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</tr>
<tr>
<td></td>
<td>silver</td>
<td>sandstone</td>
<td>wax</td>
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<tr>
<td></td>
<td>solder</td>
<td>slate</td>
<td>wood</td>
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<tr>
<td></td>
<td>tin</td>
<td>zinc</td>
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<tr>
<td>CERAMIC</td>
<td>DEFINITION</td>
<td>EXAMPLE</td>
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<td>--------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
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<td></td>
</tr>
<tr>
<td><strong>Brick</strong></td>
<td>Hard baked earthenware, usually moulded or cut to uniform rectangular shape before baking.</td>
<td>Building bricks, clay tiles and pavers.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Earthenware</strong></td>
<td>Opaque, porous baked clay moulded or turned to shape before baking. Usually has distinct surface glaze for waterproofing.</td>
<td>Kitchen / dining crockery</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pipe clay</strong></td>
<td>A very fine white unglazed clay commonly moulded and baked for smoking pipes.</td>
<td>Clay pipes</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Porcelain</strong></td>
<td>Very fine, vitreous china, translucent. Has no distinct surface glazing.</td>
<td>Fine dinner service</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Stoneware</strong></td>
<td>A hard, usually course grained, ceramic. Vitrified in firing, it does not require glazing.</td>
<td>Domestic crockery, clay vessels.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Terracotta</strong></td>
<td>A soft, unglazed ceramic, usually pink or yellow in colour</td>
<td>Flowerpots, Agricultural pipes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tile - glazed</strong></td>
<td>Earthenware plaques for protective or decorative facing on walls or floors. Coloured and glazed on outer surface.</td>
<td>Bathroom tiles</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GLASS</th>
<th>DEFINITION</th>
<th>EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Crystal</strong></td>
<td>Glass with a very high degree of brilliance and transparency, frequently decorated with cut designs.</td>
<td>Wineglasses, carafes</td>
</tr>
<tr>
<td><strong>Glass</strong></td>
<td>Vitreous, clear or coloured amorphous silica. Usually transparent or translucent.</td>
<td>Window panes, table and cookware.</td>
</tr>
<tr>
<td><strong>Optical glass</strong></td>
<td>Glass of high purity and clarity for use as lenses, plates and prisms.</td>
<td>Spectacles, camera lens</td>
</tr>
<tr>
<td><strong>Stained glass</strong></td>
<td>Glass strongly coloured, or with integral designs, used to construct decorative panels.</td>
<td>Stained glass windows</td>
</tr>
</tbody>
</table>
### METAL

<table>
<thead>
<tr>
<th>KEYWORD</th>
<th>DEFINITION</th>
<th>EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium</td>
<td>Soft silvery-white metal. Very light-weight. Usually found as sheet or foil.</td>
<td>Aeronautical parts, power cable wire</td>
</tr>
<tr>
<td>Brass</td>
<td>Yellow metal, strong and corrosion resistant. Usually small cast fittings.</td>
<td>Domestic fittings. Dress accessories, cartridge cases</td>
</tr>
<tr>
<td>Copper</td>
<td>Pink / red metal, soft and ductile. Usually found as wire or sheet.</td>
<td>Electrical wiring &amp; fittings. Coins (bronze)</td>
</tr>
<tr>
<td>Gold</td>
<td>Bright yellow metal, non-corroding</td>
<td>Jewellery, coins</td>
</tr>
<tr>
<td>Iron</td>
<td>Silvery-white. Corrodes readily to red-brown FeO</td>
<td>Structural &amp; machine parts. Frequently steel, (FeC)</td>
</tr>
<tr>
<td>Lead</td>
<td>Soft, heavy, silver-grey, dulls quickly to grey-white</td>
<td>Roof sheeting, weights, projectiles</td>
</tr>
<tr>
<td>Mazak</td>
<td>Grey alloy designed for die-casting</td>
<td>Complex castings for automotive &amp; domestic fittings</td>
</tr>
<tr>
<td>Nickel</td>
<td>Hard, silvery, corrosion resistant</td>
<td>Plating, laboratory equipment</td>
</tr>
<tr>
<td>Pewter</td>
<td>Soft, silver-grey, heavy alloy, dulls to grey</td>
<td>Drinking vessels, buttons</td>
</tr>
<tr>
<td>Silver</td>
<td>Bright, heavy, lustrous. May corrode forming purple residue</td>
<td>Jewellery, coins</td>
</tr>
<tr>
<td>Solder</td>
<td>Bright silver to grey alloy. Used for plumbing joints.</td>
<td>Joints in iron &amp; copper sheet</td>
</tr>
<tr>
<td>Stainless</td>
<td>Bright, non-corroding alloy</td>
<td>Kitchen equipment, cutlery</td>
</tr>
<tr>
<td>Steel</td>
<td>(Fe, Cr)</td>
<td></td>
</tr>
<tr>
<td>Tin</td>
<td>Bright silvery metal, usually used for plating</td>
<td>Tin-plate food cans</td>
</tr>
<tr>
<td>Zinc</td>
<td>Grey, heavy metal, corrosion resistant. Often used to plate iron &amp; steel</td>
<td>Roofing 'iron', perforated sheet</td>
</tr>
</tbody>
</table>

### MINERAL

<table>
<thead>
<tr>
<th>KEYWORD</th>
<th>DEFINITION</th>
<th>EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agate</td>
<td>Semi-precious silica, frequently banded</td>
<td>Costume jewellery</td>
</tr>
<tr>
<td>Asbestos</td>
<td>Fibrous form of silica. Heat resistant</td>
<td>Insulation, lagging</td>
</tr>
<tr>
<td>Basalt</td>
<td>Hard blue-black, fine grained stone</td>
<td>Building material</td>
</tr>
<tr>
<td>Concrete</td>
<td>Artificial aluminium silicate, can be cast or used as mortar. May be reinforced with stone aggregate or metal</td>
<td>Building footings, brick &amp; stone bond</td>
</tr>
<tr>
<td>Material</td>
<td>Description</td>
<td>Use</td>
</tr>
<tr>
<td>----------</td>
<td>-------------</td>
<td>-----</td>
</tr>
<tr>
<td>Granite</td>
<td>More or less coarse-grained stone often pink or grey-white. Takes a high polish</td>
<td>Building material</td>
</tr>
<tr>
<td>Gemstones</td>
<td>Various dense, lustrous or brilliant minerals. May be polished or faceted</td>
<td>Jewellery</td>
</tr>
<tr>
<td>Limestone</td>
<td>Soft calcium carbonate, usually white or cream.</td>
<td>Building material, chalk</td>
</tr>
<tr>
<td>Marble</td>
<td>Dense form of calcium carbonate, takes a polish</td>
<td>Decorative stonework, statuary</td>
</tr>
<tr>
<td>Mortar</td>
<td>Soft, artificial mix of powdered calcium carbonate and sand</td>
<td>Brick &amp; stone bond</td>
</tr>
<tr>
<td>Sandstone</td>
<td>Soft, stone. Largely compacted silica grains</td>
<td>Building material</td>
</tr>
<tr>
<td>Slate</td>
<td>Fine grained, hard, usually dark coloured stone. Splits readily into thin, flat sheets</td>
<td>Roofing material, writing slates</td>
</tr>
</tbody>
</table>

**ORGANIC**

<table>
<thead>
<tr>
<th>KEYWORD</th>
<th>DEFINITION</th>
<th>EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bark</td>
<td>Tree bark. Spongy, tough xylem</td>
<td>Roofing, bottle corks, insulation</td>
</tr>
<tr>
<td>Bone</td>
<td>Animal skeletal material, calcium carbonate. May indicate source animal</td>
<td>Food residue, funerary remains</td>
</tr>
<tr>
<td>Charcoal</td>
<td>Carbonised wood. Brittle, frequently retains grain of wood source</td>
<td>Fire residue, fuel.</td>
</tr>
<tr>
<td>Coal</td>
<td>Compact black or brown mineral formed from decomposition of plant material</td>
<td>Domestic or industrial fuel</td>
</tr>
<tr>
<td>Horn</td>
<td>Hard, laminar keratin from animal horns or hoofs</td>
<td>Buttons, decorative inlay</td>
</tr>
<tr>
<td>Leather</td>
<td>Treated animal hides</td>
<td>Clothing, harness</td>
</tr>
<tr>
<td>Paper</td>
<td>Processed cellulose fibre</td>
<td>Books, writing paper</td>
</tr>
<tr>
<td>Textile</td>
<td>Plant or animal fibres. <em>Eg.</em> cotton, wool, spun and woven</td>
<td>Clothing, sailcloth</td>
</tr>
<tr>
<td>Wax</td>
<td>Soft, solid, non-greasy hydrocarbon. Flammable, low melting point</td>
<td>Candles, waterproofing</td>
</tr>
<tr>
<td>Wood</td>
<td>Cellular xylem component of trees and other plants</td>
<td>Building material, furniture</td>
</tr>
<tr>
<td>KEYWORD</td>
<td>DEFINITION</td>
<td>EXAMPLE</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>Bakelite</td>
<td>Thermosetting phenolic resin. Brittle, usually dark coloured</td>
<td>Electrical fittings, domestic furnishings</td>
</tr>
<tr>
<td>Celluloid</td>
<td>Cellulose nitrate &amp; camphor. Strong, often transparent</td>
<td>Light panels, film base, Kewpie dolls</td>
</tr>
<tr>
<td>Nylon</td>
<td>Synthetic polyamide. Strong &amp; elastic. Often used as synthetic fibre</td>
<td>Fishing line, yarn, oil-less bearings</td>
</tr>
<tr>
<td>Polystyrene</td>
<td>Clear plastic polymer. May be aerated into a foam</td>
<td>Insulation foam, food containers</td>
</tr>
<tr>
<td>PVC</td>
<td>Polyvinyl chloride / polyvinylidene chloride.</td>
<td>Water pipes, hoses, waterproofing</td>
</tr>
<tr>
<td>Vinyl</td>
<td>Vinyl polymer</td>
<td>Floor tiles, LP records</td>
</tr>
<tr>
<td>Vulcanite / Ebonite</td>
<td>Hard rubber</td>
<td>Electrical &amp; telephonic fittings. Domestic fittings</td>
</tr>
</tbody>
</table>

FUNCTION CLASS KEYWORDS:

Architectural  Domestic  Equipment  Military  Personal  Socio-religious  Implement  Unclassified  Religious

FUNCTION CLASS KEYWORD DEFINITIONS

<table>
<thead>
<tr>
<th>KEYWORD</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architectural</td>
<td>A component of a building and construction</td>
</tr>
<tr>
<td>Domestic</td>
<td>Related to the home and household affairs</td>
</tr>
<tr>
<td>Equipment</td>
<td>Standing machines or devices for performing tasks</td>
</tr>
<tr>
<td>Implement</td>
<td>Directly manipulated instrument or tool</td>
</tr>
<tr>
<td>Military</td>
<td>Relating to soldiery and the armed forces</td>
</tr>
<tr>
<td>Personal</td>
<td>Employed in individual activities of a particular person</td>
</tr>
<tr>
<td>Socio-religious</td>
<td>Relating to communal or cultic activities</td>
</tr>
<tr>
<td>Unclassified</td>
<td>Objects of unknown function</td>
</tr>
<tr>
<td>Architectural</td>
<td>Domestic</td>
</tr>
<tr>
<td>--------------</td>
<td>----------</td>
</tr>
<tr>
<td>access</td>
<td>catering</td>
</tr>
<tr>
<td>binding</td>
<td>cleaning</td>
</tr>
<tr>
<td>material</td>
<td>dining</td>
</tr>
<tr>
<td>ceiling</td>
<td>commercial</td>
</tr>
<tr>
<td>covering</td>
<td>fishing</td>
</tr>
<tr>
<td>electrical</td>
<td>hunting</td>
</tr>
<tr>
<td>fastening</td>
<td>lighting</td>
</tr>
<tr>
<td>fencing</td>
<td>flooring</td>
</tr>
<tr>
<td>flooring</td>
<td>hardware</td>
</tr>
<tr>
<td>lining</td>
<td>plumbing</td>
</tr>
<tr>
<td>wall</td>
<td></td>
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</table>
### FUNCTION CLASS 2 KEYWORD DEFINITIONS

#### ARCHITECTURAL

<table>
<thead>
<tr>
<th>KEYWORD</th>
<th>DEFINITION</th>
<th>EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access</td>
<td>Doors, windows etc.</td>
<td>Frames, panels, sashes, glazing</td>
</tr>
<tr>
<td>Binding</td>
<td>Any material binding components together to form a building</td>
<td>Cement, mortar</td>
</tr>
<tr>
<td>Ceiling</td>
<td>The overhead interior lining material of a room</td>
<td>Moulding, fibre board</td>
</tr>
<tr>
<td>Covering</td>
<td>Protective or decorative material laid over surfaces of a building</td>
<td>Plaster, paint, tile, linoleum, carpet</td>
</tr>
<tr>
<td>Electrical</td>
<td>The components of the standing electrical reticulation of a building</td>
<td>Wiring, switches, power sockets</td>
</tr>
<tr>
<td>Fastening</td>
<td>Items penetrating components of a building to hold them in relationship to each other</td>
<td>Nails, screws, bolts</td>
</tr>
<tr>
<td>Fencing</td>
<td>Enclosure or barrier around or adjoining a building</td>
<td>Posts, rails, wire</td>
</tr>
<tr>
<td>Flooring</td>
<td>Forming the lower, traffic-carrying surface of a building</td>
<td>Concrete, tiles, planks</td>
</tr>
<tr>
<td>Hardware</td>
<td>Mechanical equipment necessary for functioning of building fittings</td>
<td>Hinges, latches, Plaster board, particle board</td>
</tr>
<tr>
<td>Lining</td>
<td>Material forming the inner side of a cavity or veneer wall</td>
<td></td>
</tr>
<tr>
<td>Plumbing</td>
<td>The components of the standing water reticulation of a building</td>
<td>Piping, taps</td>
</tr>
<tr>
<td>Roofing</td>
<td>The external upper cladding of a building</td>
<td>Corrugated iron, tile</td>
</tr>
<tr>
<td>Wall</td>
<td>The upright, enclosing sides of a building</td>
<td>Masonry, concrete, timber</td>
</tr>
</tbody>
</table>

#### DOMESTIC

<table>
<thead>
<tr>
<th>KEYWORD</th>
<th>DEFINITION</th>
<th>EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catering</td>
<td>Instruments &amp; vessels commonly used in processing &amp; cooking food</td>
<td>Bucket, dish, knife, ladle</td>
</tr>
<tr>
<td>Category</td>
<td>Definition</td>
<td>Example</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>Cleaning</td>
<td>Implements &amp; substances used for cleaning &amp; washing.</td>
<td>Broom, mop, soap, wash board</td>
</tr>
<tr>
<td>Dining</td>
<td>Articles for serving &amp; eating food</td>
<td>Crockery, cutlery, drinking glass</td>
</tr>
<tr>
<td>Furnishing</td>
<td>The fittings, appliances &amp; furniture equipping a building for domestic purposes</td>
<td>Chair, table, curtains</td>
</tr>
<tr>
<td>Outdoor</td>
<td>A house-yard or garden area &amp; outdoor domestic activities</td>
<td>Enclosures, sheds furniture, ornament</td>
</tr>
<tr>
<td>Heating</td>
<td>Fittings &amp; materials to generation heat for cooking or comfort</td>
<td>Fire grate, stove, fuel</td>
</tr>
<tr>
<td>Lighting</td>
<td>Devices &amp; materials to provide light</td>
<td>Lamp, candle, light bulb</td>
</tr>
<tr>
<td>Measuring</td>
<td>Standards, scales or mechanisms for measuring</td>
<td>Rule, balance, clock</td>
</tr>
<tr>
<td>Ornament</td>
<td>Portable articles used to decorate a building</td>
<td>Image, vase, screen</td>
</tr>
<tr>
<td>Storing</td>
<td>Containers for storage &amp; transportation</td>
<td>Box, bottle, bag, case</td>
</tr>
</tbody>
</table>

### EQUIPMENT

<table>
<thead>
<tr>
<th>KEYWORD</th>
<th>DEFINITION</th>
<th>EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automotive</td>
<td>Motor vehicles &amp; accessories</td>
<td>Car, axle, windscreen, tyre</td>
</tr>
<tr>
<td>Farming</td>
<td>Machinery and materials used for agricultural or pastoral activities</td>
<td>Plough, shears, silo, fencing</td>
</tr>
<tr>
<td>Animal handling</td>
<td>Accessories required for the handling of domesticated animals</td>
<td>Harness, collars, stock bells</td>
</tr>
<tr>
<td>Commercial</td>
<td>Materials for trading business activities</td>
<td>Cash register, ledger, computer,</td>
</tr>
<tr>
<td>Fishing</td>
<td>Materials required for fishing activity</td>
<td>Boat, net, line</td>
</tr>
<tr>
<td>Hunting</td>
<td>Materials required for hunting or capturing wild game</td>
<td>Firearms, traps</td>
</tr>
<tr>
<td>KEYWORD</td>
<td>DEFINITION</td>
<td>EXAMPLE</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Metalworking</td>
<td>Shaping, fabricating and finishing metal objects</td>
<td>Forge, hacksaw, tap &amp; die</td>
</tr>
<tr>
<td>Recording</td>
<td>Making a record or image of a process or object</td>
<td>Drawing material, camera,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Needle, shears, thread</td>
</tr>
<tr>
<td>Sewing</td>
<td>Using stitches of thread to attach pieces of fabric, leather, etc.</td>
<td></td>
</tr>
<tr>
<td>Weapons</td>
<td>An instrument designed to inflict death or injury. Hunting or combat equipment.</td>
<td>Firearms, ammunition, knives</td>
</tr>
<tr>
<td>Woodworking</td>
<td>Shaping, joining and finishing wooden objects</td>
<td>Chisel, plane, brace &amp; bit</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>KEYWORD</th>
<th>DEFINITION</th>
<th>EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accoutrements</td>
<td>A soldier’s equipment other than arms &amp; uniform</td>
<td>Belts, pouches</td>
</tr>
<tr>
<td>Ammunition</td>
<td>The cartridge or separate igniter, powder &amp; ball for loading firearms</td>
<td>Musket ball, gunflint</td>
</tr>
<tr>
<td>Artillery</td>
<td>Large guns fired from a carriage</td>
<td>Cannon, carronade</td>
</tr>
<tr>
<td>Small arms</td>
<td>Individual arms borne by a soldier</td>
<td>Musket, bayonet</td>
</tr>
<tr>
<td>Uniform</td>
<td>The distinctive dress of a body of soldiers; in uniform style</td>
<td>Coat, shako, gaiters</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>KEYWORD</th>
<th>DEFINITION</th>
<th>EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costume</td>
<td>Dress or costume, including ornaments</td>
<td>Coat, blouse, shoes, necklace</td>
</tr>
<tr>
<td>Currency</td>
<td>Money &amp; media of exchange</td>
<td>Coins, tokens, notes</td>
</tr>
</tbody>
</table>
Grooming
Items & materials for maintaining
personal appearance
Comb, razor,
lipstick
Health
Materials & equipment used to maintain
personal health
Medicines,
prosthetics,
thermometer
Hygiene
Materials for personal cleanliness &
sanitation
Soap, shampoo,
launder
detergent
Smoking
Materials & objects required for tobacco
smoking
Tobacco, pipe,
cigarette lighter

SOCIO-RELIGIOUS

<table>
<thead>
<tr>
<th>KEYWORD</th>
<th>DEFINITION</th>
<th>EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>Equipment &amp; materials used in information sharing</td>
<td>Telephone, radio, postage stamp</td>
</tr>
<tr>
<td>Education</td>
<td>Materials for instruction, training or study</td>
<td>Classroom fitting, text book</td>
</tr>
<tr>
<td>Entertainment</td>
<td>Facilities for amusement, diversion</td>
<td>Game pieces, TV, magazine music instrument, sports equipment</td>
</tr>
<tr>
<td>Recreation</td>
<td>Providing a pastime, diversion or exercise</td>
<td></td>
</tr>
<tr>
<td>Religious</td>
<td>Relating to a system of belief or worship</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX THREE

ARCHAEOLOGY OF A MILITARY AREA.

The differences between a military location and a civilian community need to be taken into account when excavating and analysing the Fort Dundas site. Military settlements and activity areas are different to civilian settlements in the population, activities and equipment that create them. The analysis and interpretation of the archaeological material of a military encampment must be approached with different parameters to the archaeological interpretation of a civilian settlement.

In the historical period, the archaeological record of a military settlement will reflect certain characteristics such as:

- A largely young, male population with few, if any, women and children.
- A largely homogeneous culture, language and social structure.
- Regimented and disciplined behaviour patterns.
- Uniformity of clothing and equipment.
- Domestic facilities limited in location and proportion of the settlement area.

Swann, (Swann, 1999) in exploring the Geographical Information Systems relevant to military concepts, introduces a valuable distinction between three significant styles of military installation: the Base Plant, the Barracks and the Battlefield.

- The base plant constitutes a major concentration of military material and activity. It is the headquarters complex, far removed from any expected battle zones and is the nucleus of planning, command, and supply.
- The barracks is a concentration of troops and equipment located to serve a strategic purpose. It is situated to meet anticipated communication and logistics needs that may arise from time to time.
• The battlefield is the actual combat zone, in which personnel and material are grouped according to tactical requirements or the exigencies of the conflict.

It is important to recognise that the material features and artifacts of military installations will differ from each other depending on whether they function as base plants, barracks, or battlefields and that these differences will produce distinctive features in the archaeological record remaining. In the context of the Fort Dundas research programme it is sufficient to note certain salient points of the base plant and barracks installations: they are not equipped for battle, they have considerable storage, accommodation and training facilities and they are usually in, or close to population centres. While the Melville Island settlement possessed some qualities of a barracks installation, Fort Dundas itself was essentially a battlefield installation.

A battlefield installation will have limited accommodation, related to the needs of tactical concentration and command, the personnel will be distributed according to perceived combat needs, it will possess combat-ready weaponry and its location will be selected or accepted according to a response to an enemy. This will, of course, dictate the nature and style of archaeological materials found on the site; defensive shelters, weapon mountings and weapon materials being particularly significant diagnostic features of the battlefield.

Fort Dundas presents all these features, with protective ramparts, copper fastened magazine furnishing, cavalier-mounted guns in turrets, and munitions such as musket balls and gunflints found in the site.

The emergence of these features in the course of the research programme, as discussed in the text, clearly dictated the interpretation of the site as a military battlefield installation, supported by a limited nearby barracks.
APPENDIX FOUR

DYNAMICS OF DESERTION.

The manner in which the population disengages from an activity area will have significant effects on the type and distribution of the archaeological materials that remain (Cameron, 1993, esp. pp 3 - 7). We can seldom entertain a 'Pompeii principle', assuming that artifacts and activities were abandoned as we find them; dropped in an instant, in the patterns of normal community activity. In the case of Melville Island some factors about the abandonment of the site influenced the style of the archaeological record.

- Fort Dundas was subject to an organised military withdrawal. There was both the opportunity and the intention to salvage anything useful for the party to take elsewhere.

- There was no intention to resume activity in the settlement, nor was any further European activity expected there. None of the Melville Island party would have had an incentive to cache any materials on the site or to make any provisions for a later return or future use.

- Due to the long and difficult supply-lines of the north Australian settlements, the Melville Island party would have comprehensively salvaged all materials of use from that site, to contribute to their expected new location on Raffles Bay.

- Until the 1930's when firstly pearlers' camps, then a Roman Catholic mission were established at Garden Point (Pularumpi) very close by, the site was not subject to scavenging by people having a similar material culture. Thus, due to cultural difference or lapse of time, there has been little post- abandonment disturbance.

The absence of an object from the archaeological record seldom provides a basis for any definite interpretation while the presence of features or artifacts essentially makes an incontrovertible statement. However, by assessing the
likelihood of an article's removal by the departing population, it may be possible to construct a working hypothesis as to what will be found during archaeological research, and how the material record should be interpreted.

In the case of the Melville Island settlement there was an obvious incentive to salvage re-usable building materials to assist with providing accommodation for the party at the Raffles Bay site. This may explain certain absences from the Melville Island site.

- A number of fragments of roofing slates have been found at the Melville Island settlement, but certainly far less than would comprise any useful roof. This may be explained by assuming that the bulk of these locally irreplaceable artifacts was salvaged for re-use.

- The iron nails that have been found in considerable quantities around some building sites are usually both badly damaged and scattered, as if discarded when a timber structure was dismantled, and they were generally found to be too damaged for re-use.

- Apart from bent and broken nails, very few metal artifacts are found on the Melville Island site, suggesting that metal fittings, which would have to be almost totally supplied by distant manufacturers, were carefully preserved. (Alternatively, metal may have been one item of value to the returning Tiwi, to be carefully gathered by them.

As the Melville Island settlement was deserted through a process of transfer of people and material to a site in similar geographical and economic circumstances, it is important to note that the artifact scatters left by the departing population will not be statistically directly related to the material priorities of the active pioneer settlement in tropical Australia, but indeed may be inversely related, due to the removal of valued materials with the population to serve in similar conditions at Raffles Bay.

This interpretation factor has still to be thoroughly explored in relation to Melville Island and Fort Dundas.
“...for the Good of His Majesty’s Service.”

The archaeology of Fort Dundas, 1824 – 1829

GLOSSARY
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 Definitions and descriptions provided here have been confirmed with those of the Second Edition of the Macquarie Dictionary (Delbridge, 1991). Where a variant usage or specialist application is intended the explanation or authority is given.

banquette
A fire-step. A raised step made behind a parapet or rampart where troops stand to fire over the top (Muller, 1746, pp 209 ff).

batter
The slope of an inclined standing surface, angled backward from the base.

bastion
A rectangular fortification of two faces and two flanks projecting from a rampart (Duffy, 1975, pp 183 ff).

berm
A narrow terrace between a rampart and a moat or ditch. Provided to prevent subsidence of the rampart wall.

brattice
A light wall or partition, particularly in fortifications, constructed of planks, canvas, etc.

brickbats
Pieces of broken bricks

carronade
A short, large bore, muzzle-loading gun, usually on a wheel-less carriage. On firing it recoils along slides within the carriage. Very destructive at short range.

case shot
An anti-personnel gun charge consisting of a tin canister filled with many musket balls. It disintegrates close to the gun's muzzle on firing, sending a hail of balls over a wide front.

cavalier
An earthwork or platform within the body of a fortification, raised above the ground surface to provide commanding fire over the country round about. (Muller, 1746, pp 209 ff).

counter-scarp
A slope or retaining wall on the outer side of a ditch (Duffy, 1975, pp 183 ff).

**curtain**
The straight section of a rampart between bastions, towers, etc.

**EDAX**

**embrasure**
An opening in a wall or parapet through which a gun may be fired. The sides of the opening widen toward the inside of the wall.

**en barbette**
An elevated gun position, where the gun carriage is mounted high enough for it to shoot over the rampart, not through an embrasure. (Duffy, 1975, pp 183 ff).

**expense magazine**
A small ammunition store close to a battery or gun, holding a quantity of ammunition for immediate use.

**factory**
In the context of early nineteenth century commerce a ‘factory’ was the office and goods warehouses of a ‘factor’, the agent conducting local trade for a merchant or company.

**frog**
An indentation moulded into one larger side of a brick, often bearing a makers mark, etc.

**grape shot**
A gun charge consisting of some nine large bullets wired together. Chiefly for use against small vessels, etc. (This term is often used in non-technical contexts when case shot is actually referred to).

**glacis**
An upward sloping bank of earth before the ditch, or covered-way outside a fortification. Designed to expose attackers, and to deflect low shot.

**gun**
An artillery piece. A heavy weapon designed to be fired from a carriage or mounting.

**gun flint**
The shaped piece of flint held in the cock of a flintlock weapon to strike sparks on firing, ignite the powder and discharge the piece.
lens
In the archaeological context this may refer to any, usually small, stratum or deposit found in the earth that is lenticular (i.e. elliptical) in section.

limber
A detachable part of a field gun carriage, to which the trail of the gun is hitched for transport, and which carries ammunition and equipment.

mortice
A rectangular hole or slot cut in a piece of timber, etc. to accommodate the shaped end of another (the tenon) as a method of joining.

musket
The personal arm of troops from the 17th to early 19th century. The musket of this period had a smooth bore, was loaded from the muzzle and was fired by a flint-lock mechanism.

parapet
A protective wall elevated above the rampart of a fortification to protect defenders on the rampart.

pitched roof
A roof design sloping down from a raised central ridge to two opposite outer walls.

prunt
A piece of ornamental glass laid on the body of a bottle, etc.

rampart
A thick wall of earth, masonry, etc. forming the main outer defence of a fortress, etc.

revetment
A retaining wall, or facing, on an earth or rubble bank.

redoubt
A small, strong, fully enclosed fortification. Usually separate from, and reinforcing the main work.

round shot
A cannon-ball. Spherical cast metal or stone projectile for firing from a gun.

scarp
The inner face of a ditch, usually including the outer slope of a rampart.
skillion
   A roof design that slopes down from one higher outside wall in only one direction.

spit
   A depth of earth, notionally the length of a spade's blade. Any conveniently defined depth stratum nominated for an archaeological excavation.

sprue
   The aperture in a mould through which the molten metal is introduced, leaving a distinctive mark on the casting.

Stadtholder
   Chief Magistrate and ruler of the former Republic of the United Provinces of the Netherlands.

star picket
   A light trilobed steel fencing post or stake, available in various lengths and very useful for marking survey datum points.

stringer
   A longitudinal wooden or metal beam supporting a deck or partition.

talus
   A sloping mass of rubble at the foot of a cliff or wall.

turret
   A small round tower at the angle of a building or rampart.

xylem
   The hard cellular material giving structure to wood.
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The archaeology of Fort Dundas, 1824 – 1829

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