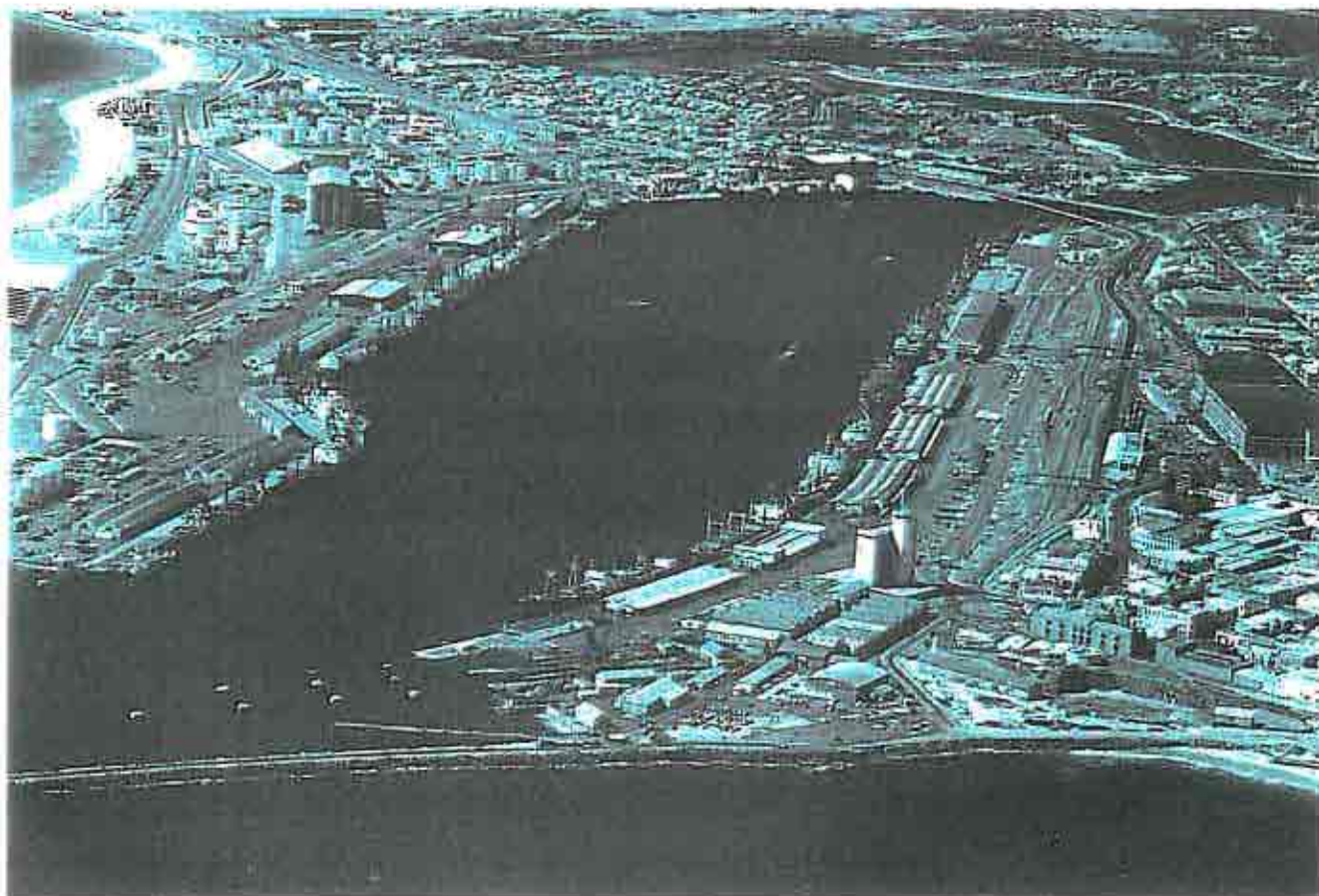


**Archaeological watching brief for New Maritime Museum Site
Forrest Landing, Victoria Quay, Fremantle**



By

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Abstract

In July 2000, the author was requested to conduct an archaeological watching brief at the site of the new maritime museum proposed at Forrest Landing at the south western end of the Fremantle Harbour. The program was conducted over July and August 2000. A detailed literature search was conducted in order to ascertain the extent of the potential archaeological resource and a presence was maintained on site throughout all earthworks. In addition to the site monitoring program, a record was maintained and a representative collection of materials made. This report details those events and contains a catalogue of the objects collected. Recommendations are made for the preservation and presentation of a portion of the original headland and for the exhibition of materials recovered.

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Executive Summary

The Department of Maritime Archaeology at the Western Australian Maritime Museum has been involved in the examination and excavation of the maritime archaeological resources at Arthur Head since the excavations at Bathers Bay in 1984.

Ms Coriolis Souter is currently employed as an Assistant Curator with Department of Maritime Archaeology. She holds an undergraduate degree majoring in historical archaeology and a post-graduate diploma in maritime archaeology. With this background, she was selected to develop the Department's input into new maritime museum site works at Forrest Landing, Arthur Head.

The new museum site is located in the region where the Nyungar people "crossed the bar" which blocked the entrance of the Swan River. Arthur Head was also one of the first landing places for the Swan River Colony and became the scene of many subsequent developments, including whaling facilities, jetties and other maritime infrastructure. Developments in and around Arthur Head have ensured that the area and many of its significant features have undergone major physical alterations resulting from the different phases and types of occupation. The establishment of a Whaler's Station in 1836 combined with the construction of the Inner Harbour in 1892, for example, reduced the height of the land mass which makes up Arthur Head. It has been approximated that 60% of the original headland has been removed with further quarrying occurring throughout the nineteenth and twentieth centuries. As a result much of the original maritime heritage resource in the area has either been removed/destroyed or is buried under landfill. Despite this, there are many other remains extant and the site has been viewed as an historic area for a considerable length of time. As a result there is a large quantity of documentary material supplementing the scarce archaeological resource. In these early accounts, site descriptions and in some cases, the location of important maritime sites appears.

This report endeavours to determine and document the extent of archaeological remains of significance, reminiscent of the industries which Forrest Landing supported.

Dr M. McCarthy
Project Supervisor
Department of Maritime Archaeology

Introduction

The new maritime museum at Forrest landing is situated in the region of Arthur Head, a significant natural formation on the southern shore of the entrance to the Swan river. Though a significant and prominent location, land reclamation and the construction of the Inner Harbour has covered the majority of visible signs of the original Arthur Head shoreline and the earlier port related structures at Forrest Landing. The area was also heavily disturbed and much altered. In recognition of the significance of the area and the possibility that materials or sites may be unearthed in the construction phases, the Department of Maritime Archaeology was requested to establish a monitoring presence in accordance with the requirements of the *Maritime Archaeology Act 1973*. In discussing the brief, it was decided that an archaeological watching brief would be conducted.

Purpose of fieldwork

The Site Monitoring Programme seeks to determine the location and extent of any archaeological remains of significance in the area of the New Maritime Museum site and make that information available. Site works include excavation of existing soil and partial reclamation of land at the western extremity of the site.

Role in Archaeological Monitoring

The duties of the site monitoring archaeologist will be to attend the site as appropriate on each of the days (likely to last 1-2 weeks) when the initial site work is being conducted on the northern promontory of Arthur Head. If any artefacts are uncovered which the archaeologist believes might be of significance, the archaeologist will report this to the builders and report back to the Head of Maritime Archaeology Department. The builders will cease site works in that place until the matter is resolved.²

Archaeological Procedures at the New Maritime Museum Site

Following discussions between the archaeologist(s) and other stakeholders prior to commencement of earthworks, a set of procedures and protocols were drafted. In developing this set of archaeological procedures at the new Maritime Museum it was accepted that all involved understood and accepted their obligations in respect to the relevant legislation. The archaeologist commissioned was to undertake an *Archaeological Watching Brief*. This is defined as a formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons within a specified area or site, where there is the possibility that archaeological deposits may be disturbed or destroyed. This programme does not include incidental observations of significant cultural material (Aboriginal or historical), which should lead to an appropriate archaeological project being designed and implemented, nor does it include

monitoring for preservation of remains *in situ*. An archaeological Watching Brief is not intended to reduce the requirement for excavation or preservation of known or probable deposits, and it is intended only to guide, not replace, any requirement for contingent excavation or preservation of possible deposits.¹

In accepting this position, the following procedures will be implemented as per the Director's brief of 6 July 2000:

- The WA Museum archaeologist(s), will monitor the excavation at the new Maritime Museum to ascertain whether indications of heritage or Aboriginal sites are present.
- The archaeologist(s) will be provided with all necessary access to the site.
- Should indications of a site be found, the archaeologist's request for a halt to the excavations in the area if the site will be acted on.
- The archaeologist(s) will then be provided with the time and access required to enable them to conduct the required archaeological examination.
- The contractor, superintendent and the archaeologist(s) will consult to determine how site works can proceed while the archaeological work can be satisfactorily completed.
- Provision should be made for the post-excavation treatment, analysis and long-term storage of archaeological material and/or features recovered during the ground disturbance.

If there is doubt on the significance of materials then the situation will be referred to:

1. Head Maritime Archaeology Department, then if necessary Advising Archaeologists, Dr Moya Smith and Mr Charles Dortch of the WA Museum.
2. Director Maritime Museum informed.
3. Director informs Government Property Office and Architects Cox Howlett & Bailey Woodland.
4. If significant Director refers to Consulting Section of UWA Centre for Archaeology and/or Aboriginal Affairs Department.

Preliminary Activities

A literature search was conducted and materials including photographs and plans compiled. A theoretical framework and methodology for the site monitoring programme was established utilising similar case histories and following advice from other archaeologists. A permit under the provisions of Section 16 of the Aboriginal Heritage Act 1972 for monitoring during development was obtained. (Appendix 1).

Site Location and Description

The New Maritime Museum site is located at the western end of Victoria Quay in between the slipways and A shed, occupying the region known as Forrest Landing.

Colonial construction which utilised the stone from Arthur Head, the construction of the Inner Harbour in 1897 and twentieth century construction has reduced and significantly altered the land mass which makes up the northern promontory of Arthur Head. Land reclamation and the construction of the Inner Harbour has covered the majority of visible signs of the original Arthur Head shoreline and although we do not have evidence of the precise location, we know that Aboriginal people crossed the river via the rock bar, probably near this point². Earlier port related structures at Forrest Landing for the most part, have not survived in the archaeological record as they were usually of iron, timber and later, asbestos construction with a short occupation. Most architectural remains of this period were removed after WWII and up until the 1960's, as part of port rationalisation and mechanisation which reduced the need for manual labour and these associated trade stores.

The stratigraphy of the site is characterised by successive layers of fill reflecting the changes in industry and modifications to the headland during the nineteenth and twentieth centuries. The site prior to this excavation was paved with either concrete or asphalt probably installed during or after WWII.³ Drilling investigations between the western end of Victoria Quay and South Mole revealed that the pavement is generally underlain with a 0.2-1.0m basecourse of crushed limestone or gravel. Limestone basecourse, over wooden blocks, over thin broken concrete was found under asphalt between E shed and the FPA building.⁴ Victoria Quay has been filled with dredge spoil from port construction supplemented by limestone from the levelling of Arthur Head and imported fill from Rocky Bay. Drilling investigations across the Victoria Quay Waterfront indicate that the surface 1-2m of profile is principally comprised of dredge spoil, however the surface soil profile is irregular, suggesting substantial modifications by historical site works.⁵

Inspection revealed a visible portion of the original limestone headland of Arthur Head at the new Maritime Museum site. The formation runs parallel to the western end of the existing wharf at Forrest Landing in a north south direction for approximately 5m. The top of the headland is exposed and it is assumed the formation continues below the soil to and possibly below seabed level. The line of the original headland continues below the surface across the museum building site.

This northernmost remnant of Arthur Head is an integral part of the harbour's history, and a link with the ancient pre-European past. The formation has been identified as typical Tamala Limestone and continues under the wharf at Forrest Landing and out to sea as a 1m

deep flat reef platform about 8-10 m wide. The extent of headland appears, although not confirmed, similar to the view in the 1890 panorama taken from a ship (Appendix 6 Fig. 1).

Site History

It had been recognised since first arrival in Fremantle, that there were no appropriate facilities for sheltered anchorage or berthing and that ship traffic could not traverse the limestone bar across the mouth of the Swan River. Fremantle presented as an unsafe harbour until the bar across the mouth of the Swan River was removed and the Inner Harbour constructed in the 1890's. These poor port facilities ensured that Albany remained Western Australia's principal port throughout most of the nineteenth century. Prior to the harbour developments, cargo and passengers were landed at South Bay. For further passage up the Swan River, everything had to be transported across the peninsula to the river wharves from South Bay. In 1837, Lieutenant Jones proposed the creation of an artificial harbour creating a breakwater, 914.4m long, south of Arthur Head. In 1839, the Surveyor General, J.S. Roe, proposed a similar scheme; however, neither of these early schemes were undertaken, principally because of the lack of resources in the colony. It was intended to utilise the labour of transportees on public work.

Work was initiated on opening the bar in 1848, when a trial explosion was facilitated by Superintendent of Public Works, Henry Trigg with the intention to carry on in succeeding seasons.⁶

In 1849, a Fremantle Harbour Board was appointed, chaired by Roe. Soon after, work started on Triggs Passage, a channel through the rock bar at the river's mouth. Local Shipping agents raised objections to opening this passage, fearing that ships would sail straight to Perth, bypassing Fremantle. Work was abandoned because of lack of plant.

The importance of the major port at Fremantle increased in the 1870's, reflecting a growing population and economy.⁷ In 1890 with the granting of responsible Government, the Colony became a State and in doing so gained the right to raise loans for its own maritime works. Harbour engineer, Sir John Coode had offered two proposals for Fremantle Harbour in 1877 which both proved too costly for the colony at that time.⁸ In early 1891, Forrest was anxious to resume investigation into building an appropriate port and requested Coode to advise as to what effect certain improvements proposed for Fremantle would have on Coode's 1887 scheme. Forrest was at the time considering Owen Anchorage, south of Fremantle as an alternative harbour, taking into account that Coode's basic scheme for Fremantle was unsuitable for all-weather berthing of vessels.⁹

In June 1891, Charles Yelverton O'Connor, an Irish engineer with extensive experience in New Zealand, arrived in Fremantle. While providing Forrest with

estimates he requested for the Owen's anchorage development, O'Connor also developed his own recommendations for a harbour. He presented two alternatives for an inner harbour, either at the mouth of the Swan or by dredging a channel to Rocky Bay. The former was his preferred scheme as there were navigational problems with Rocky Bay and extra costs for providing road and rail to that area.¹²

Director of Public Works, Harry Venn and members of the engineer Select Committee also favoured the river mouth harbour proposal based on its simplicity and lesser cost. Forrest successfully moved the O'Connor scheme in the Legislative Assembly on March 9, 1892. These were essential factors in finally determining the location and the form of Western Australia's principal port. The proposal consisted of two stone rubble breakwaters or 'Pierre Perdues', extending from each side of the river mouth. Removal of the limestone bar and subsequent dredging was required to open the Swan to shipping. Dredge spoil and blasted rubble was to be used to reclaim both sides of the Harbour. The proposal for what would eventually be Victoria Quay, was the creation of land backed wharves.¹³ Construction works commenced on the Inner Harbour in 1892, with the construction of North Mole utilising limestone from quarries at Rocky Bay. Preliminary work for South Mole began in May 1894, resulting in much of Arthur Head being levelled to provide the fill. Rocky Bay limestone was later substituted to the south mole as it was considered to be structurally unsound for the north mole. By 1897, much of the original promontory at Arthur Head had been quarried with the level land utilised by the Railway Department for railway lines.¹⁴



Fig 1 Victoria Quay pile driving c 1895

Victoria Quay was constructed of timber half-caps, corbels, beams and decking on a jarrah pile sub-structure.¹⁵ The completion of the work was celebrated with the arrival of the mail steamer *SS Sultan* of the Western Australian Steam Navigation Company, on May 4, 1897.



Fig 2 SS Sultan 1897

Fremantle Harbour Construction

C.Y. O'Connor's plan to open the Swan River bar and construct a harbour was approved by Parliament in early 1892. The resident engineer was Mr J.A. MacDonald.

Chronology

Nov 1892	Work on North Mole commenced utilising stone from Rocky Bay Quarry.
July 1894	Drilling and blasting of sandstone/limestone river bar commenced.
Aug 1894	Work on South Mole commenced in stone from the "levelling down" of Arthur Head.
Sept 1895	A 200 feet wide and 12 feet deep channel cut into bar and the <i>Fremantle</i> passed into the river. The suction dredge <i>Premier</i> followed in January 1896, along with a second bucket and second suction dredger.
Nov 1895	Main section of North Mole completed.

May 1897 S.S. *Sultan*, operated by the Western Australian Steam Navigation Company, made first passage over the bar. The North Mole slipway could now take any of the four dredges which otherwise could not have slipped any closer than Melbourne.

February 1898 The North German line vessel, *Prinz Regent Leopold* became the first mail steamer to successfully use the harbour, swinging in a basin then only 650 feet in width.

Temporary slipway at Rous Head completed.

July 1890 The dredging sufficiently advanced for the mail steamers to be induced to call regularly.

The Fremantle Harbour Trust established. Work on the Inner Harbour substantially finished.

1906 Construction of goods sheds

1912/3 Victoria Quay was re-piled and re-decked with jarrah timber after teredo (marine worm) damage to the sub structure.

1923-37 Re-piling of wharf sub structure due to teredo attack using reinforced concrete piles. A concrete casting yard was set up at the western end of Victoria Quay.

Slipways

After the C Y O'Connor extensions, work in the region continued, increasing in preparation for World War II. From WWII, activity in the area were predominately industrial and centred around the slipways. The development of a large purpose built slip changed the focus of the western end of Victoria Quay, in the vicinity of the new museum. This included activities associated with the general maintenance of vessels such as welding, carpentry, sheet metal work and repairs to engines, gears and rigging.¹⁶ The later named Swan Dock consists of three slipways; a 2000 ton slip constructed in the period prior to 1942, flanked by a 610 ton slip to the north and 101 ton slip to the south, both constructed in 1958. The No. 1 Slipway was progressively upgraded to 3000 tons in 1967. The Public Works Department of WA built the

majority of works on site.¹⁷ The main slip was used by the military during WWII including the British and American and Dutch Navies. The area was part of the largest submarine base in the southern hemisphere with an international fleet operating from the harbour. In the post war years the slipways were used to service the Stateships and Royal Australian Navy vessels. Privell Pty Ltd leased the slipways from 1988 to service commercial and military vessels.¹⁸

Potential Archaeological Research Questions

An aim of the site monitoring programme was to distinguish separate historical periods utilising known construction phases and see if these are reflected in the archaeological record. A set of questions related to the potential material remains associated with each construction phase were devised;

Pre-Colonial/Colonial Period

Are there visible traces of the original shoreline?

Is there any evidence of Aboriginal activity?

Is there any archaeological evidence to suggest this is location where Captain Fremantle took possession of Western Australia?

C Y O'Connor Harbour works 1892- 1897

Can we identify the Inner Harbour works in the immediate vicinity of the new Maritime Museum Site?

1897-Pre WWI

Can we identify any of the remains associated with general harbour works known to have occurred during this period?

Is there any evidence of the raising of wharf height from sheds A-D in 1903-1904?

Is there any evidence of timber "double-decking" to rail level in 1906-1907?

Is there any evidence of Victoria Quay re-piling 1912-1913?

1915-1945

Are there any traces of the original timber planking or wooden blocks which paved the area prior to WWI (evidenced by excavation between the FPA and E Shed)?

Can we locate the foundations of the Steam Ship Store (built 1919-1921, demolished 1947-1953), the Plumbers shop and Carpenter's shop (built 1920, demolished c.a.1969)?

Are there any indications of alterations to the wharf substructure? (old piles were removed from under the quay and a concrete apron was built from Cliff St to the west end 1916-1917)

Are there any indications of changes to the new Maritime Museum site and foreshore with the construction and upgrading of the 3000 ton slipway at Arthur Head?

Is there material remains of the American/British base established in the region during WWII?

Post WWII – present

Are there any indications of changes to the site and foreshore with the construction (1957-1958) of the 610 ton and 101 ton slipways either side of the 3000 tone original slipway?

Initial Archaeological Assessment

The new maritime museum site may be considered part of an historic precinct with much literary material to accompany any historical archaeological resource. This provides us with the potential location of archaeological remains. Archaeological investigation has been largely determined by the topographic changes Arthur Head and its surrounds has endured. Changes in the landscape reflected the different types of occupation at the site since first settlement.

It was anticipated that the ground would be profoundly disturbed at Forrest Landing. In terms of Aboriginal material, it was considered unlikely to find artefacts *in situ*, if at all. There is no evidence so far, for sustained Aboriginal occupation in this area and this suggests there is only a remote chance of archaeological evidence of their activity. The nearest identified prehistoric site is located in Mosman Park.¹⁹ It was considered possible, however, that the excavation could reveal traces of the original shoreline.

In the immediate vicinity of the new maritime museum site, there was no sustained occupation during the nineteenth century and this was taken into account when anticipating the archaeological record. It was expected that the majority of objects would range from the late nineteenth up until the early twentieth century and most likely re-deposited. The anticipated assemblage included fragmentary traces of nineteenth century bottles ranging through to stone ballast re-deposited from the river bed during dredging operations.

Field Methodology

The archaeologist(s) was present during all excavation phases of the initial site works. Prior to commencement of the construction programme (Appendix 3), excavation for the installation of various services provided test trenches across the site. These included deep excavation for a truck wash bay (B) and drain (D) with the contaminated area (I) scheduled to be removed first. It

was anticipated that this would provide an indication of the soil profile and material contained at the seaward end of the site and may also possibly reveal the original headland. If the stratigraphy was not adequately defined at any of these points, the archaeologist was to request a 1m trench running west-east down the centre of the site. This would have to have been located at the side of the site as a truck route through to Forrest Landing was required.

The excavation programme was carefully monitored with the archaeologist(s) watching for soil profile changes and objects contained in the fill. If there was any discernible stratigraphy, work ceased until it had been appropriately recorded. Similarly, areas containing material were examined prior to any further excavation, as was the spoil mound. It was apparent from the initial ground disturbance work that the majority of the site was fill from various construction phases. The site was characterised by areas of buried industrial rubbish, this was most noticeable to the west of the site with the highest concentration of material collected from the seaward side of the original headland.

It was initially suggested that excavated material be removed and immediately re-deposited in the riverbed to be used as bunding for reclamation work. This would not allow a thorough enough investigation of the material or an adequate sampling strategy so a stockpile technique was requested.

A contextual problem in regard to re-deposition of material and soil was noted and subsequently it would be very difficult to prove excavated materials association with either the industrial or maritime activity of the site. It was also anticipated that the soil would be wet due to proximity to the river and tidal variation making profile detection difficult. A reliance on shapes rather than soil colour changes when monitoring site excavations was expected.

Artefact Collection Strategy

One of the aims of this site monitoring programme was to collect representative artefacts from the site. This decision was also made with consideration for the lack of stratigraphy. A quantitative analysis was not possible in this strategy. It was anticipated that the majority of material would relate to 'modern' occupation (post 1920) consisting predominately of industrial rubbish, deposited outside facilities or over the edge of earlier sea walls. A sorting strategy was devised focussing in particular on material representative of the periods outlined in the potential archaeological research questions and with a view for display. It was also anticipated that a sequence could be derived from the large amount of fragmented glass material.

Dependant on the material excavated, a consistent discarding process was devised; For example:

1. Initial discard material at spoil heap
2. Further discrimination at secondary sorting area

Recording techniques

Progressive photographs of the excavation and digital video footage were taken. Profile drawings were also made where relevant.

Results

The maximum depth excavated for earthworks was 1.4 metres with the exception of trenches dug for services. Three primary areas were targeted for excavation at 300mm, 800mm and 1m depths. Separate excavations were organised for areas of contaminated fill and for service trenches. The site has been divided into areas denoted alphabetically and chronologically. (Appendix 2)

The excavation areas and depths (expressed in metres) are as follows;

- A Surface of entire site prior to excavation (incorporating existing rail), 0m
- B Truck wash and fire hydrant drain, 1.9m
- C SW corner of concrete wharf, 0.8m
- D Drain, 3.5m
- E SE shallow excavation area, 0.3m
- F Northern 600 tonne slip walk way, 1.4m
- G SE corner of concrete wharf, approx. 0.1m (removal of concrete cap only)
- H SW excavation area, 1.0m
- I Contaminated fill (slag/foundry waste), 1.4m
- J Contaminated fill (petrochemical), 0.3m

Area A Excavation

Contractors removed the disused rail line that ran to the end of the concrete wharf, west of A shed. Approximately 62 metres of rail was removed. The rail was supported by single jarrah railway sleepers, modern in appearance. It was noted that they did not have any protective coating of creosote or the like. The rail was attached by single dog spikes and some representative examples have been collected (NMM 1). Two periods of asphalt cover are associated with the rail, distinguished by the coarseness of the matrix of the earlier layer. The rail was located over modern road base and incorporated with the latest layer of asphalt.

The original headland was detected running parallel to the NS end of the concrete wharf at end of A Shed, cutting diagonally across the site and running along the northern walkway of the 600 ton slip. This original shoreline has been previously altered for construction and this is evidenced by the concrete interface on the slip walkway wall as well as the concrete slabs located at depth as foundations for lights. It was anticipated that the diagonal section cutting across the site could be detected during the 1m excavation (H) and in one contaminated fill area (I).



Fig 3 Area A with rail still present

Area B Excavation

A truck wash was dug at the eastern extremity of the site 1.9m deep. The stratigraphy consisted of bitumen overlaying limestone/sand infill, overlaying clean sand at 1.9m. The limestone/sand infill was clean and of very high quality which possibly makes it contemporary with the Inner Harbour developments 1892-1897. The Inner Harbour was a primary development in this period and superior materials such as this limestone fill would have been used. It is also a similar matrix to original ground which make the interface sometimes difficult to discern. The excavation to install the fire hydrant revealed that at this point the stratigraphy is bitumen overlaying 20cm of limestone fill overlaying bitumen overlaying clean limestone sand, again interpreted as imported limestone fill.

Area C Excavation



Fig 4 Area C post excavation

This excavation was divided into two parts;

- C1 Removal of concrete capping and ground disturbance to approximately 0.1m.
- C2 0.8m excavation

General surface observations from C1 included 20th century bottle glass; numerous iron fastenings such square section deck spikes (NMM2, NMM3), bolts, nails (NMM4) fasteners; ceramic and glass fragments.

Excavation 800mm (Area C2) extended 32m W-E, approximately 5m in from original shoreline.

Stratigraphy West Wall



Fig 5 Area C west wall profile

Layer	Average Depth
Concrete cap	0-10cm
Mixed deposit/rubbish	10-30cm
Limestone fill	30-60cm
Dark soil w/limestone rubble	60-125cm
Limestone rubble base	125cm

Stratigraphy East wall

Layer	Average Depth
Concrete cap	0-10cm
Mixed deposit/rubbish	10-30cm
Limestone fill	30-50cm
Dark soil w/limestone rubble	50-80cm
Original Road level	80-85cm
Limestone road base	85-95cm
Dark soil	95-125cm
Limestone rubble base	125cm



Fig 6 Area C east wall profile

The corrugated iron 'sea wall' was the northern boundary of C2. This was heavily corroded and punctuated with holes. The 'sea wall' is probably contemporary with the original Forrest Landing wharf which is constructed from jarrah timber and later overlaid with asphalt/concrete either during or after WWII. The southern boundary was excavated at an angle approximately 60° to the vertical, meeting the 0.3m excavation area with no definitive stratigraphy. C2 was bound at the western periphery by the original shoreline. The artefact assemblage consisted of bricks; glass sherds; nails; bolts; miscellaneous fastenings; fragments of limestone with limestone solution pipes indicating original shoreline level; and unidentified iron work. Collected material included a bottle neck with applied top (NMM5) and a copper nail (NMM6). An applied top bottle (NMM7) was discovered in the East wall of C2 in the dark soil w/ limestone rubble layer 50-80cm below the surface. Sherds of green 20th century bottle glass, bolts, timber fragments and other fastenings were also observed but discarded, having already collected representative examples.

Area D Excavation

The drain trench was excavated to a depth of 2.7m. In this excavation, the ratio of limestone fill to original sand was unclear. The bottom of the hole reached the water table and this was secured with blue metal and drained. Industrial rubbish was discovered under the bitumen approximately halfway along the trench, indicative of the modern debris infiltrating the site as a whole. Other material consisted of steel cable, machined bolts, steel cover for underground tap mechanism, and other amorphous metal pieces. No significant cultural material

or notable stratigraphy was observed. The trench was completed to and through the sea wall.



Fig 7 Area C corroded sea wall



Fig 8 Area D at iron sea wall interface



Fig 9 Area D west wall

Area E Excavation

Excavation to 0.3m revealed road base overlaying clean limestone fill. A trench from the fire hydrant to the slag contamination (I) in order to remove an asbestos pipe also contained modern detritus. Notable objects included a deck spike (NMM 9) on the surface from western extremity of the area.



Fig 10 Area E profile showing modern electrical services

Area F Excavation

The 600 ton slip rails were removed to facilitate truck access to the land reclamation area. They will be replaced at the completion of construction. The previously noted exposed limestone wall along the northern side of this slip was destroyed by heavy machinery. It was quite thin in section and residual traces of the headland appear to be visible elsewhere in the area. The northern walkway of 600 ton slip was excavated to base foundation level of 1.4m. Modern electrical services were located at approximately 1m and these overlaid imported soil base approx. 20cm thick which in turn, overlaid the original limestone rock platform. At the south eastern end of the slip the services are laid directly on original limestone. The area was of little archaeological interest, having been disturbed on various occasions for the installation of these services post 1942. Bolts and various fastenings were found at the surface and identified as industrial rubbish. Although the 600 ton slip area has been covered with limestone fill to facilitate access to the reclamation site and the slip trolleys removed, the area is to be returned to it's original state at the conclusion of the works. Cranes and other ancillary machinery, including the winder shed remain.



Fig 11 Area F chain *in situ*



Fig 12 Area F profile

Area G Excavation

The concrete cap at Area G was removed and ground disturbance occurred to approximately 0.1m. Surface survey of Area G after this procedure revealed one single water worn igneous stone, non-local in origin displaying wear on 2 surfaces (NMM 8).

Area H Excavation

Excavation of Area H began in the south west corner, with the soil profile noted as road base overlaying soil/limestone fill, overlaying the original limestone headland. The presence of the headland in this area made it impossible to excavate a level surface.

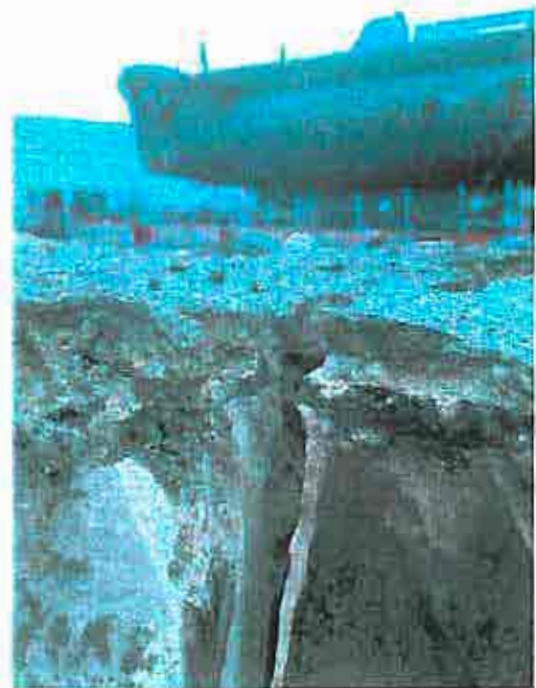


Fig 13 Area H showing limestone headland

A body fragment of a half size 'torpedo' bottle (NMM 10) and neck of green beer bottle (NMM 11) were recovered from the surface in this region. Continued excavation of Area H in an easterly direction, revealed 20-30cm infill soil overlaying natural limestone. A lump of concreted chain (NMM12) was recovered at 30cm.

The limestone headland was evident NW of contamination spoil (I) but no significant cultural material was observed. Material was predominately industrial rubbish probably associated with the occupation of the slipways. Significant material recorded in Area H included a 'Goldfield's black' bottle (NMM 27) found in the spoil heap; a flensing/boning tool from the whaling industry (NMM 28) found at 30cm in fill located approximately in the middle of Area H.

A storm water drain, also running E/W through contamination fill (I), was located and removed at approximately 2 metres. The soil profiles varied over Area H with the western end predominately dark soil infill interspersed with post 1942 industrial rubbish and the eastern end displaying the same clean limestone rubble fill evident across the majority of the site.



Fig 14 Area H industrial rubbish

Excavation in the area west of contamination pit (I) revealed several rubbish deposits. Very dark soil interspersed with various iron and steel industrial rubbish including cables from the slip and possible condensers characterised the majority of the deposit. Large limestone blocks (0.5m square) with an iron ring in middle of one side were noted. These may have been deliberately dumped over the edge of the sea wall as reinforcement, along with the other material. Reinforced concrete piles were also found dumped over the edge of the sea wall dating from the 1922 re-piling of Victoria Quay. At approximately sea level, a corked but badly broken up bottle (NMM 36) was found concreted in a section of corroded pipe which was also in a pocket of an unidentified oily substance seeping from the trench. Subsequent to this discovery, the environmental consultants, Sinclair Knight Mertz, called a cease to excavation until samples were analysed. Preliminary observations were that the area should be classified Class 4 waste. NMR spectrum analysis gave a broad categorisation of the material as a high boiling point, aromatic petroleum product (possible poly-aromatic hydrocarbon like coal tar).



Fig 15 Area H west of contaminated Area I

Excavation of south eastern corner of Area H contained no significant material, however, the two road levels and limestone fill, as observed elsewhere, were noted in this area.

Area I Excavation

This area, at the south western end of site contained above acceptable levels of copper and lead in the fill. Contamination was excavated in excess of the original 1.4m as a pocket of foundry waste was discovered. This overlaid a storm water drain possibly dating from the 1920's when the area was used for industry. The majority of material, in particular, bottle fragments were post 1920 which also supports this conclusion. Included in this spoil was an earlier rubbish dump characterised by stoneware vessel fragments. There was also iron cable, steel girders and similar material which is most likely associated with the slipway and WWII/post WWII activity. Representative examples of material from these three periods were collected. The original headland cuts through the eastern side of the contamination hole as anticipated and the slag contamination has continued into some of this level fusing metallic oxide residue to the limestone.



Fig 16 Foundry waste



Fig 17 Contaminated Area I excavation



Fig 18 Retrieving bottle from Area I

Area J Excavation

The second contaminated area incorporating petrochemical contaminants (Area J) was excavated to 0.3m. No cultural material found and the deposit was predominately limestone fill.

Conclusions

The archaeological significance of Forrest Landing at Arthur Head is in its reflection of the physical and economic growth of Fremantle beginning with the Inner harbour works through to the current museum development. The archaeological record supplements the historical, but as a whole is made up of fragmented artefactual material and disturbed deposits. The new museum site is located between the western extremity of Victoria Quay and the slipways and was utilised primarily as an area for temporary port associated trade stores in the period 1919-c.1969 and as a contemporary dumping ground for almost all periods of occupation. The 'rubbish tip' nature of the site was recognised quite early on by C.S.R Palmer while addressing the Institution of Civil Engineers in his paper of 1904 outlining alterations to south mole and Victoria Quay in 1902 stated.

The irregular disposition of the stone was not only a source of expense when the quay, constructed under pressure to accommodate traffic, was widened out to the present width, but was also a cause of serious nuisance, as the garbage which collected on the rough surface assisting furnishing food for colonies of rats that lived in the interstices of the stonework; and these rats were a considerable source of danger in times of bubonic plague.²¹

The landfill which accounts for much of the area's stratigraphy, in itself represents a series of separate historical events. The site has undergone major alterations

resulting from the different phases and types of occupation.

Pre-Colonial/Colonial Period

There is no evidence of Aboriginal sites in the areas excavated as part of site works for the new museum.

Although the majority was incorporated into Forrest Landing, part of the original headland of Arthur Head is still visible at the new Maritime Museum site. The formation runs parallel to the western end of the existing wharf at Forrest Landing in a north south direction for approximately 5m. The line of the original headland continues below the surface across the museum building site to the north west corner of the 600 tonne slip and has been exposed during excavation.

This northernmost remnant of Arthur Head is an integral part of the harbour's history, and a link with Captain Fremantle, C. Y. O'Connor and the ancient pre-European past. The formation has been identified as typical Tamala Limestone and contains within it, formations of geological interest.



Fig 19 Residual headland



Fig 20 Sectioning off headland earmarked for preservation

This is a significant for the following reasons;

- A) It is the only remaining piece of original headland at Arthur Head
- B) It is adjacent to where the Nyungar people would have crossed the mouth of the Swan along the limestone bar.
- C) It is a tangible remnant of the place where Captain Fremantle may have issued his proclamation.

D) It is linked to the terrestrial end of the rock bar removed during the Inner Harbour works by G Y O'Connor 1892-1897.

The archaeological team has worked with the consultants for the project and reached agreement with them on a means to retain a portion of the headland with a view to providing a conceptual link between the modern Victoria Quay, the limestone cliffs at the Round House and Arthur Head. The feature has connections with the Aboriginal past, the advent of European settlement and the development of the port.

1892-1897 C. Y. O'Connor Inner Harbour works

Evidence of the Inner Harbour works in the immediate vicinity of the new Maritime Museum Site consists predominately of the imported limestone sand and rock used as fill for reclamation work. It's distinctively clean matrix and good quality is indicative of the period's building products. The Inner harbour was one of Western Australia's primary public works and combined with the availability of rock from Arthur Head and Rocky Bay, superior building materials were preferred. The selection of contemporary beer bottles may be related to the ports industrial and/or social aspects. It was indicated that the area between E shed and the slipways was paved with timber. It was anticipated that the timber pavement would have been replaced with asphalt and concrete during and after WWII²³ and this was verified by this excavation.

1915-1942 Port related Industry- From Stateships to the Slipway

Rubbish pits found level with services probably laid in the 1920's (eg storm water drain in Area I) give us a rough date range for the material contained within them. Bottles recovered also help date the deposit. The contaminated area (I) is difficult to interpret as the deposit is interspersed with foundry waste which has also leached into the limestone rock platform. Amorphous metal objects; industrial waste; and pockets of lead/copper and petrochemical waste confuse the context further. Although there is no direct evidence of the Stateships store and other known trade stores, much of the rubbish is contemporary.

Of the rubbish found west of the original sea wall at Forrest Landing, evidence of the reinforced concrete repiling was noted. Several concrete piles were found 'dumped' on the seaward side, perhaps put there to reinforce the sea wall. This point should be considered as large concrete blocks constructed for this purpose were found in association with these piles.

The presence of what appears to be a whaling flensing/boning tool in association with industrial rubbish from the slipway is not easily explained. If it is such a tool (following conservation, a firmer identification can be given), it is probably from the Whaling Station located on

the southern side of Arthur Head. The Fremantle Whaling Company was established in Bather's Bay in 1836/37. The export value of whale products fluctuated between 1844 and 1850 and along with increasing wool exports, lead to the demise of whale product exports and consequently industry operations. The Company was dissolved in 1850 and the site being Crown land, was resumed by Government. The Whaling Station was excavated in 1984²⁴ revealing parts of the Whaler's store, tryworks and related buildings. Most of the finds related to the whaling station were discarded as being undateable building material or industrial waste from landfilling. There are several possibilities pertaining to how the implement ended up in the location in which we found it; two are presented here;

- (i) This may be an example of the secondary use of a tool. The shovel/spade like shape may have been suited to other tasks.
- (ii) It may have been re-deposited in this location as part of the Inner Harbour works which utilised stone quarried from Arthur Head in the region of the old Whalers Station.

1942-1945 WWII Naval Ship Repair Facility

A collection of heavy duty fittings such as the split pin shackle, concreted lumps of chain, and cable from the slip make up the material remains of the American/British/Dutch base established in the region during WWII.

There were no beverage bottle remains from this period, possibly reflecting the fact that it was a fully operational Naval facility with no scope for social drinking. This contrasts with the location of modern soft drink and beer bottles which reflects the downgrading of the area even in civilian use after WWII.

Stratigraphy

The site consists predominately of limestone fill and it is often not possible to give excavated materials direct contextual association. On the basis of the character of the artefactual assemblage, we can infer association with either industrial or maritime activity at the site. Profile detection is also difficult in this type of deposit.

Although limestone base course, over wooden blocks, over thin broken concrete was found under asphalt between E shed and the FPA building in earlier site works not related to this project, no indication of wooden flooring has been found in the new maritime museum site to date. The majority of maritime structures previously uncovered at Arthur Head have been preserved under approximately two metres of landfill. It has been estimated that 87% of the original structures at Arthur Head were demolished within 25 years of the opening of the Inner Harbour.²⁴

Conservation

All artefacts will undergo treatment, after registration is completed. Many specimens, especially those located at the western end of the site have been subject to tidal movement and intermittent wetting and drying. This contributes to the highly corroded state of most iron pieces. Contamination pit (I) has waste associated with foundry works and this has influenced the state of preservation of many objects. The corroded iron objects will be treated in the hydrogen furnace and some glass will undergo a process of desalination. The majority of objects will be cleaned and then displayed.

Interpretation/identification of artefacts

Glass

The earliest bottle example is the commonly called 'goldfields black', a three piece mould with applied top, black-olive coloured, beer bottle. This style is usually attributed to the 1850-1870's period. The relatively fine finish and smooth pontil on this example however, suggest it is later in age. It is conceivable that this earlier style may reflect the vintage of the bottle manufacturers machinery, producing these type bottles in a later period. Regardless, we can attribute this bottle to the second half of the nineteenth century.

A body fragment of half size, 'torpedo' Hamilton patent bottle made from aqua glass was also of interest. It probably dates to 1880-90's.

The bottles from this site are best classified by their closures. The Australian ring seal was common on this site and its appearance in earlier goldfield contexts date the introduction of the closure to around the 1850's. This closure is however, most common on the late nineteenth century ring seal beers.²⁵ Another common seal of bottles on site was the applied crown seal, patented in 1891 by William Painter. This was used up until 1915 when it was superseded by the machine made crown seal following the automation of the bottle making industry with the formation of the company Australian Glass Manufacturers.²⁶

The majority of glass material on site, can be dated by closure type and general style, to the late nineteenth, early twentieth centuries. Many of the examples have also had the necks "cracked" off. Instead of undoing or cutting the wire or string used in the ring seal to hold the cork, the tendency was to give the bottle a sharp crack on a convenient object to snap off the top just under the tie ring.²⁷

All the glass bottles most likely contained beer. They do not exhibit the fineness in form of wine bottles, which are similar in design. Similarly, the consumption of beer is more applicable to the port/industrial location in which they were found.

Ceramics

A number of fragments of square top stoneware ink containers were found on site, especially in Area I. They are robust, common, mass produced items and subsequently, none of these examples bear a potter's mark. The notable other ceramic material included fragments of stoneware *demijohns*. These are fairly large containers, one example (NMM 35) with "Cuming Footscray Chemical Works Melbourne" partially stamped into it. This vessel was probably an acid container.

Fastenings and metal objects

Perhaps one of the more interesting objects found amongst post WWII industrial rubbish in the west contamination pit (Area I) was the large iron shackle (NMM 14). It is an example of the English patent, split pin shackle which were in use until the end of WWII. It was found in association with slipway material such as lengths of cable.

The majority of fastenings recovered from the site reflect the industrial use of the area, ranging from the dogspikes to secure the railway, to iron deck spikes and copper fastenings that are also indicative of the port activity.

Stone

The stone object (NMM 8) recovered from Area G, is unlikely to be of Western Australian origin and may be identified as 'English Flint' possibly carried as ship's ballast to Fremantle.²⁸ It is similar in form to stones from southern England; eg Chesil Beach. For a formal identification, the specimen should be thin sectioned to expose and identify microfossils within the matrix.

The stone was discovered just inside the existing sea wall under the concrete cap of Area G. It may have been part of the dredge spoil used to reclaim the Victoria Quay area as part of the 1897 Inner Harbour works.

A portion is missing from the stone, possibly flaked off after being struck by a heavy object. The stone does not appear to be deliberately "worked" although on first inspection it gave the appearance of possibly being Aboriginal in origin.

Legal Protection

Port related structures at Arthur Head are protected under section 5.6 (3) of the *Maritime Archaeology Act 1973*, stating that the sea-bed under and around jetties and port-related structures that were in use before 1900 is a protected maritime archaeological site. A date of 75 years before present is also the criterion for nomination of an historic site under current maritime archaeological legislation. The criterion remaining to be satisfied under that process is whether there is some structure extant at the site under consideration. The nomination of sites under the terms of the *1976 Commonwealth Historic Shipwrecks Act* are:

- (i) A site significant in the discovery, early exploration, settlement or early development of Australia
- (ii) A site relevant to the opening up of development of parts of Australia
- (iii) A site relevant to a particular person or event of historical importance
- (iv) A site, the possible source of relics of historical or cultural significance
- (v) A site representative of a particular maritime design or development

The area at Forrest Landing does not qualify for protection under these criteria.

Recommendations

Display

It is envisioned that objects collected as part of the watching brief could form part of a small display highlighting the history of the new museum site at Forrest Landing. This display should be erected in the entrance gallery in the existing maritime museum and then moved into the new premises. Some of the material and information from this watching brief could also be incorporated in the Fremantle and Swan River Gallery proposed for the new museum.

Retention of original headland.

It was resolved that at least half the section of headland identified at the western end of the Forrest Landing wharf, can be preserved and made a feature of the new museum. Further suggestion was made at exhibiting a section of the headland showing the geological features and an offer of assistance of returning the seabed at this point to its original state, was made by the Maritime Archaeology Department.

Archival Sources

1. Reports of the Department of Public Works for the Financial Year (1895-1908)
2. PWD WA 15605 (Drawing No. 9) Fremantle Harbour & Gage Roads. Harbour Works c.1896
3. PWD WA 26082 (Sheet 1 & 2) Fremantle Harbour Works c.1896 & 1901
4. PWD WA 9259 Fremantle Harbour Works showing extent of works constructed and provided for. C.1901
5. PWD WA 17630 Fremantle Harbour Works c.1924.
6. PWD WA 7858 Fremantle Works c.1900.
7. PWD WA 9077 Fremantle Harbour Works c.1902.
8. PWD WA 5832 Fremantle Harbour Works c.1900.
9. PWD WA 17630 Fremantle Harbour Works c.1918.
10. PWD WA 9421 (Sheet 2) Fremantle Harbour Works, Progress Plan (Revised) 6/9/1902.
11. PWD WA 15300 Fremantle Harbour Works, Progress Plan (Revised) 31/12/1910.

Bibliography

- Bavin, L. 1988. Exploratory Excavations at Arthur Head: Stage II of the N.E.P. Archaeological Programme. Fremantle City Council.
- Bavin, L. & Gibbs, M. 1988. Report on the Historical Archaeological Potential of Arthur Head and Directions for Future Management and Research. Fremantle City Council.
- Bowman Bishaw Gorham 1999. Fremantle Waterfront Environmental Audit Initial Evaluation of Contamination (Draft 1 Version 1) Report prepared by GHD Pty Ltd.
- Considine and Griffiths Architects 2000. Victoria Quay Slipways Area Conservation Plan. Government Property Office.
- Ewers, J. 1948. Western Gateway. Fremantle City Council.
- Hitchcock, J. 1929. The History of Fremantle. Fremantle City Council.
- Jones, O. 1986. Cylindrical English Wine Beer Bottles 1735-1850. National Historic Parks and Sites Branch Environment Canada- Parks.
- MacIlroy, J. & Kee, S. 1986. Bathers Bay Whaling Station Fremantle Excavation Report. Fremantle City Council.
- Molyneux and Associates 1998. Victoria Quay Heritage Study Volumes 1-3. Fremantle Port Authority.
- Page, J. 1986. Building a State. Water Authority of Western Australia, Leederville.
- Pearson, M. 1984. Report of an Investigation into the Historical Archaeological Resource within the Arthur Head Area, Fremantle. Fremantle City Council.
- Roycroft, R. & C. 1976. Australian Bottle Price Guide. Reliance Press, Deniliquin.
- Roycroft, R. & C. 1977. Australian Bottle Price Guide. Reliance Press, Deniliquin.
- Souter, C. & McCarthy, M. 1997. The Maritime Archaeological Resource at Arthur Head. A Report for the Arthur Head Conservation Plan. Department of Maritime Archaeology, Western Australian Museum Report No. 145.
- Stannage, C. (ed.) 1981. A New History of Western Australia. University of Western Australia Press.
- Vader, J. & Murray, V. 1975. Antique Bottle Collecting in Australia. Ure Smith, Sydney.
- Wood, D. 1986. The Arthur Head Project. City of Fremantle.

Footnotes

¹ Standard and Guidance for Archaeological Watching Briefs
Institute of Field Archaeologists, London, 1995.

² Henderson, G. Brief for Archaeologist to Monitor Initial Site
Works of New Maritime Museum email correspondence to
Acting Head, Department of Maritime Archaeology 6/7/
00.

³ Dortch, C. pers. comm.

⁴ Bavin, L. & Gibbs, M. 1988. Report on the historical
archaeological potential of Arthur Head and directions for
future Management and research p.32

City of Fremantle. 1991. Victoria Quay and it's architecture:
history and assessment of cultural significance. p43

⁵ Bowman, Bishaw Gorman. 1999. Fremantle Waterfront
Environmental Audit Initial Evaluation of Contamination
p12

⁶ *Ibid.* p12

⁷ *Ibid.* p13

⁸ Page, J. 1986. Building a State: a history of the Public Works
Department 1819-1985 p51

⁹ Bavin, L. and Gibbs, M. *op. cit.* 1988 p13

¹⁰ Page, J. *op. cit.* p139

¹¹ *Ibid* p184

¹² *Ibid* p186

¹³ *Ibid* p190

¹⁴ Pearson, M., 1984. Report of an investigation into the historical
archaeological resource within the Arthur Head Area
Fremantle p 6

¹⁵ Page, J. *op. cit.* p195

¹⁶ Bowman Bishaw Gorman. *op. cit.* p23

¹⁷ Considine and Griffiths, Architects. 2000. Victoria Quay
Slipways Area First Draft Conservation Plan pii

¹⁸ Bowman, Bishaw Gorman. *op. cit.* p23

¹⁹ Dortch, C. pers. comm. .

²⁰ Bavin, L. 1995. Exploratory Excavations at Arthur Head: Stage
II of the N.E.P. Archaeological Programme. Fremantle City
Council

²¹ Page, J. *op. cit.* p195

²² Bowman Bishaw Gorman. *op. cit.* p45

²³ McIlroy, J. & Meredith, D. 1984 Bathers Bay 1984: Report for
the Australian Heritage Commission. Australian Heritage
Commission, Perth.

²⁴ Bavin, L. & Gibbs, M. *op. cit.* p13

²⁵ Roycroft, R. & C. 1976. Australian Bottle Price Guide p43

²⁶ Vader, J. & Murray, B. 1975 Antique Bottle Collecting in
Australia p14

²⁷ Roycroft, R. & C. 1977. Australian Bottle Price Guide p9

²⁸ Dortch, C. pers. comm.

Appendix 1

Aboriginal Affairs Department Section 16 Monitoring permit.



ABORIGINAL AFFAIRS DEPARTMENT

Permit under the provisions of the *Aboriginal Heritage Act 1972*,
Section 16, for Aboriginal sites

PERMIT NO:

263

APPLICANT:

Mr G Henderson

OF:

Western Australian Museum
WA Maritime Museum
Cliff Street
FREMANTLE WA 6160

Is hereby permitted under section 16 of the *Aboriginal Heritage Act 1972*
(AHA) to:

SECTION 16
TYPE:

A. Collect Aboriginal cultural material
from the surface of the site(s) described
hereunder for the purposes of
archaeological investigation.

F. Undertake management of the site(s)
described hereunder for the purpose of
heritage protection

For the following area: Fremantle Harbour : New Maritime Museum Site

For the period of: 31 July 2000 to 30 November 2000.

The Final Report is due 30 November 2001. This permit is issued subject to
the provisions of the AHA, its regulations and conditions as denoted on
page 2.

.....
Registrar of Aboriginal Sites

23.7.00
.....
Date

COPY



ABORIGINAL AFFAIRS DEPARTMENT SITE MONITORING

APPLICATION FOR A PERMIT UNDER THE PROVISIONS OF SECTION 16 OF THE
ABORIGINAL HERITAGE ACT 1972 FOR MONITORING DURING DEVELOPMENT

1. APPLICANT DETAILS:

Name:

Western Australian Museum

(Title)

(Given Names)

(Surname)

Address:

WA Maritime Museum Cliff Street FREMANTLE 6160
(Street Number & Street OR Post Office Box) (Town) (Postcode)

Phone & Facsimile Number(s): Mr G. Henderson - (08) 9431 8477 (08) 9335 7224

2. PROJECT MONITORING AND ARCHAEOLOGICAL PROCEDURES

Outline proposed archaeological procedures for monitoring: This should include information such as sampling design, method of collecting, layout, excavation, processing and estimated portion of area to be examined.

Archaeologists on the staff of the WA Museum will monitor the progress of ground disturbance at the new maritime museum site and act in accordance with the requirements of the legislation should a site(s) be indicated.

3. DESCRIPTION OF AREA:

Please repeat section 5 if you are requesting a permit for more than one area and enclose a copy for each area.

Definition of the extent of the area: 200 m (E-W) x 100 m (N-S)

Map sheet name 1:250,000(metric): UBD Map 573 (see CAMS site plan A1-01REV.A for details)

Serial No:

--	--	--	--	--	--

Grid Reference of southwest corner:

--	--	--	--	--	--

Nothing

--	--	--	--	--	--	--

Presentation of marked mapsheets: *Attach portion of clearly marked 1:250,000 (metric) series map below (legible photocopies are adequate).*

4. MANAGEMENT OF CULTURAL MATERIAL (where applicable):

Discuss management of retrieved material if applicable, include reference to consultation with relevant Aboriginal people.

In the event of a discovery of Aboriginal Cultural Material the Section 16 Permit will be revised as required.

Consultation will then be made with the Western Australian Museum Aboriginal Cultural Heritage Advisory Committee (WAMACHAC) as well as members of the local community and the Maritime Museum Nyungar Advisory Committee. These groups will be consulted in respect to retrieval, conservation, exhibition and management of all relevant cultural material.

5. COMMUNITY PARTICIPATION:

By what processes have you consulted with the relevant Aboriginal people/organisation(s), and who, if appropriate, has given you advice in these matters? The following information should be included if relevant - a list of individuals/organisations consulted; meetings held; the issues discussed; Aboriginal concerns and involvement; any agreements reached; and, arrangements, if any, made with Aboriginal people:

Refer to report entitled: 'Ethnographic Report Desktop Study for the Development Site of the Western Australian Maritime Museum for Cox, Howlett, Bailey, Woodland' by Dr Barrie Machin, October 1999.

IMPORTANT

Letter(s) from the relevant local Aboriginal Community/Individual(s) which shows

6. DEVELOPMENT PROJECT DETAILS:

Name of Employer/Agency commissioning the project:

Western Australian Museum

(Title)

(Given Names)

(Surname)

(Company)

Postal Address:

WA Maritime Museum

Cliff Street

FREMANTLE

6160

(Street Number & Street OR Post Office Box)

(Town)

(Postcode)

Contact Phone & Facsimile number(s): Mr G. Henderson (08) 9431 8477 (08) 9335 7224

Details of project including report to which proposed work relates and brief description of the development project. This should include report title, author(s), year and whether a copy has been provided to AAD, including a section 18 referral where applicable:

Western Australian Maritime Museum - please refer to Cox, Howlett, Bailey Woodland reports July 1999 April 2000

Names of those involved in the project/fieldwork: This should include information such as occupation, archaeological training, and any relevant Aboriginal cultural affiliations. Please attach further information if necessary.

Ms C. Souter, BA (Archaeology) GradDipMarArch

Dr M. Smith, BA(Hons) PhD DipEd

Mr Charles Dortch, BSc MPhil

7. OTHER RELEVANT DETAILS:

Highest applicable qualification attained by the Applicant (include Degree, Grade, Institution, Year):

See above

Supervisor (where applicant does not hold a post-graduate degree or experience acceptable to the Registrar) or Referee:

Dr Michael McCarthy, Acting Head, Dept Maritime Archaeology, WA Maritime Museum

(Title) (Given Names)

(Surname)

(Department)

(Institution)

Supervisor/Referee's Phone & Facsimile number(s): (08) 9431 8436 (08) 9335 7224 (Fax)

Details of the most relevant fieldwork/excavation or other archaeological experience: Please include, Year, Project, Region, Area/Site, Supervisor, and Tasks undertaken by applicant (for example, survey, excavation) and Title/Date/Author of Report; additional information can be attached:

Excavation of 'Batavia' victims remains, excavation and management of the French annexation site (1998-2000)

8. DATES OF THE PROPOSED WORK

Fieldwork research commencement date: *Interim reports are required at the end of each calendar year, regardless of the issue date. Failure to submit reports by 31 January will result in forfeiture of the permit.*

31 July 2000

DATE

Fieldwork completion date: *Permits are only issued for the maximum period of 3 years.*

Formal application for an extension beyond this period must be submitted to the Aboriginal Cultural Material Committee prior to the completion date.

end-November 2000

DATE

9. CONDITIONS FOR PERMIT HOLDER:

The holder must:

- a) Adhere to the provisions of the *Aboriginal Heritage Act 1972* and its Regulations.
- b) Consult with and, where appropriate, involve members of the relevant Aboriginal communities in all aspects of the project (for example, prior to submitting an application and during monitoring). The researcher is accountable to the relevant Aboriginal people and communities regarding the monitoring project and the archaeological method and procedures must be explained and approved by them.
- c) Action at any site located is to be limited to *in situ* recording, a sample no greater than 10 per cent of surface material, or two 1m x 1m test pits to assess the archaeological potential of the site, whichever is applicable. Additional work must be subject to a new application. **Note:** Permits can be issued urgently where a request is justified.
- d) Submit site documentation on appropriate forms and a report on the results, to be accessioned with the Aboriginal Affairs Department (AAD), after consultation and agreement with the relevant Aboriginal people. This should include site plans of any site sampled.
- e) Provide a written record of all cultural material recovered to the relevant Aboriginal communities, AAD and the Western Australian Museum.
- f) Arrange storage and future management of all Aboriginal cultural material recovered in accordance with the wishes of the Aboriginal people.

g) Where human skeletal material is discovered at any site, cease any activity at the site, inform the relevant Aboriginal people, the Registrar and the Police immediately and await instructions.

h) Provide the AAD and the relevant Aboriginal communities/people with:

- a report within 1-3 months on completion of the monitoring project, and,
- any subsequent documentation and published reports (for example, thesis, carbon dates, articles).

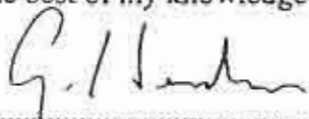
IMPORTANT

A breach of these conditions will result in forfeiture of the permit and may jeopardise consideration of future applications.

10. AGREEMENT FOR PERMIT HOLDER:

I the undersigned, hereby certify that:

- a) I shall be in charge of the work outlined above and accept full responsibility for the manner in which the investigations are conducted, including arrangements to enter the land, which is the subject of this application. I accept that the AAD takes no responsibility for the provision of any other permits or permission as may be required by other agencies or interest groups in relation to the proposed work programme.
- b) I accept the "conditions for permit holders" and any special conditions set by the ACMC and stated on my permit.
- c) I will honour any agreements with, and obligations to, the relevant Aboriginal people.
- d) To the best of my knowledge the information supplied herein is correct.



SIGNATURE OF APPLICANT

27/7/00

DATE

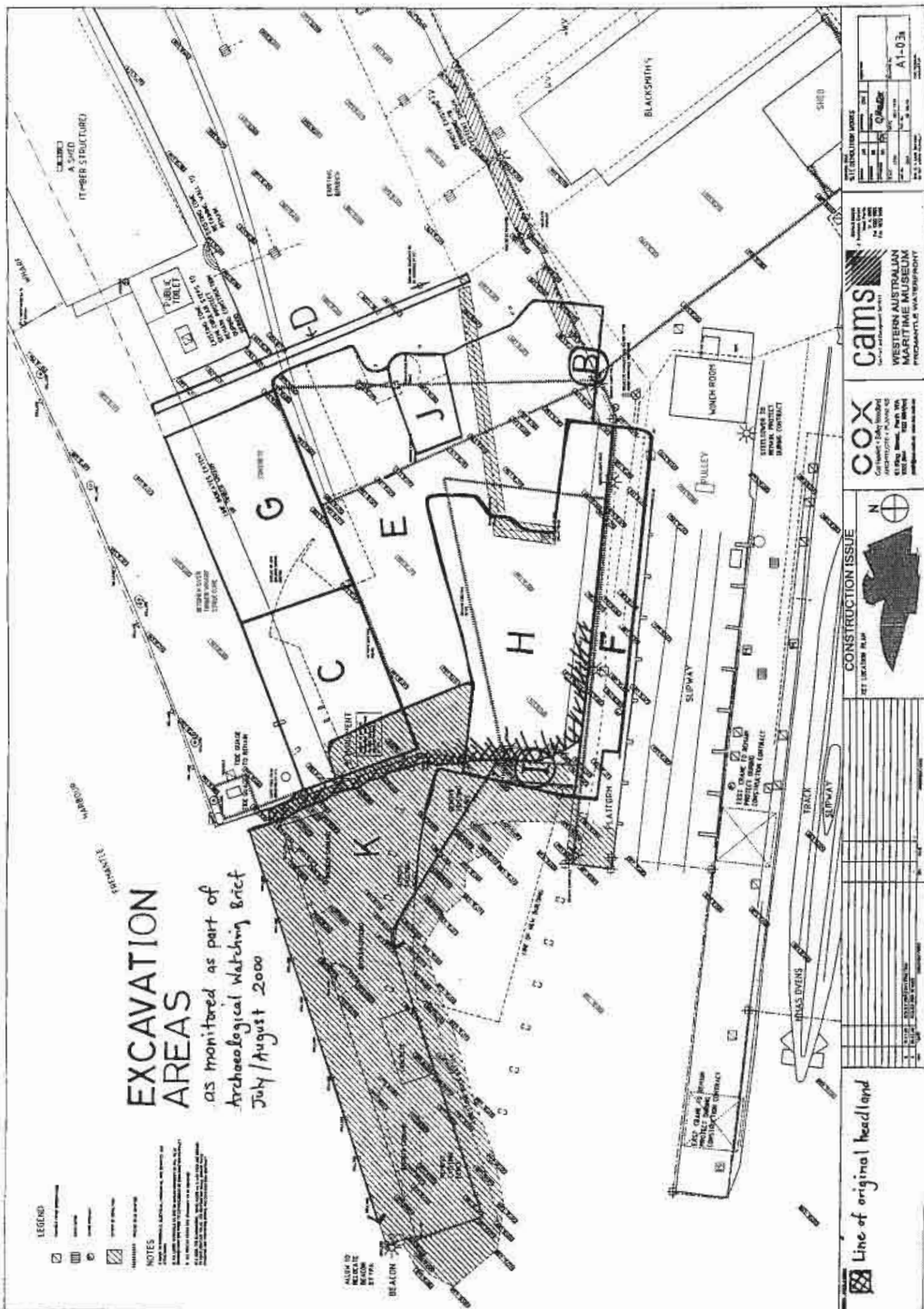
Appendix 2

Site excavation plan

New Museum site showing original shoreline

EXCAVATION AREAS

as monitored as part of
Archaeological Watching Brief
July / August 2000





Appendix 3

Multiplex Construction Programme

Construction Programme

MULTIPLEX CONSTRUCTIONS PTY LTD

Act	Orig	Early	Early	Early
10	Dur	Start	Finish	Finish
10	10	10	10	10

MILESTONES & CONTRACT OVERVIEW

1000	1000	1000	1000	1000
1000	1000	1000	1000	1000
1000	1000	1000	1000	1000

GENERAL SITE PREPARATION

1000	Establish Site & Set Out	5/24 JUL 00	24 JUL 00	27 SEP 01
1010	Excavate & Remove Contaminated Fill	3/25 JUL 00	26 JUL 00	
1040	Excavate & Remove Contaminated Fill	5/26 JUL 00	04 AUG 00	
1050	Demolish Surface Features & Hardstandings	6/25 JUL 00	05 AUG 00	
1060	Demolish Forest Landing Wharf	10/26 JUL 00	10 AUG 00	
1070	Storm Water Diversion	4/29 JUL 00	03 AUG 00	
1080	Excavate 1m of Fill Over Area of New Slabs	10/29 JUL 00	10 AUG 00	
1090	Install Ground Borers	20/15 AUG 00	06 SEP 00	

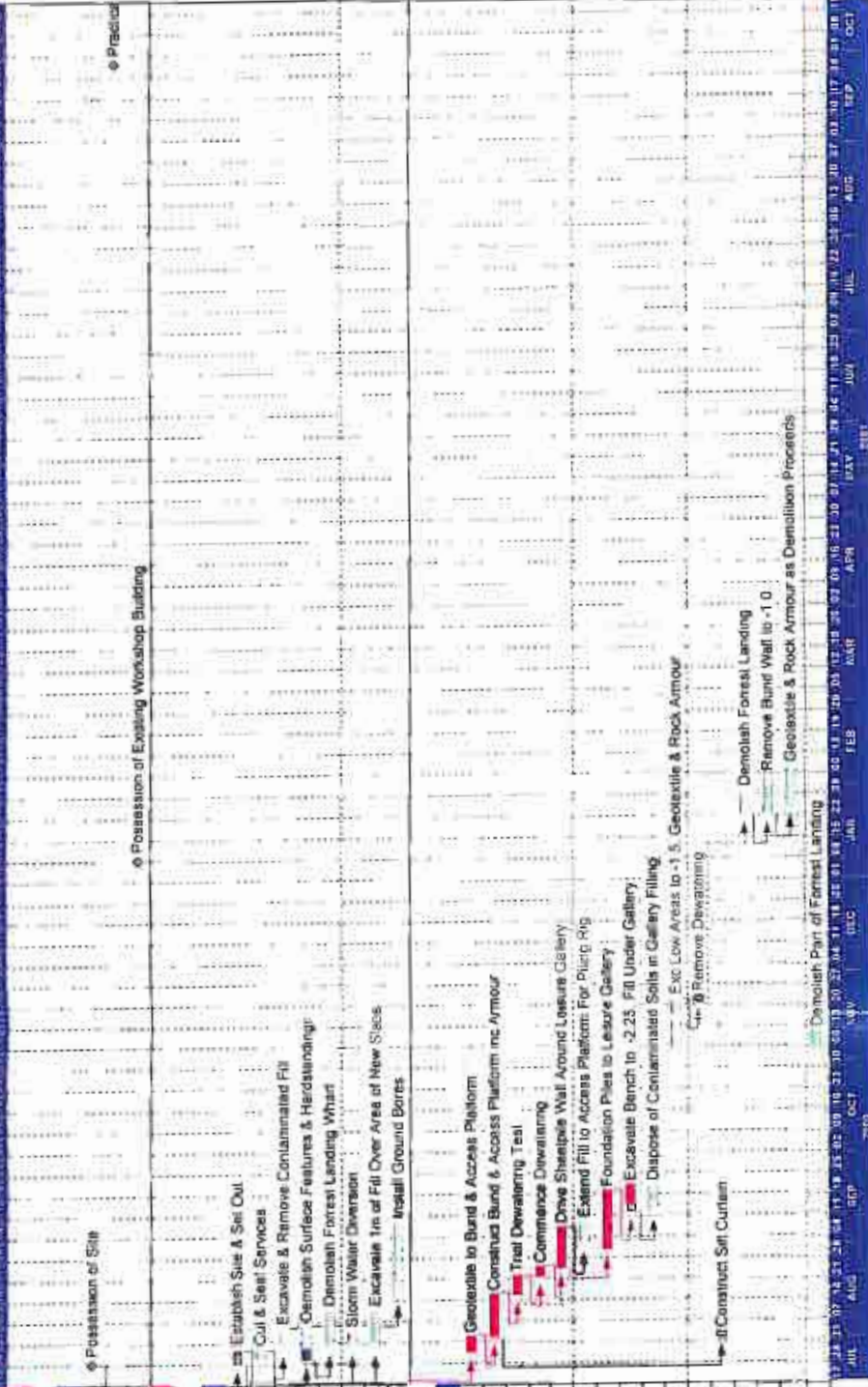
LEISURE GALLERY

1000	Geotextile to Bund & Access Platform	4/27 JUL 00	01 AUG 00	
1010	Construct Bund & Access Platform inc Armour	10/01 AUG 00	15 AUG 00	
1020	Trial Dewatering Test	5/15 AUG 00	21 AUG 00	
1030	Commence Dewatering	3/21 AUG 00	24 AUG 00	
1040	Drive Sheetpile Wall Around Leisure Gallery	10/24 AUG 00	06 SEP 00	
1050	Extend Fill to Access Platform For Piling Rig	5/01 SEP 00	08 SEP 00	
1060	Foundation Piles to Leisure Gallery	13/30 AUG 00	18 SEP 00	
1070	Excavate Bench to -2.25, Fill Under Gallery	7/12 SEP 00	20 SEP 00	
1080	Dispose of Contaminated Soils in Gallery Filling	7/12 SEP 00	20 SEP 00	
1090	Exc Low Areas to -1.5, Geotextile & Rock	12/04 NOV 00	21 NOV 00	
1100	Remove Dewatering	1/21 NOV 00	22 NOV 00	
1110	Construct Silt Curtain	1/01 AUG 00	02 AUG 00	
1120	Demolish Forest Landing	5/22 JAN 01	29 JAN 01	
1130	Remove Bund Wall to -1.0	10/22 JAN 01	03 FEB 01	
1140	Geotextile & Rock Armour as Demolition	10/24 JAN 01	08 FEB 01	
1150	Demolish Part of Forest Landing	5/04 NOV 00	10 NOV 00	

1160	Demolish Part of Forest Landing	5/04 NOV 00	10 NOV 00	
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Date	Revision	Checked	Approved
21 JUL 00	0		RL

MULTIPLEX CONSTRUCTIONS PTY LTD
W.A. MARITIME MUSEUM PROGRESS



Appendix 4
Artefact Database

New Maritime Museum Archaeological Survey

Area

E (A)

Registration No.

NMM 1

No. of artefacts

2

Description

dogspikes

Material

iron

Date Registered

Date Found

31/07/00

Depth

surface

Site location

found in association with rail which was removed 27/07/00

Notes

Dimensions

16 x 5cm

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/80/1

New Maritime Museum Archaeological Survey

Area

C

Registration No.

NMM 2

No. of artefacts

2

Description

deck spikes

Material

iron

Date Registered

Date Found

3/8/00

Depth

surface

Site location

Notes

Dimensions

16 x 19cm

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/80/2

New Maritime Museum Archaeological Survey

Area

D

Registration No.

NMM 3

No. of artefacts

1

Description

square head bolt

Material

iron

Date Registered

Date Found

3/8/00

Depth

30mm

Site location

south end of drain excavation

Notes

Dimensions

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/80/3

New Maritime Museum Archaeological Survey

Area

C

Registration No.

NMM 4

No. of artefacts

1

Description

nal

Material

iron

Date Registered

Date Found

7/8/00

Depth

85mm

Site location

second road level on east wall of C2 excavation

Notes

Dimensions

55mm

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/80/4

New Maritime Museum Archaeological Survey

Area

C

Registration No.

NMM 5

No. of artefacts

1

Description

piece of clear/blue glass bottle neck with applied top. Similar in form to patent medicine bottle like Eno's Fruit Salts (see LJ 452)

Material

glass

Date Registered

Date Found

7/8/00

Depth

80cm

Site location

sifted from fill from C2 excavation

Notes

Dimensions

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/44/1

New Maritime Museum Archaeological Survey

Area

C

Registration No.

NMM 6

No. of artefacts

1

Description

Nail

Material

copper

Date Registered

Date Found

7/8/00

Depth

80cm

Site location

sifted from fill of C2 excavation

Notes

Dimensions

50mm

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/30/1

New Maritime Museum Archaeological Survey

Area

C

Registration No.

NMM 7

No. of artefacts

1

Description

green applied "blob top" bottle. Possibly a spa water bottle late nineteenth to early twentieth century

Material

glass

Date Registered

Date Found

8/8/00

Depth

50-80cm

Site location

east wall of C2 excavation in dark soil w/limestone layer

Notes

found by Multiplex excavator

Dimensions

205mm long, 55mm base diameter

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/44/2

New Maritime Museum Archaeological Survey

Area	G		
Registration No.	NMM 8		
No. of artefacts	1		
Description	Igneous (chert) water worn stone with portion flaked out from centre		
Material	stone		
Date Registered		Date Found	9/8/00
Depth	20mm		
Site location	under concrete cap middle of Area G		
Notes	Not likely to be aboriginal-the portion missing has possibly been flaked by being struck by heavy object. Contact point of such a blow is visible. Tentatively identified as 'English Flint' and possibly carried as ballast- most probably not Western Australian in origin		
Dimensions	70 x 50mm		
Photo Yes/No	Y	Drawn Yes/No	
Photo No.	MMEX/0/1, MMEX/0/2		

New Maritime Museum Archaeological Survey

Area

E

Registration No.

NMM 9

No. of artefacts

1

Description

deck spike

Material

iron

Date Registered

Date Found

9/8/00

Depth

0-20cm

Site location

approximately half way along old fenceline western end of Area E

Notes

discovered while installing 300mm drain from fire hydrant

Dimensions

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/80/5

New Maritime Museum Archaeological Survey

Area

H

Registration No.

NMM 10

No. of artefacts

1

Description

Bogy fragment of Torpedo bottle (half size)
aqua glass, Hamilton patent. Probably
1880-90's.

Material

glass

Date Registered

Date Found

9/8/00

Depth

0-20cm

Site location

south west corner of Area H, directly above slip walkway.

Notes

Dimensions

12 x 7cm

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/44/3

New Maritime Museum Archaeological Survey

Area

H

Registration No.

NMM 11

No. of artefacts

1

Description

Green beer bottle neck. Ring Seal, applied top.
Late nineteenth century

Material

glass

Date Registered

Date Found

9/8/00

Depth

0-20cm

Site location

south west corner of Area H, directly above slip walkway.

Notes

Dimensions

15cm long, 3cm lip diameter

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/44/4

New Maritime Museum Archaeological Survey

Area

F

Registration No.

NMM 12

No. of artefacts

1

Description

concreted lump of chain

Material

iron

Date Registered

Date Found

10/8/00

Depth

30cm

Site location

north west corner of Area F

Notes

Dimensions

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/80/6

New Maritime Museum Archaeological Survey

Area

1

Registration No.

NMM 13

No. of artefacts

1

Description

limestone solution pipe

Material

stone (natural)

Date Registered

Date Found

11/8/00

Depth

2m

Site location

bottom of pit excavation

Notes

collected as represenative sample of natural fomations in limestone headland

Dimensions

approx 14 x 11 cm

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/0/3, MMEX/0/4

New Maritime Museum Archaeological Survey

Area

I

Registration No.

NMM 14

No. of artefacts

1

Description

large shackle and through bolt

Material

iron

Date Registered

Date Found

11/8/00

Depth

50cm

Site location

found in industrial rubbish in top layer(s) of spoil heap

Notes

found with post 1950's industrial rubbish- associated with slip way and found with lengths of cable etc? Probably made much earlier- possible secondary use or dumped with this later material

Dimensions

34cm long, bolt 20cm long

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/80/7

New Maritime Museum Archaeological Survey

Area

1

Registration No.

NMM 15

No. of artefacts

3

Description

3 x green ring seal beer bottle bases (like NMM 33)

Material

glass

Date Registered

Date Found

11/8/00

Depth

1.4m

Site location

In spoil above storm water drain

Notes

Dimensions

diameter 8-9cm

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/44/5

New Maritime Museum Archaeological Survey

Area

1

Registration No.

NMM 16

No. of artefacts

1

Description

Machine made brown beer bottle base. "7" and "M" impressed on base. First half of the twentieth century

Material

glass

Date Registered

Date Found

11/8/00

Depth

1.4m

Site location

In spoil above storm water drain

Notes

Dimensions

diameter approx 9cm

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/44/6

New Maritime Museum Archaeological Survey

Area

1

Registration No.

NMM 17

No. of artefacts

1

Description

square neck ceramic 'ink' bottle body fragment

Material

stoneware

Date Registered

Date Found

11/8/00

Depth

1.4m

Site location

in separate pocket of rubbish- no association with storm water drain (eastern corner

Notes

Dimensions

length 13.5cm shoulder diameter 7cm

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/20/1, MMEX/20/2

New Maritime Museum Archaeological Survey

Area

I

Registration No.

NMM 18

No. of artefacts

1

Description

ceramic bottle shoulder fragment including neck

Material

stoneware

Date Registered

Date Found

11/8/00

Depth

1.4m

Site location

in separate pocket of rubbish- no association with storm water drain (eastern corner

Notes

Dimensions

length 10cm

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/20/3

New Maritime Museum Archaeological Survey

Area

1

Registration No.

NMM 19

No. of artefacts

1

Description

ceramic bottle shoulder fragment, brown glaze

Material

stoneware

Date Registered

Date Found

11/8/00

Depth

1.4m

Site location

in separate pocket of rubbish- no association with storm water drain (eastern corner

Notes

Dimensions

length 10cm

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/20/4

New Maritime Museum Archaeological Survey

Area

1

Registration No.

NMM 20

No. of artefacts

1

Description

part of ceramic bottle base

Material

stoneware

Date Registered

Date Found

11/8/00

Depth

1.4m

Site location

in separate pocket of rubbish- no association with storm water drain (eastern corner

Notes

Dimensions

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/20/5, MMEX/20/6

New Maritime Museum Archaeological Survey

Area

1

Registration No:

NMM 21

No. of artefacts

2

Description

2 x ceramic bottle body fragments

Material

stoneware

Date Registered

Date Found

11/8/00

Depth

1.4m

Site location

in separate pocket of rubbish- no association with storm water drain (eastern corner

Notes

Dimensions

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/20/7

New Maritime Museum Archaeological Survey

Area

1

Registration No.

NMM 22

No. of artefacts

1

Description

large ceramic fragment- demi-john vessel??

Material

stoneware

Date Registered

Date Found

11/8/00

Depth

1.4m

Site location

Notes

Dimensions

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/20/8

New Maritime Museum Archaeological Survey

Area

Registration No.

NMM 23

No. of artefacts

1

Description

brown crown seal beer bottle with the registered trademark of WA glass manufacturer (This bottle is the property of the West Australian Glass Manufacturers Ltd) 1926- broken neck possibly "knocked off" to drink.

Material

glass

Date Registered

Date Found

11/8/00

Depth

1.4m

Site location

Notes

Dimensions

length 27.5cm ,base diameter 7.5cm

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/44/7

New Maritime Museum Archaeological Survey

Area

Registration No.

NMM 24

No. of artefacts

1

Description

green ring seal beer bottle with remains of label, possibly "India Pale Ale", top broken off possibly 'cracked off' to drink. Thick glass to accommodate gas pressure

Material

glass

Date Registered

Date Found

11/8/00

Depth

1.4m

Site location

Notes

Dimensions

length 29cm, base diameter 9cm

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/44/8

New Maritime Museum Archaeological Survey

Area

1

Registration No.

NMM 25

No. of artefacts

1

Description

green beer bottle- broken neck possibly
'cracked off' to drink c 1890-1920

Material

glass

Date Registered

Date Found

11/8/00

Depth

1.4m

Site location

Notes

Dimensions

length 25cm, base diameter 8.5cm

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/44/9

New Maritime Museum Archaeological Survey

Area

H

Registration No.

NMM 26

No. of artefacts

1

Description

white glazed earthenware sherd

Material

earthenware

Date Registered

Date Found

15/8/00

Depth

1m

Site location

western end of H

Notes

Dimensions

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/20/9

New Maritime Museum Archaeological Survey

Area

H

Registration No.

NMM 27

No. of artefacts

1

Description

black-olive glass 3 piece mould bottle
'Goldfield's Black' c 1850-70's with striations on
body. The smooth pontil mark and fine finish
suggest this example may be later in age than
the style suggests

Material

glass

Date Registered

Date Found

15/8/00

Depth

<1.4m

Site location

discovered in spoil heap-probably from 12/8/00 excavation

Notes

Dimensions

length 25 cm , base diameter 8.5cm

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/44/10

New Maritime Museum Archaeological Survey

Area

H

Registration No.

NMM 28

No. of artefacts

1

Description

whaler's flensing tool

Material

iron

Date Registered

Date Found

15/8/00

Depth

30cm

Site location

middle of H in association with industrial rubbish which probably dates to a later

Notes

Dimensions

45cm long, 13cm at widest point

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/80/8

New Maritime Museum Archaeological Survey

Area

H

Registration No.

NMM 29

No. of artefacts

1

Description

Brown beer bottle base. Early twentieth century

Material

Glass

Date Registered

Date Found

18/8/00

Depth

1.4m

Site location

SW in H

Notes

Dimensions

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/44/11

New Maritime Museum Archaeological Survey

Area

H

Registration No.

NMM 30

No. of artefacts

1

Description

small black-olive beer bottle base and heel.

Material

glass

Date Registered

Date Found

18/8/00

Depth

1.4m

Site location

SW in H just outside I

Notes

Dimensions

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/44/12

New Maritime Museum Archaeological Survey

Area

H

Registration No.

NMM 31

No. of artefacts

1

Description

iron bolt

Material

iron

Date Registered

Date Found

18/8/00

Depth

1.4m

Site location

SW in H

Notes

Dimensions

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/80/9

New Maritime Museum Archaeological Survey

Area

H

Registration No.

NMM 32

No. of artefacts

1

Description

sinker

Material

lead

Date Registered

Date Found

18/8/00

Depth

1.4m

Site location

SW in H

Notes

Dimensions

Photo Yes/No

N

Drawn Yes/No

Photo No.

New Maritime Museum Archaeological Survey

Area

H

Registration No.

NMM 33

No. of artefacts

1

Description

green ring seal beer/wine bottle. machined
pontil, mass produced striated neck.

Material

glass

Date Registered

Date Found

18/8/00

Depth

1.4m

Site location

SW in H

Notes

Dimensions

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/44/13

New Maritime Museum Archaeological Survey

Area

H

Registration No.

NMM 34

No. of artefacts

1

Description

natural fossilised weevil pupae formation in limestone headland

Material

limestone

Date Registered

Date Found

18/8/00

Depth

1.4m base limestone

Site location

Notes

Dimensions

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/0/5, MMEX/0/6, MMEX/0/7

New Maritime Museum Archaeological Survey

Area

H

Registration No.

NMM 35

No. of artefacts

2

Description

body fragment of demijohn. Cumings Footscray
Chemical Works Melbourne partially stamped
into sherds. Probably a acid container

Material

ceramic

Date Registered

Date Found

18/8/00

Depth

1m

Site location

SW in H

Notes

Dimensions

Photo Yes/No

Y

Drawn Yes/No

Photo No.

MMEX/20/10, MMEX/20/11, MMEX/20/12

New Maritime Museum Archaeological Survey

Area

H

Registration No.

NMM 36

No. of artefacts

Description

crown seal beer bottle neck and sherds. Neck is corked suggesting secondary contents.

Material

Glass

Date Registered

Date Found

19/8/00

Depth

1.4m

Site location

West of (I)

Notes

Dimensions

Photo Yes/No

N

Drawn Yes/No

Photo No.

Appendix 5

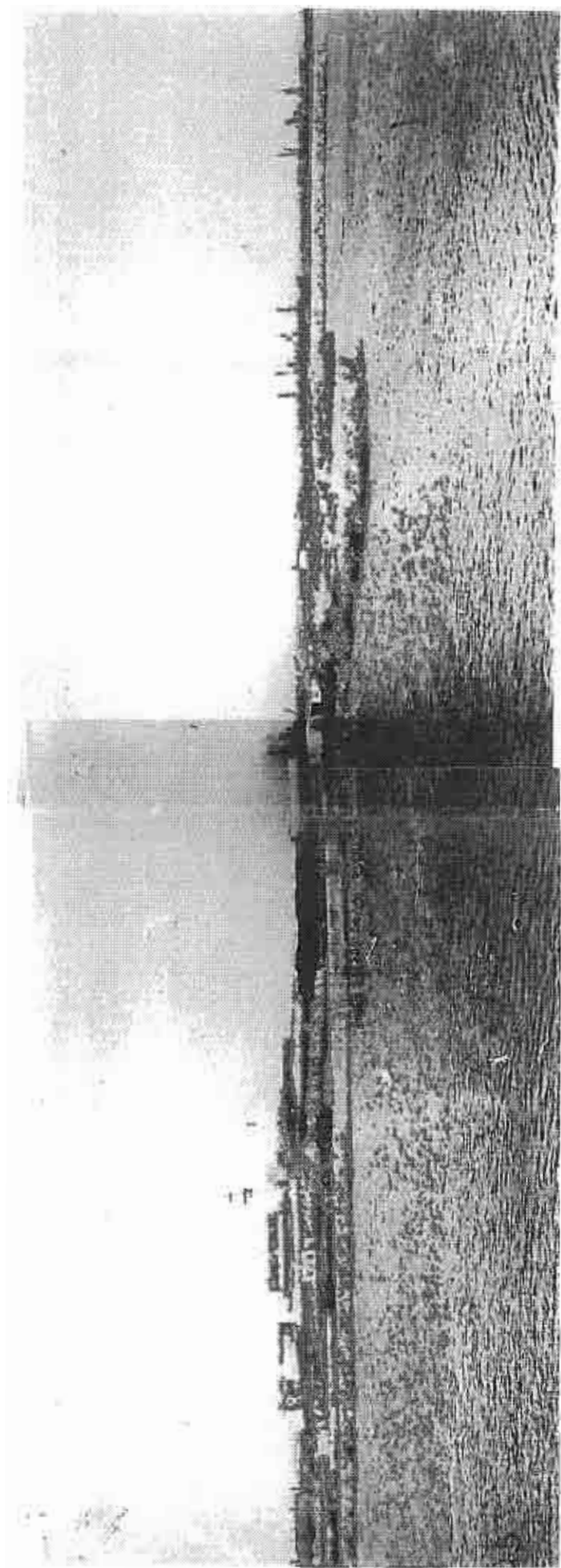
Artefact photographs

Glass

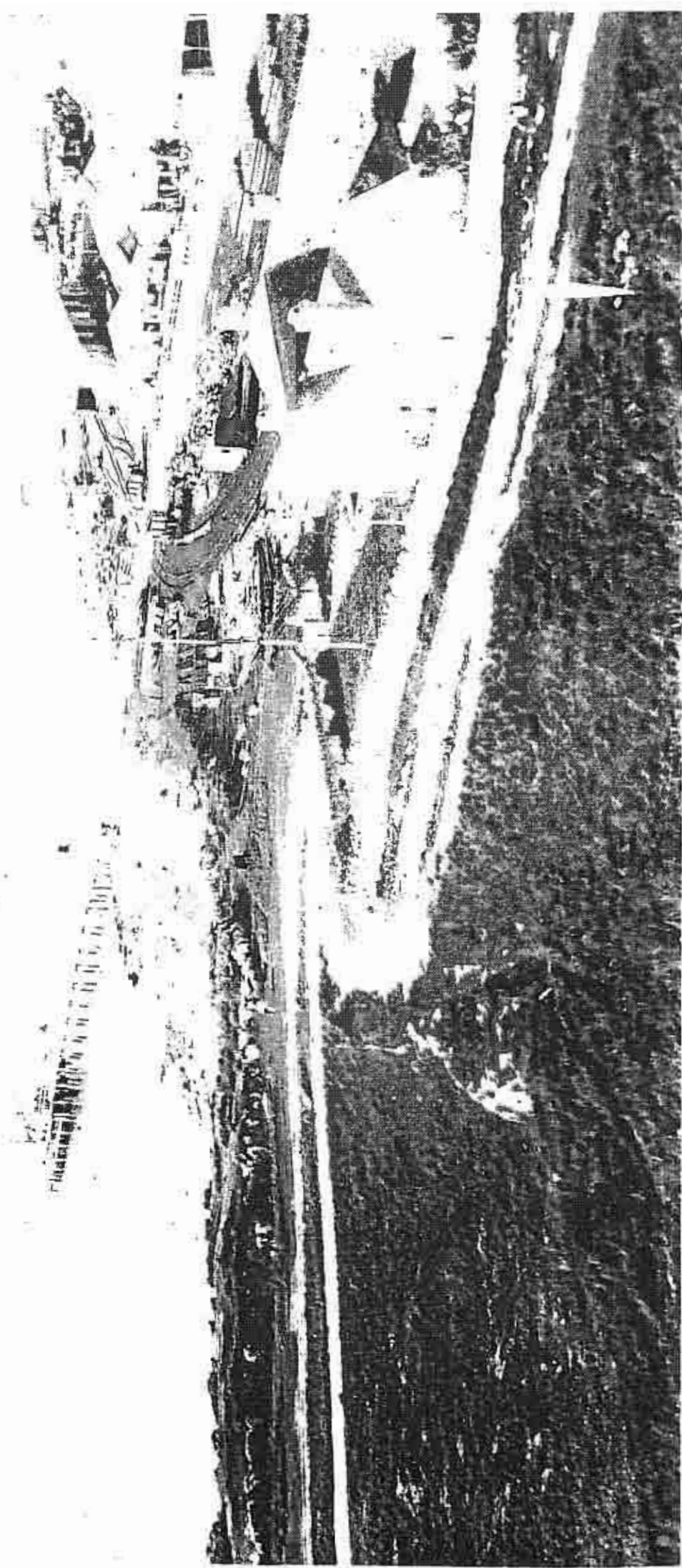


Appendix 6

Historical photos



54883 P





62432 P

