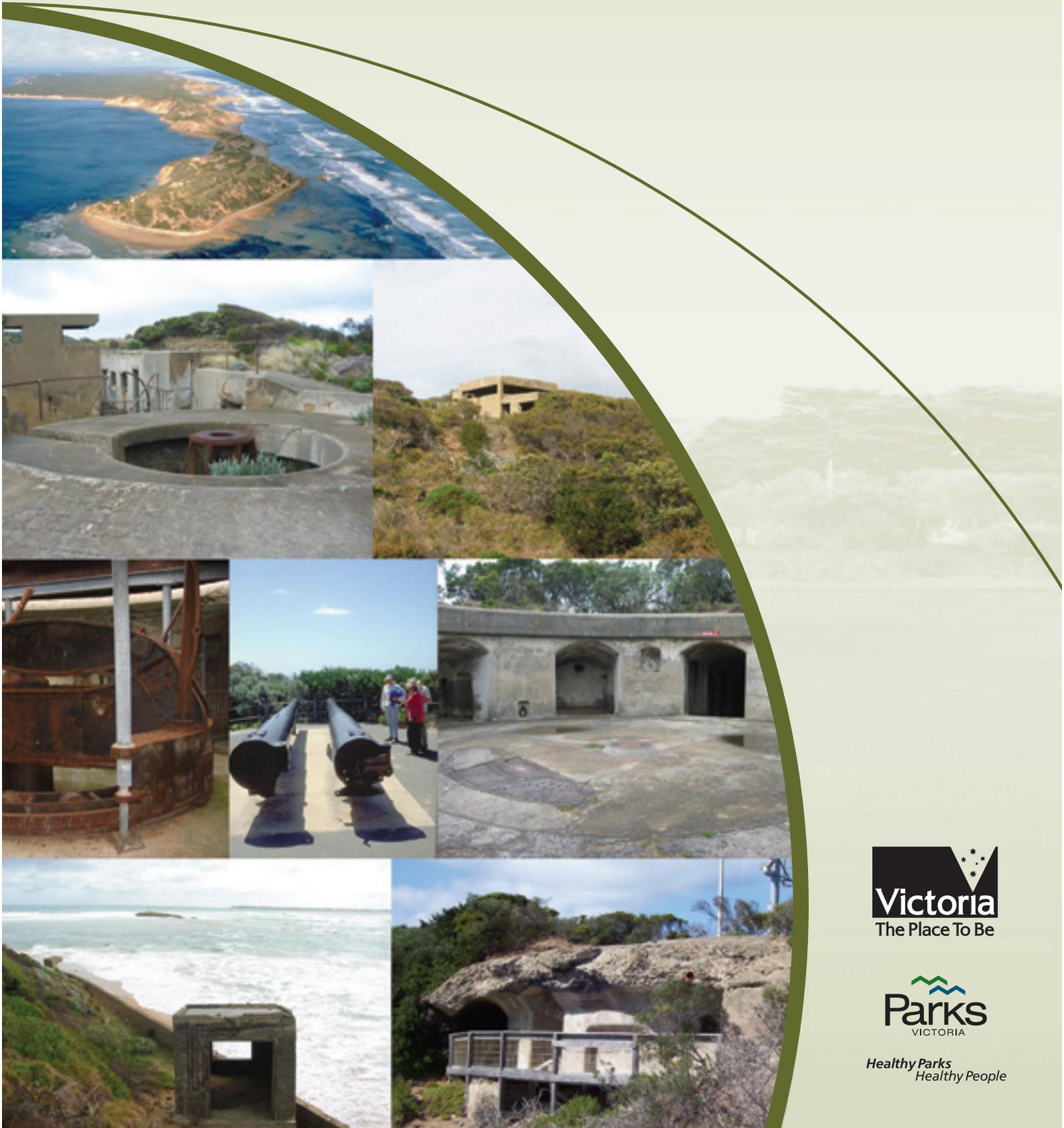


Point Nepean Forts Conservation Management Plan



Victoria
The Place To Be

Parks
VICTORIA

Healthy Parks
Healthy People

POINT NEPEAN FORTS

CONSERVATION MANAGEMENT PLAN

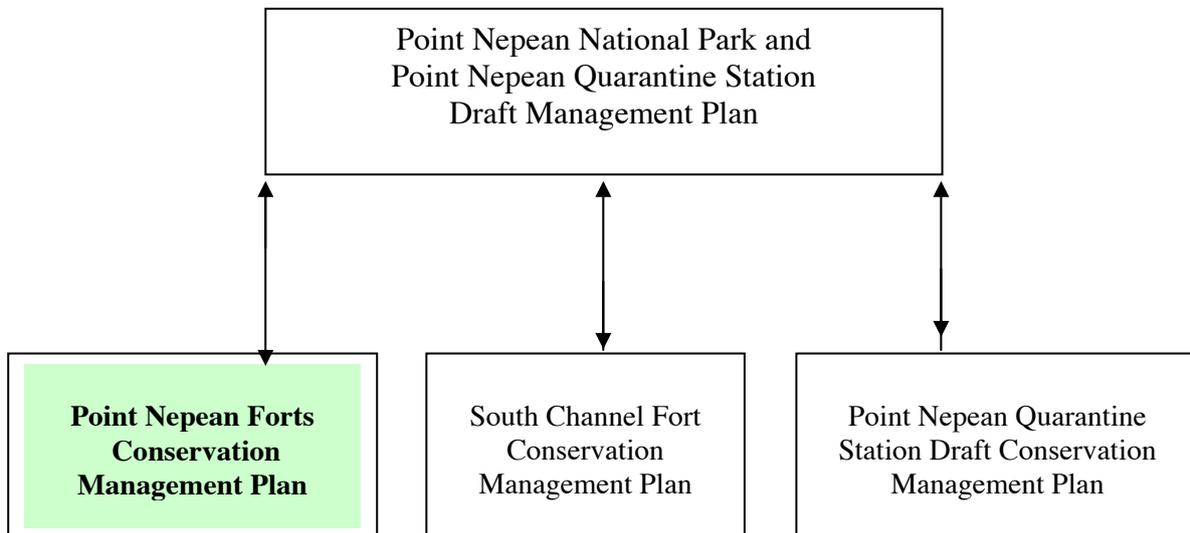
Parks Victoria

July 2006

This document is based on the Conservation Plans for the Point Nepean National Park Fortifications (1990) and Gun Emplacement No. 1 (1988) prepared by the Historic Buildings Branch, Ministry Of Housing and Construction, reviewed and updated for currency at the time of creation of the new and expanded Point Nepean National Park in 2005.

CONTEXT

This Conservation Management Plan (CMP) for the Point Nepean Forts is one of three Conservation Management Plans for historic heritage that have been prepared and/or reviewed to support the Point Nepean National Park and Point Nepean Quarantine Station Management Plan, as shown below:



The Conservation Management Plan establishes the historical significance of all the fortification structures centring on the Fort Nepean complex area, as well as Eagles Nest and Fort Pearce, develops conservation policies for the sites as a whole as well as their individual features, and provides detailed strategies and works specifications aimed at the ongoing preservation of those values into the future.

The Conservation Management Plan for Point Nepean Forts supports the Point Nepean National Park and Point Nepean Quarantine Station Draft Management Plan, setting out policies and actions for the management of historic heritage values in the Forts.

The Point Nepean National Park and Point Nepean Quarantine Station Draft Management Plan together with this Conservation Management Plan sets out to meet the requirements of:

- Sections 324Y (management in accordance for National Heritage management principles)
- Schedules 5B (National Heritage management principles) (EPBC Act Regulation 10.01E)
- Schedule 5A (contents for a Management Plan for a National Heritage Place) of the EPBC Regulations.

POINT NEPEAN FORTIFICATIONS: CONSERVATION PLAN

	Page No.
A. Introduction	1
B. Heritage Status	7
C. Significance and Conservation Policy	11
D. Condition	15
E. General History	18
F. Fortification Structures	33
F1. Fort Nepean Emplacement No. 1	41
F2. Fort Nepean Emplacement Nos. 2A, 3, 4 and adjacent Barracks site.	51
F3. Fort Nepean : Emplacement No. 5.	63
F4. Fort Nepean : Emplacement No. 6.	70
F5. Fort Nepean : Emplacement No. 7 Engine House and Special Beam.	76
F6. Fort Nepean : Emplacement No. 8.	85
F7. Eagles Nest	89
F8. Fort Pearce	95
F9. Pearce Barracks	100
F10. Cheviot Hill	108
G. General Specification	113
H. Schedule of Drawings and Photographs	118
I. Bibliography	120

ASSOCIATED DOCUMENTS

- Schedule of original colour finishes
- Schedule of Signs

INTRODUCTION

In 1990, a Conservation Management Plan (CMP) was prepared for the Point Nepean fortifications in accordance with the recommendations in the Point Nepean National Park Management Plan – Point Nepean Section (June 1989). A separate Conservation Plan was prepared for Gun Emplacement No 1 in 1988.¹

The CMP, formally titled the *Point Nepean National Park Fortifications Conservation Plan*,² (1990) was prepared for the then State Department of Conservation Forests and Lands following transfer of former defence lands to the State from the Commonwealth. The CMP was prepared by the Historic Places Branch of the Ministry of Housing and Construction, by a team led by Ms. Susan Balderstone.

The Point Nepean National Park, which was proclaimed in 1988, was renamed the Mornington Peninsula National Park in 1995.

Parks Victoria was formed in 1998 upon the merger of the then National Parks Division of the Department of Natural Resources and Environment and Melbourne Parks and Waterways. Parks Victoria is responsible for the management of all Victoria's National and State Parks and manages land at Point Nepean under the provisions of the National Parks Act 1975.

Following agreement between the State and Commonwealth for the transfer of the 205 hectare former Range Area, a new Point Nepean National Park was proclaimed on September 17, 2005. The new park, which includes South Channel Fort, is proposed to be enlarged following the future addition of the 90 hectare Point Nepean Quarantine Station sometime before June 2009. The Point Nepean Quarantine Station is currently managed by the Point Nepean Community Trust on behalf of the Commonwealth.

Throughout this evolution, the CMP (1990) remained the primary guiding document for the conservation management of the forts in accordance with management plans that have applied to the area.

Parks Victoria is currently preparing a management plan for the new Point Nepean National Park and the Point Nepean Quarantine Station in partnership with the Point Nepean Community Trust. As part of the planning process, the *Point Nepean National Park Heritage Conservation Policy 2005* was prepared by Parks Victoria to provide overall policy statements for all of the individual historic zones within the planning area including the Point Nepean Forts, South Channel Fort, the former Range Area and the Quarantine Station (Norris Barracks).

In addition, the 1990 CMP has been reviewed and updated having regard to the nature and extent of works implemented since its preparation and the changes in the condition of the structures in the intervening period. This document is the result of the update for the Point Nepean Forts and includes a

review of the CMP for Gun Emplacement No. 1. It has been prepared by Parks Victoria Team Leader Heritage Programs, Conservation Architect John Grinpukel.

The Statements of Significance for individual fortification structures and complexes, originally prepared as a basis for submission to the then Historic Buildings Council for listing on the Historic Buildings Register, have been adopted in this document. The Appendix to the original document, comprising a photographic record of painted signs associated with the fortifications, has also been retained unaltered, again as a separate volume.

The fortifications in the Park were part of a wider defence system developed for the protection of Port Phillip. Their place in this system is outlined in the unpublished notes by D. Baguley titled "Fortifications of Port Phillip." At the time of writing of this CMP update a new publication by Geoff Bellamy, and to be titled "*Australia's Gibraltar*" which will comprehensively cover the defences of Port Phillip, was in preparation and due for publication in late 2006.³

Fig. 1 shows the essential features of such a defence system as designed for a typical Harbour. This map illustrates the General Guiding Principles of the Joint Naval and Military Committee for the defence of colonial ports.³

This Conservation Plan covers the main fortification structures extant at Point Nepean, including the emplacements at Fort Nepean, Eagles Nest, Fort Pearce and Cheviot Hill, and Pearce Barracks.

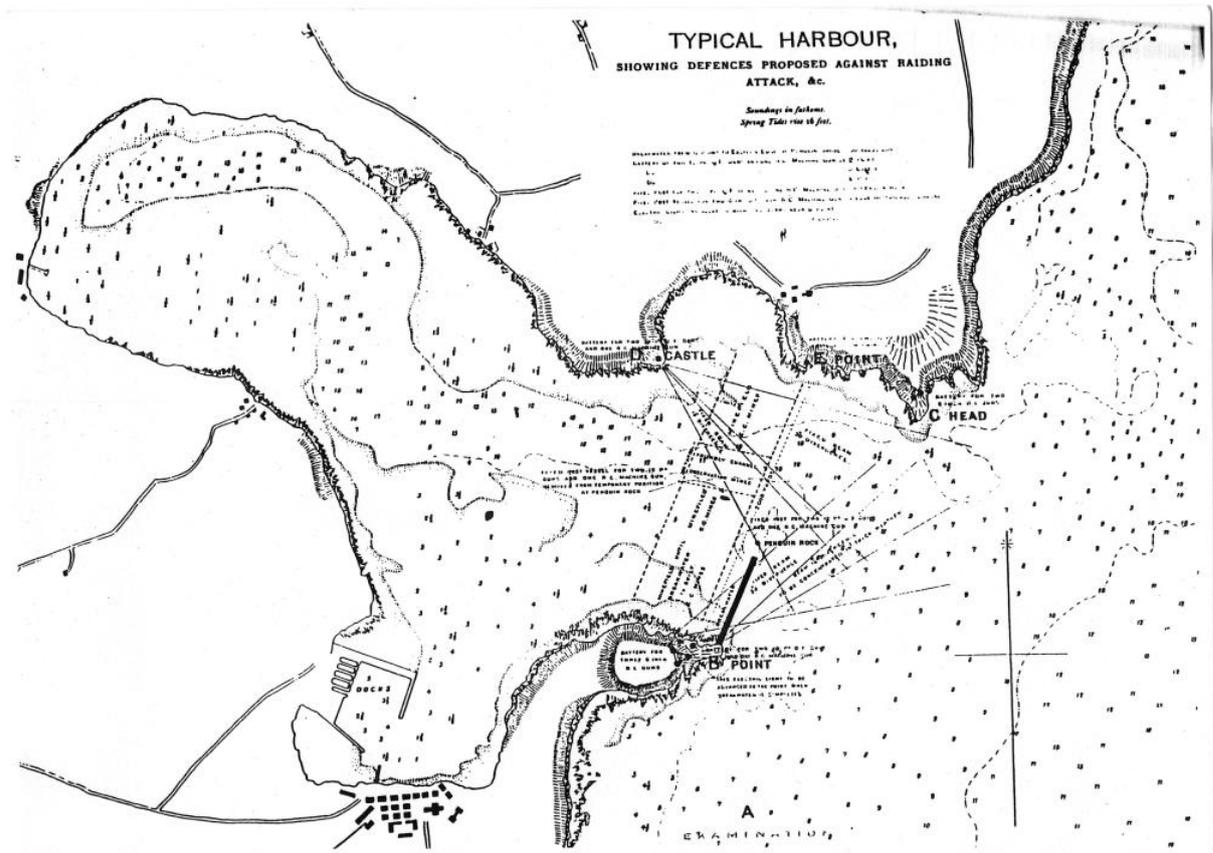
The fortifications were stripped of fittings and equipment in 1958, being declared surplus to Army needs. The remaining structures are generally sound, however face increasing threat from the unstable geomorphology of the area causing land slips in adjacent cliffs and slopes, such as at Eagles Nest, and the highly corrosive environment causing persistent localised damage to the steel and concrete fabric.

Gun mountings for Mark VII guns remain in situ at Forts Nepean and Pearce and at Cheviot Hill and for a 6" disappearing gun at Fort Nepean. Gun barrels from the Fort Nepean Mark VII guns have been returned to the Park on permanent loan from the Department of Defence and are presently displayed on the former parade ground at Fort. Nepean. The gun barrel from the Eagles Nest's 10" disappearing gun is mounted in the Park away from the fortifications at the junction of Defence and McCracken Roads.

Changes in gun and fortification technology over the period from 1880 to 1940 resulted in a rapid evolution of the fortification structures.

The Historic Structures Report identified five temporal phases of development of fortifications: 1878, 1880-1882, 1887-1890, 1910-1916 and 1939-1942. These are referred to as phases 1-5 in this Conservation Plan. Phase 2 in fact covers the period 1880-1886.

The numbering system adopted here for the fortifications at Fort Nepean dates from 1906.⁴ Report and covered the guns in place after the completion of the phase 3 works.



Previous numbering systems reflect the earlier phases of construction: the phase 2 emplacements were numbered 1 to 6; however guns were not emplaced in two of these during this phase. The numbering changed to relate to guns rather than emplacements, hence early in phase 3, emplacements nos. 3 and 4 became No. 1, emplacement no. 1 became No. 5, and emplacement no. 5 became No. 4. the construction of new emplacements for additional guns during phase 3 produced No. 6 (no. 1 in 1906) and No. 2 (no. 6 in 1906). The addition of two quick-firing gun emplacements at the end of phase 3 led to renumbering as shown on the 1906 plan to include nos. 7 and 8. In fact there were only 7 guns. as emplacement no. 3 contained not a gun but an armourer's store.

Subsequent renumbering reflects the reduction in the number of guns following the introduction of the longer range Mark VII guns in 1911. At this time No. 6 became A1, No. 5 became B1, No. 1 became H1 and No. 4 became F1.⁵ Later again, c1940, when the breech loading gun in No. 4 (F1) and the disappearing gun in No. 1. (H1) became redundant, the remaining Mark VII guns were renumbered so that A1 became F1 and B1 became H1.

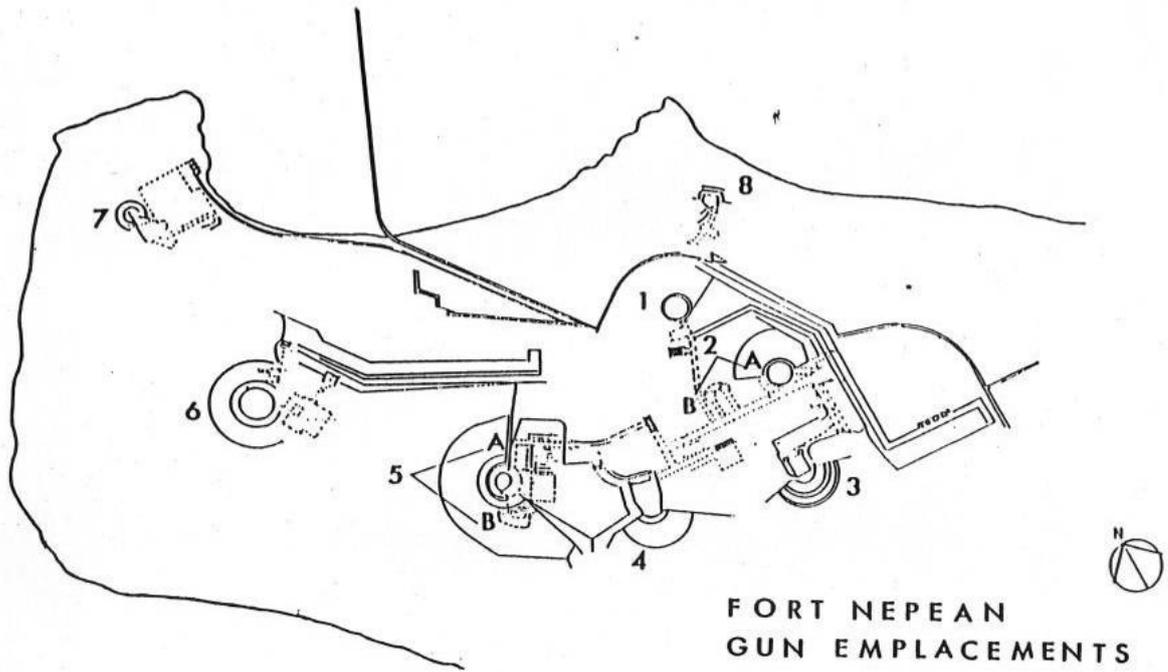


Fig. 2

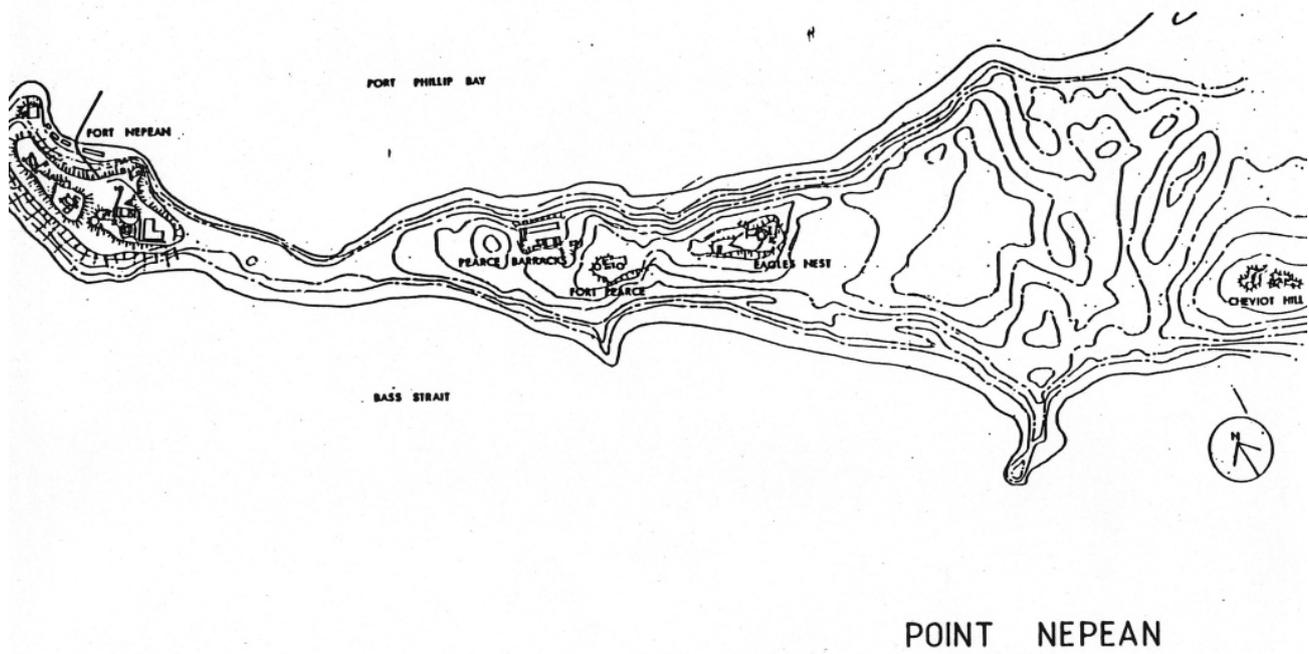


Fig. 3

TABLE

DATE	GUNS AND EMPLACEMENTS										FAGLES	FORT PEARCE	CHEVIOT HILL
	FORT NEPEAN												
	1	2A	2B	3	4	5A	5B	6	7	8			
PHASE 1	4 x 80 lb RML in 2 temporary sandbagged batteries.												
PHASE 2 1880-86	80 lb RML		80 lb RML	no guns installed		80 lb RML in each emplacement							
PHASE 3 1887-90	6" BL Hp	6" BL Hp	converted to observation posts	converted to armourer's shop	6" BL Cp	combined to form 1 emplacement No. 5 9.2 BL Hp	9.2 BL Hp	4.7 QF	14 lb QF		10" BL Hp		
PHASE 4 1910-15	6" BL Hp	used for water tank	"	"	"	6" mark VII	6" mark VII	converted to light emplacement	gun removed to Queens-cliff	6" mk. VII	gun removed		
PHASE 5 1939-62	gun removed	"	"	"	conversion to skidding shed	" hood	" hood	"	"	gun removed to Cheviot Hill	"	6" mk. VII	6" mk. VII

Fig. 4

A considerable amount of work as recommended in the 1987 Point Nepean National Park Concept Plan Report was documented by the Historic Buildings Branch of the Ministry of Housing and Construction and carried out as part of the Bicentennial project in 1988, whilst further works as recommended in the 1990 Conservation Plan having been progressively implemented since that time. The items on Existing Structural Condition and Recommended Works in Sections E1-E9 of this Conservation Plan Update are adapted from the 1989 CMP, and largely comprise the works in that Plan that have not been implemented, reviewed and as appropriate revised following detailed condition assessments in accordance with current existing conditions and priorities.

The general history of the fortifications included in Section E was researched and written by F. O'Neill for the Bicentennial Project's interpretation plan and is included here as a framework to sections E1-E9 on individual groups of structures. The Specification included in Section F is an update of that provided in the 1989 Conservation Plan to include current practices and technological developments, and currently active suppliers and companies. The working drawings included in Sections E1-E9 are unchanged from those in the 1989 document, and should be read in the context of the current status of works.

FOOTNOTES

- 1 Point Nepean National Park Gun Emplacement No.1 Conservation Plan, prepared for Department of Conservation, Forests and Lands, July 1988 Historic Buildings Branch, Ministry of Housing & Construction.
- 2 Point Nepean National Park Fortifications, Conservation Plan, prepared for Department of Conservation, Forests and Lands, January 1990 Historic Buildings Branch, Ministry of Housing & Construction.
- 3 To be published by 'Australian Military History Publications'. As advised by The War Book Shop, Sydney June 2006.
- 4 Circular Dispatch dated 12/5/1893 from the Marquess of Ripon. Australian Archive MP 153/16, Item 28.
- 5 Dwg. Site Plan, Australian Archives MP 338, Folder 1.
- 6 Dwg. "Fort Nepean Battery" F/28, 1911. Source: Victoria Barracks. The number H1 can be discerned painted on the wall of Gun Emplacement No. 1.

HERITAGE STATUS

NATIONAL HERITAGE LIST

Following the establishment of the National Heritage List and the Commonwealth Heritage List under the Commonwealth Environment Protection and Biodiversity Conservation (EPBC) Act in 2003, and the agreement by the Commonwealth government to transfer its remaining defence holdings at Point Nepean to the State in 2004, the whole of Point Nepean, including the forts and the former Quarantine Station, was included on the National Heritage List in June 2006. Inclusion on the National Heritage List means the Forts are subject to the provisions of the EPBC Act. In particular, it strongly encourages the preparation of Management Plans for places entirely within a State or Territory jurisdiction. Provisions however are made within the Act for Bilateral agreements between the Commonwealth and States to minimise duplication in the environmental and assessment process. It is likely such an agreement will be implemented between the Commonwealth and Heritage Victoria in relation to Point Nepean as a whole.

A summary of the identified National Heritage Values of the Forts is included in Section C. The full National Heritage List Assessment report is included in the Draft Management Plan for Point Nepean National Park and the Point Nepean Quarantine Station.

REGISTER OF THE NATIONAL ESTATE

The fortifications were included as part of the land at Point Nepean listed in Register of the National Estate in 1988 by the former Australian Heritage Commission. It is described as –

Historically significant as a major and integral link in the Victorian Colonial Coastal Defence System which contributed to making Port Phillip Bay reputedly the most heavily defended harbour of the late nineteenth and early twentieth centuries in the southern hemisphere. The fortifications are the best examples of the development of military technology of the Port Phillip Bay network. These Forts are attributed with firing the first Allied shots of both World Wars.

Following the abolition of the AHC and establishment of the Australian Heritage Council, and the consequent introduction of the Commonwealth and National Heritage Lists in 2003, the RNE, whilst being retained as an important database for education purposes, no longer retained any statutory heritage protection status.

VICTORIAN HERITAGE REGISTER

The whole of Point Nepean was included on the State Heritage Register in 2004 as number H2030. Whilst its jurisdiction does not cover Commonwealth owned land or assets, the Registration included

the 90 ha Quarantine Station as a pre-emptive step in anticipation of its ultimate transfer to the State of Victoria for addition to the Point Nepean National Park. Whilst the extensive citation focuses primarily on the Quarantine Station, it only briefly addresses the fortifications. The relevant extracts from this citation are included in the Statement of Cultural Significance in Section C of this document.

Inclusion on the State Heritage Register places statutory obligations on Parks Victoria under the Heritage Act 1995. Under this Act a permit is required for works to the place unless specifically exempt. These exemptions are for works generally of a maintenance nature where alterations to the appearance of the place is not involved. The full Permit Exemption statement, applying to the whole of the Registered area, follows:

PERMIT EXEMPTIONS:

General Conditions: 1. All exempted alterations are to be planned and carried out in a manner which prevents damage to the fabric of the registered place or object.

General Conditions: 2. Should it become apparent during further inspection or the carrying out of works that original or previously hidden or inaccessible details of the place or object are revealed which relate to the significance of the place or object, then the exemption covering such works shall cease and the Executive Director shall be notified as soon as possible. Note: All archaeological places have the potential to contain significant sub-surface artefacts and other remains. In most cases it will be necessary to obtain approval from Heritage Victoria before the undertaking any works that have a significant sub-surface component.

General Conditions: 3. If there is a conservation policy and plan approved by the Executive Director, all works shall be in accordance with it. Note: The existence of a Conservation Management Plan or a Heritage Action Plan endorsed by Heritage Victoria provides guidance for the management of the heritage values associated with the site. It may not be necessary to obtain a heritage permit for certain works specified in the management plan.

General Conditions: 4. Nothing in this declaration prevents the Executive Director from amending or rescinding all or any of the permit exemptions.

General Conditions: 5. Nothing in this declaration exempts owners or their agents from the responsibility to seek relevant planning or building permits from the responsible authorities where applicable.

Regular Site Maintenance : *The following site maintenance works are permit exempt under section 66 of the Heritage Act 1995, a) regular site maintenance provided the works do not involve the removal or destruction of any significant above-ground features or sub-surface archaeological artefacts or deposits; b) the maintenance of an item to retain its conditions or operation without the removal of or damage to the existing fabric or the introduction of new materials; c) cleaning including the removal of surface deposits, organic growths, or graffiti by the use of low pressure water and natural detergents and mild brushing and scrubbing; d) repairs, conservation and maintenance to plaques, memorials, roads and paths, fences and gates and drainage and irrigation. e) the replacement of existing services such as cabling, plumbing, wiring and fire services that uses existing routes, conduits or voids, and does not involve damage to or the removal of significant fabric. Note: Surface patina which has developed on the fabric may be an important part of the item's significance and if so needs to be preserved during maintenance and cleaning. Note: Any new materials used for repair must not exacerbate the decay of existing fabric due to chemical incompatibility, obscure existing fabric or limit access to existing fabric for future maintenance. Repair must maximise protection and retention of fabric and include the conservation of existing details or elements.*

Fire management Duties : *The following fire management duties are permit exempt under section 66 of the Heritage Act 1995, a) Fire management and fire fighting duties provided the works do not involve the removal or destruction of any significant above-ground features or sub-surface archaeological*

artefacts or deposits; b) Fire management activities such as fuel reduction burns, and fire control line construction, provided all significant historical and archaeological features are appropriately recognised and protected; Note: Fire management authorities should be aware of the location, extent and significance of historical and archaeological places when developing fire management and fire fighting strategies. The importance of places listed in the Heritage Register must be considered when strategies for fire management and management are being developed; c) Ecological burning programs; d) Emergency responses.

Pest, plant and animal control : The following pest, plant and animal control activities are permit exempt under section 66 of the Heritage Act 1995, a) Pest, plant and animal control activities provided the works do not involve the removal or destruction of any significant above-ground features or sub-surface archaeological artefacts or deposits; Note: Particular care must be taken with pest, plant and animal control works where such activities may have a detrimental affect on the significant fabric of a place. Such works may include the removal of ivy, moss or lichen from an historic structure or feature, or the removal of burrows from a site that has archaeological values; b) Removal of plants listed as noxious weeds in the Catchment and Land Protection Act 1994.

Landscape Maintenance : The following landscape maintenance works are permit exempt under section 66 of the Heritage Act 1995, a) landscape maintenance works provided the activities do not involve the removal or destruction of any significant above-ground features or sub-surface archaeological artefacts or deposits; b) watering, mowing, top-dressing and fertilising necessary for the continued health of plants, without damage or major alterations to layout, contours, plant species or other significant landscape features; c) Management of trees in accordance with Australian Standard; Pruning of Amenity Trees AS 4373; d) Erosion control works where the Park's natural values and significant historic features are threatened; e) Replanting to maintain the landscape character and replacement planting of significant plants.

Nature Conservation: The following nature conservation management activities are permit exempt under section 66 of the Heritage Act 1995.

a) Management activities which conserve native plant communities in their natural condition, maintain and enhance habitat diversity and provide special protection for significant plant communities.

b) Management activities which conserve native fauna species and maintain the integrity of their habitats, provide special protection for significant fauna and protect genetic diversity of native populations and maintain habitat diversity.

Public Safety and Security : The following public safety and security activities are permit exempt under section 66 of the Heritage Act 1995, a) public safety and security activities provided the works do not involve the removal or destruction of any significant above-ground structures or sub-surface archaeological artefacts or deposits; b) the erection of temporary security fencing, scaffolding, hoardings or surveillance systems to prevent unauthorised access or secure public safety which will not adversely affect significant fabric of the place including archaeological features; c) development including emergency stabilisation necessary to secure safety where a site feature has been irreparably damaged or destabilised and represents a safety risk to its users or the public. Note: Urgent or emergency site works are to be undertaken by an appropriately qualified specialist such as a structural engineer, or other heritage professional.

Signage and Site Interpretation : The following Signage and Site Interpretation activities are permit exempt under section 66 of the Heritage Act 1995, a) signage and site interpretation activities provided the works do not involve the removal or destruction of any significant above-ground structures or sub-surface archaeological artefacts or deposits; b) the erection of non-illuminated signage for the purpose of ensuring public safety or to assist in the interpretation of the heritage significance of the place or object and which will not adversely affect significant fabric including landscape or archaeological features of the place or obstruct significant views of and from heritage values or items; c) signage and site interpretation products must be located and be of a suitable size so as not to obscure or damage significant fabric of the place; d) signage and site interpretation products must be able to be later removed without causing damage to the significant fabric of the place; Note: The development of signage and site interpretation products must be consistent in the use of format, text, logos, themes and

other display materials. Note: Where possible, the signage and interpretation material should be consistent with other schemes developed on similar or associated sites. It may be necessary to consult with land managers and other stakeholders concerning existing schemes and strategies for signage and site interpretation.

Minor Works : *Note: Any Minor Works that in the opinion of the Executive Director will not adversely affect the heritage significance of the place may be exempt from the permit requirements of the Heritage Act. A person proposing to undertake minor works may submit a proposal to the Executive Director. If the Executive Director is satisfied that the proposed works will not adversely affect the heritage values of the site, the applicant may be exempted from the requirement to obtain a heritage permit. If an applicant is uncertain whether a heritage permit is required, it is recommended that the permits coordinator be contacted.*

NATIONAL TRUST REGISTER

The Landscape Committee of the National Trust has classified the landscape at Point Nepean. Classification or recording by the National Trust imposes no statutory requirements but often attracts considerable public interest and pressure. There is no separate classification for the Forts on the Point.

MORNINGTON PENINSULA SHIRE PLANNING SCHEME

At the time of preparation of this update, the forts at Point Nepean were not included within the Mornington Peninsula Shire Planning Scheme Heritage Overlay.

SIGNIFICANCE AND CONSERVATION POLICY

The following Statement of Cultural Significance for the fortifications at Point Nepean is as provided in the 1990 Conservation Plan, and supplemented with relevant statements from the 2004 Heritage Victoria citation and National Heritage List citation. In addition, Section E of this document provides separate Statements of Significance for the individual key components of the fortifications.

STATEMENT OF CULTURAL SIGNIFICANCE

Point Nepean must be considered as a whole complex, as one fort in the system of the outer defences of Port Phillip. However, certain structures are particularly significant as evidence of individual phases of the development of Point Nepean. These are identified in individual statements of significance in the following sections of this report.

The forts that make up the outer defence system of Port Phillip Bay are one of the most substantial projects ever undertaken by the Victorian Colonial Government in the nineteenth century.

Fort Nepean has some historical significance in firing the first shots of both the First and Second World Wars, which were the only shots fired in anger from any of the Port Phillip batteries.

Fort Nepean, as the fighting station of the North Melbourne Battery also has some historical significance through its association with Sir John Monash, commanding officer of the North Melbourne Battery from 1897 to 1908.

The forts illustrate the major advances that were occurring in military design and engineering throughout the latter half of the nineteenth century and the early part of the twentieth century. They are considered to be the most substantial and extensive system of fortifications in Australia.

By 1890 Port Phillip Bay was regarded as the most heavily fortified port of the British Empire in the Southern Hemisphere, leading to its title "The Gibraltar of the South".

Point Nepean and Fort Queenscliff were manned during both World Wars, however the other forts were largely redundant by 1911 when long range artillery at the Heads provided adequate protection for the entrance to the bay.

Point Nepean is second only in scale to Fort Queenscliff which retains its status as the premier fort. Point Nepean is less intact than Queenscliff having been vacated over forty years ago with much metal and joinery having been removed.

The nature of the terrain at Point Nepean determined the design of its fort complex, which is quite different from the others. Fort Queenscliff and Swan Island bear some similarity to each other in form and layout, whilst South Channel Fort is an artificial island of unique and revolutionary design.

SUMMARY

Point Nepean is considered to be the best example within the Port Phillip defence system of a large fortification complex exhibiting the changes in military engineering throughout the nineteenth and twentieth centuries, containing major developments from 1880, 1890, 1910 and 1940.

EXTRACT FROM VICTORIAN HERITAGE REGISTER CITATION 2004

Point Nepean was a major part of the Victorian coastal defence system which made Port Phillip Bay reputedly the most heavily defended harbour of the late nineteenth and early twentieth century in the southern hemisphere. It is said that the fortifications at Point Nepean are the best examples demonstrating the development of military technology of the Port Phillip Bay network. Remaining buildings and structures from the defence use of the site include the gun emplacements, light emplacements, observation posts, tunnels, Pearce Barracks, Fort Pearce, Eagle's Nest, and the Engine House, and a number of archaeological sites such as Happy Valley, the site of a World War II camp.

The area contained observation points associated with the fortifications, observation points for range firing at sea targets and range points for such firing

Point Nepean Defence and Quarantine Precinct is historically significant in the history of defence in Victoria from its first use as one of a number of colonial defence installations round Port Phillip Bay, (and) as an important Commonwealth defence site before and during the two World Wars...

SUMMARY OF NATIONAL HERITAGE LIST VALUES

The National Heritage List Citation Summary of Significance states that the fortifications 'illustrate British military design and technology of the 1870's and 1880's, similar to Middle Head, Sydney, overlaid by changes in imperial armaments and Second World War coastal defences', and that Fort Nepean in particular 'demonstrate(s) the geo-political importance of coastal defences ... in protecting the Australian colonies as part of the British Empire'.

The National Heritage List assessment identifies the Point Nepean Forts as having outstanding heritage value to the nation under the following criteria –

Criterion (a) - Importance in the course, or pattern of Australia's cultural history :-

- first shots of WW1 and WW2 fired from Point Nepean
- aspects of its defence use as part of a strategic outer line of defence of Melbourne's ports and harbours since the 1870's, following resolution by the British government that colonies with responsible government should bear the cost of their own defence.

Criterion (b) - Possession of uncommon, rare or endangered aspects of Australia's cultural history :-

- as part of the system of defence of Port Phillip Bay, best illustrates British military design and technology of the 1870's and 1880's, under the influence of Jervois and Scratchley and is therefore rare.

Criterion (d) - importance in demonstrating the principal characteristics of a class of Australia's cultural places :-

- as part of a strategic outer line in the defence of Melbourne's ports and harbours since the 1870's, surviving fabric clearly illustrates the implementation and operation of the fortifications, including the General Guiding Principles employed for a typical harbour under the Joint Naval and Military Committee for the defence of colonial ports by 1893. These include overlapping fields of fire from fortifications on headlands overlooking the approaches and channels and supporting barracks, all features employed at Point Nepean under the influence of the Jervois-Scratchley reports of 1877.

Criterion (h) - special association with the life or works of a person, or group of persons, of importance in Australia's cultural history.

- association with Sir John Monash, its commander officer, and Commander of Australian forces in WW1.

The full citation of Point Nepean's National Heritage Listing is included in the Draft Management Plan for Point Nepean National Park and the Point Nepean Quarantine Station.

CONSERVATION POLICY

The fort structures are to be conserved¹ with the minimum amount of clearing, consolidation, reconstruction, preservation and public safety measures required to maintain the structures and adequately interpret them to the public in accordance with the management plan for the Point Nepean National Park and the Point Nepean Quarantine Station.

Presentation of the site shall interpret the history and development of the site with minimal physical intrusions consistent with the need for visitors to be self-guiding.

BASIS

The basis for this approach is that the fort sites are considered unique in their present ruinous, half-buried, vegetated form, providing a romantic experience in a culturally significant but semi-wild, natural environment.

This type of experience is recognised as being of value in itself to the visitor and is not to be confused with the experience of visiting a reconstructed, and possibly semi-operating complex of buildings, which is available elsewhere such as at Fort Queenscliff.

Since the forts became redundant, they have been stripped of most of their fittings and fixtures. Additionally, a significant number of buildings and structures have been lost or removed. Predominantly of timber construction, these include barracks buildings, the jetty, tramline, various stores and other ancilliary facilities. However sufficient intact remnants of each phase of development of fortification technology are available to demonstrate the significance of Point Nepean; reconstruction is not required for interpretation purposes.

ADDITIONAL PUBLIC ACCESS

Whilst there is little need to make further areas publicly accessible in the foreseeable future, the provision of access to additional areas will be considered only if they can materially enhance the forts' interpretation, or to potentially substitute for any currently open structures which may need to be closed in the future due to reasons of public safety.

FOOTNOTES

- 1 Burra Charter Definitions, see Appendix 1.

CONDITION AND CONSERVATION WORKS PRIORITIES

The fortifications at Point Nepean largely comprise of the massive concrete and masonry structure remnants of long redundant, decommissioned and dismantled defence facilities in a largely ruinous, half-buried, vegetated form. The foundations on which the structures were built comprise of recent wind blown sand overlying older dune sand deposits cemented to form calcarenite rock.¹ A number of the fort structures were built adjacent to steep slopes or cliff faces above the ocean or the bay, which are subject to significant natural erosion and movement and the collapse of old sea walls. Such action has caused progressive deterioration of the structural integrity of the forts in a number of key specific locations, and continue to threaten the retention of Eagles Nest and the future interpretation of other fortification structures.

A number of coastal studies have been undertaken over the years, particularly since the 1970's. Early reports identify erosion and collapse of seawalls along the Port Phillip Bay side dating back as far as 1917 due to the refraction of waves following their passage through the Heads. The collapse and undermining of the seawalls on the Port Phillip Bay side is primarily due to their construction on sands without adequate footings. Erosion is evident today along the entire section of coast between Fort Nepean and Observatory Point, including active erosion of primary dunes between The Bend and Observatory Point. Comparatively, the old seawalls along the Bass Strait coast at Fort Nepean and the Narrows are in sound condition despite exposure to the high energy sea conditions. This may be due to the natural protection provided by extensive rock platforms and/or solid foundations.

The retardation of this impact would involve geomorphologic stabilisation against wind and wave erosion, and subsequent movement of the dunes and sandstone cliff substrates. These are major issues and recognised as requiring serious attention. However they are also subject to further coastal dynamics research and broader coastal management policy, and would involve major engineering works of a scale requiring interagency resourcing and cooperation.

Whilst stabilisation of the surviving forts fabric against atmospheric impacts of corrosion and weathering is a key conservation focus, displacement of the forts structures resulting from subsidence failure of the foundation material in this situation is largely unavoidable and irreversible, and as such the priority issue for their management must be to minimise resultant risk to visitors and personnel. Thus in situations where straightforward and effective stabilisation actions are not sufficient to arrest structural deterioration, regular monitoring of decaying masonry shall be undertaken. Where deterioration develops to pose an unacceptable level of risk to visitors, the approach will be to close the area to public access.

Notwithstanding however, representations to government and its relevant agencies need to be actively maintained for the commitment of appropriate levels of major works funding specifically dedicated to the stabilisation of the area's dunes and cliffs through sea wall repair and construction of rock revetments.

PREVIOUS WORKS

The opening of the Point Nepean Forts area for public access and display in the early 1990's was accompanied by the provision of a range of visitor amenity, safety and interpretation infrastructure including walkways, barriers and handrails, protective mesh screens and gates, toilets, fixed interpretive displays and signage, and an innovative and evocative audio interpretation system in the main central tunnel complex. Many of these works were as identified for implementation in the 1990 Conservation Management Plan.

In addition, and progressively, over the years since, a number of major conservation works included in the 1990 CMP have been carried out on the forts, including

- ~ stabilisation works to Gun No.1
- ~ replacement of the asphalt roof membrane to the Engine House at Fort Nepean
- ~ Repair of the long stairs at Fort Nepean
- ~ Some rock revetment repair works between the Fort Nepean Engine House and The Narrows.
- ~ Replacement of waterproof membranes over magazines at Fort Pearce and Gun Emplacement 5,
- ~ Concrete repairs and metal stabilisation to the Emplacement No. 5 gun canopy.
- ~ Floor repair works in the main tunnel.

Whilst public access was provided to most areas at the time of opening, due largely to structural movement and safety concerns arising from foundation instability, visitor access to several areas, particularly at Eagle's Nest and Fort Pearce, has needed to be either initially or subsequently restricted.

FUTURE WORKS PRIORITIES

Apart from the geomorphological stabilisation works to the Point Nepean coastal slopes and cliffs referred to above, The primary focus of conservation works at the forts into the foreseeable future is to achieve a sustainable level of stabilisation of their surviving built fabric through combating the effects of the persistent corrosive coastal environment. This is a widespread issue across the complex, and requires continuous, progressive and prioritised attention if long term survival is to be achieved.

Notwithstanding the subterranean nature of many of the structures, this essentially comprises of a range of minor and moderate scale repair works which can be successfully applied to retard such deterioration. Together with a practical preventative maintenance regime, this would contribute to the stabilisation of fabric and the prolonging of life of key significant components, all in the context of demand for visitor access, interpretation and safety. Such actions include corrosion treatment of surface metal, remnant joinery preservation, surface concrete repairs, protection of delicate paintwork, practically achievable waterproofing repairs, and 'housekeeping' tasks like maintenance of drainage systems and control of

invasive vegetation. The approach to such treatment for the general groups of fabric deterioration is covered by the General Specification included as Section F in this document.

The extent of the fort areas currently open to the public is very adequate to provide a meaningful visitor interpretive experience of the forts. However, where such areas are exhibiting structural deterioration, regular monitoring is required to determine the rate of change and the subsequent the level of risk to visitors. Assessment must then be made as to the most appropriate response, ranging from temporary repairs to major structural stabilisation, or to close the area to public access. The importance of the location to the visitor experience is of major consideration in this assessment.

A key area for priority consideration in this regard is the Engine House, where foundation movement has resulted in significant cracking to the brickwork and reinforced concrete in its south east corner. As a major throughpoint on the primary visitor interpretation route, this area is a priority for remedial attention. Formal monitoring and structural assessment will help indicate whether continual movement is occurring and the nature of necessary remedial action.

The other priority works resulting from potential risk to the public is the removal of the hazardous asbestos cladding of the Fort Pearce buildings. Although public access is not currently available to this site, the extent and deteriorated condition of the material, and its potential to generate airborne fibres makes its removal essential.

FOOTNOTES

1. Geological Survey of Victoria 1:63,360 Series Queenscliff Sheet (Reference 2)

GENERAL HISTORY

VICTORIA'S GIBRALTAR

Fort Nepean, known in the 1880s as Victoria's Gibraltar, was an essential part of the defence network of colonial Victoria. Victoria's defences, in turn, were planned in the larger context of British imperial defences. One of a number of defence installations round Port Phillip Bay, the fortifications on the tip of the Nepean Peninsula, together with those at Queenscliff, Swan Island, Fort Franklin and South Channel Fort, were designed to protect Victoria from attack by raiders who might penetrate the Heads and make their way up the Bay to hold the city of Melbourne to ransom.¹

Victoria's defence was in its early years the province of the British navy. Its internal security was at first also safeguarded by the presence of British forces. Although the protection by the mother country was valued by the colonists, it nevertheless made Victoria vulnerable to attack by enemies of the Empire. Thus, France, the United States, Russia and China were named as potential threats to Victorian security.² The Crimean War (1853-1856) stirred the colonial patriots to take some responsibility for their own defence. In 1854, a volunteer rifle brigade was formed in Melbourne. Drilling and military exercises were carried out by the volunteers at night and weekends.³

The discovery of gold in Victoria meant that the colony now had something to defend. As the *Argus* warned its readers

... in the event of war we are in a very defenceless state and that the fact of it being known all over the world that we have a few millions, worth of solid gold within cannon shot of the Bay is a circumstance which renders us peculiarly liable to attack.⁴

British troops were partially withdrawn in 1860, when they were sent to New Zealand to fight in the second Maori War. They were completely withdrawn in 1870. Volunteer enthusiasm had waned after the Crimean War ended but the withdrawal of British troops was an incentive to plan Victorian defences and improve the local force.⁵

COASTAL DEFENCES

In 1860, Victoria applied to the British Government for the services of an officer of the Royal Engineers to superintend the erection of defences. Captain Peter Scratchley was appointed and advised the provision of batteries in Hobson's Bay and at the Heads.⁶

1877 SCARE

Russian activity against Turkey in 1877 with the possibility of Britain's involvement may have been a factor in the appointment of a team of advisers from the Royal Engineers to report on Victorian defences in that year. In June 1877 Colonel Sir William Jervois and Lieutenant Colonel Peter Scratchley

recommended that Port Phillip be defended by a battery and keep at Queenscliff, a fort at Point Nepean and batteries at Swan Island and South Channel Island, with mines in the South and West Channels.⁷

Towards the end of 1878, a report was circulated by the press of Australia that the Russian Government had contemplated making a raid upon some of the Australian ports:

... the Russian admiral at Yokohama ... who possessed the instinct of a true buccaneer, became almost too frank... on one occasion he went so far as to say, striking his thigh at the same time with considerable energy "Fancy one, after all, missing such a chance! Six millions sterling! Why, there would not have been such a coup since the days of the Spanish galleons".⁸

1882 SCARE

The European crisis in 1882, when it seemed that Britain would become involved in a major war, was decisive in encouraging Victoria to build defences. A general European war with Britain isolated would make the colonies vulnerable to attack.⁹

As Victorian politician James Service put it in a speech to the electors of Castlemaine in 1883, Victoria had no consistent policy on defence in the nineteenth century:

Upon the subject of colonial defence we grow hot or cold alternately year by year. One year we get scared and spend any amount of money, then we have a fit of economy and do nothing...¹⁰

However, following the 1883 election, Victoria set up its own Ministry of Defence, a step not taken by the other states.¹¹

INVASION

The Victorian colonists did not fear a large scale invasion. They believed that the British navy was sufficient protection against invasion by a large body of troops, since an enemy would not risk its army so far from home. A force of 10,000 troops, a force large enough for the task, would be difficult to transport and maintain; its ships would be vulnerable to attack by the British navy.¹²

More probable was "a sudden attack with a view to plunder" by "some dashing fellow in command of an enemy's frigate, or a privateer, who will seek an entrance into Port Phillip with the view either of laying the City of Melbourne under an embargo, or destroying the shipping ...¹³

Certainly Victoria wavered in its determination to provide adequately for its own defence, but the 1880s provided enough incentive as well as enough prosperity to complete its fortifications at the Heads by 1890.

BUILDING THE FORT

A map of the area shows a rocket and mortar shed was built right at the tip of Point Nepean by 1876. This was probably used for life-saving equipment. Plans for a jetty dated 1878 show that preparations for defences had started.¹⁴

In 1878 a portable house, possibly intended for workmen, was erected at a cost of £188, a road was laid out and almost 9000 sandbags were unloaded to construct a temporary emplacement for four 80 pounder guns. The military reserve was fenced in 1879. Although plans dated November 1878 for a jetty survive, this was not built until 1882. Prior to this, the military may have used the Quarantine Station jetty or the Cattle jetty to unload building materials and equipment.¹⁵

In 1882 work began on the first permanent gun emplacements. The first delivery of powder to Point Nepean was in April 1885, which suggests that guns were then in place.¹⁶

Construction work continued during 1885 on another battery for 80 pounder guns and was completed by March 1886.¹⁷

1885 SCARE

The Russian designs on Afghanistan in 1885 alarmed Britain and therefore the colonies. This alarm was particularly felt in Victoria. As the Council of War commented later:

the threat of war acted like an electric shock upon the community¹⁸

THE DISAPPEARING GUN

The next phase of building at Point Nepean began in 1887 to adjust to the new developments in artillery. The disappearing" gun on an hydropneumatic carriage had been developed in the 1870s. After firing, it recoiled below the parapet to enable re-loading to be done in safety. Thus it did not present a target to the ship it was attacking. At Nepean one gun pit was converted to receive a 6" gun of this type, two others were converted for a 9.2" gun, and a new replacement for a 9.2" gun was built. In 1889 a contract for a 6" emplacement, passage, etc., was signed and a weatherboard barracks was begun in the same year.¹⁹

EAGLES NEST

At one of the highest points along the Nepean Peninsula, about one kilometre east of Point Nepean, the battery known as Eagle's Nest housed a 10" disappearing gun on an hydropneumatic carriage.²⁰

The buildings at Point Nepean reflect intense activity in the 1880s and early 1890s to keep Victoria's defences up to date with the latest inventions in military hardware. The impetus for this came from the international political scene, with a continuing sequence of war scares. There were said to be over 200 war scares in Australia during the nineteenth century.²¹

1888 SCARE

The accidental cutting of the cable linking Melbourne and London on 30 June 1888 set off a general war alarm in the colony. A headline in the Age newspaper read:

**ALARMING WAR SCARE
GUNBOAT ALBERT SENT TO THE HEADS
VICTORIAN FLEET READY FOR ANY EMERGENCY**

The Premier reacted by ordering a mobilization trial, in an attempt to test the defences without alarming the general population.

The Defence Department called out the Naval Brigade and directed the men of the Harbour Trust Battery to reinforce the garrison artillery. These men were distributed between the Queenscliff, Point Nepean and Swan Island forts. The gunboat Albert was sent to Queenscliff, and the search lights used at the Heads. Submarine mines were laid in the channels. According to the Argus, the re-armament of Fort Nepean had been in progress for some weeks and gun emplacements had been prepared. Three guns were placed in barges on Saturday 30 June and sent down the Bay. Once these are installed, claimed the report, "the fort will be one of the best equipped in the Southern Hemisphere".²²

The Age was more critical of the defence preparations:

It is unfortunate that the present scare should arise when both the Point Nepean and Point Franklin forts are almost completely dismantled, only one 9 inch gun and two 80 pounders being in position and ready for action at Nepean fort. Certainly one of the most recent pieces of artillery has been placed in the latter fort during the past week, but it is stated that the proper ammunition is not ready for it.²³

THE GUNS

The Age claimed that the heaviest piece of artillery in the colony was the 9.2 inch Armstrong breech loader, with its hydro-pneumatic carriage, which was mounted at Fort Nepean on 25 June 1888. It was brought down from Melbourne by the steamer Maud. With the carriage platform, and shield, the entire apparatus weighed 64 tons. It was installed by 30 men of the Victorian Artillery, supervised by Lieutenant Umphelby and had to be moved 'almost entirely by manual labour'. The weapon's range was 10,200 yards and the weight of each shot was 380 pounds.²⁴

First fired on 30 June 1888 at the time of the Russian scare, this gun and carriage

was mounted and fired under the most unfavourable circumstances viz. the pit not being made, or rather consisting of a huge excavation in the sand which had to be lowered at strong sand storm blowing the whole of the time the gun was being mounted. The sand was so bad that in the evening we used to cover all parts of carriage with tarpaulins, cases etc, and in the morning you would find the whole lot covered with sand.²⁵

With evident satisfaction, the Queenscliff local paper described Point Nepean's guns in 1889 as "a family of dealers of death and destruction". This florid prose was hardly justified: the guns at Fort Nepean had not at this time been fired in time of conflict and had caused no loss of life.²⁶

By 1890, Charles Dilke's assessment of Victoria's overall defences was a tribute to the planners:

The Australians are--- to be congratulated upon the perfection of the local defences of Melbourne – the best defended commercial city of the Empire.²⁷

There were three main types of guns emplaced at Point Nepean during its long history.

1. rifled muzzle loading guns
 - a) 80 pounder (4)
 - b) 9 inch (1)

2. breech loading guns
 - a) on a central pivot mounting
 - i) 6 inch (1)
 - ii) 6 inch Mark VII (4)

 - b) on a hydropneumatic mounting
 - i) 6 inch (2)
 - ii) 9.2 inch (2)
 - iii) 10 inch (1)

3. quick-firing guns
 - a) 14 pounder (1)
 - b) 4.7 inch (1)

DISAPPEARING GUNS

were breech loading guns on hydropneumatic carriages. The gun could be loaded in safety in the pit and emerged only for a moment before it fired and retracted. Thus the advantage of the disappearing gun was that it was difficult for a ship to see.²⁸

QUICK FIRING GUNS

These used 'fixed ammunition', that is, the projectile and cartridge were made up in one piece. Each round could be handled and loaded faster than before and there was no need to swab out the chamber of the gun before firing as the charge was exploded in the metal cartridge which was ejected.²⁹

6 INCH MARK VII GARRISON GUNS

The 6 inch gun was the standard imperial gun used from 1911 to after World War II.

GUN CREWS

A newspaper report of 1889 described the way the guns were fired. A gun crew usually consisted of nine men, but firing could be achieved by as few as five gunners. The first task was to sponge the gun out.

The charge (powder and shot or shell) was brought from the magazine on a trolley and raised by a derrick to the muzzle of the gun where it was rammed home by two men.

The charge is then pricked through the vent by a steel pricker which pierces the flannel bag containing the charge. A friction tube is placed in the vent to which is attached a lanyard, the gun is then trained and the sights being brought to bear, it is fired.

The target used for practice was towed by a boat and the results of the shots were conveyed back to the gunners by flag signals. The steam launch Mars was used for target practice within Port Phillip Bay.³⁰



Fig. 5. 6-inch gun, Fort Nepean c. 1943 (Australian War Memorial, Canberra ID 051186)

THE FORTIFICATIONS

Beneath the gun emplacements was a complex arrangement of passages and compartments designed to prevent accidents. Compartments for shell, shot and fuses were separated from those for the gunpowder cartridges. The supply to the guns by lifts and hoists was so arranged that the components of a complete round of ammunition never came together until they were actually loaded into the gun. Candles illuminated the magazines through glazed and sealed apertures to prevent gunpowder dust from coming into contact with a naked flame. Behind the magazine chambers ran a series of lamp passages, so that the lamps could be filled from behind. Copper nails were used in the woodwork to prevent sparks.³¹

Artillerymen coming on duty left their clothing and boots at the entrance to the magazine called the shifting lobby. Here they put on working overalls and exchanged their hobnailed boots for canvas shoes as a safety precaution. They had to empty their pockets of metal and matches before entering the magazines.³²

MANNING THE FORTS

The Victorian Artillery, a permanent force, manned the forts of Queenscliff, Nepean, Franklin, Swan Island and South Channel Fort. In 1888, some 150 men were stationed at the forts. The remainder of the Victorian Artillery were stationed in Melbourne, doing guard duty at Government House and other posts. The force of 150 permanent soldiers was not sufficient to man the guns without reinforcements.³³ To man the defences fully the militia were needed as well. The militia were civilians who were paid to attend training parades and annual camps, and were given specialised tasks within the Victorian Military Force. They were to be called out in the event of hostilities to their war stations.



Fig. 6. Looking west to Fort Nepean, c.1946. Barracks blocks and other ancillary timber buildings are visible, now demolished. As well, sea walls constructed to retard erosion of the Point are clearly apparent. (Australian War Memorial, Canberra, ID PO1108.011)

LIVING CONDITIONS

The men who manned the guns at Fort Nepean were brought from the headquarters at Queenscliff by launch. The conditions they lived under in the 1880s were complained of by six men court martialled for refusing to obey orders in July 1885. One of their grounds for complaint was:

That we were treated more like dogs than men, in fact used like convicts. We were made to do the work of horses, and indeed, horses get better accommodation than we had at Queenscliff and Point Nepean.³⁴

EASTER CAMPS

Since the militia trained mainly at night, their experience would have been very limited if it had not been for the training they received at the annual Easter manoeuvres.

In 1881, an Easter Camp was organized at Point Nepean by the militia themselves, who paid any expenses out of corps funds. The Government agreed to accommodate the soldiers at the Quarantine Station. The five hospital buildings were used as barracks for the 1st and 2nd Battalions of the Red Rifles for four days. Two steamers were chartered to bring the men and the horses of the mounted officers down the Bay. Field manoeuvres were held on the Saturday in "the country between the Quarantine Station and Sorrento, a hilly, sandy district covered with brackens and patched with scrub". The men were told that an enemy occupied a position on a hill between the station and Portsea, and was to be driven out and be made to retreat to Sorrento.³⁵

The official report by Major Templeton expressed satisfaction with the exercise but the Age reported disapprovingly that not all took the manoeuvres seriously. During the afternoon, five deserters were found in the Nepean Hotel; it took a sergeant and twelve men to arrest and imprison them. On the Saturday evening, all the men were in bed by ten o'clock with the exception of Majors Templeton and Freeman and fifteen men who were absent without leave. The absentees were retrieved from a ball at Portsea. They arrived back to find the commanding officer had decided to sound an alarm to see how smartly the men would turn out of their beds and appear on parade. The bugler sounded the alarm at 11 o'clock and in thirteen minutes every man in the place was on parade and ready for action. It is not clear whether the Portsea revellers joined in.³⁶

Other Easter camps held at Queenscliff involved artillery practice for the militia at Fort Nepean and the other forts.³⁷

SIR JOHN MONASH AND FORT NEPEAN

In 1887 the artillerymen and engineers attached to Victoria's forts numbered almost one thousand men. A small proportion of these were permanent soldiers but the majority were militia.

On 3 March 1887 John Monash was formally attached to the North Melbourne Battery (Metropolitan Brigade) of the Garrison Artillery whose fixed guns defended the Victorian ports. The Battery consisting of permanent soldiers and militia had Fort Nepean as its fighting station. Monash rose through the ranks of lieutenant, captain and major in the Battery to become its commanding officer in 1897.

Before joining the North Melbourne Battery, however, Monash had been disillusioned by his early contacts with the militia. "The militia is a fraud and bristles with ill-management", he wrote, "I have little heart to bother about it further". His experience in the battery changed his mind: when he transferred to the Australian Intelligence Corps in 1908, he described his 21 years in the North Melbourne Battery as the best years of his life.

Since the Nepean fort would be the first to come into action in the event of hostilities, it was particularly attractive to the romantic young soldier. One of John Monash's fantasies was that he might have charge of the seaward guns at Point Nepean and be the first to fire at a hostile fleet.³⁸

Monash's experience in the coastal artillery is seen by his biographer Geoffrey Serle as crucial to his later career as commander of the Australian forces in World War I. It was at Fort Nepean and in the North Melbourne Battery that Monash "learned to know and understand Australian volunteer soldiers".³⁹

FEDERATION

After federation, defence ceased to be a State responsibility: the state military forces were re-organised into a unified Commonwealth Military Force from 1901. The administration of the military establishment at Point Nepean was taken over by the Commonwealth.

NEXT PHASE OF BUILDING

The next phase of building at Point Nepean was designed to accommodate changes in armament technology. The 6 inch Mark VII guns installed in 1911 remained in use until the end of World War II. A new battery (1911) and barracks (1917) were built at Fort Pearce.

WORLD WAR I

During World War I, the Nepean garrison's numbers of artillerymen and engineers increased. The engineers at Point Nepean were responsible for the searchlights which were directed at the stretch of water at the Rip to show up enemy ships. The engines to work the search lights and provide other power at the fort were housed in the engine house near the jetty.

FIRST SHOT

The first British shot of World War I was fired by the Royal Australian Garrison Artillery from a 6 inch Mark VII gun at Fort Nepean.

The German steamer Pfalz left Victoria Dock on 5 August 1914, just before war was proclaimed, with Captain Robinson of the pilot service on board. At Portsea, the vessel was halted by the s.s. Alvina but given clearance since advice of the outbreak of war had not yet been received. A message was then received at Fort Nepean that war had been declared and the fire commander, Lieutenant Morris, was ordered to stop the Pfalz. Signals were hoisted at Point Nepean calling on the ship to stop. When the first shot was fired, Captain Robinson with difficulty convinced the captain of the Pfalz that the next would hit the ship. The vessel was brought back to Portsea, where both ship and crew were placed under arrest.⁴⁰

An account of the event by one of the gunners survives:

... the tide was flowing very fast when we had the word to fire and I pressed the electrical trigger and saw the shot land with a splash in the water; the splash went right up over the bridge of the ship ... The last order we had was "Stop her or sink her".⁴¹

The Pfalz was refitted at Williamstown and renamed the Boorara. She served as an Australian transport for the duration of the war.⁴²

GUARDING THE HEADS DURING WORLD WAR 1

The gunners and engineers stationed at Fort Nepean during World War I found their duties frustrating. Their newspaper, the Fort Critic, which circulated amongst the men at the forts of Queenscliff, Pearce, Franklin and South Channel from its editorial office at Nepean expressed some of their frustrations.

One contributor in a poem entitled "In Self- Defence" complained of

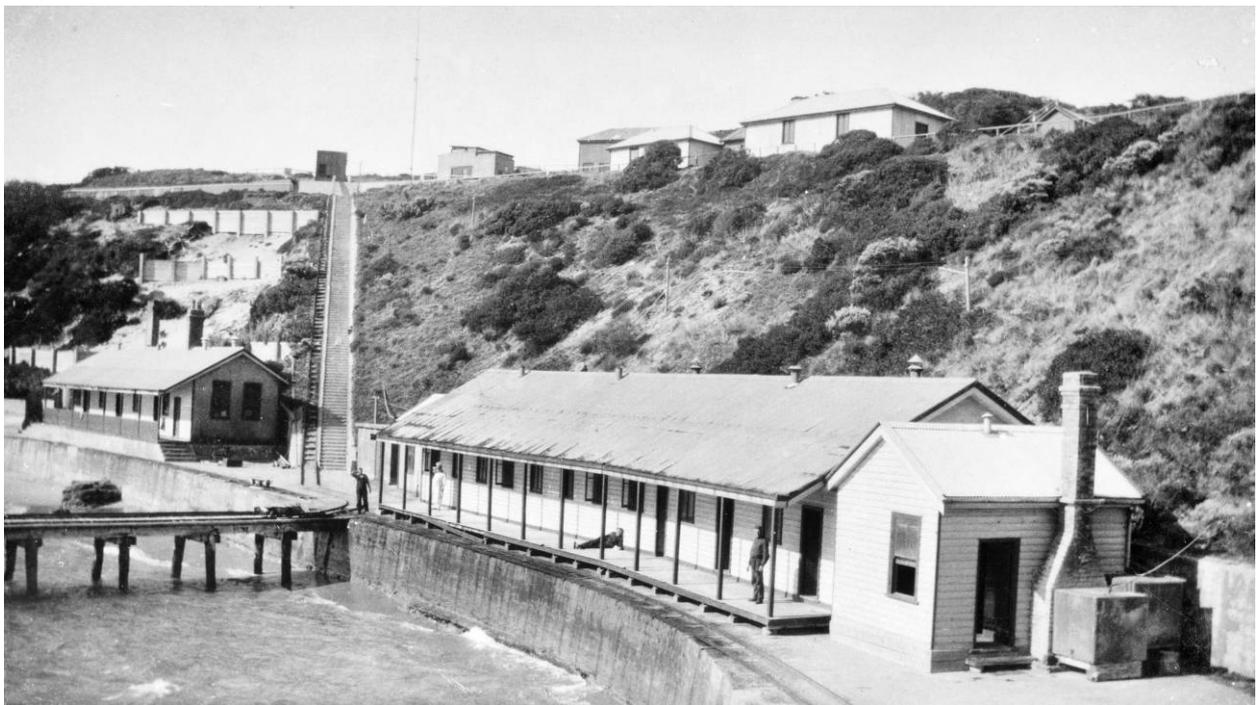
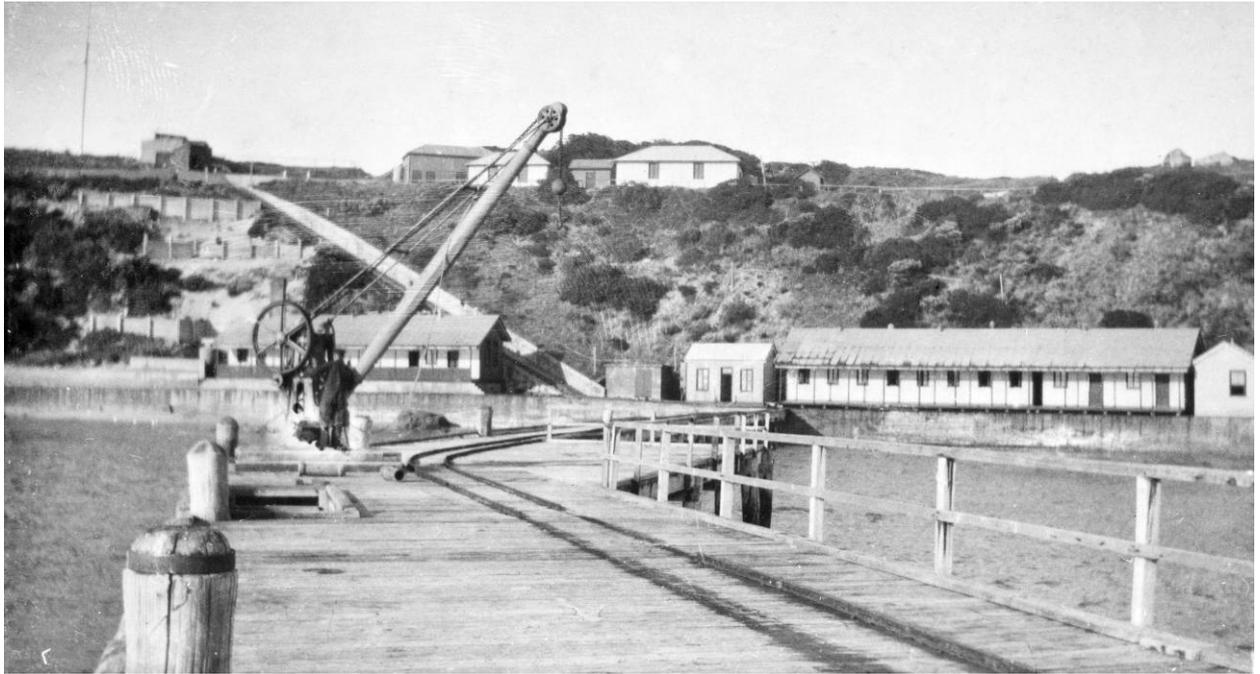
**the slurs of those
Who, fighting not themselves,
don't hesitate
To brand as cowards those men who chose
To serve Australia.⁴³**

To be kept at home to guard Australia's ports laid the garrison artillerymen and engineers open to accusations of cowardice. The writer found it necessary to assert that the gunners and engineers on garrison duty were not afraid to go to war, but that

It hurts That many seem to think we're here only To decorate Australia.⁴⁴

However, in both World War 1 and World War II, the Nepean Fort was a training ground for engineers and gunners who were subsequently sent overseas.

The pages of the newspaper reveal some of the limitations of the posting at Nepean. The pastimes of the men included swimming, fishing and billiards. The shortage of females at local dances was a constant complaint. Two enterprising men walked fifteen miles to Dromana to a dance, only to find that "there were 50 gents present and 15 females".⁴⁵



Figs. 7 & 8. Two views of the Royal Australian Engineers Barracks at Fort Nepean c.1933, seen from the end of the jetty and the engine room. (Australian War Memorial, Canberra). All the timber building in these views have since been demolished. (Australian War Memorial, Canberra, ID PO1449.061 and PO1149.060)

BETWEEN THE WARS

In the 1930s Carl Stillman was stationed at Nepean, going to Queenscliff only for weekends and mid-week sports meetings. At that time there were only five or six men living at Nepean. Their rations were brought over in a basket by boat from Queenscliff each day. If the weather was rough and the boat could not deliver the rations, the men had to go down to the Quarantine Station or Portsea for eggs and bread.⁴⁶ The working dress of the gunner consisted of white canvas trousers, white canvas jacket and a white hat.

For those engaged in cleaning and maintaining the guns, the challenge of appearing on Monday mornings in a clean uniform was considerable.⁴⁷

WORLD WAR II

Additional barracks at Point Nepean were built to accommodate the increased numbers of men stationed there during World War II. After the Japanese attack on the garrison at Rabaul in 1942, it was decided that the guns at Fort Pearce should be moved to Cheviot where a two-gun emplacement was built. The existing sites were believed to be too conspicuous and vulnerable to enemy dive-bombers. At Fort Nepean protective concrete shields were provided for emplacements F1 and H1, and a new Battery Observation Post built. Since the protective shields restricted the arc of fire from emplacements F1 and H1, a 14 pounder Nordenfelt gun was emplaced at Pearce to cover the Examination Anchorage.⁴⁸

FIRST SHOT

Fort Nepean is said to have fired the first British shot in World War II at an unidentified vessel approaching Port Phillip Heads. On 4 September 1939, a small Bass Strait freighter, the Woniara attempted to enter the Heads without identifying herself. A warning shot was fired from the fort.⁴⁹

CONDITIONS DURING WORLD WAR II

Reports on conditions at Nepean and Pearce during World War II referred to the low morale at the forts. Long hours were spent watching out to sea for enemy ships, often in cold and damp conditions. As Fortress Engineer G.H.Warr explained:

It was an eye strain, a nerve strain and you did not dare doze for fear you missed something. And it was lonely.

The barracks at Cheviot was known as Happy Valley. Warr recalled it as

a most miserable and depressing place. The big compensation to the fortress man for hours of watch keeping and standing to... was to be able to return to 1st class accommodation. [Happy Valley] was worse than sub-standard ... It was unsewered, flies were a problem. Fly traps were in use but the stench made eating unpleasant. Drinking water was from a tank which had a kerosene film to prevent mosquitos breeding.[The huts held] six men each side in two-tiered bunks. There were no windows and the huts were dug in to the side of small hills and buried 90%... No sheets or pillows, [no] rifle racks, no place to dry wet clothes.⁵⁰

RETREAT

At the end of World War II, the garrison at the Heads was removed and the buildings at Point Nepean were declared redundant.

Late in 1951, the Commonwealth Department of Health and the Department of the Army reached agreement for the Army to have temporary use of part of the Quarantine Station at Point Nepean for officer cadet training.⁵¹

The establishment of the Australian Defence Forces Academy in Canberra in 1986 led to the closure of the Officer Cadet School in December 1985.

The School of Army Health and then the Army Logistic Training Corps occupied the Quarantine Station site until 1998.

NOTE

This chapter owes a great deal to the original research of Mr Michael Kitson. I am grateful to him and to Mr Bill Goodall for their constructive reading of the text. (Louise Honman, 1990)

FOOTNOTES

- 1 G. Serle. The Rush to be Rich. (Melbourne, 1971), p.202; Sentinel (Queenscliff) 27 July 1889.
- 2 J. Tate A History of Fort Queenscliff in the Context of Port Phillip Defences. (Queenscliff, 1982) pp.1-14.
- 3 J.M. Templeton. 'History of the Victorian Defence Force, Part I'. United Service Institution of Victoria Journal , 3, 4, September 1894, pp.3-31; Serle, The Golden Age, p.161.
- 4 31 December 1853.
- 5 T.Millar 'History of the Defence Forces of the Port Phillip District, Colony of Victoria, 1836-1900'. (M.A. Thesis, University of Melbourne, 1957).
- 6 Defences of the Colony: Report of Captain Scratchley, R E.(Victorian Parliamentary Papers, 1860, Vol.2, No.2).
- 7 Defences: Preliminary Report, 1977 (Victorian Parliamentary Papers 1877 Vol 2, No.46).
- 8 Major-General E. Harding Steward, Confidential memorandum, November 1884, pp. 1, 16, in Australian Archives, Brighton. MP. 106 1884-1/2/1/1.) quoted by Winty Calder Australian Aldershot (Melbourne 1987), p.iv.
- 9 Tate p. 10.
- 10 Argus 8 February 1883.
- 11 Serle, The Rush to be Rich, p.202.
- 12 Tate p. 17; M. Kitson "Australia: the South Channel Defences at Port Phillip: Factors in the Design, 1876-1909", Fort, 15, 1987, pp.105-134.
- 13 Quoted by Tate, p.5.
- 14 Sanatory Station Annual report 1876; Australian Archives CRS B3712 Folder 14, Details of Framing for Jetty for Defence Purposes, Point Nepean 2/11/1878.

- 15 Victorian Year Book 1880-81 p.12 and Reserve Branch Files Summary of Works at Point Nepean; Australian Archives B.3712 Folder 14; Contracts Reserve Branch Files. Summary of works. see also PWD Contracts 81.2/125.
- 16 PWD Contract 82.3/39 from Reserve Branch File Summary of Works.
- 17 PWD Contract 1884.5.
- 18 cited by Kitson, 'The Defence of South Channel, Port Phillip, Victoria, 1876-1906', 1985. (Manuscript in the possession of the Author).
- 19 Reserve Branch Files and PWD Contract 87.8/42; PWD Contract 88.9 and 89.90/112
- 20 The Hydro-pneumatic "disappearing" mounting was developed at Sir William Armstrong's Elswick Works in Britain. M. Kitson Notes for Guides : Port Phillip Defences, South Channel Fort (Melbourne, 1987) 4.8.
- Return of Heavy BL Guns on Military Charge in the Colony of Victoria, 1891 (Australian Archives, A.C.T. CRS A1194 Item 45.30).
- 21 R. Hyslop. 'War Scares in Australia in the Nineteenth Century', Victorian Historical Journal, 47, 1976, pp 23-44.
- 22 Age 2 July 1888; Argus 2 July 1888.
- 23 2 July 1888.
- 24 Argus, 5 July 1888.
- 25 R. Harding 'History of Guns'. (Australian Archives, A.C.T. CRS A 1194 Item 45.30.27790).
- 26 Sentinel 27 July 1889. It is believed that further shots were fired during World War II (personal communication, Mr Bill Goodall).
- 27 Problems of Great Britain. (London, 1890), p.649 cited by Kitson, 'Australia: the South Channel Defences at Port Phillip', p.105.
- 28 M. Kitson Notes for Guides, 4.8.
- 29 Ibid, 4.11.
- 30 9 Feb 1889.
- 31 G. Vazenry 'Military Forces of Victoria, 1857-1967', pp 15-45.
- 32 Kitson, Notes for Guides, 5.8.
- 33 Argus 2 July 1888
- 33 Tate, p.47.
- 35 Templeton p.26; @@ 18 April 1881; Age 16 April 1881.
- 36 Templeton p. 26; Age 18 April 1881; Argus 18 April 1881.
- 37 e.g. Australasian 18 April 1903
- 38 Serle John Monash (Melbourne, 1982), p.64.
- 39 Ibid p. 169.
- 40 A.M. Robertson War in Port Phillip. (Sorrento, 1968).
- 41 Tate p. 64.
- 42 E. Scott Australia During the War (Official History of Australia in the War of 1914-1918, vol . XI) (Sydney, 1936) p. 36-7; Robertson, p.3.
- 43 Fort Critic 10 July 1916.

- 44 Ibid.
- 45 Fort Critic 17 June 1916.
- 46 Tate p.118.
- 47 Tate P.120.
- 48 Proposed Point Nepean National Park Concept Plan. (Melbourne, 1987); Fort Record Book 31 July 1944 Preface.
- 49 Robertson p.4.
- 50 G.H.Warr 'Notes on Point Nepean' (Manuscript in the possession of the Nepean Historical Society).
- 51 Welch, Hell to Health, p.85.

FORTIFICATION STRUCTURES

The fortification structures making up the extensive Point Nepean defences comprise the main Fort Nepean complex at the end of the Peninsula overlooking the Heads, the central group comprising Eagles Nest and Fort Pearce, and the Cheviot Hill Emplacement further to the East. In addition, a number of minor outlying facilities, primarily searchlight emplacements, complemented the main defences. Table 1 generally details those structures for which visible evidence remains. Their locations indicated in Figures 9 and 10.

TABLE 1. Inventory of Fortifications Structures

See Figs. 9 & 10 for location of site numbers).

LEGEND:

BL = Breach Loading

BOP = Battery Observation Post

ELDS = Electric Light Directing Station

ELER = Electric Light Engine Room

HP = Hydro-pneumatic mounting for gun

OME = Ordnance Mechanical Engineer

OF = Quick firing

RML = Rifled Muzzle Loading

1.	Special Beam Station.	
2.	Harbour Trust Store (ruins)	early 1900s
3.	Coastal Artillery Searchlight Emplacement (ruins). Originally operated nightly as a sentry beam.	1910
4.	Electronic Beam (infra red) Receiver. Concrete structure.	1943
5.	Roadway to Jetty and Engineers area.	c1940
6.	Coastal Artillery Searchlight Emplacement. (Original site of an early 4.7" OF Gun Empl.). Reconstructed	1910 c1939
7.	Portal from the Engine Room (originally the access tunnel to searchlight emplacements).	1880s
8.	ELER. for Coastal Artillery Searchlights. Additional upper engine room	c1880 c1910
9.	Concrete floor slab of toilet block.	pre WW2
10.	Gun Emplacement for 9.2" BL HP Gun. Modified for superseding 6" Mark VII BL. Gun	1887 c1910
10.	Concrete shield constructed. (Site of first British shots fired in WW1 and WW2).	1942
11.	Gun Emplacements for 80 pdr. RML guns(2 mounted close together). No surface remains. 9.2" BL. HP. gun emplaced between the two earlier emplacements which required extensive modification. 6" Mark VII BL. gun emplaced on site of 9.2" gun Concrete shield constructed	1882 1888 c1910 1942
12.	Original Garrison Artillery Barrack Room site (no remains)	early 1880s

13.	Site of original timber stairway (no remains).	c1880
14.	Former Jetty with steel tramway and crane. Root of the jetty and some of the tramway remains.	c1878
15.	Engineers Headquarters, Barracks & service buildings (ruins). Subsequent modifications over many years.	c1890 pre WW2
16.	Steep haulage, steel cable tramway. Adjacent inclined concrete stairway (118 steps). (Not the site of original access from lower to upper levels)	c1880 Pre WW1
17.	Emplacement built for 80 pdr. RML gun which was not mounted. A 6" BL gun on a central pivot was emplaced Enclosed for Equipment Storage (Skid Shed).	1882 c1888 1900s
18.	BOP. & ELDS. Adjacent foundations of the earlier BOP. & ELDS (Directly below is the access shaft, now sealed up, to original Fire Commander's Station)	1939 1910 c1900
19.	Site of signal hut. Concrete floor slabs remain.	pre. WW2
20.	Original Nepean Battery Fortifications (underground passages, magazines, shelters, access shafts to emplacements, ancillary rooms). A series of modifications. Casualty room addition.	1882 1882-1890s c WW1
21.	Gun Emplacement for 6" BL gun on HP mounting (mounting still extant) Re-use as a Survey Store.	1888 1937
22.	Garrison Artillery Parade Ground. Technical Stores Building sites Levelling of area: Large number of barrack rooms erected, now demolished	pre WW1 pre 1940 1940
23.	Gun Emplacement for 80 pdr. RML gun. Modified for Observation Post (original) and for other defensive purposes, eg. equipment store, shelter (accessed from covered passage only)	1882 1888
24.	East-west reinforced concrete retaining wall (partly collapsed).	c1940
25.	Gun Emplacement for 80 pdr. RML gun. Modified for superseding artillery (re-use as salt water reservoir for sewerage scheme)	1882 1887 cWW1
26.	Gun Emplacement for 14 pounder of gun. Gun re-emplaced at Fort Queenscliff (Empl. in exc.cond.)	1890 1897
27.	Gun Emplacement for 80 pdr. RML gun which was not mounted Enclosed for Armourer's Shop (OME store).	1882 1889
28.	Artillery Headquarters, Garrison Artillery permanent Barracks (not the original site), stores, coal shed, etc. Extensive modifications and additions Demolished, only concrete floor slabs remain	1880s prior to 1920s earlypostWW2

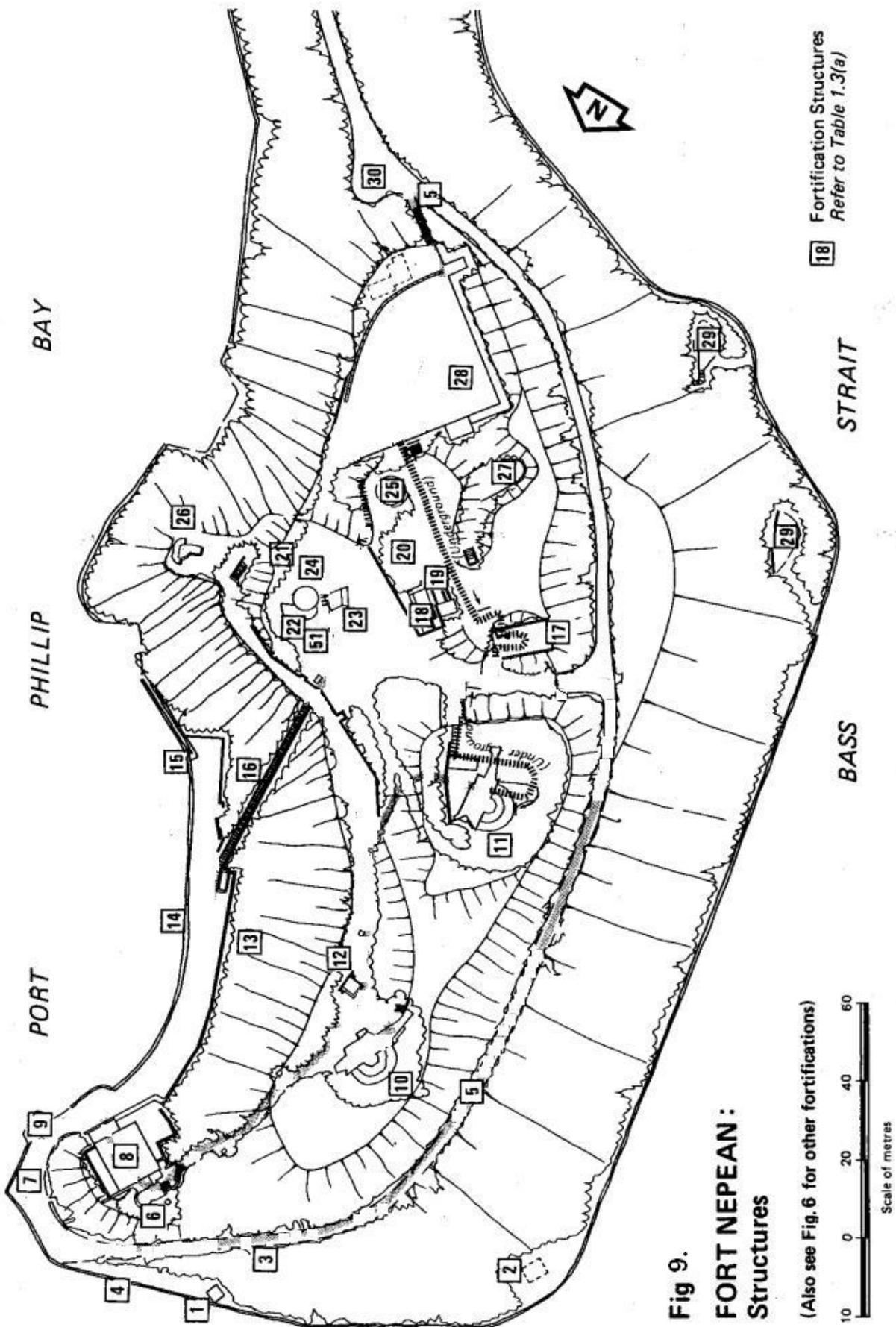
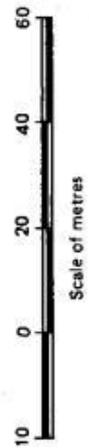


Fig 9.
FORT NEPEAN:
Structures

(Also see Fig. 6 for other fortifications)



29.	Coastal Artillery Searchlight Empl. (ruins) (2 sites)	1910
30.	Site of stables. Later garage (no remains). Incinerator ruins opposite	c1890 c1940
31.	Fort Pearce Barracks Complex. Subsequent modifications, construction and demolition of many buildings. After WW2 used by CMF & School Cadets. Fort Pearce ELER, in good cond	c1915 c1939
32.	Site of toilet block. Concrete floor slabs remain.	cWW1
33.	Original Fort Pearce Battery Observation Post. Modified to Gun Position Officer's Post.	1911 1939
34.	Fort Pearce Battery Gun Emplacements (2 sites) for 6" Mark VII BL. guns; subsequently moved to Cheviot Hill.	1911 1942
35.	Coastal Artillery Searchlight Emplacement.	1939
36.	ELER. for Coastal Artillery Search Light.	c1939
37.	New Fort Pearce BOP. and ELDS	
38.	Eagle's Nest Battery Gun Emplacement for 10" disappearing gun. Barrel now displayed at Defence Road. (Adjacent is the site of the former Caretaker's Cottage & Observation Post).	1889
39.	Fire Commander's Post. (Replaced earlier structure on same site c1900). Modified for Port Phillip Pilots' Radar Navigation Installation	1914 1985
40.	Machine Gun Emplacement (2 sites).	c1941
41.	Water tank 50 000 Gal.	c1941
42.	Dug-out shelter and Anti Aircraft Gun Emplacement. Coastal Artillery Searchlight Emplacement.	c1942 1939
43.	Barracks site, - Happy Valley and Cheviot Camps (Concrete floor slabs of service buildings and ruins of some structures visible today) Nearby was site of Italian Prisoner-of-War camp	1942 1945-46
44.	Cheviot Hill Battery: Gun Emplacement & Magazine (2 sites). 6" Mk. VII BL Guns relocated from Fort Pearce. ERA gun shields remain on site	1942
45.	Cheviot Hill Battery Command Post & ELDS.	c1942
46.	Two underground concrete water tanks.	c1942
47.	ELER. for Coastal Artillery Searchlights.	1942
48.	Gun emplacement (2 sites) for 6" Mk VII BL. Gun. (Guns not emplaced; were to receive the two 6" Mk VII guns from Fort Nepean. Move negated by improving over head protection by constructing concrete shields in 1942.)	1942

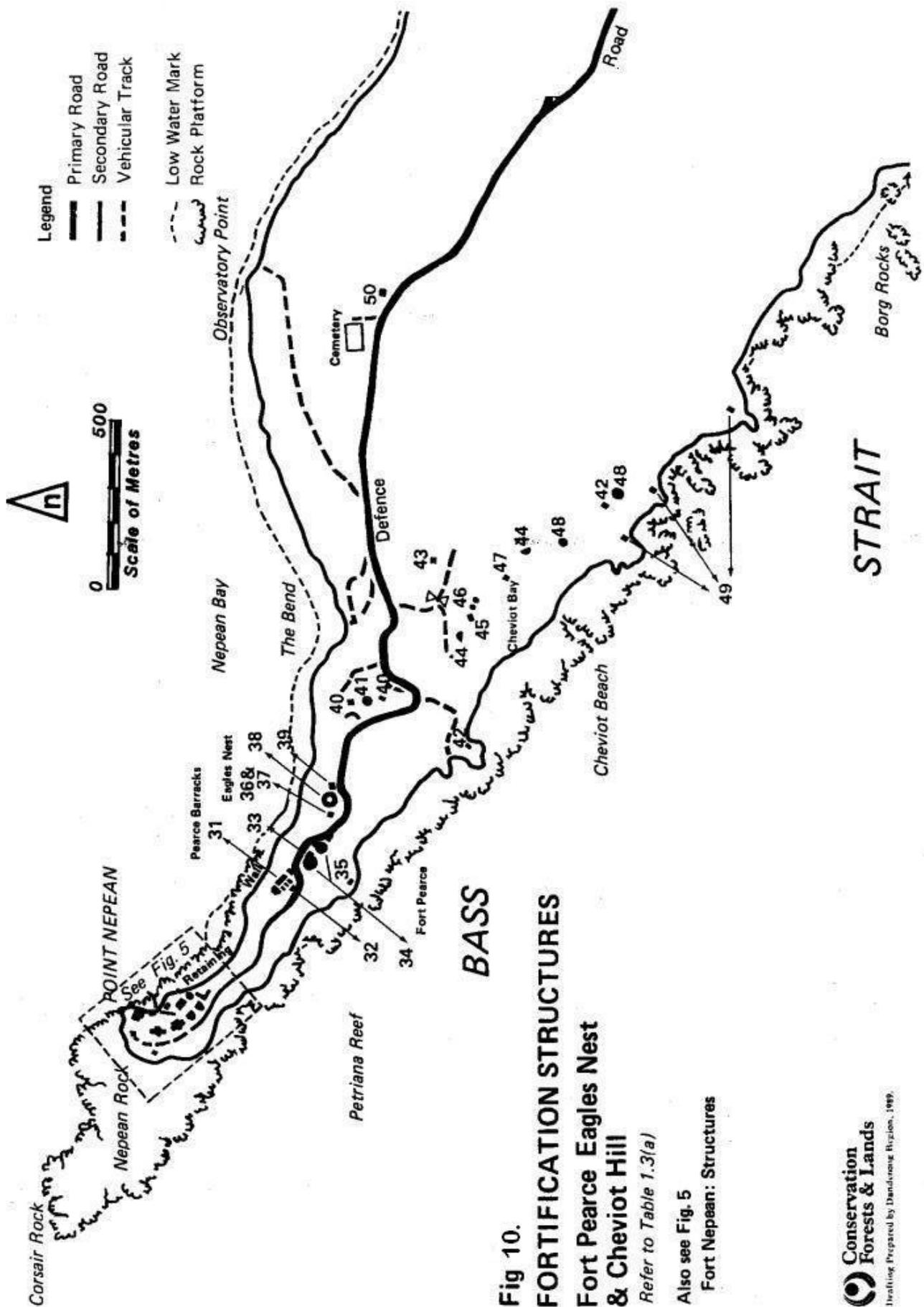


Fig 10.

FORTIFICATION STRUCTURES

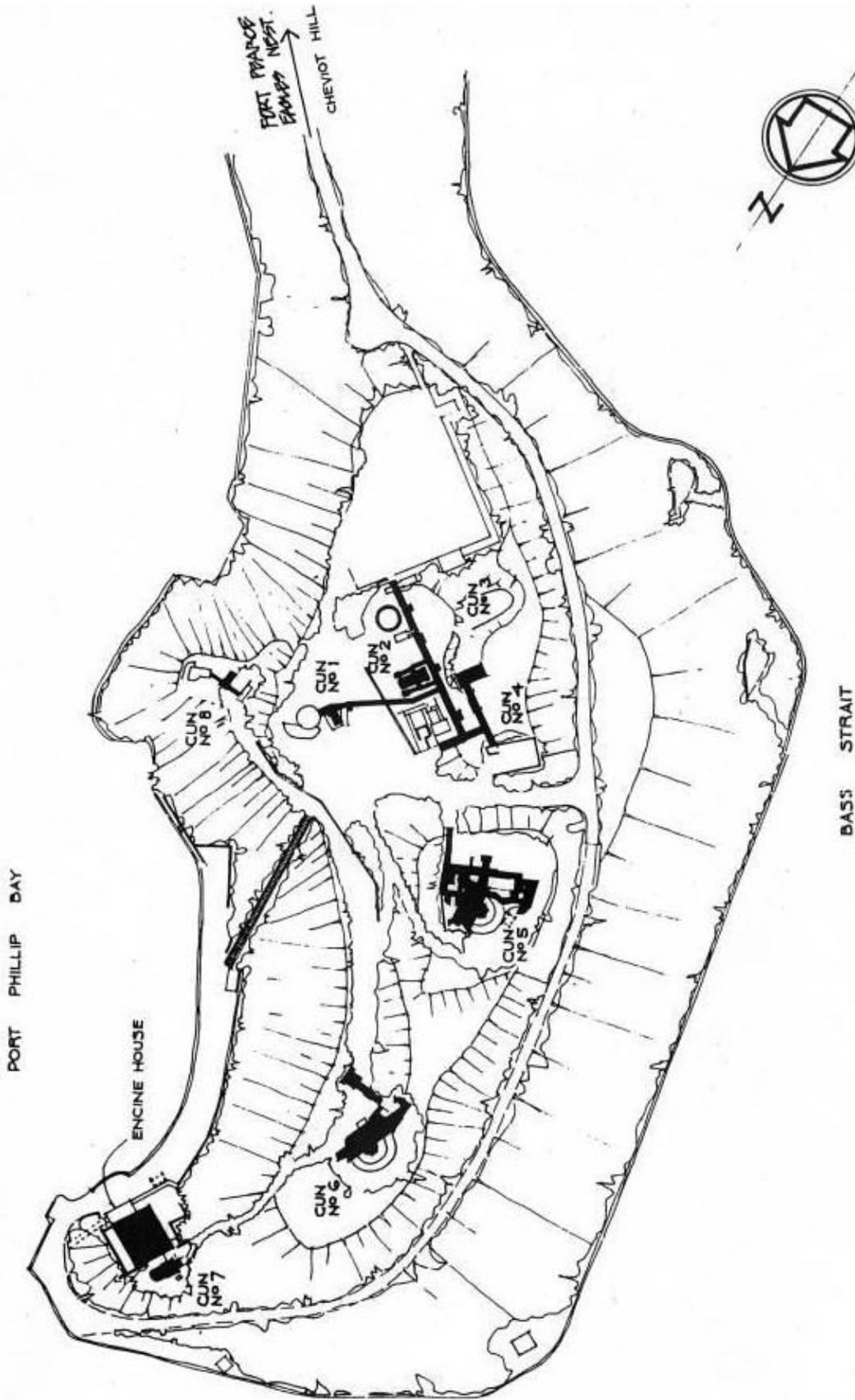
Fort Pearce Eagles Nest & Cheviot Hill

Refer to Table 1.3(a)

Also see Fig. 5

Fort Nepean: Structures

- | | | |
|-----|--|------|
| 49. | Coastal Artillery Searchlight Emplacement (3 sites).
(Timber construction. Only one light emplaced; other two not needed when Fort Nepean Guns were not relocated.) | 1942 |
| 50. | Master Gunner's Cottage (subsequent modifications).
(Refer to Section 1.3.5) | 1916 |
| 51. | 6" guns return to location 10 0211 | |

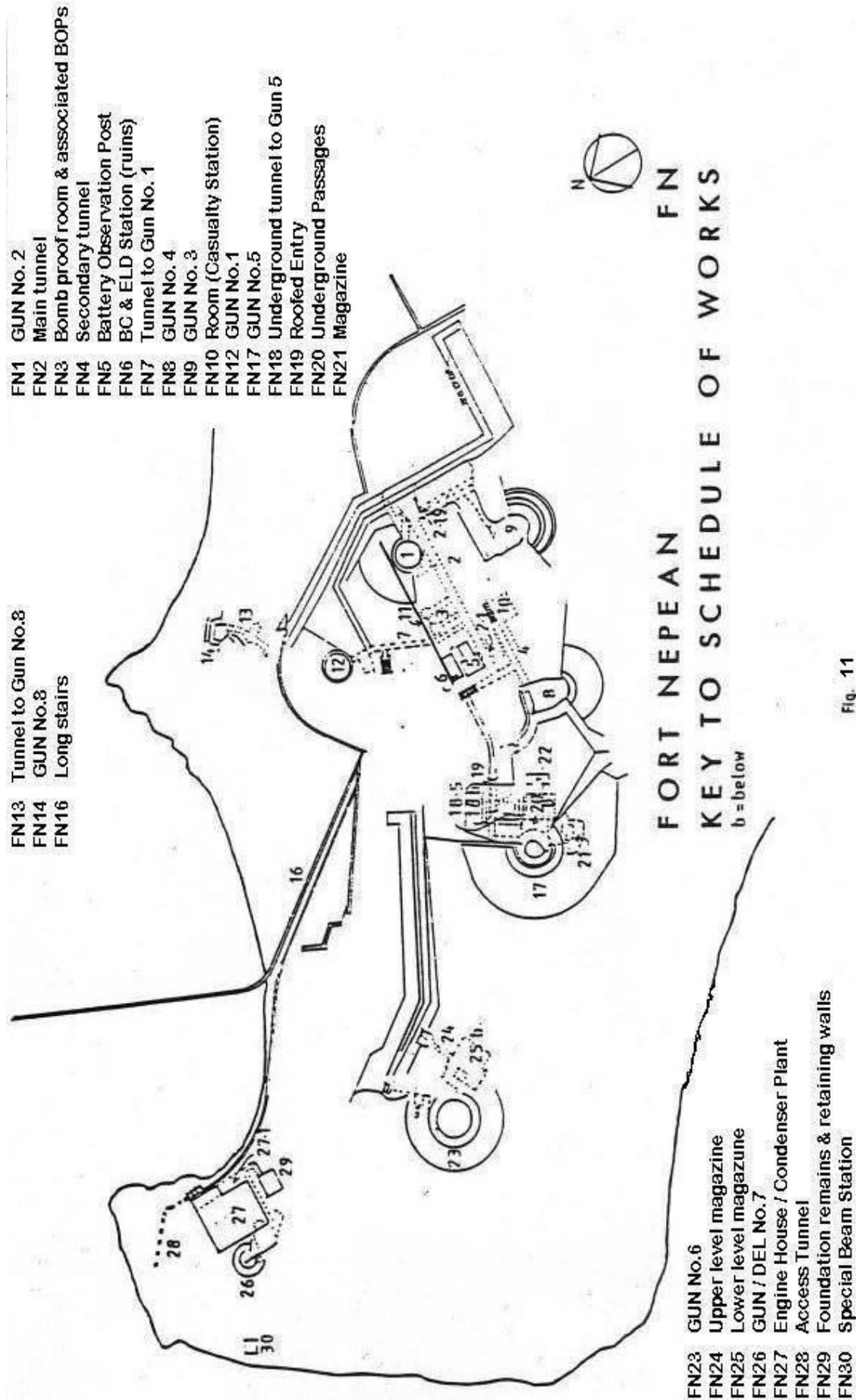


**FORT NEPEAN -
GUN EMPLACEMENTS**

DRC No. 88 - 773 - A1.
 DRAWN: MICHAEL RITCHIE 12/2/1988
 REVISION: ANDREW ARNOLD 20.1.90.

NOT TO SCALE

**MINISTRY OF HOUSING & CONSTRUCTION
 POINT NEPEAN NATIONAL PARK
 REPAIRS TO FORTIFICATIONS**



GUN EMPLACEMENT No. 1**CHRONOLOGY**

The gun emplacement was constructed during the third phase (1887-90) of development at Fort Nepean; the first (1878) being the construction of sandbagged batteries to house 4 no. 80 pounder RML guns and the second (from 1882) being the construction of six brick gun emplacements, 'u' shaped in plan.

During the third phase, one of these brick emplacements (no. 2A) was altered, and the new gun emplacement (now no.1) was constructed, both in mass concrete, circular in plan, each to take a 6" BL gun on pneumatic mountings. (The function of these mountings is to allow the gun to rise above the rim of the emplacement to fire and then withdraw, thus giving rise to the description "disappearing gun"). During this phase also, two other of the second phase brick 'u' plan emplacements were converted to magazines for a new circular emplacement in mass concrete to take a 9.2" BL gun on pneumatic (Hp) mountings (no. 5), and a further new emplacement (no.6) was similarly constructed to take a second 9.2" gun on Hp mounting. This last was adjacent to the site of an emplacement for a 9" RML gun prepared c1885¹. A drawing dated 4.8.1893.² shows the magazine for this and notes the gun as "removed".

A contract drawing³ for guns no's 1 and 2A dated 12.9.1887 shows the emplacements to be for 5" 3 ton guns on Hp carriages. However a note dated 7.10.1887 on the drawing records that this was "altered to 6" 5 1/4 ton" and refers to drawing no. 7a dated 19.11.1887. This is a new drawing for emplacement no. 1 redesigned to accommodate the 6" Hp gun which was actually emplaced in July, 1988.

The gun was removed some time after the fourth phase of development (1910-1916) during which two new gun emplacements were constructed for 6" Mark VII guns at Fort Pearce and the 9.2" Hp guns in emplacements 5 & 6 were also replaced with 6" Mark VII guns.

Reasons for the superseding of the "disappearing" gun by the Mark VII were the limitation on its range imposed by the inability of the mounting mechanism to achieve sufficient elevation, and the inclination of the gun to fire before the barrel had actually cleared the pit,⁴ causing several accidents.

Photographs submitted at an enquiry into the accidental discharge of a 9.2" BL gun on Hp mounting record the damage which occurred on January 13, 1910⁵.

An undated plan⁶ of a proposed sewerage system for Fort Nepean shows emplacements no's 1 and 2a to be converted to salt water reservoirs. A drawing dated 14.5.1917⁷ for the "proposed installation of a combined electric light engine room and condenser plant at Point Nepean" shows gun no. 1 "to be dismantled and pit used for reservoir". Gun emplacement no. 2a is noted as "existing salt water reservoir". However a site plan of 26.5.1937⁸ notes emplacement no. 1 as a survey store and no. 2 as a water tank. An existing wall painted sign opposite the pump chamber to gun no. 1 still denotes it "survey store". This together with other physical evidence which gives no indication of use as a water tank leads to the conclusion that emplacement no. 1 at least was never converted to a water reservoir.

In fact, the "disappearing" gun in No.1 apparently still in place and fired for demonstration purposes between 1925 and 1929⁹.

Following abandonment of the fortifications in 1946, the emplacement appears to have been gradually filled and buried by wind-driven sand.

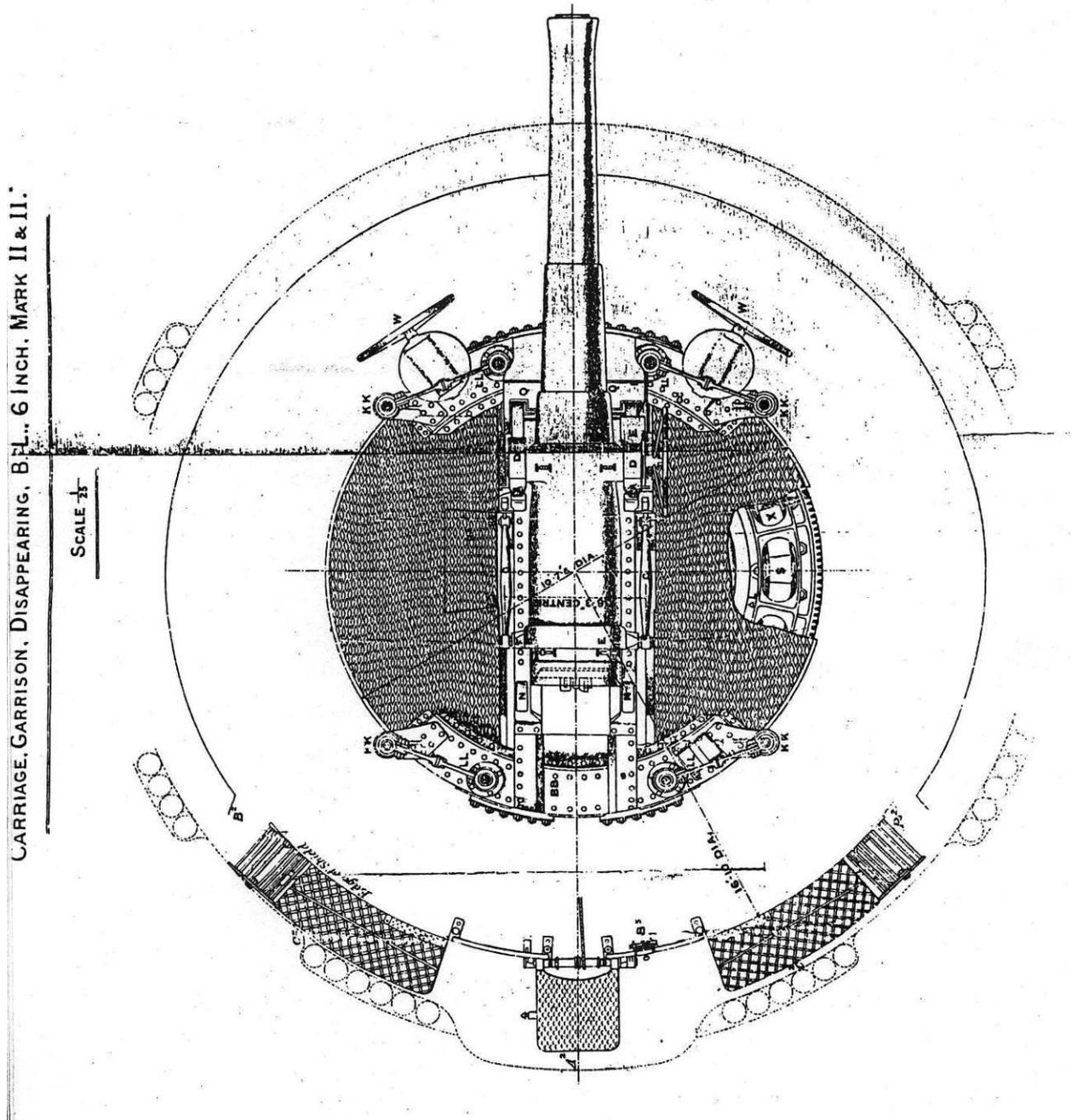


Fig. 12. Plan - 'Carriage, Garrison, Disappearing B.L 6 Inch, Mark II & II'

STATEMENT OF SIGNIFICANCE

Point Nepean is considered to be the best Australian example of a large fortification complex exhibiting the change in military engineering¹⁰ throughout the nineteenth and twentieth centuries, containing major developments from the 1880s, 1890s and the periods of the First and Second World Wars.

A key event in these developments was the design and production in 1885 of the disappearing gun mounting, which was a major step forward in the achievement of invisible forts¹¹. The gun appeared very briefly above its horizontal shield to fire and then recoiled by means of a hydraulic ram below into the gun pit for reloading. The gun pit was sunk into the sand dunes and the gun protected by the surrounding mass concrete and sand, camouflaged from marauding ships and better able to withstand heavy gunfire. This gave the advantage to the fort over the armoured warships. Earlier guns were necessarily permanently raised above the parapet and were by comparison visible and unprotected.

The gun emplacement as excavated displays the limewash and charcoal outlining of recesses and openings from the time of its last use. There are remnants of timber shelving and cupboard doors in the fuze cupboards of the shell recesses. Original signs designating the type of shell/shot stored in each recess have been re-painted at various times and now display the stencilled lettering of the last period of use, c1920s¹².

SUMMARY

The remnant of the gun carriage in gun emplacement no.1 is the only hydro-pneumatic (Hp) gun carriage remaining in place of the five once emplaced at Point Nepean. Hence, significance of gun emplacement: no.1 lies in its containing the only remnant at Point Nepean of a particular key element in the development of gun design and thus in the development of military engineering, of which Point Nepean is considered to be the best Australian example.

It has particular significance as containing an internationally rare remnant of this type of gun¹³ which is the only remnant of a 6" Hp gun mounting in situ of the Port Phillip Defences and possibly in Australia¹⁴, and in that it displays almost intact surface finishes and signwriting from the last period of use.

CONSERVATION POLICY & STRATEGY

Gun Emplacement No.1 shall be conserved with the key elements of its significance, namely the remnant HP gun mounting and the existing surface finishes preserved in situ, and the remaining pieces of the gun shield reinstated in their original position over the mounting.

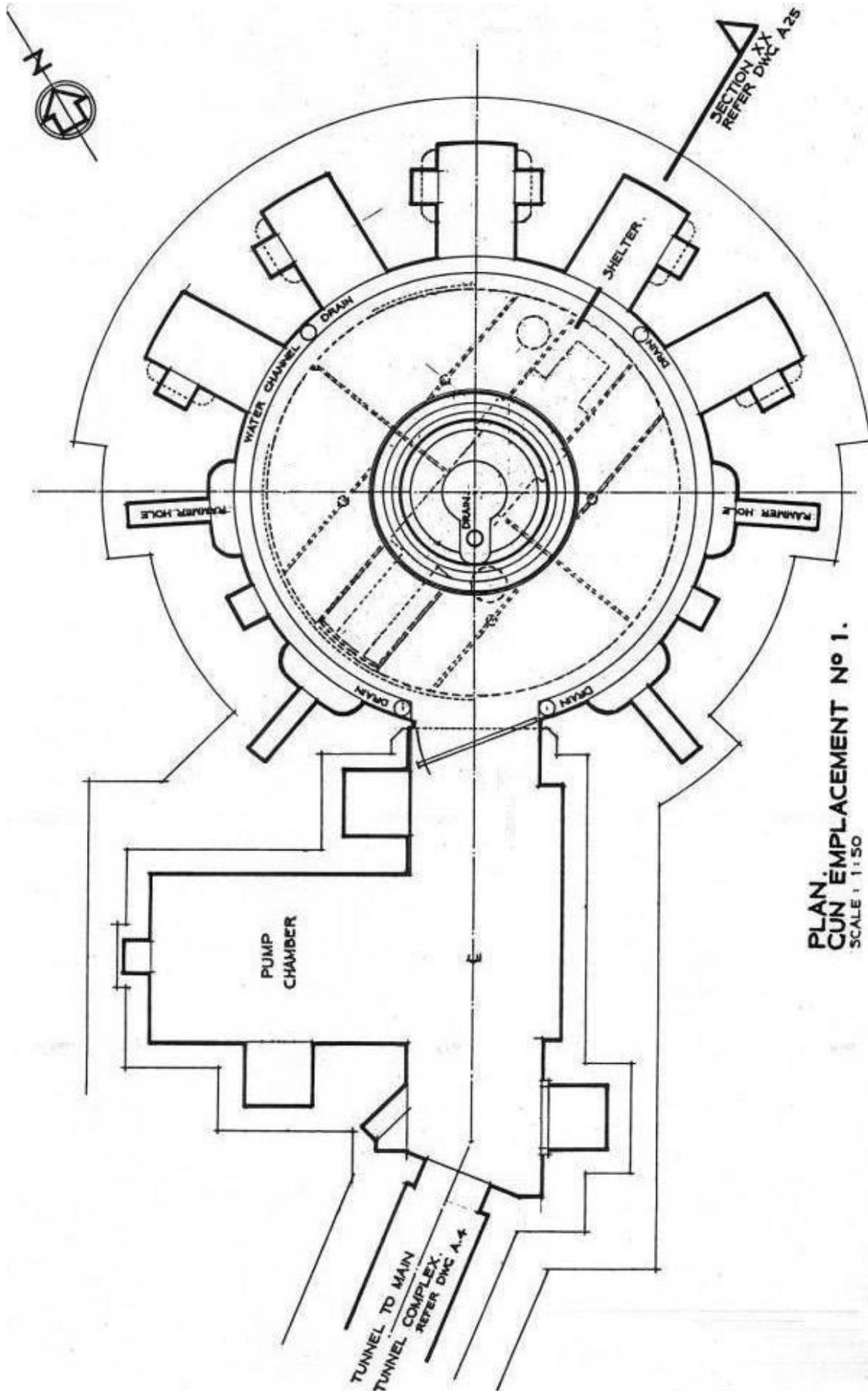
Maintain as an area with very high visitor access, interpretation and conservation values. Generally the gate excluding access within the emplacement should be maintained however increased visitor access inside the gate may be permitted through authorised and special interest guided tours.

Given the high significance of this emplacement due to the surviving disappearing gun carriage, and its very good visitor accessibility, conservation and interpretation of this feature is to be of the highest priority. The reinstatement of the gun shield has served in part to preserve the gun mounting surface finishes and signwriting, by providing a roof to the emplacement. Further preservation is to be achieved primarily through the application of appropriate chemical consolidants to stabilise the various materials against further deterioration. The metal shield and mounting is to be treated in situ with a proven and approved vapour corrosion inhibitor, and the emplacement's drainage system is to be investigated and if possible cleaned out and made fully operable.

The existing shell and other recesses and fuze cupboard shall be cleaned out, timber shelf and door remnants being retained in situ. The wall finish is to be preserved by treating the existing lime washed walls and charcoal outlines to recesses and openings with a chemical consolidant, initially one section immediately left of the entrance shall be treated and the result assessed over a full seasonal cycle, i.e. one year.

Remnant signwriting shall be protected either by treatment with a chemical consolidant or covered with Perspex covers as detailed.

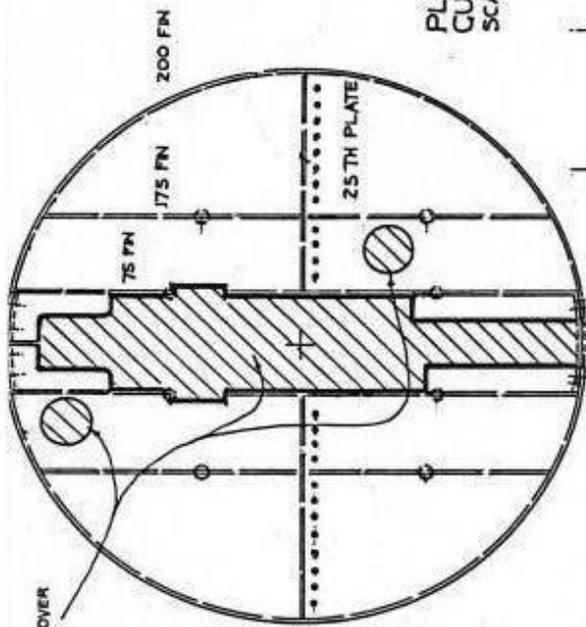
A lockable galvanised steel gate has been installed at the entrance to the emplacement to exclude public access whilst allowing viewing. This gate has suffered substantial corrosion, apparently due to its inability to be washed by rainwater in its protected location. It is proposed that public access into the emplacement be restricted until all consolidation and other protective works as outlined above have been completed and have proven effective.



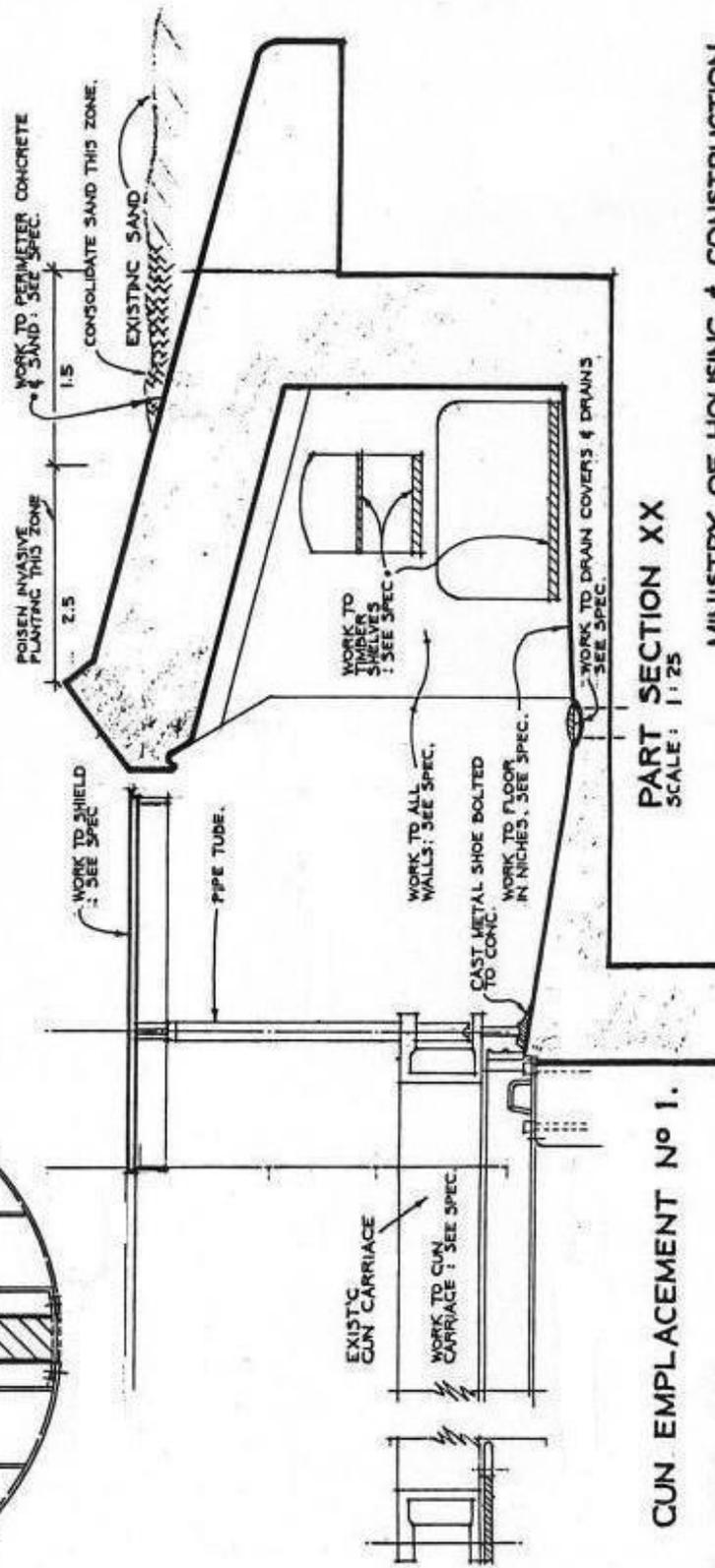
MINISTRY OF HOUSING & CONSTRUCTION
POINT NEPEAN NATIONAL PARK
REPAIRS TO FORTIFICATIONS
UPDATED AUGUST 2005

PLAN EMPLACEMENT No 1.
SCALE: 1:50

DRG No. 88-773-A24
DRAWN: MICHAEL RITCHIE 5/7/1588



PLAN OF SHIELD
GUN No 1 (ø 5330)
SCALE: 1:50



CUN EMPLACEMENT No 1.

DRC No. 88-773-A25
DRAWN: MICHAEL RITCHIE 5/7/98

MINISTRY OF HOUSING & CONSTRUCTION
POINT NEPEAN NATIONAL PARK
REPAIRS TO FORTIFICATIONS.
UPDATED AUGUST 2005

CONDITION

The emplacement was excavated in March 1988 and all sand extracted by July 1988. As with many other areas of the forts, interpretation signs have been mounted and a sound system, providing a haunting backdrop to life in the facility, installed in the emplacement.

Walls

Walls are generally intact but have an outer limewash layer which is easily removed by washing or abrasion. Charcoal signage and outlines overlay earlier markings.

Wall Recesses

Fuze and shot recesses contain timber shelves fitted on timber battens which are fixed into the concrete by timber plugs.

Shelving and plugs appear to be softwood - possibly oregon and all were water laden when excavated.

These timbers when dried out are soft and in some places the timber has completely decayed. A number of shelves have collapsed due-to batten fixings decaying.

Emplacement Perimeter Concrete

The perimeter concrete is in good condition except at the inner lip where several sections have been broken away in the area adjacent to where the gun barrel has been removed. Some sections of the drip line bead have also been damaged. The inner concrete lip has had a reglet sawn into it to take a makeshift gutter fitted up against the underside of the rotating shield. The gutter was held by heavy drawn wire spikes set in timber plugs fitted below the reglet. Small portions of this gutter remain.

Concrete Floor

The concrete floor is in good condition and shows only minor damage. Earlier paint scheme borders are evident in the fuze recesses.

Gun Carriage and Shield

The gun carriage has been rotated some 135 degrees out from its normal alignment. The inner paired shield support pillars had previously been bent downward to facilitate the barrel removal, whilst its missing four outer shield support pillars have been replaced by new galvanised steel posts when the shield, previously removed along with the barrel and miscellaneous components such as cogs and hand wheels, was reinstated in 1990.

It would appear (by observation) that the carriage has been aligned with the small uphill track to facilitate removal and transportation of the barrel. Its whereabouts is unknown.

Rusting of the roller bearings and arm bearing pins has meant the carriage is now "fixed" in an out of alignment position. The extent of corrosion (essentially, rust) to the various components, is variable, ranging from superficial to very advanced. Sand is present on most internal cavities and ledges and is generally bonded to the surface where scaling rust is present.

Drainage

Drain covers found in the gun base pit and along the spoon drain in the emplacement have all rusted to various degrees. Some can be removed, others require cutting free. Earthenware drains below the covers are filled with sand. The extent of this sand filling, the condition of the earthenware pipework and the outfall locations are unknown.

Joinery

Joinery in the tunnel leading to the emplacement is damaged to various degrees.

There are 3 recesses in the location of the Dump chamber. Two recesses were fitted with 2 inch thick panel doors. These doors are now missing. Their jamb linings however remain.

Signage

A number of signs are evident in the emplacement over the recesses and the tunnel entrance. The signs originally in charcoal on the limewash finish have been overpainted with oilbase.

RECOMMENDED WORKS

Generally

Obtain an assessment of the paintwork and signage by a paint conservator.

Carry out priority actions including conservation of metal, timber and paint finishes in accordance with Section G. General Specification, additional technical specifications and consolidant manufacturers instructions. All preservation and consolidation works to be undertaken under the supervision of appropriate conservation specialists.

Monitor drainage, sand accumulation and potentially damaging vegetation. Prepare and implement a maintenance regime to minimise the negative impacts of such action, including maintenance of drainage systems, and removal of vegetation and sand buildup.

Drains

- a) Clear drainage system as possible to make functional Carefully remove 5.no. metal drain covers. Dig out all sand in drains by root cutter, vacuum or other approved method. Clean out sand for minimum of 3m length.

- b) Wire brush clean drain covers. Open drain eyes.
- c) Ensure surfaces are clean and dry. Prime with approved metal primer and finish with 2 coats enamel to select colour.

Perimeter of Emplacement

- a) Remove sand and vegetative matter all around to 2.5m from concrete lip. Selectively poison invasive plants.
- b) Consolidate sand in a 1.5m band around the gun emplacement. Use crushed gravel as for pathways. Mix gravel with a light gauging of concrete powder. Compact in 25mm layers damping down between successive passes of the roller.
- c) Finish surface to run ground water away from the emplacement.

FOOTNOTES

1. Victoria : Papers presented to Parliament 1886, Vol.3, No.61, Report of the Council of Defence.
2. Australian Archives MP338, Folder 1.
3. Australian Archives, MP338, Folder 1.
4. Tate, J. A History of Fort Queenscliff, 1982. Chapter 4, The Soldier's life at the Fort, p.111 and p.119.
Harding, R. Report to the Commanding Officer of Victorian Artillery, 1890.
5. Australian Archives. MP84/1. Department of Defence Central Registry. Central Correspondence 1906-1913.
6. Australian Archives, MP 338, Folder 1.
7. Ibid.
8. Map 114, Australian Archives B3712, Folder 14.
9. Tate, J. A History of Fort Queenscliff, 1982. Chap.4, letter from Mr. A.J.W. Evans to Col. Jones, dated 1.4.1975 (p.102).
10. Public Works Victoria: Point Nepean National Park Concept Plan Report, Heritage Analysis 1.3. September 1987.
11. Kitson, M. Notes for Guides: Port Phillip Defences South Channel Fort, for Victour Properties Pty Ltd. 28.8.1987.
12. Tate, J. A History of Fort Queenscliff. 1982. Chap.4, letter from Mr. A.J.W. Evans to Col. Jones, dated 1.4.1975 (p.102).
13. Research by Mr. M. Kitson indicates that there are very few remnants of Hp mountings world wide, apart from those in New Zealand, there may be remnants at Mauritius and Hong Kong. (Letter from V.A.S. 22.08.88)
14. An 8" Hp gun from South Channel Fort was restored and relocated to Queenscliff fort as part of the restoration program there in 1980. A second 8" mounting remains in place at South Channel Fort. This is the only known remnants in situ in Australia. A restored 6" HP gun is located at Fort Tairaoa, in Otago New Zealand

GUN EMPLACEMENT No. 2A, 3 & 4**CHRONOLOGY**

The first permanent emplacements, now numbered 2A, 2B, 3 and 4 began construction in 1882 in brick, and were "U" shaped in plan. These represented 4No. of the 6No. brick emplacements built between 1880 and 1886. These emplacements housed two of the 4No. 80 pounder muzzle loading guns on the site at the time.

The brick emplacements were accompanied by brick tunnels linking the gun pits and giving joint access to the lower level magazines. Vertical hoists were used to access the magazines and once raised the individual elements were carried to the desired gun pit.

Alterations to the gun pits

In phase 3 (1887-90), the gun emplacements within this group, were altered in the following ways:

- Former No. 1, now 2A was converted from a brick "U" plan emplacement by some amount of breaking out and relining with mass concrete to house instead a 6" breech loading gun on hydropneumatic mounting (BLHP).
- The lower level of emplacement 2B was converted to a bomb proof room, over it were constructed two Observation Stations.
- A third 'U' plan emplacement now No. 3 became the site of an armourer's shop.
- The fourth "U" plan brick emplacement now No. 4 was modified for installation of a 6" breech loading gun on centre pivot (BLCP).

Drawings signed in September 1887 designated the new gun in 2A as being a five inch, three ton gun. Soon afterwards in January 1888 an amended sheet no. 4A showing "alterations of 5 inch 3 ton gun pit at present no.1 80 pounder muzzle loading gun to 6 inch 5.25 ton breech loading gun pit" was produced.

The implications of this change were: an increase in the diameter of the pit from 20'6" to 22'6", an additional "man recess" and "rammer hole" and above the rim, the perimeter apron has a slightly higher profile. It appears that these changes were made to the drawings before construction had begun.

In 1895, the brick emplacement No. 3, formerly No. 6, is shown as having located in it an "armourer's shop".¹ This is a timber framed structure with iron cladding and small tanks to collect water from the roof. This gun pit does not appear to have ever received a gun.

An undated drawing shows emplacements nos. 1 and 2A to be used as seawater reservoirs in a proposed sewerage system on Fort Nepean.² Gun Pit No. 2A was tanked to contain water. This is evident in the enclosure of the pit with mass concrete and exposed piping now running out of it. A site plan dated 26.5.1937³ notes emplacement No. 2A as a water tank.

The guns in emplacement 2A and 4 were not upgraded to 6" Mark VIIIs during the phase 4, c.WW1 alterations. A drawing 4/8/93 shows gun No. 4 marked up in red as a "5" CP on vavassour mounting, as does the 1906 site plan,⁴ but later drawings and the "list of Armament (Mounted) at the Various Forts throughout the Commonwealth" dated 1/1/1903⁵ indicate that the 6" BLCP was in place prior to the conversion of the emplacement to a "skidding shed" c1937. The "skidding shed" was used to store equipment needed for hauling the armaments.

For this purpose the height of the emplacement was increased with concrete parapets and the beam holes for the roof structure are visible beneath the 1988 roof of the present interpretation centre.

Alterations to the Magazines

In phase 3 (1887~90) this tunnel and magazine system was extensively altered to provide the double circulation system separating the magazines from the flame of lighted lanterns.⁶

The magazines and connecting passages as constructed in phase 2, were caressed in mass concrete and lined with brickwork.⁷

Access to the lower level was achieved via a metal ladder whose rungs were individually mounted on the wall of the square profile shaft.

The 1882 magazines comprised five inter~ connecting spaces and drawings indicate an asphalt finish to floors of the inner chambers. In 1888 the magazines and gun pits were altered in response to the installation of the hydropneumatic guns. This was to provide a separate entrance for the newly constructed lamp passage and an additional lobby and hoist for the new No. 4 gun.⁸

The storage area of the existing magazine was in fact halved; walls dividing the paired north and central rooms were removed and the width of the south and central rooms was reduced by the provision of the separate lamp passage.

Battery Observation Posts (BOPS)

The original Phase 3 Fire Commander's Station, commanding the two 6" disappearing guns and Gun No.4, was located above the main tunnel connecting Gun Nos. 4 and 2A.⁹ Access to it was via a vertical shaft from the tunnel, the positions of the ladder rungs can still be seen on the concrete lining. During phase 4, prior to WW1, a new battery observation post was constructed a little to the north of this and c1942 a third BOP was constructed between them. This last is the one to which the public now has access.

Barracks Site

During phase 3 1887-90) "permanent" barracks were constructed on the flat area east of the main tunnel entrance and provided accommodation for the garrison artillery.¹⁰



Fig. 14. Battery Observation Post, Fort Nepean c.1943 (Australian War Memorial, Canberra, ID 051174)

As the site of artillery headquarters this area saw many subsequent modifications and additions.

Barracks and other quarters¹¹ were added during World War I and in 1918 a 15,000 gallon water storage tank¹² was added to the site.

From about 1937 this group was extended to include the use of the parade ground in front (north) of emplacements 2A, 3 and 4. The drawing describing the barracks in this year¹³ show up to eight timber barrack buildings in this area, including one over the emplacement no.1. This is confirmed by a contemporary photograph.¹⁴

Signal Station

The remains of the signal station adjacent to the steps leading to the Casualty Room date from before 1939. During World War 1 the Port War Signal Station was located at Cheviot Hill. Subsequently it was located at Fort Nepean and in 1943 was relocated to Fort Pearce. The Port War Signal Station was manned by the Navy.¹⁵

STATEMENT OF SIGNIFICANCE

The interlinked structure containing gun pits numbered 2A, 3 and 4, the bomb proof room and observation stations, tunnels and magazines and WW1 and WW2 battery observation posts is centred around the location of the earliest sand bagged gun emplacements on Point Nepean. This group, apart from Emplacement No. 5 sustained its greatest number of changes in response to new fortification and gun technology between 1882 and WW2.

This is the only group that still retains an unaltered "U" plan emplacement from phase 2. Gun pit no. 2A was the only phase 2 pit to be converted in phase 3 to house a breech loading hydro pneumatic gun.

Given the intact nature of the various phases this group has the greatest potential for the interpretation of those phases. This opportunity is enhanced by their location immediately adjacent to the arrival point and easy pedestrian access.

Gun emplacements nos. 2A, 3 and 4 together with Emplacement No. 1 and the "Eagle's Nest" emplacement, are the most intact remnants of the Scratchley / Jervois "Gibraltar of the South".

Gun Emplacement 2A despite use as a water tank still displays the limewash and charcoal outlining of recesses and openings from prior to WW1. The gun and hydro pneumatic mounting have gone but the base ring and guides remain.

Summary

Emplacement Nos. 2A, 3 & 4 and associated tunnels, magazines, bomb proof room, observation stations, and WW1 and WW2 battery observation posts demonstrate changes in fortification and gun technology most particularly over the first three phases of development of the site.

Emplacements 2A, 3 and 4 together with the tunnels, bomb proof room, observation stations, and magazines are intact remnants of the Scratchley/Jervois "Gibraltar of the South".

CONSERVATION POLICY AND STRATEGY

This group shall be conserved in its current configuration and remain as the primary visitor access and interpretation point for the Point Nepean Forts.

This, the central complex of Fort Nepean, is the location of the extensive electronic audio and interpretive display, installed in 1994 / 95 and still successfully providing a very evocative visitor experience of life at the fort. Integrally with the disappearing gun remains of Emplacement No. 1, it provides a readily accessible and comprehensive range of the fort's key defence features.

- It is not considered desirable that pedestrian access be extended to the top area of this group, beyond the present access to the BOP. The remains of the signal station should be identified for interpretative purposes.
- There is currently no access to **gun pit no. 2A**. Opening of the tunnel to the emplacement is therefore not required in the short term. This Gun pit retains some signage relating to its phase 3 construction and use. Provision of access to the base of the gun pit could be provided in future by unblocking the original opening from the tunnel. This would assist public appreciation of the extent of the complex, and interpretation of its later conversion to a water tank would assist appreciation of the changes made to the fort through its different phases.
- There is currently no access to **gun pit no. 3**. Opening of the tunnel to the emplacement is therefore not required in the foreseeable future.
- **The tunnels** will be retained as areas with very high visitor access, interpretation and conservation values. There is no current access out the east end of the secondary tunnel between Emplacement No. 4 and the Casualty Station. The present closure to the end of this tunnel shall be maintained.
- Remnants of the shield (located by the Coastal Defences Study Group - letter from M. Kitson to V.A.S.) could be retrieved and placed in the pit. The only gun remnant in this group is the base mounting ring of the hydro pneumatic gun in pit no. 2A.
- **Emplacement No. 4** will be retained as an important visitor access and interpretation and visitor orientation site.
- **The Bomb Proof Room** and the associated phase 3 observation stations will be maintained as areas with very high visitor access, interpretation and conservation values. The stations require inspection by an experienced metals conservator to assess treatment of the metal plate superstructure.

The northern most of the **paired observation stations** has an amount of exposed cabling which may be contemporary with its construction and therefore indicative of the working relationship of the emplacements. The cables have not been significantly damaged to date and it is proposed to leave

them exposed pending further potential research into the communications systems and early electric lighting of Fort Nepean.

Lighting

The lighting of this group is adequate for current visitor interpretation and safety requirements. If future interpretative signage is provided to the emplacement it is suggested that this be lit by specific task lighting rather than by raising the ambient lighting level.

Barracks Site

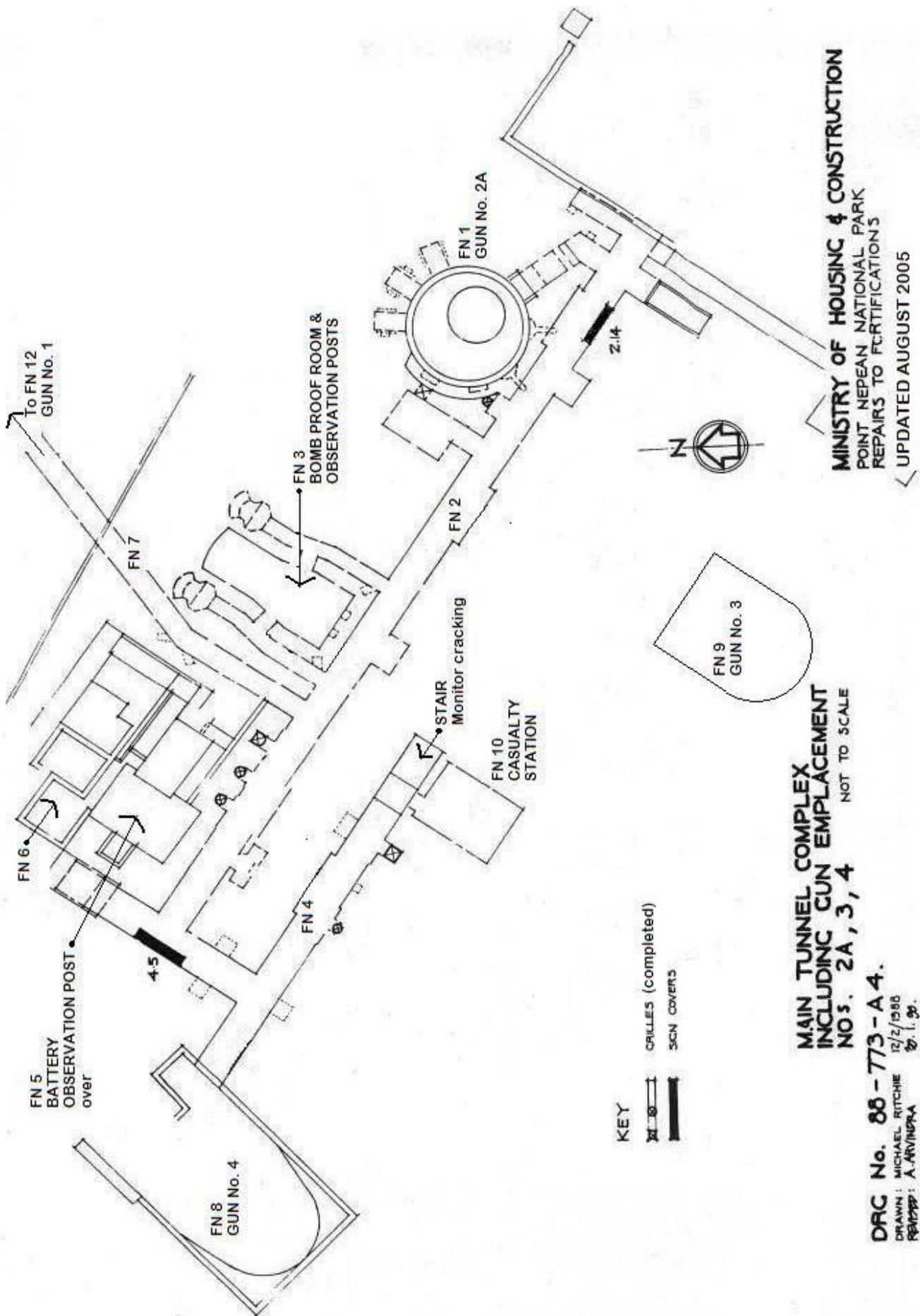
Due to the considerable photographic and drawing evidence of the nature of the original barracks east of Gun No. 2A, and in the context of the Conservation Policy, it is not proposed to clear the barracks site. Such work would require controlled archaeological excavation due to the potential for in situ deposits, and the exposed footings would then require consolidation as an archaeological site. Further interpretative material could be displayed at the end of the tunnel overlooking the site, such as copies of the original drawings of the barracks buildings.

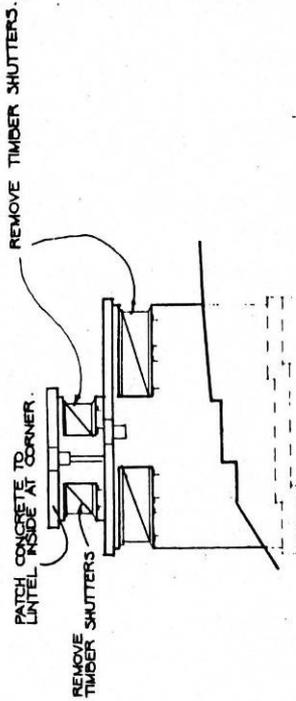
The Barracks site will be maintained as an important visitor access and interpretation site requiring minimal conservation works. The maintenance of the open area and the interpretation of its former functions is desirable.

Battery Observation Post (BOP) (Phase 5)

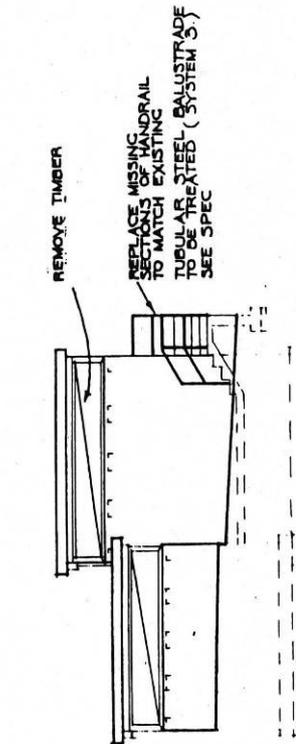
The battery observation post will be maintained as a site with very high visitor access, interpretation and conservation values. Due to these values this BOP has the highest priority for conservation work above other BOPs. It requires minor repair work as detailed on drawing no. A13.

Timber remnants are not part of the original timber shutters as these were replaced with glazing at an early stage. On removal of the three windows the openings were boarded up. It is proposed that these timber remnants therefore be removed. Reinstatement of windows to range finder room may be considered.

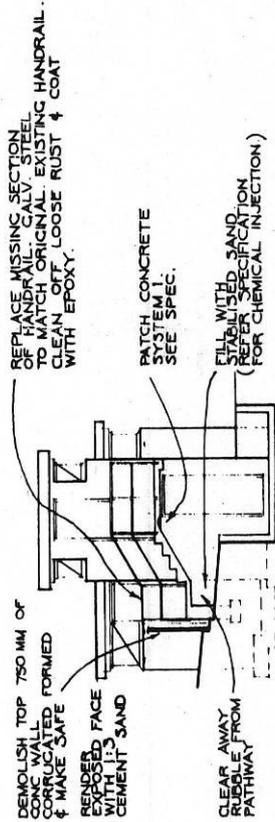




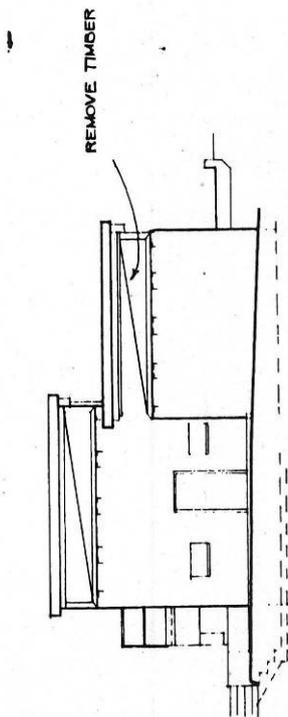
WEST ELEVATION



SOUTH ELEVATION



EAST ELEVATION



NORTH ELEVATION

ROOF SLAB TO BE LOAD TESTED WITH 2 KPa LEVELLOAD

GENERAL NOTE:
RECTIFY SPALLING CONCRETE DUE TO CORROSION OF REINFORCEMENT USING SYSTEM 1 TOGETHER WITH POLYMER MODIFIED CEMENT GROUT
APPLY LOW VISCOSITY EPOXY GROUT TO HAIRLINE CRACKS ON UPSIDE OF CONCRETE ROOF SLAB.

REFER ALSO TO DRC NO 4, 21
PERSEPEX SIGN COVERS
SIGN COVERS TO PAINTED SIGNS ON RANGE FINDER POSTS (SIZE APPROX 400 X 400) X 2

BATTERY OBSERVATION POST (FN5)

SCALE: 1:100

DRC No. 88-773-A13

DRAWN: MICHAEL RITCHIE 12/2/1988
LOUISE HONMAN.

REVISOR: A. ARVINDRA 10-1-90.

MINISTRY OF HOUSING & CONSTRUCTION
POINT NEPEAN NATIONAL PARK
REPAIRS TO FORTIFICATIONS

SCHEDULE OF SIGN COVERS
 REFER TO KEY SHEETS FOR LOCATION OF NUMBERS
 DRAWING NO. 3, 4, 5, 6, 7 & 8 and Appendix 3 'Sign Survey'

LOCATION	NEST/EN	RANGE SHELL RANGE	APPROXIMATE SIZE	SURVEY No.	
• FACLES EN	1.15		70 x 60	158	
	1.15		80 x 250	159	
• PORT NEPEAN FN	2.14	PORT ARMS RACK	240 x 260	49	
	3.00	ROUND ROOF	590 x 690	47	
	4.30	"TO THE PRIVATE GROUND" TO THE CASUALTY ROOM.	660 x 480	18	
• B.O.P.	5	BEARINGS AND DISTANCES	2 x 40 x 600	129 & 130	
• GAIN 1	7.40	SURVEY STOPS	760 x 490	24	
• GAIN 9	18.00	"MACHINE CAPACITY"			
	18.14	800 CARTRIDGE	740 x 510	88	
	20.14	"MAGAZINE"	1200 x 250	58	
	20.17	"HI ARMS RACK"	670 x 270	60	
	22.0	"2"	200 x 180	62	
		No. 5 RECESS 12 SHELL OR CARTRIDGE	1640 x 250	77	
• GAIN 6	23.00	No. 4 RECESS 12 SHELL OR CARTRIDGE	1640 x 250	78	
	23.70	SHELL CAPACITY 400"	740 x 560	70	
• GAIN 7	23.70	BEARINGS AND DISTANCES	880 x 700	109	
	24.30	"FI ARMS RACK"	680 x 260	80	
	24.40	"TO SHELL ROOM AND LIFT"	750 x 350	92	
	24.50	"TO MACHINE AND CARTRIDGE LIFT"	850 x 330	91	
	24.52	"2" BY SHELL ROOM	600 x 530	94	
	25.40	"MACHINE CAPACITY"	1900 x 300	112	
	25.70	"RECEIVING LOBBY"	760 x 230	114	
	26.10	"FRASE"	880 x 340	126	
		NOTE: SIGN NOS 13, 14, 15, 22, 45, 46, 100, 107, 109, 147, 154, 162 & 166			
		ALSO REQUIRES SIGN COVERS. SEE APPENDIX 3 FOR DETAILS.			

MINISTRY OF HOUSING AND CONSTRUCTION VICTORIA

MICROFILMING CLIENT DEPT. CODE NO. FILE NO. PORT NEPEAN NATIONAL PARK -
 O.P.S. 287 x 210 REPAIRS TO PERTURBATIONS.

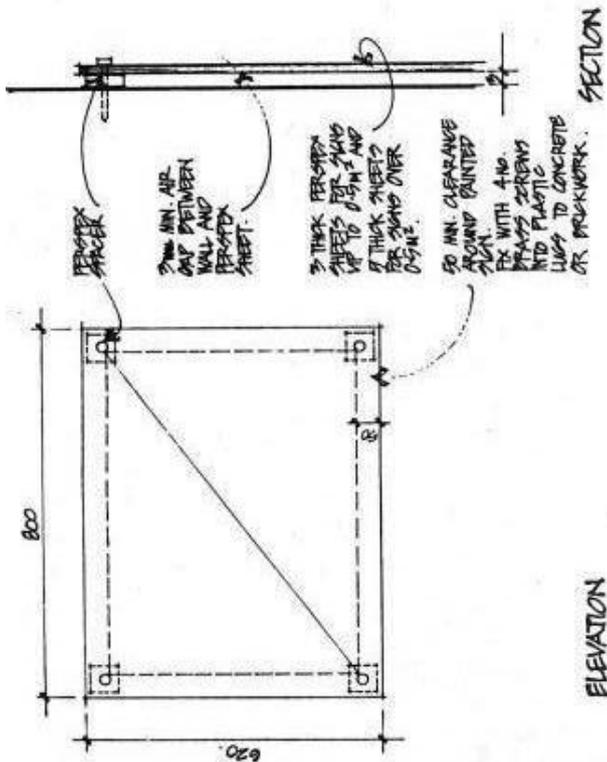
2
 4
 1

DESIGNED BY: JAVIN/NOVA
 CHECKED BY: APPROVED

DRAWN BY: JAVIN/NOVA
 APPROVED

SCALE: 1:10
 DATE: FEB. 2
 DRAWING NO. 88-773-A21
 NO. OF SHEETS

MINI OPERATOR HERITAGE GROUP
 HISTORIC BUILDINGS BRANCH.



ELEVATION

PERFEX SIGN COVERS.

SECTION

GENERAL NOTES:
 COVERS ARE TO BE PLACED OVER SIGNS WHERE STILL LEGIBLE AND WHERE THEY ARE IN DANGER OF BEING REMOVED BY TOUCHING OR RUBBING.
 IF IN DOUBT AS TO WHETHER A PARTICULAR SIGN NEEDS COVERING OR NOT, CONTACT THE Heritage Programs Section, National Parks Division, Parks Victoria.
 REFER TO SCHEDULE OF SIGNS (APPENDIX 3).

EXISTING STRUCTURAL CONDITION & RECOMMENDED WORKS**GENERALLY**

The group is in essentially sound condition and does not require any substantial structural works.

Monitor and maintain existing drainage systems throughout and keep the structures clear of potentially damaging vegetation. Monitor for any signs of potentially damaging moisture penetration. Where detected, investigate likely moisture sources to determine whether simple remedial measures are possible. If not, monitor condition of masonry and close to public access when deemed at risk of failure.

Signs -

Obtain an assessment of the paintwork and signage by a paint conservator. Apply proven chemical stabilisation treatment against environmentally caused deterioration. Monitor condition of historic signage susceptible to visitor contact for physical damage. If necessary install protective perspex covers as detailed. See drawing no. A21.

Timber -

All joinery remnants should be preserved where identified on the drawings as specified in Section G.

TUNNELS**1. Main Tunnel - FN 2 (Phase 2, 3)**

- a) Good structural condition. Recent floor protective resurfacing for visitor safety purposes has been carried out.
- b) No further structural repairs required.

2. Secondary Tunnel - FN 4 (Phase 2, 3)

- a) Good structural condition except for retaining wall to steps leading to Gun No. 3 which is being pushed in by sand and vegetation. (Near FN10).
- b) Clear sand and vegetation adjacent retaining wall and monitor for risks to visitor safety. Prop the walls if necessary and retain present exclusion of visitor access.

3. Tunnel to Gun No. 1 - FN 7 (Phase 2, 3)

- a) Good structural condition. No structural repairs required.

4. Bomb Proof Room & Associated Observation Posts - FN 3 (Phase 2, 3)

- a) Bomb Proof Room in good structural condition. No structural repairs required.
- b) Treat metal corrosion to underside of Observation Post hoods.
- c) Cut back vegetation to maintain sight lines from the west observation portals.

5. Gun No. 2 - FN 1 (Phase 2, 3)

- a) Closed off.
- b) Structural condition adequate. Monitor and maintain drainage and keep structure clear of potentially damaging vegetation.

6. Gun No. 3 - FN 9 (Phase 2)

- a) Partly covered with sand and overgrown. Monitor drainage and potentially damaging vegetation. Remove loose sand only to allow for drainage.

7. Gun No. 4 - FN 8 (Phase 2)

- a) This structure is in good condition and no specific works are required
- b) Monitor and periodically maintain drainage systems and remove potentially damaging vegetation

8. BC & ELD Station (Ruins) - FN 6 (Phase 4)

- a) Good structural condition.
- b) Minor areas of corrosion treatment required as per General Specification (Section G).

9. Room (Casualty Station) - FN 10 (Phase 2)

- a) Fair structural condition. No structural repairs required.

10. Battery Observation Post (BOP) - FN 5 (Phase 5)

- a) Treat corroded reinforcement to concrete including to stairs
- b) Control vegetation to maintain views to water across both sides of the Point.
- c) Reinstatement of the rangefinder room windows may be considered.

11. Barracks Site

- a) Control and remove regenerating vegetation on built features such as paving, spoon drains, footings etc. Elsewhere allow controlled regeneration of low growing vegetation in accordance with an agreed detailed plan of the area.
- b) The concrete water tank adjacent the western retaining wall is spalling and cracking at its top northeast corner. Cause is likely to be foundation movement. Monitor to establish whether masonry structural movement is still active, and if so, at what rate. Clean out, pin back and fill crack with mortar to prevent water and soil ingress. Close visitor access to immediate area if continued movement is deemed to pose a risk.
- c) Recent (2005) screw pile underpinning of the adjacent roadway below the tramway terminus has addressed geotechnical subsidence of the road in this vicinity. Monitor for any evidence of continuing ground movement .
- d) Install public safety railing to bay side.

FOOTNOTES

- 1 Dwg. "Victorian Defences Point Nepean Battery, Guns Nos. 4 and 5" Drawing No.2, source: CFL.
- 2 Australian Archives, MP338, Folder 1.
- 3 Map. 114, Australian Archives B3712, Folder 14.
- 4 Australian Archives MP 338, Folder 1.
- 5 Australian Archives MP153/16 Item 20.
- 6 Dwg. "Victorian Defences Point Nepean Battery, Guns Nos. 4 and 5" Drawing No. 3, source: CFL.
- 7 Dwg. , "Victorian Defences Battery, Point Nepean Magazine for Guns Nos. 1,2,5,6." Source: CFL.
- 8 Dwg. "Victorian Defences Point Nepean Battery Guns Nos. 4 and 5". Drawing No.3, source: CFL.
- 9 Dwg. "Victorian Defences Point Nepean Battery Guns Nos. 4 & 5" Drawing No.2, source: CFL.
- 10 Dwg. "Extension of barracks", PWD contract drawing, signed "W Morris" 14 September 1889, Australian Archives MP 1334 folder 15.
- 11 Dwg. "Point Nepean officers quarters", April 1916, dwg no. 11/14/27, Australian Archives MP 1334 folder 15. - Dwg. "Timber barracks for engineers", C.WWI, dwg no. 39, Australian Archives MP 1334 B3712.
- 12 Dwg. "Point Nepean Barracks", September 1918, dwg. no. 11/15/18, Australian Archives MP1334 Folder 15.
- 13 Dwg. "Point Nepean Barracks", dwg. no. 114, May 1937, Australian Archives MP 427/1 bundle 5.
- 14 Photograph "View of Nepean c1939-40", source: Fort Queenscliff. Museum No. 1836.
- 15 Australian Archives R.A.N

GUN EMPLACEMENT No. 5**CHRONOLOGY**

The development of this emplacement began with the construction in phase 2, c1885 of 2No. "U" plan brick gun pits. Those gun pits were parallel and had located between them a lower level magazine.

The magazine at this emplacement served only two gun pits and correspondingly had only half the storage capacity of its contemporary at emplacement nos. 2A, 2B, 3 and 4.

The contract for phase 3 alteration to this emplacement was signed in April 1888, seven months after similar work had begun at emplacement no. 2A. The phase 3 construction produced a single large emplacement between the two previous emplacements to house a 9.2" gun BLHP.¹

The phase 3 emplacement was constructed using mass concrete in the base and containing walls of the gun pit. Passages to the gun pit were broken through the brick walls of the former "U" plan gun pits. The space within the former gun pits was also subdivided using mass concrete to provide a pump chamber, a large artillery store and other storage space.

In 1895 an observation platform was added to emplacement No.5. and was located on its north west rear flank.² Access to the observation platform was gained from the emplacement's lower passages at levels equivalent to natural ground and from the external natural level at the rear of the emplacement. The open observation platform had a parapet level with the outer rim of the gun pit and its perimeter was battered with turfed sand to that level also. The passage walls were constructed with timber posts and lined to retain the turfed sand batter.

A lamp passage was provided in the lower magazine by dividing the lobby area and breaking through openings to the main magazine and remaining lobby. Access to the lamp passage was gained vertically from a former hoist shaft.

Around 1911 the 9.2" BLHP was replaced with a 6" Mark VII gun. The conversion for this required a significant increase in the gun pit diameter; the gun centre was relocated, the base of the gun pit was raised; new access passages were constructed up to this new level; the lower magazine was extended and given direct access by a stair and the hoisting shafts were extended so that shells could be lifted vertically, direct from the magazines to cupboards adjacent to the gun pit; thus bypassing the mid level passages.³

During the early years of WW2 open Mark VII's were shown to be vulnerable to attack. It had been proposed to move the Mark VII guns in pit Nos. 5 and 6 to new emplacements east of Cheviot Hill, but it was instead decided to cover the existing emplacements. The reinforced concrete hoods, c.1942, were lined with perforated metal and insulation material, to reduce reverberation, and had hooks on the outer edges to which camouflage nets were attached.

STATEMENT OF SIGNIFICANCE

Gun emplacement no. 5 is the only emplacement on Fort Nepean exhibiting clearly the physical implications of alteration to accommodate the phases 2 to 5.

The development of this emplacement began with the construction in phase 2, c1882 of 2No. "U" plan brick gun pits. It was altered in phase 3, c.1888, to house a 9.2" BLHP gun.

Four Mark VII guns were installed at Point Nepean (Fort Nepean and Fort Pearce), around 1911. Gun emplacement No.5 was altered in that year and received its Mark VII gun. At no time was the technology of the guns at Point Nepean in advance of those at Queenscliff or South Channel Fort. South Channel Fort had an 8" BLHP gun in 1885 and subsequently Queenscliff had 6" Mark VII guns in 1909, on both occasions at least two years in advance of Point Nepean.

The phase 5, c.1942, concrete hoods were provided as a response to the New Guinea experience of the vulnerability of open and uncamouflaged artillery to attack.

Gun No. 5 may not have been the most strategically importantly located gun, but it is important for the demonstration in its fabric of the implications of the alterations made during the four major phases of alteration. Gun no. 5 is the only emplacement engaged in alteration over the four main phases, it is the most readily accessible of the multi phase emplacements and given that it is already exposed may be seen as slightly more consumable, in terms of visitor management, than its more intact neighbour, gun No. 6.

Gun Nos. 5 and 6 have some historical significance in firing the first shots of both world wars, which were the only shots fired in anger from any of the Port Phillip batteries. While the barrel number of the firing gun was recorded, it is not known which emplacement it was in. It seems most likely that it was No. 6. (See Statement of Significance for Gun Emplacement No. 6.)

This emplacement has had other features that contribute to an understanding of the fortification as a complex. They were: the c.1895 Battery Observation Post, a timber structure on which new instruments, for gauging the location of the enemy and range of fire, could be mounted. It retains a nearby cabling conduit which may be useful in interpreting the distribution of electric power and telephone communications.

Summary

The significance of Gun Emplacement No. 5 lies in its contribution to the understanding of the network of fortifications provided at the entrance to Port Phillip over four changes in gun and fortification technology.



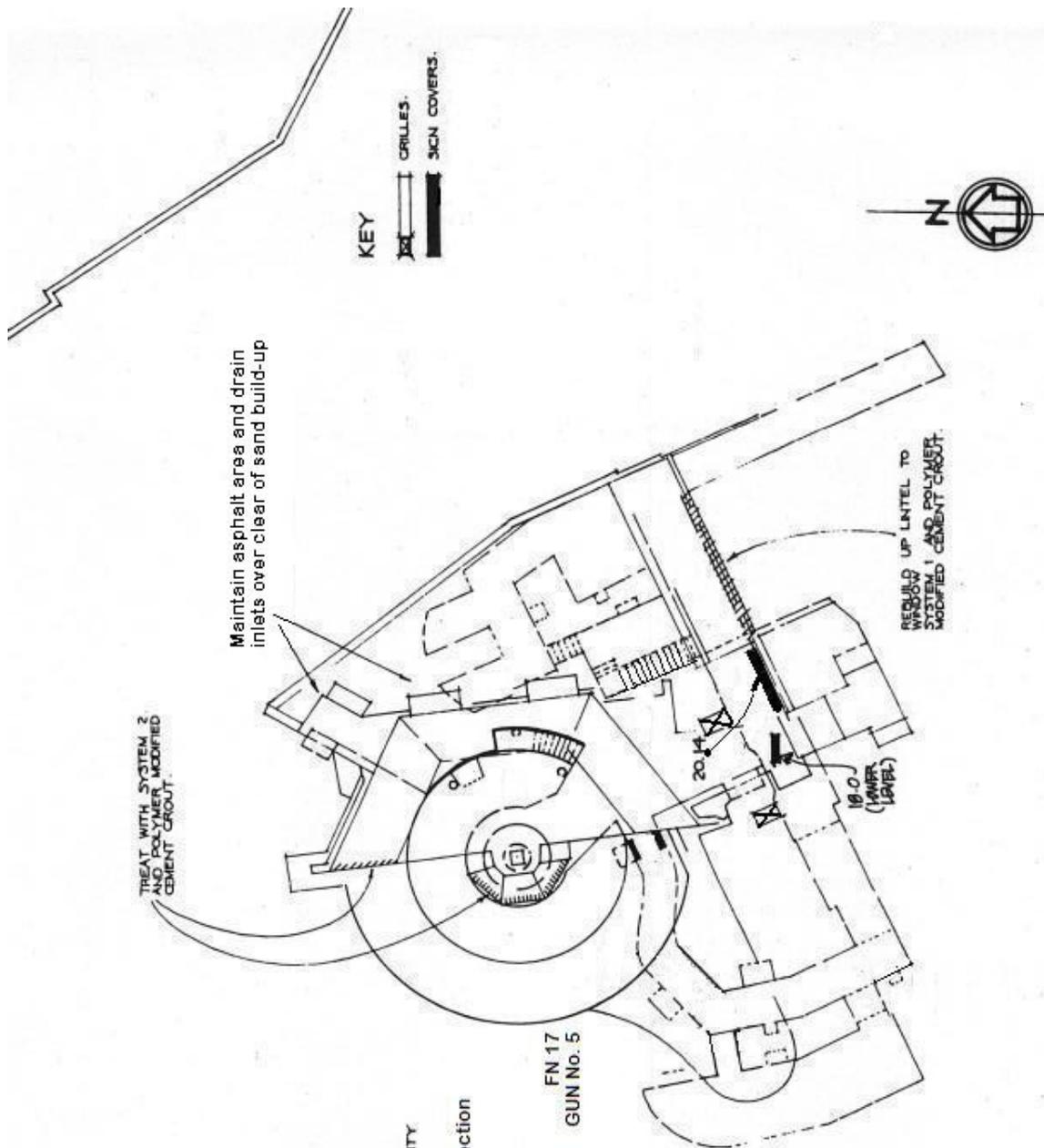
Fig. 15. Gun Emplacement No. 5 (Australian War Memorial, Canberra, ID 051185)

CONSERVATION POLICY AND STRATEGY

Conserve and maintain in existing form and condition as a site with very high visitor access, interpretation and conservation values.

The access to the mid levels of this emplacement was established in late 1988, during the Bicentennial project. That access was provided direct from the external natural level, through timber lined tunnels dating from the construction of the 1895 BOP. Areas of collapsing wall were propped using timbers detailed in such a way as to be differentiated from the original work.

An extensive range of conservation works have been undertaken on this Emplacement in recent years, chiefly comprising the replacement of the asphalt roof membrane and waterproofing of the roof over the passages, storage areas and magazines, and concrete repairs and metalwork stabilisation works to underside of the the gun canopy.



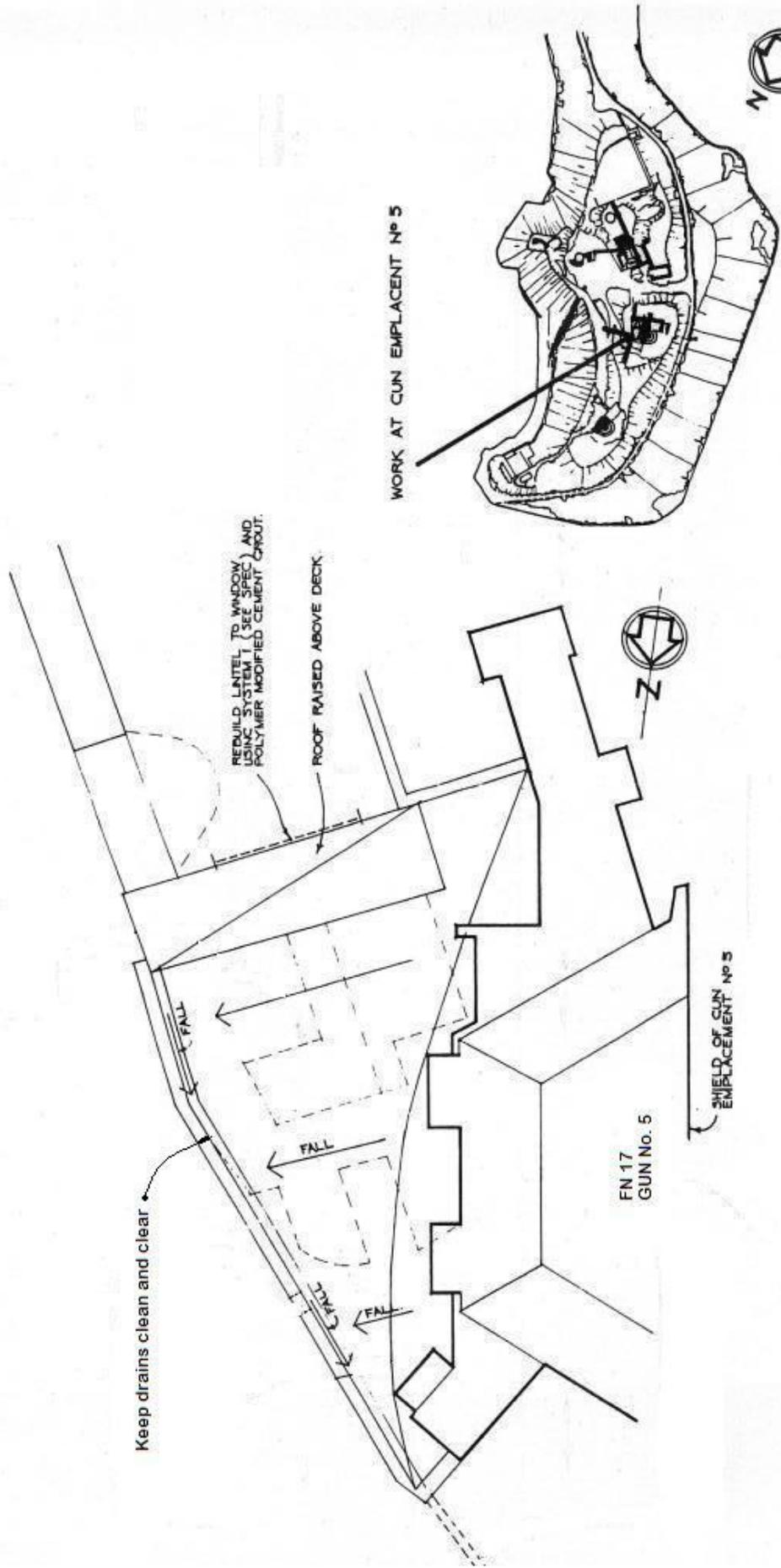
- GENERAL NOTE:**
1. TREAT AREAS OF EXPOSED REINFORCEMENT WITH SYSTEM 1 AND POLYMER MODIFIED CEMENT GROUT.
 2. TREAT EXPOSED STEEL MEMBERS MAINLY THE UPPER EDGE ON SOUTH FACE WITH SYSTEM 2 AND POLYMER MODIFIED CEMENT GROUT. GROUT MAY HAVE TO BE BUILT UP SLIGHTLY TO PROVIDE A MINIMUM OF 20 MM OVER ALL STEEL. APPLY LOW VISCOSITY EPOXY GROUT TO HAIRLINE CRACKS ON UPSIDE OF CONCRETE ROOF SLAB.
 3. Treat rusted alcove door frames with corrosion protection coating.
 4. GROUT UP ALL OPEN CRACKS IN CONCRETE USING A POLYMER MODIFIED CEMENT GROUT. (SEE SPEC)
 7. REBUILD LINTEL TO WINDOW IN MAIN EXISTING UNDERGROUND TUNNEL USING SYSTEM 1 AND POLYMER MODIFIED CEMENT GROUT.

FN 17
GUN No. 5

GUN EMPLACEMENT NO 5 (FN 17)
NOT TO SCALE.

DRC No. 88 - 773 - A6.
DRAWN : MICHAEL RITCHIE 12/2/1988
REVISED : A. AKHINDRA 10.1.90.

MINISTRY OF HOUSING & CONSTRUCTION
POINT NEPEAN NATIONAL PARK
REPAIRS TO FORTIFICATIONS
UPDATED AUGUST 2005



WORK AT GUN EMPLACEMENT No 5

PLAN SHOWING LOCATION.
NOT TO SCALE

AREA ADJACENT TO
GUN EMPLACEMENT NO 5 (FN 17.)
SCALE: 1:100

DRC No. 88-773-A12
DRAWN: MICHAEL FITCHIE, 12/2/1988
LOUISE HONMAN

MINISTRY OF HOUSING & CONSTRUCTION
POINT NEPEAN NATIONAL PARK
REPAIRS TO FORTIFICATIONS
UPDATED AUGUST 2005

EXISTING STRUCTURAL CONDITION & RECOMMENDED WORKS**GENERALLY**

The main areas of concern with this Emplacement have been concrete spalling and metal corrosion of the gun canopy, and water seepage into the underground chambers. Conservation works to address these in recent years appear to have been successful. As elsewhere at Pt. Nepean, due to exposure to the corrosive and hostile environment, this deterioration of ferrous metal elements will continue, and ongoing monitoring is required.

Control vegetation encroaching on the structure of the gun pit and maintain clear views from the gun pit. Monitor drainage, sand accumulation and any signs of potentially damaging moisture penetration.

Wall Finishes -

Preserve the remaining wall finish by treating the existing lime washed walls and charcoal outlines to recesses and openings with an approved chemical consolidant.

Signs -

Obtain an assessment of the paintwork and signage by a paint conservator. Apply proven chemical stabilisation treatment against environmentally caused deterioration. Monitor condition of historic signage susceptible to visitor contact for physical damage. If necessary install protective perspex covers as detailed. See drawing no. A21.

Metals -

The phase 4 alterations to gun pits include metal doors and other fittings including tubular galvanised steel handrails and the base mounting of the Mark VII gun. These are to be cleaned and treated in accordance with the general specification in Section F and with approved corrosion inhibitor in accordance with the manufacturer's instructions.

Timber -

Preserve all joinery remnants where indicated on the drawings as described in general specification in Section G.

1. Gun No. 5 - FN 17 (Phase 2, 3 & 4)**a) Gun Pit**

Minor concrete spalling of sides of pit due to rusting steelwork. Apparent deliberate damage done by testing of explosives to part of wall and steps of pit and to gun mounting.

Treat all severely rusted alcove door frames and remaining doors for corrosion.

Clean and repair tubular steel handrail.

b) Steel and Concrete Hood (Phase 5)

This structure is structurally sound, and following recent steel corrosion treatment and concrete repair works, further deterioration has been retarded. The steel plate lining to the underside of the canopy is assessed as not critical structurally. The lining however has some historic value.

Retain and protect in-situ the remaining, recently stabilised, sample section of the acoustic insulation which previously fully lined the gun canopy.

2. Underground Tunnel - Gun No. 5 - FN 18 (Phase 2, 3 & 4)

- a) The structural condition is fair but some cracking of the walls has occurred.
- b) Recent replacement of the asphalt roofing of this area has retarded seepage into the tunnels. The continued efficacy of this treatment is to be regularly monitored.
- c) Periodically clean the asphalt roofing to this area of sand build up, particularly around drainage outlets. Maintain drains.
- d) The lintel to the window is in need of repair:-
 - Cut away part of underside of old lintel. Cast new concrete lintel.

3. Underground Passages - FN 20 (Phase 2, 3)

- a) Good structural condition. No structural repairs required.

4. Magazine - FN 21 (Phase 2, 3)

- a) Fair structural condition, no significant structural repairs required.
- b) This area in the past has been very damp and subject to significant seepage from above. Waterproofing of the upper roof surface of this area has therefore been undertaken in 2004. The continued efficacy of this treatment is to be regularly monitored.
- c) The sand and vegetation overburden was removed to facilitate the waterproofing treatment. Replacement of this camouflage cover is desirable from an interpretive perspective. This should be carried out with the provision of a self draining membrane between the treated finished surface of the concrete roof and the sand covering.

5. Roofed Entry - FN 19 (Phase 5)

- a) Good structural condition. Minor structural repairs required only.

FOOTNOTES

- 1 Dwg. "Victorian Defences Point Nepean Battery No.1-9.2" B.L. Gun on H.P. Carriage". Drawing No.2, P.W.D. Victoria, 9.4.88, source: CFL.
- 2 Dwg. "Victorian Defences Point Nepean Battery Gun No.3" P.W.D. Victoria, numbered Fg/3, source: CFL.
- 3 Dwg. "Point Nepean Port Phillip Alterations to Emplacement B2 etc. for 6" Mark VII Gun, drawing numbered 11/14/11, source: CFL.

GUN EMPLACEMENT No. 6**CHRONOLOGY**

Gun emplacement No. 6 was constructed during phase 3, the contract drawing for this whole new emplacement being signed in September 1888¹, two months after the contract signed on gun no. 5 its near neighbour and technological equivalent (9.2" BLHP).

Gun no. 6 covered an arc of fire over the immediate entrance between the heads but may not have had sufficient elevation to fire within the south channel.

In 1911 this emplacement was altered to house a 6" Mark VII gun.² This involved building up the base of the gun pit with mass concrete, relocation of the pit centre and provision of a wide apron at the rear of the arc of fire to provide workspace for the different operation at Mark VII guns. At the lower level the magazine was provided with direct stair access. The lowest level was extended in both the magazine store area and around the area of the new vertical lift. This work was achieved by mining methods and extended beyond the area of the upper structure. The lamp passage was slightly modified and a new ladder provided.

The 2 No. new lift shafts, operated hydraulically³, delivered their load to cupboards opening onto the apron area.

Similarly to gun emplacement No. 5, this emplacement was covered with a concrete hood, c.1942.

During the early years of WW2 the uncovered Mark VII guns were shown to be vulnerable to attack. It had been proposed to move the Mark VII guns in pit nos. 5 and 6 to a new emplacement east of Cheviot Hill, but it was instead decided to cover the existing emplacements. The reinforced concrete hoods, c.1942, were lined with perforated metal and insulation material, to reduce reverberation, and had hooks on the outer edges to which camouflage nets were attached.⁴

There was an earlier gun at or near the site of Gun No. 6. A drawing dated 4.8.93⁵ shows a 9" ML gun near the site of Gun No. 6 with the dotted outline of an associated magazine (to the west of the Gun No. 6 magazine). The notation has been crossed out and marked "removed". A newspaper report⁶ in 1888 noted that "only one 9 inch gun and two 80 pounders" were then in position and ready for action at Nepean fort.⁷

The report of the Council of Defence in Papers Presented to Parliament 1885, Vol.4, No.83, refers to preparation of an emplacement "outside the actual fort" for a 9" 12 ton RML gun and construction of a magazine, with a gun being brought from Swan Island and mounted.

STATEMENT OF SIGNIFICANCE

Gun emplacement No. 6 began construction in September 1888. It was part of a program of alteration to fortifications at Fort Nepean, that would see the installation there of a total of five breech loading hydro pneumatic guns. Gun nos. 5 and 6 were both 9.2" BLHP. Gun no. 6 may have had a slight strategic advantage over gun no. 5 in terms of its arc of fire.

The mid and lower levels of this emplacement typify phase 3 construction, through the use of mass concrete with a smooth rendered finish. This period was typified by the quality of the joinery and the vents which were covered with circular perforated metal plates and also the coordinated systems of signage and the limewashed walls with stripe outlining recesses. Due to subsequent alterations a great deal of this has been obscured.

Gun no. 6 was affected by the wave of alteration sweeping the fortifications in 1911 for the installation of 6" Mark VII guns.

At no time was the technology of the guns at Point Nepean in advance of those at Queenscliff or South Channel. South Channel had an 8" BLHP gun in 1885 and subsequently Queenscliff had 6" Mark VII guns in 1909, on both occasions at least two years in advance of Point Nepean.

Gun Nos. 5 and 6 have some historical significance in firing the first shots of both world wars, which were the only shots fired in anger from any of the Port Phillip batteries. While the barrel number of the firing gun was recorded, it is not known which emplacement it was in. There is some evidence that it was emplacement F1,⁸ if so that was this emplacement No. 6. (See discussion re gun numbering in the Introduction to this report).

The emplacement retains only the base mounting of the Mark VII gun, but is otherwise reasonably intact, from at least phase 5. This emplacement is marginally more intact than that of gun No. 5.

Summary

The significance of Gun no. 6 lies in its contribution to the understanding of the network of fortifications provided at the entrance to Port Phillip over three changes in gun and fortification technology.

CONSERVATION POLICY AND STRATEGY

Maintain as a site with very high visitor access, interpretation and conservation values.

The underground passage system is closed to visitors but is considered more intact and in better condition than No.5. These areas shall be protected for their heritage values and remain closed in the short to medium term, however increased visitor access may be permitted through authorised and special interest guided tours.

Access to this emplacement is possible from the upper ground level at the rear of the gun pit or from a much lower ground level through a tunnel to the mid level magazine.

The tunnel level and magazines were cleared out during works by CFL in late 1988. The lower tunnel access has subsequently had its doors replaced.

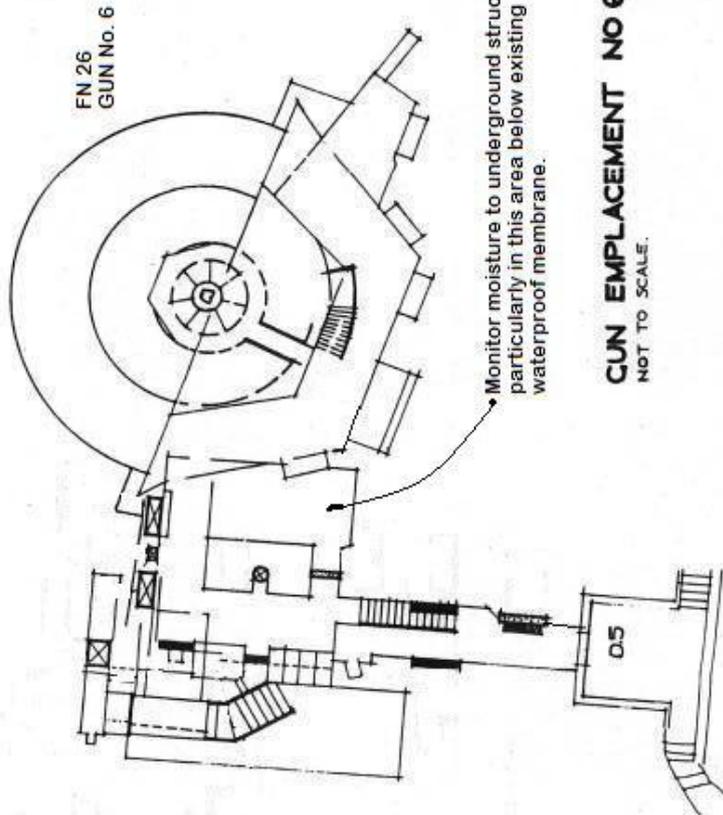
Public Access to the magazine of this emplacement is not absolutely necessary to an understanding of Fort Nepean. It is recommended that access continue to be restricted to minimise wear on the magazine.

The rear apron or deck to this emplacement has an asphalt membrane similar to gun no. 5. This also covers part of the magazine areas of the emplacement. The lack of water penetration to the lower levels of this magazine is more probably due to better grading of the surface than continued performance of the asphalt as a barrier. The continued efficacy of this membrane is critical to protect the highly intact interior surfaces, finishes and signage of these magazines..

The gun pit and hood are both exhibiting some concrete spalling. Similarly to gun No. 5 the edge of the reinforced concrete hood has spalled and requires treatment of the exposed steel and possibly requires some formwork to support regrouting. Conservation works in accordance with the general specification and similar to that carried out in 2004 at Emplacement 5 is required in the short to medium term.

Additional balustrade is required to match the existing balustrade along the edges of the access way to the gun mounting.

- GENERAL NOTES:**
1. TREAT AREAS OF EXPOSED REINFORCEMENT WITH SYSTEM 1 (SEE SPEC) AND POLYMER MODIFIED CEMENT GROUT.
 2. TREAT EXPOSED STEEL MEMBERS WITH SYSTEM 2 AND POLYMER MODIFIED CEMENT GROUT. MAKE TO BE BUILT UP SLIGHTLY TO PROVIDE A MINIMUM 20 MM COVER OVER ALL STEEL. APPLY LOW VISCOSITY EPOXY GROUT TO HAIRLINE CRACKS ON UPSIDE OF CONCRETE ROOF SLAB.
 3. Treat rusted alcove door frames with corrosion protection coating.
 4. GROUT UP ALL OPEN CRACKS IN CONCRETE USING A POLYMER MODIFIED CEMENT GROUT (SEE SPEC.)



FN 26
GUN No. 6

Monitor moisture to underground structures particularly in this area below existing waterproof membrane.

GUN EMPLACEMENT NO 6.
NOT TO SCALE.



M.H.

KEY

- Signs. Monitor condition.
- HORIZONTAL CRILLES (completed) OVER SLABS
- Timber. Monitor condition.

DRC No. 88-773-A7.
DRAWN: MICHAEL RITCHIE. 12/2/1988
REVISED: A. ARVINPRA 20.1.99.

MINISTRY OF HOUSING & CONSTRUCTION
POINT NEPEAN NATIONAL PARK
REPAIRS TO FORTIFICATIONS
UPDATED AUGUST 2005

EXISTING STRUCTURAL CONDITION & RECOMMENDED WORKS**1. Gun No. 6 - FN 23 (Phase 3, 4)****GENERALLY**

Monitor drainage, sand accumulation and any signs of potentially damaging moisture penetration to tunnels below. Ensure that drainage to areas of waterproofed membrane above passages is kept free of sand and vegetation. If necessary replace bituminous waterproof membranes.

Control vegetation encroaching on the structure of the gun pit and maintain clear views from the gun pit.

Wall Finishes -

Preserve the remaining wall finish by treating the existing lime washed walls and charcoal outlines to recesses and openings with an approved chemical consolidant.

Signs -

Obtain an assessment of the paintwork and signage by a paint conservator. Apply proven chemical stabilisation treatment against environmental caused deterioration. Monitor condition of historic signage susceptible to visitor contact for physical damage. If necessary install protective perspex covers as detailed. See drawing no. A21.

Metals -

The phase 4 alterations to gun pits include metal doors and other fittings including tubular galvanised steel handrails and the base mounting of the Mark VII gun. These are to be cleaned and treated in accordance with the general specification in Section G and with approved corrosion inhibitor in accordance with the manufacturer's instructions.

Timber -

Preserve all joinery remnants where indicated on the drawings as described in general specification in Section G.

Gun Pit

Minor weathering of edges of Pit. Some cracking of edges of concrete at alcoves due to corrosion of steelwork.

Treat all severely rusted alcove door frames and remaining doors for corrosion.

Re-grout any remaining open cracks in concrete.

Steel and Concrete Hood - FN 23 (Phase 5)

This structure is structurally sound but has some spoiling of concrete due to rusting of steelwork.

The steel plate lining to the underside of the concrete hood is moderately rusted but this steel is not critical structurally. Treat corrosion of all exposed steelwork and spalling concrete to front, exterior and lining of the gun canopy similar to that carried out at Emplacement 5 in 2004.

2. Upper Level Magazine - FN 24 (Phase 3, 4)

- a) Good structural condition. Interior finishes and signage in very good condition. No structural repairs required.
- b) Monitor for signs of damp penetration through roof. Repair / replace roof membrane if evidence of failure becomes apparent.

3. Lower Level Magazine FN 25 (Phase 3, 4)

- a) Good structural condition. Interior finishes and signage in very good condition. No structural repairs required.

FOOTNOTES

- 1 Dwg. "Victorian Defences Point Nepean Battery No.2-9.2" B.L. Gun on H.P. Carriage." Drawing No. 3, PWD Victoria, 27.9.88. source: CFL.
- 2 Dwg. "Point Nepean Port Phillip, Alterations to emplacement A1 etc for 6" Mark VII Gun", drawing numbered 11/14/12, source: CFL.
- 3 ibid. Section BB, Section CC. Photograph of similar lift at Queenscliff: shell lift for No. Bl 6" Mk VII gun, 1942, source: Australian War Memorial, Canberra, negative No. 51153.
- 4 Photograph: "camouflaged gun PMF BL Mk VII Fort Nepean", source: Fort Queenscliff Museum.
- 5 Australian Archives MP 338, Folder 1.
- 6 "The Age", 2.7.1988.
- 7 Confirmed by the Military Commander's report, August 1888, Australian Archives B3756 File no. 1888/3015.
- 8 A.M. Robertson "War. in Port Phillip", Point Nepean Historical Society, 1968.

GUN EMPLACEMENT NO. 7, ENGINE HOUSE AND SPECIAL BEAM STATION**CHRONOLOGY**

This emplacement was commenced towards the end of the third phase of development c.1891.¹ It was located on a level far below the bigger guns and was fitted with a 4.7" quick firing gun.

Access to the emplacement is via a concrete stair now connecting with timber steps and walkway constructed during the 1988 Bicentennial works.

This emplacement may be grouped with the immediately neighbouring engine room. The lower engine room is shown on the contract drawing for the emplacement and on a later drawing of 1901.² A tunnel from the engine room provided access to the original Defence Electric Lights on the point. This tunnel is timber propped and lined. The engine room was substantially extended in 1910 to power the four new Defence Electric Lights installed around the point at that time.³

Alterations prior to WW1 comprised the following:

- The quick firing gun was removed and the emplacement was converted to an electric search light station.⁴ Evidence in the remaining fabric shows that the floor of the gun pit was routed for the electric cabling to the location of the light mounting. This light was one of the four new Defence Electric Lights referred to above.
- The single level phase 2 engine room was extended upwards to a second level. The new construction in concrete dates from 1910.

WW1 and WW2 period photographs⁵ show a timber building adjacent to the engine room. Fabric remaining is the concrete base, retaining wall around the cliff face and perimeter spoon drain. The concrete has a perimeter groove which housed the bottom plate. This was the battery store whose interior is shown in a WW1 photograph.⁶

In Phase 5, the emplacement No. 7 Defence Electric Light was remodelled by the addition of a reinforced concrete hood.⁷ At this time the other three Defence Electric lights around the port were also reconstructed and additional lights mounted along the coast below Fort Pearce and Cheviot Hill.

A further development in detection technology at this time was the installation in 1942 of a Special Beam between Points Lonsdale and Nepean. The small concrete building outside the sea wall below and behind Emplacement No. 7 was the receiving station for the invisible infra-red beam thrown from Point Lonsdale. It housed apparatus which registered interruptions to the beam indicating penetration of the defences, and automatically switched on all the search lights.⁸

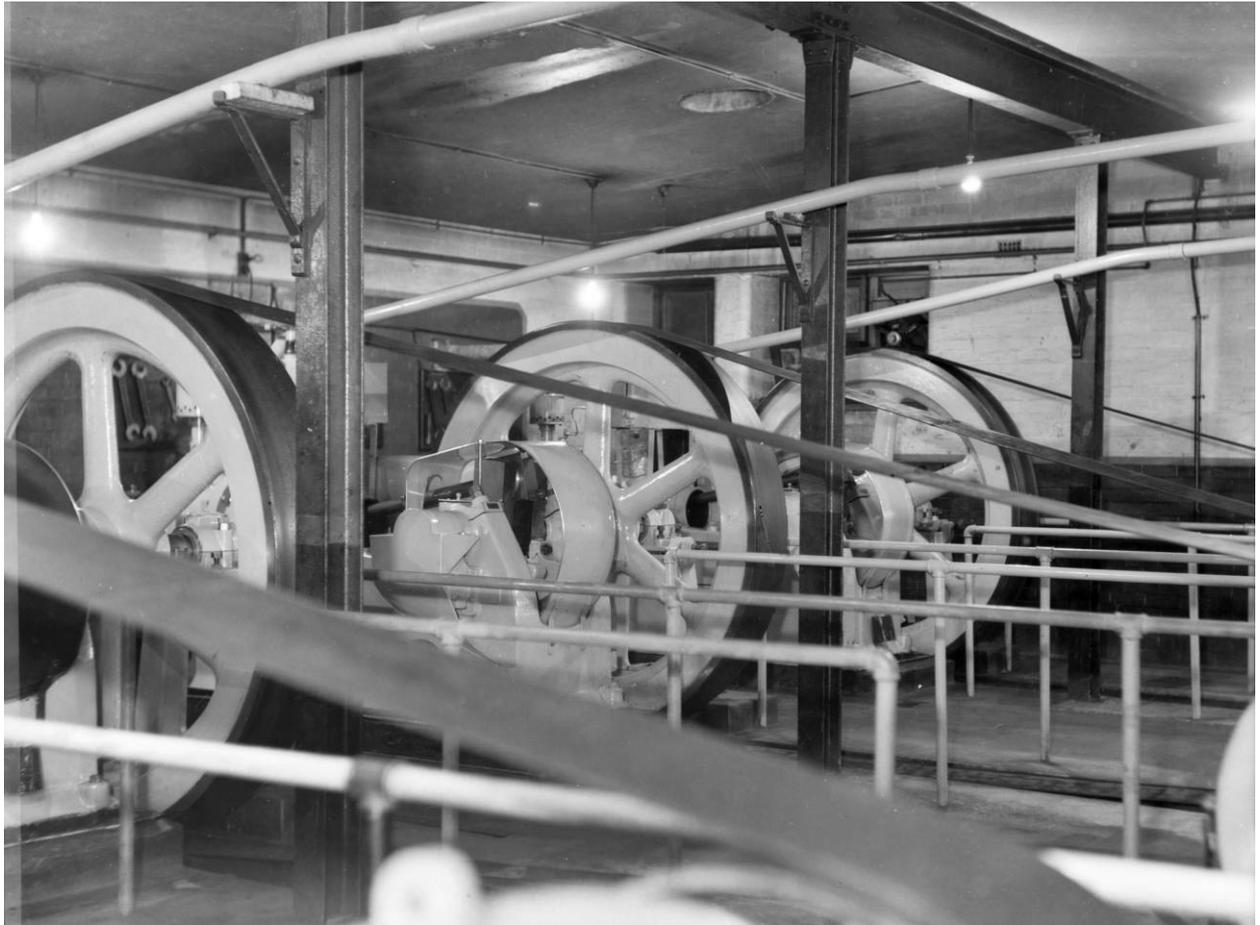


Fig. 15. The engines which generate the power necessary for the working of the powerful searchlight at Point Nepean (Australian War Memorial, Canberra, ID 051178)



Fig 16 The No. 7 searchlight at Fort Nepean. C.1933 (Australian War Memorial, Canberra, ID PO1449.058)

STATEMENT OF SIGNIFICANCE

Gun emplacement No.7 was constructed during the phase 3 extensions of the fortification network. It was mounted with a 4.7" quick firing gun and its strategic purpose was complementary to the longer range breech loading guns, providing rapid fire against the expected fast moving mine sweepers and torpedo boats. Its conversion to a Defence Electric Light during phase 4 reflects the emphasis during World War 1 on detection as a complement to fire power. For this purpose four new Defence Electric Lights were mounted at lower levels around the point c1910, of which No.7 was one. Gun No.7 was the only gun emplacement converted for use as a Defence Electric Light.

The Special Beam receiving station was an important WW2 development of this detection system.

The extension to the engine house reflects changes in technology at the Fort both in terms of electricity generation and the use made of it.

Summary

The significance of Gun Emplacement No.7, Engine House, and Special Beam Station lies in their being evidence of the development of detection technology in the form of search lights, special beams and associated power generation.

CONSERVATION POLICY AND STRATEGY

This group is located at a key point on the fort interpretation circuit, and comprises a range of intact and semi intact features. The Engine House, being the main and most intact feature, will be conserved and maintained as a site with very high visitation, interpretation and conservation values. Visitor access to its interior will be maintained. Due to their poor condition and advancing deterioration, the former Emplacement No.7 (later searchlight station) and Special Beam Station will be conserved as ruins and restricted to external visitor viewing and interpretation only.

The engine house and former gun emplacement have undergone considerable structural repair and consolidation since 1987. The work undertaken in 1988 was largely related to the propping of the emplacement's roof canopy, replacement of Engine House timber frames and doors, provision of a balustrade to its upper level and the later replacement of the asphalt roof in the early 1990's. However a number of structural masonry defects, largely caused by foundation movement, remain outstanding.

Emplacement No.7 (Searchlight Station)

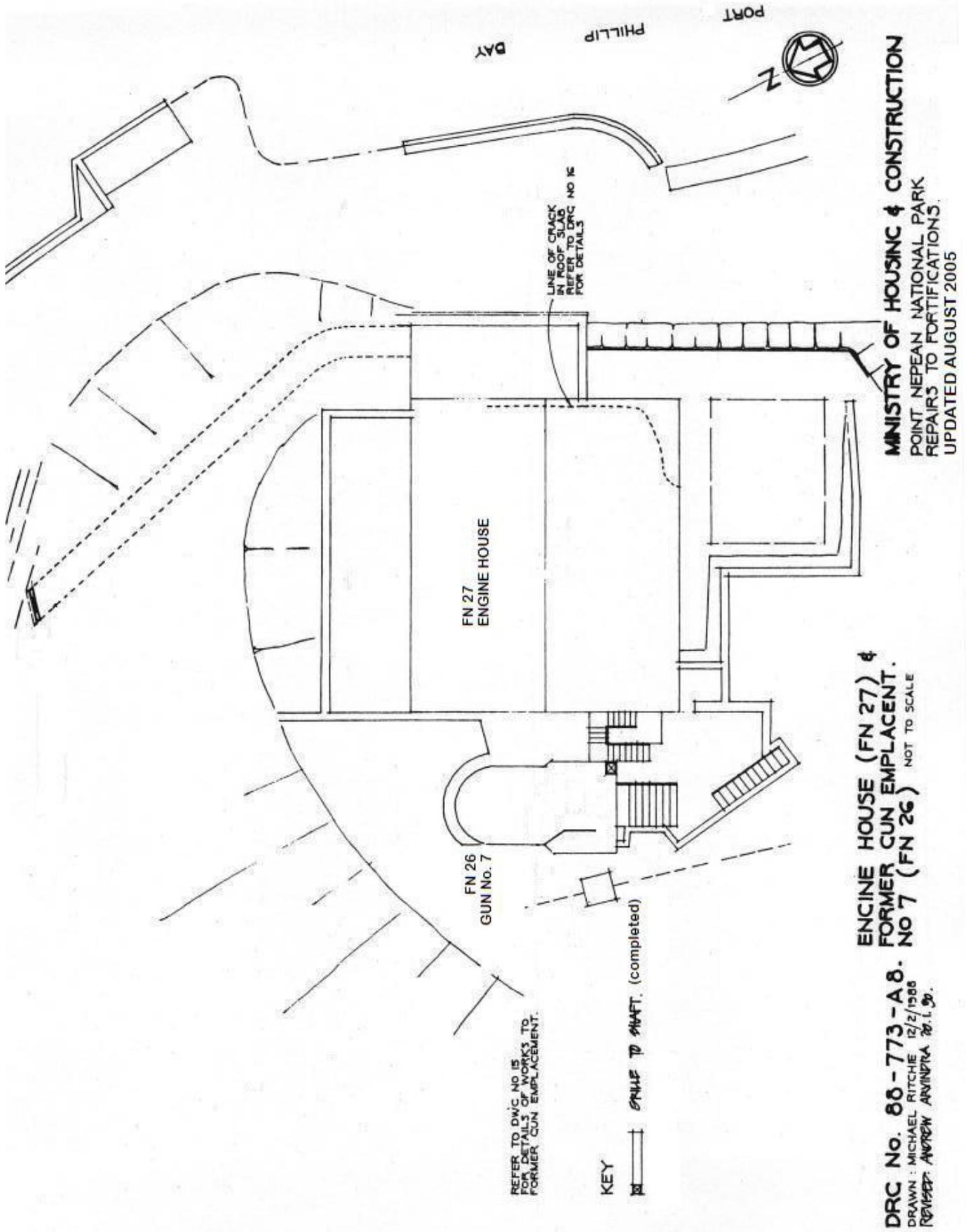
This feature has high visitor access (to the exterior), interpretation and conservation values as the only accessible search light station at Point Nepean. However the structure, and in particular its cantilevered reinforced concrete roof canopy, has deteriorated rapidly over recent years, is in a poor condition and would require extensive rebuilding to repair. The roof cantilever has been propped and due to the unacceptable level of public risk, entry to the interior has been closed off to visitor access. This is currently seen as a satisfactory arrangement. A gradual long term decline in the condition of the searchlight station is considered unavoidable, and as such conservation action will be limited to reinforcement corrosion treatment to slow the rate of advancing deterioration and provision of appropriate interpretation.

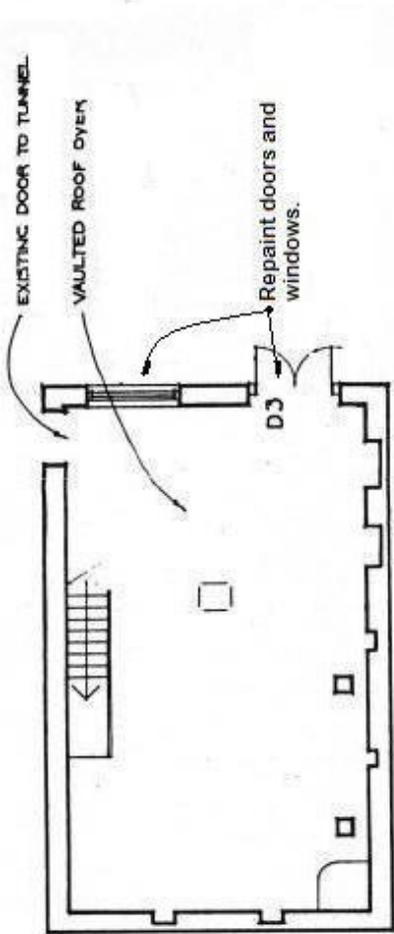
Special Beam Station

Because of the exposed position of the Special Beam Station and its consequent inherent instability it is proposed to allow it to decay. The site should be marked with an interpretative plaque on the edge of the track adjacent.

Long stairs

Maintain as a site with very high visitor access, interpretation and conservation values. The stairs are a key part of the loop walk. Interpret the location of the funicular railway.





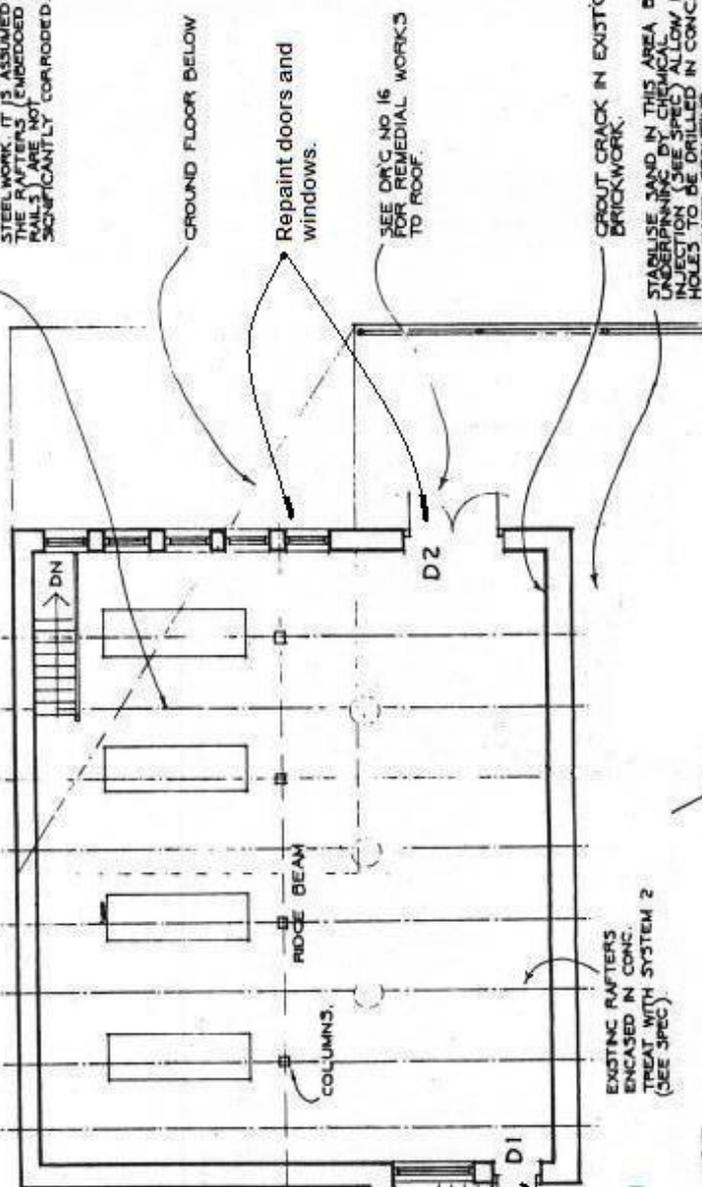
GROUND FLOOR PLAN

TREAT ALL EXISTING EXPOSED STEELWORK WITH SYSTEM 3 (SEE SPEC) THIS INCLUDES, COLUMNS, RIDGE & HANDRAIL.

GUN EMPLACEMENT NO. 7 FN 26

TREAT AREAS OF EXPOSED REINFORCEMENT ON UNDERSIDE AND UPSIDE OF EXISTING CONC ROOF WITH SYSTEM 1 & POLYMER MODIFIED CEMENT GROUT & APPLY LOW VISCOSITY EPOXY GROUT ON UPSIDE OF CONC. ROOF SLAB. REMOVE LOOSE REINFORCEMENT HANGING FROM UNDERSIDE OF CONC. ROOF SLAB

GENERAL NOTE
 CLEAN OFF ALL LOOSE & FLAKING PAINT. CLEAR OUT ALL DEBRIS AND GENERALLY MAKE PRESENTABLE. SEE ALSO DRC NOS 6, 20 & 21 FOR GRILLES & SIGN COVERS



ENGINE HOUSE (FN 27) UPPER FLOOR & REFLECTED CEILING PLAN.

SCALE 1:100



ENGINE HOUSE (FN 27) UPPER FLOOR & REFLECTED CEILING PLAN.

DRC No. 88-773-A15.

MINISTRY OF HOUSING & CONSTRUCTION
 POINT NEPEAN NATIONAL PARK
 REPAIRS TO FORTIFICATIONS
 UPDATED AUGUST 2005

EXISTING STRUCTURAL CONDITION & RECOMMENDED WORKS**GENERALLY**

Significant structural stabilisation and repair works to the Engine House comprise the predominant required major works to this group. Failure of the underlying foundation material has contributed in a major way to the condition of the building, and any remedial works need to be carefully designed and specified by suitably qualified engineers prior to implementation. The specifications for foundation stabilisation in Section F of this document should be used as an initial guide only in this instance.

Refer to drawing nos. A8, A15 and A16.

Signs -

Obtain an assessment of the paintwork and signage by a paint conservator. Apply proven chemical stabilisation treatment against environmentally caused deterioration. Monitor condition of historic signage susceptible to visitor contact for physical damage. If necessary install protective perspex covers as detailed. See drawing no. A21.

Timber -

Preserve all joinery remnants where indicated on the drawings as described in general specification in Section G.

1. Gun/DEL No. 7 FN 26 (Phase 3, 4, 5)

- a) Maintain public exclusion from entry to this structure. Monitor for any arising risks to visitors.
- b) Periodically treat exposed reinforcement with approved corrosion inhibitor.

2. Engine House/Condenser Plant - FN 27 (Phase 2, 4)

- a) This building is generally in fair condition.
- b) The south-east corner of the upper level is severely cracked and has opened up approximately 75mm at the reinforced concrete roof level. Application of a monitoring regime for evidence of continued structural movement is required. Following further structural investigation of cracking and subsidence of south wall, underpin or stabilise foundation as required in accordance with engineering specifications.
- c) There are areas of spalling due to corrosion of steel beams and reinforcing bars at both the upper and lower levels of the building. Treat corrosion of steelwork and repair spalling concrete to window lintels in accordance with engineering specifications.
- d) The retaining wall adjacent to stairs leading down to the upper floor of the engine House is cracking and leaning. To be assessed by a structural engineer and monitored for evidence of continued structural movement. Closure to be considered if rectification is impractical.

- e) Interior wall finishes should be brushed clean of loose and flaking paint. It is not proposed to treat these with consolidant since they are not exposed to weather. Colour treatments have been recorded in Appendix 2.
- e) The brick wall at the eastern end of the lower level is badly weathered and requires re-pointing.

3. Access Tunnel - FN 28 (Phase 4)

- a) This tunnel is of similar construction to the timber tunnel at FN 19. It has been closed to public access.
- b) The condition of the timbers needs to be checked by a structural engineer. Consider opening to public access only after structural certification.

4. Remains Old Foundations and Retaining Walls - FN 29 (Phase 4)

- a) General structural condition of retaining wall is fair. No structural repairs required.

5. Special Beam Station - FN 30 (Phase 5)

- a) This reinforced concrete "BOX" is in fair condition but has moved and now leans at approximately 10°. The concrete reinforcement to the roof beams is substantially exposed and highly corroded.
- b) Unless the foundations of this "BOX" are stabilised it should not be opened for general inspection.
- c) Assessed as bordering on collapse imminent.

6. Long stairs

- a) The stairs have been resurfaced in recent years and are structurally sound.
- b) Replace missing section of handrail to match existing.

FOOTNOTES

- 1 Dwg. No. 3. "Point Nepean Defences Point Nepean Battery. 4.7 inch Q.F. Gun." Contract signed 2.12.1891. Australian Archives MP 338, Folder 1.
- 2 Dwg. No. 11/14/7 dated 1901, Australian Archives MP 1334 B3712, drawer 11 folder 14.
- 3 Dwg. "Additions to Engine Room" dwg. no. 11/14/6. Australian Archives MP 338 Folder 1.
- 4 Dwg. No. 11/14/30 dated 1910 Australian Archives MP1334 B3712, drawer 11 folder 14.
- 5 Photographs "Barrack Room Nepean, 1914", source Mr A. Frazer, Mt. Eliza, No.20 & "Engine Room, Barracks, Jetty etc, Nepean 1939", source: Mr A. Towns, Deepdene, No.17.
- 6 Photograph: "Fort Lighting Battery Nepean 1914", source: Mr. A. Frazer Mt. Eliza No.16.
- 7 "Reconstruct DEL Nos. 7,8,9,10. Australian Archives @P 1334 B3712 drawer 11 folder 3.
- 8 Dwg. "Reinforced Concrete Emplacement for Special Beam at Point Nepean" 18.8.42, source: Victoria Barracks.

GUN EMPLACEMENT No. 8**CHRONOLOGY**

Gun emplacement no. 8 was commenced at the end of Phase 3, contract drawings were signed in 1891.¹ It was located on a level below the emplacements 1 and 2A and was fitted with a 14 pounder quick firing gun.

This emplacement was approached from a timber revetment and tramway running past its upper opening. The first flight of steps descending into the emplacement were contained on either side with mass concrete retaining walls, and had basalt steps. The first flight of steps had no overhead cover. A small magazine was located at the base of the stairs and the absence of hoist shafts indicates that munitions were carried down the stairs individually.

The axis of the open gun pit is cranked away from the entrance passage, to protect this area from direct hit. The gun was removed from this emplacement in 1897. This emplacement was notated on drawings, circa phase 4, as having been converted to a Defence Electric Light. The evidence in the fabric does not support this.

This is essentially a single phase emplacement, abandoned shortly before the turn of the century.

STATEMENT OF SIGNIFICANCE

Gun Emplacement No. 8 was constructed during the third phase of development of the fortifications at Fort Nepean. It housed a 14 pounder quick firing gun which complemented the longer range breech loading guns, providing rapid fire against the expected fast moving mine sweepers and torpedo boats, extending the range from Gun No. 7 at the point, along Nepean Bay.

Unlike the quick firing gun emplacement No. 7, this emplacement remains intact. It is significant in its contribution to the understanding of Fort Nepean's operational readiness in the 1890s, when Melbourne was considered to be "the best defended commercial city of the British Empire".³

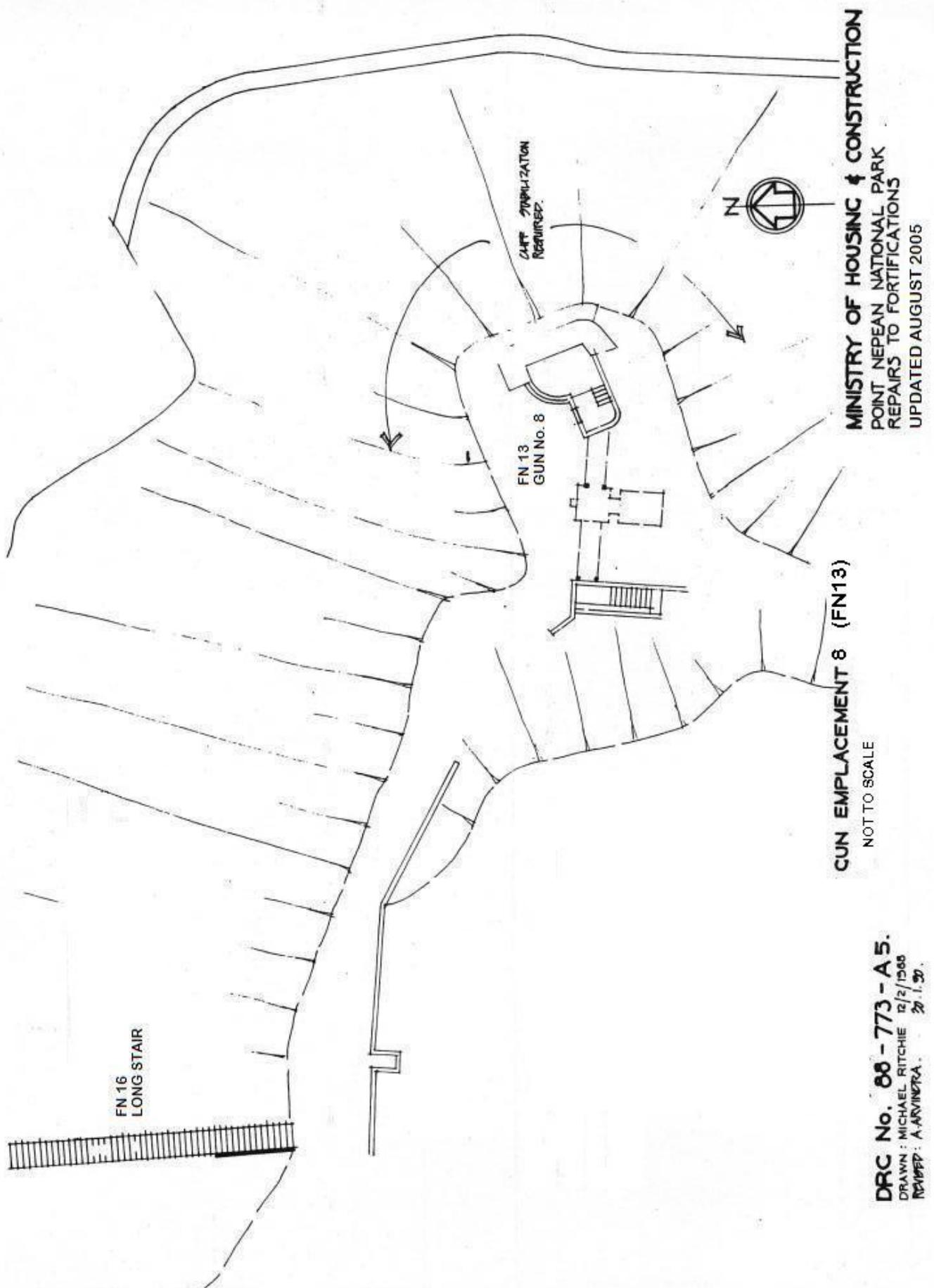
CONSERVATION POLICY AND STRATEGY

Gun Emplacement No.8, along with the adjacent tramway remnants will be conserved in their present form. Subject to technical certification of the geomorphological stability of the associated slope, visitor access to the emplacement may be reinstated.

Gun Emplacement No. 8 has been assessed as being structurally sound. However the Emplacement as a whole has been at risk in recent times due to the failure of the sea wall below and subsequent cliff failures on either side of the site. Between 1996 and 1998 rock revetment works were carried out between the Engine House and the Narrows, including the area at the toe of the slope below this emplacement.

Emplacement No.8 provides a prime opportunity for visitors to appreciate the placement of guns directed into the Bay itself. Whilst this was also the case with Emplacement No.1 and Eagles Nest, the camouflaged nature of their design, as well as the current inaccessibility to access the northern boardwalk at Eagles Nest, diminish this outlook for visitors towards the Bay. In addition, clear evidence of the former tramline which ran from the jetty to the barracks area also survives adjacent the emplacement, and would be of high interpretive value to visitors.

The effectiveness of the rock revetment work on the stability of the slope below the Emplacement is required to be assessed by an engineer. If satisfactory, provision of public access and interpretation of the emplacement and the tramline should be considered.



MINISTRY OF HOUSING & CONSTRUCTION
POINT NEPEAN NATIONAL PARK
REPAIRS TO FORTIFICATIONS
UPDATED AUGUST 2005

GUN EMPLACEMENT 8 (FN13)
NOT TO SCALE

DRC No. 88-773-A5.
DRAWN: MICHAEL RITCHIE 12/2/1988
REVISED: A. ARVINGRA 20.1.99.

EXISTING STRUCTURAL CONDITION & RECOMMENDED WORKS**1. Tunnel to Gun No. 8 - FN 13 (Phase 3)**

- a) Structurally sound.

2. Gun No. 8 - FN 14 (Phase 3)

- a) The structure itself is structurally sound. Recent rock revetment works have supplemented the failed sea wall below. Structural stability of the slope adjacent is to be reassessed by engineers. Reinforcement of the slope may still be required. If so, this should be undertaken in accordance with the principles described under Major Repair Works in Section G - Outline Specification.
- b) Monitor and maintain basic conservation works to protect the site including control of vegetation and sand build up.
- c) Consider reopening the emplacement to visitors subject to certification of acceptable safety standards.

FOOTNOTES

- 1 Dwg. ",Victorian Defences, Point Nepean Battery 14PR Quick Firing Gun", Drawing No.5. Source: CFL.
2. Fort Queenscliff Museum. Dwg. Australian Archives MP338 Folder 1, "Contract timber passage and steps" 2/12/91 note on No. 8 "This gun dismantled and taken to Queenscliff in January '99".
- 3 Sir Charles Dilke, Problems of Greater Britain (London 1890), p.649 cited by Kitson, M. "Australia: the South Channel Defences at Port Phillip", p.105

EAGLES NEST

CHRONOLOGY

This emplacement was begun in July 1888¹ two months after the commencement of conversion works on emplacement no. 5. The 1011 BLHP housed at Eagles Nest was the largest BLHP gun located in Victoria.

This huge mass concrete emplacement was set well east of Fort Nepean and located on a high point overlooking Port Phillip Bay.

The gun pit's operational level could be accessed directly through a covered tunnel, which sloped up from the lower ground level on the west side of the emplacement. At the operational level there is a store room adjacent to the entry, accessed at a slightly lower level by steps; and on the opposite or east side was a lower level magazine with separate lamp passage. Rather than having to transport munitions across the gun pit, a separate passage was provided. This circumnavigated the gun pit and was located around the Port Phillip.

There is a drawing² in the Australian Archive's collection, dated 1890, which documents a Caretaker's Cottage shown as being closely adjacent to the Eagles Nest emplacement. This is accompanied by a drawing³ detailing further sheds adjacent to the gun emplacement, they were; an artillery store of corrugated iron sheet, and a side arms store with a corrugated iron lean to.

A Fire Command Post was constructed c.1914.⁴ This was located on the east side of the existing emplacement. From here all fire was controlled through the Battery Command Posts. The Fire Commander reported to the Queenscliff Fortress Commander.

The World War 1 Fire Command Post was reconstructed and extended using reinforced concrete technology, in 1938⁵. In 1986 this was again remodelled to house the Port Phillip Pilot's Radar Navigation Installation.

It is assumed that the breech loading hydro pneumatic gun would not have been fired after the installation of the Mark VII guns elsewhere. The date of removal of the gun carriage and barrel is not known. The barrel is now mounted in the Park away from the fortifications at the junction of Defence and Ochiltree Roads.

A Battery Observation Post with Electric Light Directing Station was constructed c.1939 on the west side of Eagles Nest.⁶

STATEMENT OF SIGNIFICANCE

Eagles Nest began construction in July 1888 and was built during the massive phase 3 expansion of fortifications at Point Nepean. It was located at a distance east of Fort Nepean, on a high point overlooking Port Phillip Bay.

Eagles Nest contained the largest breech loading hydro pneumatic gun brought to Victoria. At this relatively high location it is unlikely to have had a shield or overhead cover. Eagles Nest was the largest single phase emplacement built and used mass concrete to provide tunnels; magazine; lamp, cartridge and equipment lift shafts; signs, shell cupboards and lamp alcoves.

Eagles Nest is significant as representing the peak of development in the "disappearing gun" technology (with regard to size), and being the largest intact example of the intensive phase 3 expansion of fortifications at Point Nepean.

The significance of Eagles Nest to the Point Nepean fortifications and the interpretative value of its fabric are not diminished by the partial loss of the Port Phillip Bay side caused by the failure of the supporting cliff.

CONSERVATION POLICY AND STRATEGY

The Eagles Nest Emplacement is one of the most predominant defence features of the Point, and shall be maintained as a site with high visitor access, interpretation and conservation values. Eagles Nest offers a different visitor experience to Fort Nepean and is important for the massive scale of the emplacement.

The degree of visitor access to the various areas within the Eagles Nest Emplacement will be regularly monitored for safety, and further limited where considered an unacceptable risk.

Stabilisation of the cliff and seawall below Eagles Nest will be a high priority project of any coastal stabilisation funding made available for Point Nepean.

The condition of the Battery Observation post will be regularly monitored, and visitor access restricted as risk to safety becomes unacceptably high.

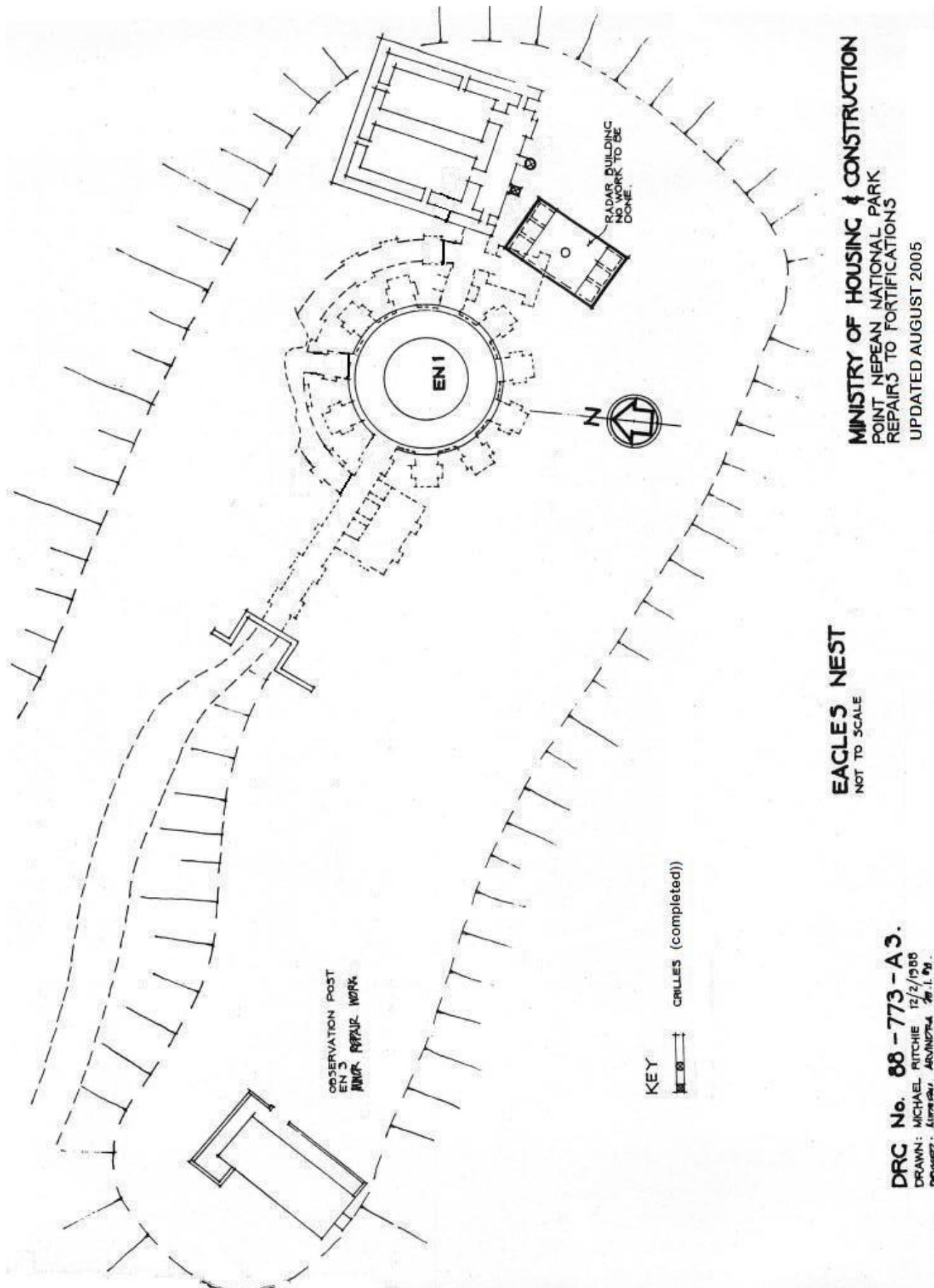
Eagles Nest gun emplacement is in substantial physical jeopardy because of failure of the supporting land. Major engineering works to consolidate and rebuild the cliff are essential if the long term stability of the structure is to be ensured.

The northern most section of the structure has been removed explosively by the army.

The boardwalk viewing platform on the northern side will remain closed to visitor access due to the risk of falling concrete. Removal of the boardwalk should be considered to

The gun barrel should be relocated to a position near the emplacement for interpretative purposes.

The **Battery Observation Post** has serious concrete and reinforcing damage problems that would require extensive reconstruction to repair. Gradual decline is therefore considered unavoidable. It is considered less important than the Fort Nepean BOP and therefore a lesser priority for conservation works. The adjacent relocated visitor lookout provides a similar view to that from the roof of the BOP although the view does not include South Channel Fort.



EXISTING STRUCTURAL CONDITION & RECOMMENDED WORKS**GENERALLY**

The mass concrete structure of the Eagles Nest gun Emplacement is severely cracked. The sea wall at the base of the adjacent northern cliff has been undermined causing erosion of the base of the cliff and subsequent landslips.

The undermined gun emplacement has severe cracking in the roof of the main east/west tunnel. This cracking also extends around the walls and roof and floor of the northern circular tunnel .

Wall Finishes -

Preserve the remaining wall finish by treating the existing lime washed walls and charcoal outlines to recesses and openings with an approved chemical consolidant.

Signs -

Obtain an assessment of the paintwork and signage by a paint conservator. Apply proven chemical stabilisation treatment against environmentally caused deterioration. Monitor condition of historic signage susceptible to visitor contact for physical damage. If necessary install protective perspex covers as detailed. See drawing no. A21.

Timber -

Preserve all joinery remnants where indicated on the drawings as described in general specification in Section G.

1. Low Level Magazine EN 1 (Phase 3)

- a) This structure appears to be structurally sound. It should not, however, be considered as structurally safe unless the cliff face, as noted above, is stabilised.
- b) Assessed as at risk of collapse due to cliff instability.

2. Gun Emplacement EN 2 (Phase 3)

- a) This mass concrete structure is severely cracked. The sea wall at the base of the adjacent northern cliff has been undermined causing erosion of the base of the cliff and a subsequent landslip.
- b) This landslip, together with wind erosion of the exposed cliff face, has undermined the gun emplacement structure causing severe cracking in the roof of the main east/west tunnel. This cracking also extends around the walls and roof and floor of the northern circular tunnel. The northern most section of the structure had been removed by the detonation of explosives (carried out by the army).
- c) Assessed as at risk of collapse due to cliff instability.
- d) Monitor cracking to provide indication of potential risks to visitor safety and access.

- e) Seek funding for sea wall and cliff face stabilisation.
- f) Treat corrosion of metalwork in accordance with the general specification in Section F and with approved corrosion inhibitor in accordance with the manufacturer's instructions.
- g) Consider removal of the boardwalk viewing platform.

3. Concrete Observation Post EN 3 (Phase 3)

- a) Monitor the structure for risks to visitor safety. Repair and prop to make safe if necessary. Close visitor access to structure when risk to public is not acceptable.

FOOTNOTES

- 1 Dwg. "Victorian Defences, Point Nepean East, 10 inch BL gun at Eagles Nest", Drawing no.4, sectional plan, signed date 23 May 1888.
Dwg. "Victorian Defences, Point Nepean East, 10 inch BL gun at Eagles Nest", Drawing No.5, sections contract date 16 July 1888.
- 2 Dwg. "Caretaker's Cottage" PWD 89-90/L207, 1890, dwg. 11/5/4, Australian Archives MP 1334 Folder 15.
- 3 Dwg. Eagles Nest, adjacent to gun emplacement an artillery store of corrugated iron sheet, a side arms store with corrugated iron lean to; site plan showing cottage at entrance to "gun pit" dwg 11/5/9, 1889, Australian Archives MP 1334 B3712 drawer 11, folder 15.
- 4 Dwg. "Fire Control Station", initialled JVM 1914, concrete structure, battered earth and sand surrounding, Australian Archive MP 1334 drawer 11 folder 5.
- 5 Dwg. Eagles Nest, Fire Command post, reconstruction, M179, 6.12.1938, Australian Archives MP 1334, B3712, drawer 11, folder 3.
- 6 Dwg. Australian Archives MP 1334, drawer 11, folder 5.

FORT PEARCE**CHRONOLOGY**

Fort Pearce was constructed during the phase 4, 1910-1916, activities on Point Nepean.¹ It was sited several hundred metres east of Fort Nepean and was located on top of the ridge dividing Port Phillip Bay from Bass Strait.

This emplacement housed two gun pits for the 6 inch Mark VII guns, which were the standard imperial gun, used from c.1909 to after World War II. A large magazine and an artillery store were located between and below the level of the gun pits. A Battery Observation Post and Direction Range Finder Stations were located above the magazines.² The magazines in this emplacement were operated in a quite different way to the others. This may have been because they were shallower than others, being on the brow of the ridge. Instead of vertical hoists the shells were lifted to waist level and manually passed up to the gun pit through two half levels.

After the Japanese attack on the garrison at Rabaul in 1942, which demonstrated the vulnerability of exposed guns it was decided that the guns at Fort Pearce should be moved to Cheviot Hill where a two-gun emplacement was built. The existing sites were believed to be too conspicuous and vulnerable to enemy fire. At Fort Nepean it was intended to remove Guns Nos. 5 and 6 to a new two-gun emplacement even further east of the Cheviot Hill Battery. However protective concrete shields were provided instead for emplacements 5 and 6, and a new Battery Observation Post built. Since the protective shields restricted the arc of fire from emplacements 5 and 6, a 14 pounder Nordenfelt gun was emplaced at Pearce to cover the Examination Anchorage.³ The battery observation post was reconstructed in reinforced concrete c1938, to become a Gun Position Officer's post.⁴

STATEMENT OF SIGNIFICANCE

The strategic and other characteristics of Fort Pearce were not tested in either World War 1 or 2. By 1942 doubts about the capability of Fort Pearce to withstand attack resulted in the removal and relocation of its guns.

Fort Pearce is significant as an intact single phase example of WW1 fortification technology and for its contribution to the understanding of the operational readiness of the Point Nepean fortifications during World War 1.

CONSERVATION POLICY AND STRATEGY.

Fort Pearce shall be conserved in its current form and interpreted as a secondary fortification facility of the Nepean group. Due to advanced structural deterioration visitor interpretation will be generally from outside the structure, and access into and onto it will be limited only to where deemed acceptable from a public risk view.

The extensive structural conservation activity required to fully stabilise the structure is of a lower priority than at other locations at the forts, and as such further deterioration in a number of areas is inevitable. Basic conservation work will comprise maintenance of drainage systems and control of vegetation and sand build up.

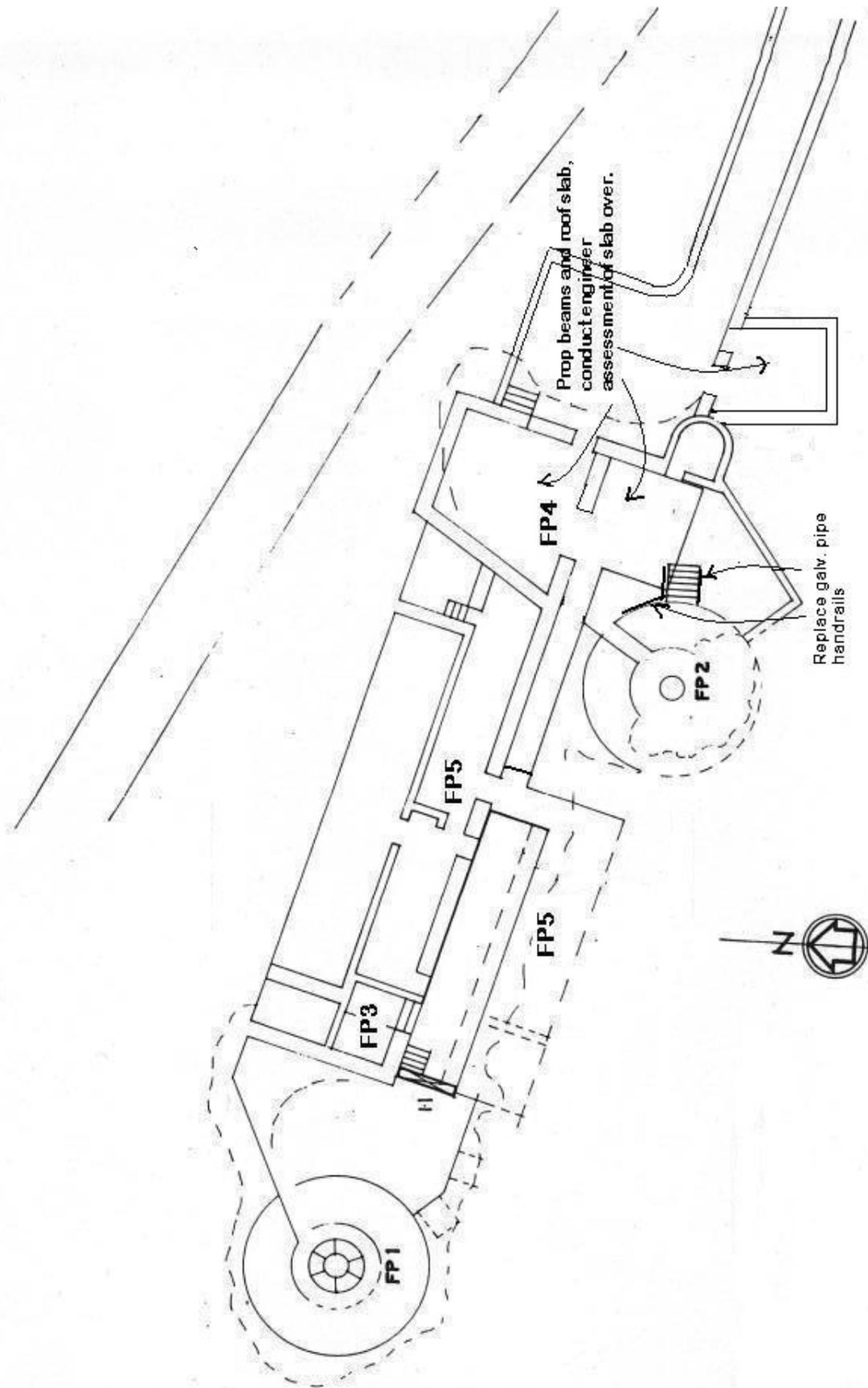
The sand in this Emplacement was dug out in the early 1990's with the assistance of the Fort Nepean Friends Group.

Fort Pearce comprises both mass concrete and reinforced concrete construction. The principle cause of structural damage is the rusting and expansion of steel elements. The shelter, artillery and shell stores which constitute the major areas of the lower structure are deteriorating because of water penetration through the covering slab. This penetration is due largely to failure of the asphalt water-proofing membrane. The membrane over the shelter section was replaced in 1998, and appears to have been moderately effective in reducing the percolation of water.

Land slippage due to natural erosion on the ocean side adjacent to the fort has forced the recent relocation of part of the boardwalk on its southern side. There is an increasing threat of the instability of the slope on the fort itself as it gets nearer to the structure.

Continued corrosion of steel reinforcement, particularly in lintels to openings and recesses, has caused continuing localised concrete spalling and collapse throughout.

Due to the advanced degree of deterioration of many of the lower chambers, the central area of the fort has remained closed to public access. Given that Fort Pearce is considered less important in heritage value and visitor experience than Fort Nepean and Eagles Nest, internal public access is not considered necessary, and therefore a lesser priority for conservation works. However, the easternmost chambers, adjacent Emplacement 2 are currently accessible, although if this is to remain, detailed structural investigation, assessment and stabilisation of the chamber roof structure is an urgent priority.



MINISTRY OF HOUSING & CONSTRUCTION
POINT NEPEAN NATIONAL PARK
REPAIRS TO FORTIFICATIONS
UPDATED AUGUST 2005

FORT PEARCE
NOT TO SCALE.

DRC No. 88-773-A 2.
DRAWN: LOUISE HONMAN, 12/2/1988
MICHAEL RITCHIE.

EXISTING STRUCTURAL CONDITION & RECOMMENDED WORKS**GENERALLY**

Monitor and maintain basic conservation works to protect the site including control of vegetation and sand build up.

1. Concrete Gun Emplacement - FP 1 (Phase 4)

- a) There are several cracks in the mass concrete apron of the pit - due to structural movement and also to expansion caused by rusting of the steel lintel / framing of the alcoves.
- b) Assessed as requiring MINOR structural repairs. Treat all exposed corroded steelwork in accordance with the general specification in Section F and with approved corrosion inhibitor in accordance with the manufacturer's instructions.

2. Concrete Gun Emplacement - FP 2 (Phase 4)

- a) Public access onto the emplacement has been restricted although the area is still available for viewing from its perimeter. The asphalt membrane to the adjacent concrete deck has been replaced to protect the shelter chambers below from moisture penetration. The lintels to some recesses have collapsed due to advanced corrosion of the steel reinforcement.
- b) Remove any areas of spalled, loose and collapsed concrete. Treat all exposed corroded steelwork in accordance with the general specification in Section F and with approved corrosion inhibitor in accordance with the manufacturer's instructions.
- c) Keep asphalt area clean from sand and debris buildup.

3. Concrete Observation Post FP 3 (Phase 4)

- a) General spalling of concrete due to corrosion of reinforcement is at an advanced state. The condition of the roof in particular is considered precarious. Continue exclusion of internal visitor access.
- b) Remove any areas of spalled or loose concrete. Treat all exposed corroded steelwork with rust inhibitor as above.

4. Artillery Store FP 4 (Phase 4) (adjacent Emplacement FP2)

- a) These mid level chambers are accessible via a doorway off the eastern ramp. Their concrete roofs comprise steel beams encased in a concrete slab. These beams have been subject to significant corrosion due to water percolation through the failed asphalt membrane covering the slab above, resulting in the spalling, and subsequent cutting away, of the concrete cover to their bottom chords. The membrane was replaced in 1998, resulting in a significant retardation of moisture penetration.

- b) The overall structural condition of the slab and its encased steel beams is unknown. Assessment by a structural engineer is required. Installation of supplementary timber beams on props below the slab should be considered as a precautionary measure until structural adequacy is confirmed, particularly as long as continued public access remains permitted.
- c) Monitor cracking and movement of walls beside entrance ramp for any increase in risk to visitor safety.
- d) Investigate and if possible rectify drainage problems to lower visitor access area.

5. Mess Area and Shell Stores - FP 5 (Phase 4)

- a) A number of these central chambers to the mid and lower levels of Fort Pearce exhibit an advanced state of deterioration and due to the resultant risks have been closed to public access. The southern mid level rooms in particular are of compromised structural integrity, with severely deteriorated reinforced concrete window openings lintels.
- b) Treat all exposed steel reinforcement with approved corrosion inhibitor in accordance with the manufacturer's instructions to retard further deterioration. Provide supplementary timber beams on props to support roof slab of mid level southern chambers.
- c) Maintain existing barriers to exclude visitor access to the central and bottom level chambers.

FOOTNOTES

- 1 Dwg. "Battery for 2 6inch BL Guns Mark VII, near Eagles Nest" notated Fort Pearce. Signed Consulting Military Engineer 10 June 1911. Australian Archives MP1334 B3712 drawer 11, folder 7.
- 2 DRF Station lookout or observation post, addition to previous concrete structure, dwg. no. 52, Australian Archives MP1334 B3712 drawer 11, folder 7.
- 3 Fort Record Book 31 July 1944 Preface.
- 4 GPO post, 6.12.1938 Australian Archives MP1334 B3712 drawer 11. folder 3.

PEARCE BARRACKS**CHRONOLOGY**

Nearly twenty years after completion of Fort Nepean, a battery of two gun pits and associated magazines was built in 1911 at what was to become Fort Pearce.

To accommodate the increased number of men stationed at the point following the upgrading of the fortifications, barracks accommodation for officers, NCO's and men was constructed at Fort Pearce in 1915.¹ The complex at this stage consisted of 2 huts for men; a cook house and associated store, officers' mess and office, and officers' hut, with ablution block not in the present location (see dwg. no.B1). The existence or location of a mess for men is unknown.

The parade ground associated with this group was being used during World War I, but may have been constructed earlier.

In the years between the world wars timber buildings, which largely housed technical functions, occupied some of the parade ground area. These were replaced by further barracks during phase 5.²

Drawings³ and photographs⁴ describe the sequence of development of this barrack group. Photographs of 1940 show the present accommodation block along the north side to be two separate buildings. The kitchen now between them was added c1942. One of the huts became a mess room whilst the other was partitioned for various uses.

At this time, 2 extra huts were constructed east of the existing barracks (see dwg. no.B2). Three other buildings appear on a 1940 plan, one of which is a fuel tank and the other a mess room. By 1940, the ablution block appears to have been built in its present location. The concrete powerhouse appears to date from this time also. Photograph no.1974 shows a series of pitched roofs in the foreground which indicate additional buildings to those shown on the 1940 plan.

Not known is the date of demolition of the officers' hut and the date of the building labelled R.A.P. on later plans.

It is also not clear when the original iron cladding was replaced by corrugated asbestos cement, which has now become brittle and is variously broken through.

STATEMENT OF SIGNIFICANCE

Pearce Barracks was built in response to the pre World War 1 construction of Fort Pearce. Fort Pearce was well east of the existing barracks at Fort Nepean and required closer accommodation for its personnel.

The Pearce Barracks are of significance as the last remaining barracks, albeit heavily degraded physically, of the Point Nepean fortifications group, all others having been removed since World War II. However earlier barracks, of masonry construction and dating from c.1885-89, survive at the nearby former Fort Franklin at Portsea, and have remained in continuous adapted (and since, much upgraded) use as accommodation for The Portsea Camp (formerly known as the Lord Mayors Childrens Camp).

Whilst the overall form and external configuration of the buildings is still clear, the integrity of the interiors has been largely lost through removal of linings, fixtures and decay, whilst complete external recladding in asbestos sheet has severely reduced the extent of surviving original fabric.

The timber construction system, although unusual in the normal domestic timber framing sense was not unusual in military construction where lightness and economy of materials were considered important.

Given the pressures of building during war time, it is considered unlikely that the construction technique was a new or unusual one. The layout of the sleeping arrangements, paired bunks x 2 high, was common in most barracks during the first world war but this was largely abandoned by the second world war. Little physical evidence remains of the way that the barracks buildings were fitted out although the bunks are clearly marked on the contract drawings.

Additional historical significance may be attributed to Pearce Barracks from 1943 when it provided the only accommodation for service women on the peninsula.



*Fig 17. Pearce Barracks c.1946
(Australian War Memorial, Canberra,
ID PO1108.009)*

CONSERVATION POLICY AND STRATEGY

The Pearce Barracks site will be made safe and accessible to the public.

Due to the ruinous and hazardous nature of the remnant structures and the marginal degree of conservation or functional value of their potential reconstruction, the asbestos cement clad timber building superstructures will be removed, whilst their footprints, comprising the respective floor slabs, paving and retaining walls, as well as the powerhouse, will be conserved and presented to interpret the form and function of the former facility.

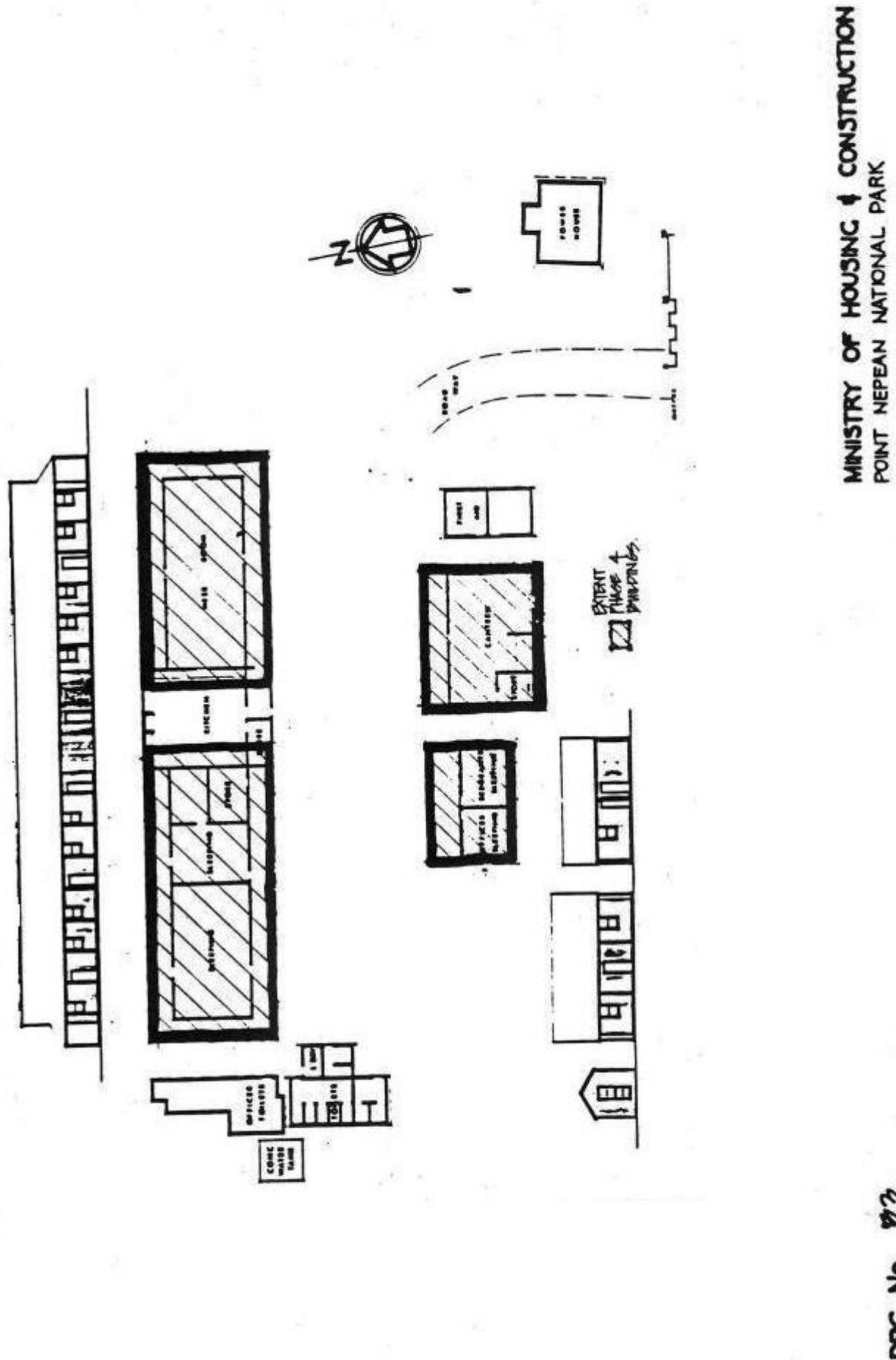
The Barracks site will be developed and maintained as a passive interpretation and sheltered picnic area for walkers.

The extant buildings comprise the remains of the main accommodation hut, the latrine and ablutions block, officers barracks, canteen and power house. All but the power house are light timber framed and asbestos clad externally and largely internally, and are in ruinous condition.

The extensive presence of damaged and friable deteriorating asbestos, both loose and still cladding the buildings, renders the site highly hazardous, making any access or use of the site unacceptable. Total removal of this material and site cleanup is therefore an urgent priority. Consideration then of repairing and recladding the remaining timber building frames in corrugated steel sheet would however be of very marginal conservation value, as effectively nothing remains of the physical evidence of the way that the barracks buildings were fitted out, and, little or no visible original fabric would then remain. Further, with the incorporation of the Quarantine Station into the Park, and the intent to centre the Point's interpretation within that complex, there is now no requirement for the Pearce Barracks site to accommodate any visitor infrastructure function. Reconstruction of the buildings therefore cannot be justified on the basis of providing accommodation for an ongoing function.

The significance of the site however will still require interpretation. Key interpretive remnants should be retained to explain the role of the Barracks and how the site was used. Such would be the concrete slabs, paving and retaining walls associated with the buildings, preferably marked up with interpretation of the functions of the various buildings' layouts and spaces. An interpretive display of the Barracks could be housed in the retained and refurbished powerhouse building. With appropriate landscaping development and maintenance, the site would provide a convenient sheltered, stopping, interpretation and picnic point for walkers.

While the barracks were altered and extended over the period between the two World Wars it is argued here that the WW1 configuration is the most significant in that the barracks were built to serve Fort Pearce, whose significance lies in the fact that it is a purpose built WW1 (Phase 4 emplacement, unaltered in Phase 5 except for minor works to the BOP. It would therefore be appropriate to interpret the site primarily to its WW1 configuration (See dwg. no.B3, hatched buildings are WW1 structures).



MINISTRY OF HOUSING & CONSTRUCTION
POINT NEPEAN NATIONAL PARK

DRC No. 03.
DRAWN: MICHAEL RITCHIE / LOUISE HORNMAN

EXISTING STRUCTURAL CONDITION & RECOMMENDED WORKS**GENERALLY**

The building remains are comprised of extensively damaged asbestos sheet cladding externally, with timber flooring and internal lining, both asbestos and timber, largely missing throughout. No internal fittings other than a couple of sanitary fixtures survive. Concrete elements comprise the floors of the ablutions buildings, external verandahs and paths, and parts of retaining wall structures. Timber window joinery in various condition survives in two buildings

Following preparation of a comprehensive photographic and drawing record of the buildings in their current state, remove all traces of attached and detached asbestos cladding in accordance with current OH&S regulations. Dismantle and remove remaining timber building framing and ancillary components. The site can then be developed for visitor access interpretation and use. There is the opportunity to develop innovative interpretive devices as part of any visitor shelter provided.

Until the above works are implemented, secure perimeter fencing and revegetate open area inside fence near road to discourage visitor access. Interpret the barracks site from the Fort Pearce boardwalk above. The following descriptions utilise the area names applied in Drwg. 88-773-A11.

1 Power House - PB 1 (Phase 4)

- a) Concrete structure in good condition. Assessed as requiring NO structural repairs.
- b) The building shall be conserved and adapted to house an interpretative display of the barracks.

2. Barracks & Mess - PB 2 (Phase 5)

- a) Mess room portion demolished. Some window joinery survives. Timber floor is partially missing, timber frame in poor condition. Concrete verandah with post bases intact.
- b) Asbestos roof and wall sheeting severely damaged and dilapidated. Hazardous to health.
- c) Remove building superstructure and conserve concrete verandah floor. Apply interpretive internal wall layout to floor replacement infill.

3. OR's Canteen PB 3 (Phase 4)

- a) Timber floor, timber frame. Brick fireplace survives though chimney missing.
- b) Asbestos roof and wall sheeting. Severely damaged and friable.
- c) This building has been vandalised and is in ruinous condition. Some roof truss members, flooring and verandah posts have been cut away. All wall and ceiling linings cut away.

- d) Remove building superstructure. Retain fireplace remnants and masonry retaining structures.
Apply interpretive devices to floor replacement infill.
- 4. Officer and Sergeants Sleeping Quarters PB 4 (Phase 4)**
All as PB 3 (excluding fireplace).
- 5. First Aid Room PB 5 (Phase 4)**
All as PB 4. Some timber lining boards and window joinery survives.
- 6. Toilets & Laundry - PB 6 (Phase 5)**
 - a) Fully asbestos clad internally and externally.
 - b) Remove building superstructure and retain concrete floor slab and masonry retaining structure.
 - c) Apply interpretive spaces layout to slab.
- 7. Officers Toilets - PB 7 (Phase 5)**
All as PB 6.

FOOTNOTES

- 1 Dwgs. Australian Archives MP1334 B3712 drawer 11, folders 7 and 15.
- 2 *ibid.*
- 3 *ibid.*
- 4 Photographs "Fort Pearce Barracks", source: Fort Queenscliff Museum, no. 2041 (1940) and no. 1974.

CHEVIOT HILL**CHRONOLOGY**

Cheviot Hill was constructed during the last phase of development at Point Nepean, phase 5, 1939-40.

It provided two gun emplacements and a battery observation post constructed using reinforced concrete.

The two gun emplacements were built to take the 6" Mark VII guns from Fort Pearce, which was considered too exposed.

The guns at this emplacement were protected from air attack by metal shields.

STATEMENT OF SIGNIFICANCE

Cheviot Hill battery and Cheviot Hill east are unaltered phase 5 structures as are the battery observation posts at Fort Nepean and Eagles Nest.

Due to the relative fragility of reinforced concrete at the time of construction these phase 5 structures are weathering more severely than the earlier mass concrete structures.

Cheviot Hill has been overtaken by banked up sand and vegetation but still exhibits a clear indication of the extent of its fabric including an extensively corroded steel hood. Previous efforts have been made to prop the hood.

This structure retains very few of its fittings or signage, but includes the remnants of a Mark VII gun mounting and ERA shield, and the severely corroded, collapsed steel hood.

Its significance is embodied in its external form and relationship to the earlier fortifications.

Summary

Cheviot Hill battery is significant as a single phase WW2 emplacement embodying the changes in concrete construction techniques of that period and incorporating in its eastwards location the latest trends in siting and protection for men and equipment.

CONSERVATION POLICY AND STRATEGY

Maintain as a site with moderate visitor access and conservation values.

Action will be taken to retard further spalling and corrosion consistent with and prioritised in association with similar treatment at the other fortifications.

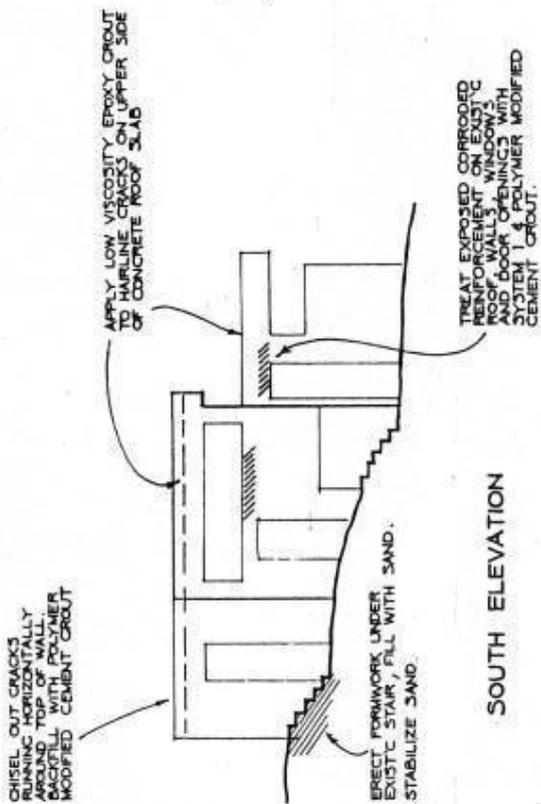
The main fortifications, comprising Gun Emplacement No.2 and the Battery Observation post, are remote from the road and at the end of a moderately steep walking track. Their elevated site affords one of the best overall vantage points in the park.

Gun Emplacement No.1 is located in the former Rifle Range area, remote from the BOP and not currently accessible to the public. There is no requirement to provide access to the emplacement in the foreseeable future.

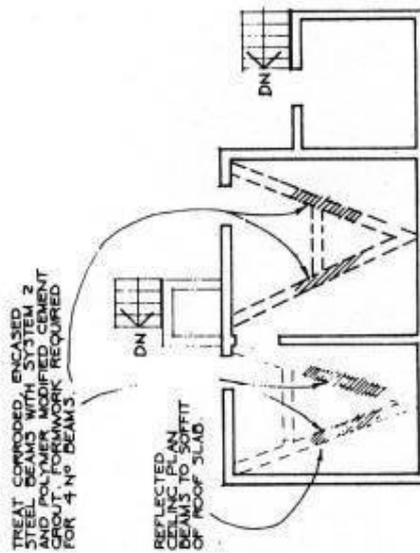
Action is required to arrest further spalling and corrosion at the BOP. These works should be achieved conservatively and no attempt made at reconstruction.



Fig. 18. Cheviot Hill Gun Emplacement c.1946. (Australian War Memorial, Canberra ID 051174).



+ ROOF SLAB TO BE LOAD TESTED WITH 2 KPa LIVELOAD



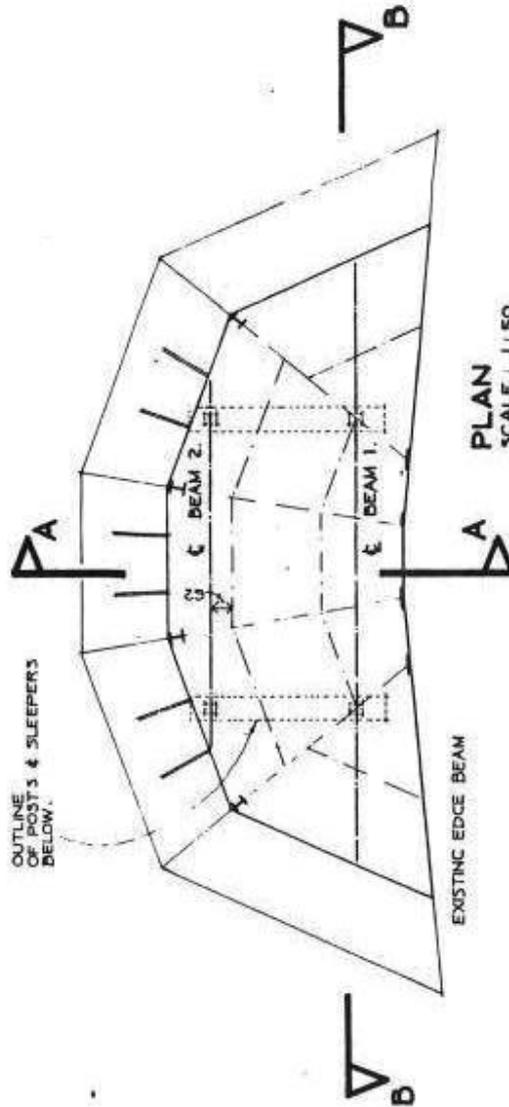
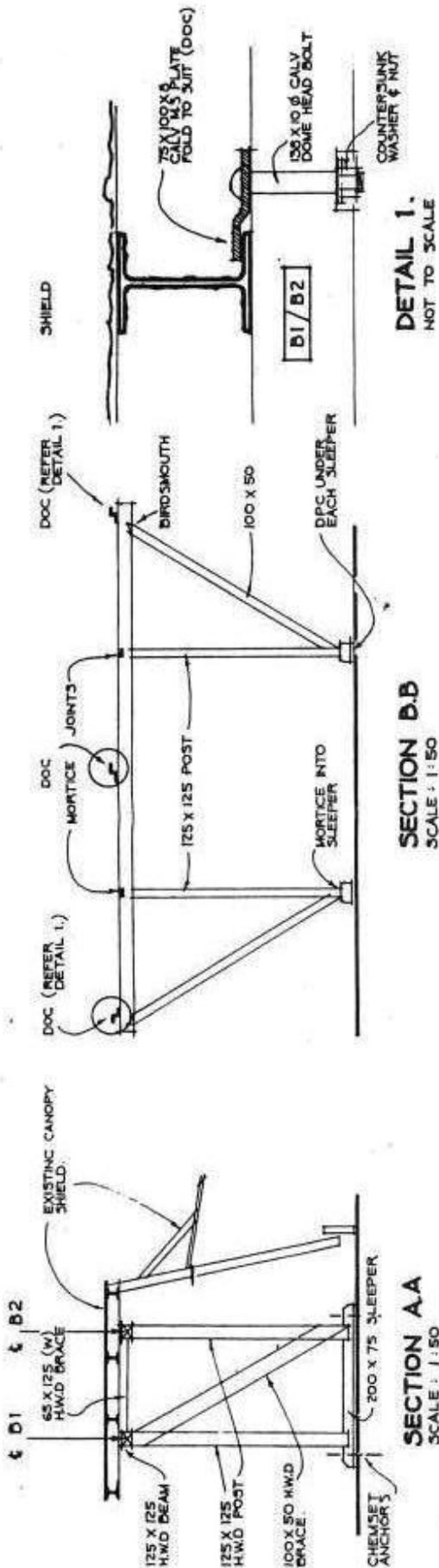
FLOOR PLAN

OBSERVATION POST
CHEVIOT HILL CH 3

SCALE: 1:100

DRC No. 88-773-A 10.
DRAWN: MICHAEL RITCHIE 12/2/1980
LOUISE HONMAN

MINISTRY OF HOUSING & CONSTRUCTION
POINT NEPEAN NATIONAL PARK
REPAIRS TO FORTIFICATIONS



**CUN EMPACEMENT CH 1
CHEVIOT HILL**

GENERAL NOTES

1. EXCAVATE SAND FROM PIT
 2. MANOEUVER THE CANOPY INTO FINAL POSITION OVER PIT
 3. JACK OR HOIST THE CANOPY TO APPROPRIATE FINAL HEIGHT.
 4. INSTALL TIMBER PROPS AND BRACES
 5. REMOVE AS MUCH LOOSE AND FLAKING RUST AS POSSIBLE BY SCRAPER
 6. APPLY NEUTRALUST'S RUST CONVERTER 3 COATS TO ALL EXISTING STEEL
 7. ALL NEW STEEL IS TO BE COATED WITH NEUTRALUST'S RUST INHIBITOR BEFORE APPLYING A PAINT SYSTEM AS DESCRIBED IN SYSTEM 5 (OPTION 1 OR 2)
- NEUTRALUST IS OBTAINABLE FROM
NO RUST PTY LTD
5/27 NEWBYS ROAD
PH: (03) 222 14 44
8. WHERE WELDING IS NOTED IT MAY BE EITHER ELECTRIC ARC OR OXY ACETYLENE
 9. ALL NEW STEELWORK AND BOLTS & ANCHORS SHALL BE HOT DIPPED GALVANIZED

MINISTRY OF HOUSING & CONSTRUCTION
POINT NEPEAN NATIONAL PARK
REPAIRS TO FORTIFICATIONS

DRC No. 86-773-A 9.
DRAWN: MICHAEL RITCHIE, 25/7/1988
(REVISED DRAWING.)

EXISTING STRUCTURAL CONDITION & RECOMMENDED WORKS**GENERALLY**

Gun Emplacement No 2 is in good condition and requires only minimal maintenance, while the concrete on the BOP ceiling is spalling

Monitor and remove potentially damaging vegetation. Keep sightlines from the BOP clear of vegetation. Obtain an assessment of the paintwork and signage by a paint conservator. Apply proven chemical stabilisation treatment against environmental caused deterioration. Monitor condition of historic signage susceptible to visitor contact for physical damage. If necessary install protective perspex covers as detailed. See drawing no. A21.

1. Gun Emplacement CH 1 (Phase 5)

This Emplacement is currently not publicly accessible, and therefore of lower priority for substantial conservation works. Such works will be limited to basic corrosion treatment.

- a) The concrete gun pit has been sand bagged but it is most likely that its structural condition is good to fair.
- b) The steel canopy is very badly corroded and has collapsed into the pit. Treat gun shield and gun tracks steelwork for corrosion in accordance with the approaches described in Section G.
- c) Should there be a requirement for the Emplacement to be made accessible to the public in the future, the steel hood should be lifted and propped as detailed in drawing no. A9.

2. Tunnel, Facilities and Gun Emplacement CH 2 (phase 5)

- a) Reinforced concrete structure in good condition. No structural repairs required.

3. Observation Post - CH 3 (Phase 5)

- a) The reinforced concrete and concrete encased steel frame structure is badly affected by spalling concrete due to severe rusting of steelwork.
- b) The structure is considered to be structurally safe but load testing should be carried out before repair work commences.
- c) Remove spalling concrete from ceiling of BOP and treat exposed metal. Refer to General Specification, and drawing no. A10
- d) Treat timber on the ceiling of the BOP.

GENERAL SPECIFICATION**G 1. SCOPE OF WORK**

This Section provides an outline approach to key required conservation works at the forts relating to concrete repair, steel treatment and painting (timber). Other works are detailed on the drawings accompanying the previous sections on individual emplacements.

Where Minor Repair Works are indicated in the preceding sections on Existing Structural Condition and Recommended Works, the following principles describe the general approach to be taken. However, in each application detailed specifications should be prepared and approved by appropriately qualified practitioners. Areas indicated in the previous sections as requiring more substantial works must each be undertaken as discrete projects subject to individual professional assessment, design, specification and supervision.

G 1.1. Specialist Sub-Contractors and Suppliers

Both the corrosive marine environment at the forts and the nature of many of the conservation works processes involved there requires the use of a range of specialist skills and techniques, and technically advanced products in order to achieve the most effective, long lasting and visually acceptable outcomes. New products and contractors are regularly entering the market. Poor choices be not only be a waste of resources, but can lead to irreversible damage to significant fabric. As such, the selection of any contractors or products for use in this work must be based on sound research and a successful track record in comparable applications.

The National Parks Division heritage conservation staff are to be consulted to advise and assist with the identification and selection of any proposed specialist subcontractors, suppliers and products for application on conservation works to the forts.

G 1.2 Supervision

All conservation works are to be supervised by appropriately trained and experienced heritage conservation and relevant professional technical personnel. For example, structures requiring concrete repairs require at least 2 inspections at the following stages.

- i. after removal of loose concrete when extent of corroded reinforcement is exposed.
- ii. after sample of concrete patching prepared. Approval to continue to be obtained from supervising engineer.

G 2. Concrete Repair Works**G 2.1. Mass Concrete**

- (a) The mass concrete is mainly confined to the gun emplacement pits which were constructed in Phase 3. Except for several cases of deliberate damage the only defects are cracks which are not

of any structural significance, with the exception of the emplacement at Eagles Nest (EN.2).

(b) Repair Work

- Clean cracks of all foreign material such as vegetation and earth.
 - Remove all badly rusted fixings (eg. the steel frames to the alcoves) and cut away the corroded steelwork.
 - Cut away spalling areas of concrete.
 - Clean surfaces of cracks to be repaired by sand blasting or water jetting.
 - Ram cement/sand mortar into large cracks and flowable grouts for the smaller cracks.
- (c) Mortar mixes to be as approved by the supervising conservation architect.

G 2.2. Concrete Encased Steelwork

- Remove all loose and cracked concrete.
- Clean all loose rust from steelwork.
- Paint exposed faces of steelwork with an approved rust inhibitor as specified.
- Fix. galvanised light gauge mesh or expanded metal lathing to face of exposed steelwork with approved fixing pins.
- Apply coat of approved epoxy coating.

G 2.3. Reinforced Concrete

- Remove rust - sand blast or needle hammer.
- Weld new bars ~ (but only as directed by the structural engineer).
- Sand blast – rust free finish finish.
- Anti rust applications to steel (as directed).
- Cut edges of concrete 20mm to avoid feather edges.
- Prevent flash rusting in marine environment.
- Remove chloride affected concrete where practical.

G 2.4 Concrete Repair Mixes

Following the derusting and treatment of any integral steelwork, open concrete cracks and surfaces are to be filled with a polymer modified cement grout to an approved formulation. The approved mixes are to be based on localised area trials, and may vary between applications. Filling of deep cracks to be tamped with a steel rod during application to remove all air pockets.

The use of low viscosity epoxy resins are suitable for penetrating and filling hairline cracks. The cracks should be cleaned by blasting with compressed air. Application to be by skilled and experienced contractors only.

G 3. Steelwork

The highly corrosive marine environment renders the rusting of steelwork, both freestanding and integral with concrete masonry, is the most insidious of the destructive processes at the forts. Treatment against this process, involving removal of existing rust and retardation of the rusting process, must form the primary front in the conservation of the forts' structures.

G 3.1 Corroded Steelwork

The approach to the treatment of corroded steelwork is as follows:-

System 1 - Corroded Reinforcement

Concrete which is loose, cracked or spalling should be removed manually or by blast cleaning which will also be used to clean the corroded reinforcement.

The concrete should be broken, back to uncorroded steel and the whole perimeter of rod should be exposed.

Blast cleaning treatments may be:

- * dry blasting with illmenite sand
- * wet blasting with silica sand
- * high pressure water jet with or without grit

The reinforcement should be blast cleaned to rust free finish just prior to the application of an approved protective epoxy coating. The coating should be applied with a brush and special care should be taken to ensure that the bars are completely coated. While the last coat is still tacky, sprinkle clean silica sand over the coated bars to ensure good adhesion between the reinforcement and the new concrete.

Where bars are so severely corroded that after blast cleaning there is likely to be a reduction in cross-sectional area of more than 15 percent (1mm in 13mm bar) that part of the bar should be cut out and replaced. At the same time concrete should be removed from the ends of the defective bar to expose uncorroded or lightly corroded steel so that a new bar can be spliced effectively to it. The new bar should be given the same coating treatment as described above and should be rolled in salt free sand while the coating is still tacky.

After the treatment of the reinforcement has been completed and just prior to the placement of the new concrete, the existing concrete surfaces should be dampened with a spray application of solvent before applying a tack coat of the epoxy in order to ensure good adhesion between the new and the old concrete. The new concrete should be placed while the bond coat is still tacky.

Cut edges of concrete to 20mm to avoid feather edges.

System 2 Corroded Concrete Encased Steelwork

Remove all loose cracked or spalled concrete so as to fully expose the corroded portion of steel member. Use manual chipping and hammering.

Remove loose or flaking rust by chipping.

Apply a rust converter to the remaining film of rust on the steel member. Use a brush so as not to coat the surrounding, freshly broken back concrete.

Apply two coats of approved tar epoxy by brush.

Fix a galvanized light gauge mesh, or expanded metal lath with approved fixing pins.

Apply new concrete as soon as possible.

Where appropriate, or in applications where sand blasting is not practical or risks damage to other adjacent surfaces, steel work, whether members or reinforcement, concrete encased or exposed should be wire brushed by hand to remove loose rust only, then coated with a, approved heavy duty rust converter primer, or other approved corrosion resisting coating.

G 3.2 Gun Mountings, Metal doors and frames to Shell Stores etc.

Cleaning

Protect walls and surfaces of gun emplacement by draping Fortecon sheets pressure taped at seams and draped. Hold sheets in position with sand bags at top and bottom.

Remove loose sand from gun carriage by compressed air and vacuum.

Wash mounting, crevices, internal faces and ledges with high pressure water wash.

Wire brush cogs, racks, internal faces and ledges to remove loose rust and sharp protrusions.

Use no power tools.

Cutting back to a perfect surface or bright metal is NOT REQUIRED.

Coat all steelwork with approved resin based steel corrosion treatment, such as *TCP CENTROX SP3 Clear*, strictly in accordance with manufacturers instructions.

G 4. Painting : Timber

A limited amount of timberwork survives at the forts, and comprises remnant painted and unpainted joinery. This is situated in both exposed and internal locations, resulting in a range of conditions. In addition there is replacement joinery dating from the early 1990's conservation works, particularly at the engine house.

Painting of all new, recently replaced and previously painted timberwork, both internal and external, is to be to the highest trades standards with first grade materials to withstand the severe environmental conditions. All paint applications are to be typically three coat systems in accordance with manufacturer's instructions.

Timber Preservation:-

Timber that is not exposed directly to weather e.g. arms racks, fragments of timber doors (refer to drawings for locations) is to be preserved rather than painted. Preparation shall be by brushing clean

with a soft paint brush. Preservative products to be approved by an appropriately qualified conservation practitioner and applied strictly in accordance with the manufacturer's instructions.

Shelf timbers (eg in Emplacement 1) are to be removed for consolidation work by others. File through nails. Label all removed items.

After treatment, refix all timbers in their original locations. Make up new wall plugs of 32 x 32 x 75 long CCA treated oregon pine. Use galvanised nails.

G 5. Major Repair Work

Eagles Nest and Gun Emplacement No. 8

The damaged sea wall has resulted in undercutting of the steep slopes and cliffs. The undercutting has proceeded to the extent that sections of structures are at some risk of significant movement or even collapse. Stabilisation and reinforcement of the cliffs is a major coastal engineering project and its specification is beyond the scope of conservation works to the forts as part of this Conservation Plan. However such works would in principle involve the construction of rock revetments along the damaged sea walls, then the earth backfilled behind the rock revetments and the slopes stabilised with appropriate vegetation.

Such rock revetment work has been implemented to date between the Engine House area and The Narrows. It is essential however that where required the slopes behind are backfilled and stabilised to prevent land slides and vegetation or rocks placed on the slopes to prevent wind erosion. Stabilisation options include

1. Use of Geotextiles - The Geotextiles can be used as a reinforcing element for the proposed backfill.
2. Use of Gabions - Gabions walls can be constructed to protect the proposed backfill from the environment and soil reinforcement mesh panels used to stabilise the backfill.
3. Use of Terraces and Retaining Walls - The backfill can be terraced and the vertical slopes retained with either crib walls or sleeper walls.

G 5.1. Specification

All such major structural works are to be subject to and in accordance with individual structural design and specifications prepared by qualified engineers and with all required heritage approvals.

SCHEDULE OF DRAWINGS AND PHOTOGRAPHS

COVER Gun Emplacement No.5 Point Nepean, Victoria Australia, April 2005.

SECTION A

Fig. 1. Typical Harbour, showing defences proposed against raiding attack, etc.
Source: Australian Archives, MP 153/16, Item 28.

Fig. 2. Fort Nepean Plan - gun numbering.

Fig. 3. Point Nepean Plan.

Fig. 4. Table of Guns and Emplacements.

SECTION E

Fig. 5 6-inch gun, Fort Nepean c. 1943

Fig. 6. Looking west to Fort Nepean, c.1946.

Figs. 7 & 8 Two views of the Royal Australian Engineers Barracks at Fort Nepean c.1933

SECTION F

Table 1 Inventory of Fortification Structures

Fig 9. Fort Nepean – Structures

Fig 10. Fortification Structures – Fort Pearce, Eagles Nest and Cheviot Hill

Drawing A1. Fort Nepean.

Fig 11. Fort Nepean – Key to Schedule of Works

SECTION F1

Fig. 12. Plan ‘Carriage, Garrison, Disappearing B.L 6 Inch, Mark II & II’

Fig. 13. Elevation, ‘Carriage, Garrison, Disappearing B.L 6 Inch, Mark II & II’

Drawing A24. Plan: Gun Emplacement No. 1.

A25. Gun Emplacement No. 1.

SECTION F2

Fig. 14. Battery Observation Post, Fort Nepean c.1943

Drawing A4. Main Tunnel Complex including Gun Emplacements Nos. 2A, 3 and 4.

A13. Battery Observation Post, Fort Nepean.

A21. Schedule of Signs.

SECTION F3

- Fig. 15. Gun Emplacement No. 5, c.1943
- Drawing A6. Gun Emplacement No. 5.
- A12. Area Adjacent to Gun Emplacement No. 5.

SECTION F4

- Drawing A7. Gun Emplacement No. 6.

SECTION F5

- Fig. 15. The engines which generate the power necessary for the working of the powerful searchlight at Point Nepean.
- Fig 16. The No. 7 searchlight at Fort Nepean. C.1933
- Drawing A8. Gun Emplacement No. 7 and Engine House.
- A15. Engine House structural details.
- A16. Engine House repairs.

SECTION F6

- Drawing A5. Gun Emplacements No 8.

SECTION F7

- Drawing A3. Eagles Nest.

SECTION F8

- Drawing A2. Fort Pearce.

SECTION F9

- Fig 17. Pearce Barracks c.1946
- Drawing B1. Pearce Barracks, c1915.
- B2. Pearce Barracks, c1940.
- B3. Pearce Barracks, extant WW1 structures.

SECTION F10

- Fig. 18. Cheviot Hill Gun Emplacement c.1946.
- Drawing A10. Cheviot Hill, Battery Observation Post.
- A9. Cheviot Hill, hood support.

BIBLIOGRAPHY**ARCHIVES AND MANUSCRIPTS**

Defence Department Records (Australian Archives, Victorian Regional Office, Brighton).

Daniell, A.C. Report on H. P. Mountings. 1890. (Australian Archives, A.C.T., CRS A1194. Item 45.30.27790).

Kitson, M. 'The Defence of South Channel, Port Phillip, Victoria, 1876 to 1906', 1985 (Typescript in the possession of the author). Reserve Branch Files, Point Nepean. (Department of Conservation, Forests and Lands, Dandenong Regional Office)

'Return of Heavy B.L. Guns on Military Charge in the Colony of Victoria. 1891. (Australian Archives, A.C.T., CRS A1194. Item no.45.30. 27792)

Summary Contract Books, Public Works Department, VPRS 972. (Public Record Office, Victoria)

Vazenry, G. 'Military Forces of Victoria, 1884-1967'. Typescript held by Library, Department of Defence, Melbourne.

Australian Archives : Plans., Drawings & Photographs in MP338 - Folder 1 & 1A
B3712 - Folder 14 MP 84/1

Australian Archives A.C.T.: Report by R. Harding, Inspector of Ordnance Machinery, 21st July, 1890. CRS A1194 Item 45.30 27790.

Australian War Memorial, Canberra, Canberra, Photographic Collection

GOVERNMENT PUBLICATIONS

Victoria. Council of Defence. Reports. (Victorian Parliamentary Papers).

Victoria .Defences of the Colony: Report of Capt. Scratchley, R.E. 1860. (Victorian Parliamentary Papers vol. 2, no. 2).

Victoria. Defences. Preliminary Report by His Excellency Colonel Sir W.F. Drummond Jervois, R.E., K.C.M.G., C.B. 1877. (Victorian Parliamentary Papers, 1877, vol. 2, no. 46).

Victoria. Reports and Suggestions Relative to the Defences of Victoria. 1882. (Victorian Parliamentary Papers, 1882-83 vol. 2, no. 34).

ARTICLES

'Scratchley, Peter' Australian Dictionary of Biography Vol. 6. Melbourne University Press, 1976.

Daley, Charles. The Early Defences of Melbourne Victorian Historical Magazine, 22, 1947, pp. 10-22.

Fitzhardinge, Verity. 'Russian Naval Visitors to Australia, 1862-1888', Journal of the Royal Australian Historical Society, 52, 1966, pp.129-158.

Gordon, J.M. 'The Naval and Military Resources of the Australian Colonies', Victorian Review, 10, 1884, pp. 321-326.

Hyslop, Robert. 'War Scares in Australia in the Nineteenth Century'. Victorian Historical Journal, 47, 1976, pp.23-44.

Kitson, M. 'Australia: The South Channel Defences at Port Phillip: Factors in the Design, 1876 – 1909' Fort: International Journal of Fortification and Military Architecture, V.15, 1987, pp. 105-134.

Lack, C. 'Russian Ambitions in the Pacific: Australian War Scares of the Nineteenth Century', Journal of the Royal Historical Society of Queensland, 8, 1967/68, pp. 432@-59.

MacCallum, Duncan. 'The Alleged Russian Plans for the Invasion of Australia', Journal of the Royal Historical Society, 44, 1958, pp.301-22.

Peacock, R.K. 'The Victorian Rangers', Victorian Historical Magazine, 17, 1938, pp. 1-18.

Price, John E. 'A History of the Defence of Port Phillip Bay', Sabretache, 15, 1973, pp. 73-83.

Reed , J. 'The Possibility of Invasion and Our Means of Defence', Victorian Review, 11, 1884/85, pp. 38-46.

Templeton, J.M. 'History of the Victorian Defence Force, Part 1', United Service Institution of Victoria Journal, 3, September 1894, pp.3-31.

Vazenry, G.R. 'Re-organisation: the Australian Military Force, 1800-1962', Australian Army Journal, 1963, p.32-43.

BOOKS

The Battle of Mordialloc. Melbourne, 1887.

The Battle of the Yarra by an Old Colonist. Melbourne, 1883.

Calder, Winty. Australian Aldershot: Langwarrin Military Reserve, Victoria, 1886-19 1 Melbourne, Jimaringle Publications, 1986.

DiIke , C. W. Problems of Greater Britain. London, Macmillan, 1890.

Hogg, Ian. The History of Fortification. London, Orbis Publishing, 1981.

Lime Land, Leisure: Peninsular History in the Shire of Flinders, by C. N. Hollinshed, E.C.F.' Bird, and N. Goss. Rosebud. Vic., Shire of Flinders, 1982.

Noble, John. Port Phillip Pilots and Defences. Melbourne, Hawthorn Press, 1973.

Noble, John. Port Phillip Panorama: A Maritime History. Melbourne, Hawthorn Press, 1975.

Robertson, A.M. War in Port Phillip. Sorrento, Nepean Historical Society, 1968.

Serle, G. The Golden Aqe: A History of the Colony of Victoria, 1851-1861. Melbourne University Press, 1963.

Serle, G. John Monash: A Biography. Melbourne University Press, 1982.

Sorrento and Portsea Yesterday. 3rd edition. Sorrento, Nepean Historical Society, 1984.(The Peninsula Story, Book

Tate, Jim. A History of Fort Queenscliff in the Context of Port Phillip Defences. Queenscliff 1982.

Tulloch, A.B. Defence of Australia: Lecture. Melbourne, H.W.Mills, 1891.

Treatise on Military Carriages, HMSO, 1902.

NEWSPAPERS AND PERIODICALS

ASCDG: Australian Coastal Defences Study Group Newssheet. (Melbourne)

Age (Melbourne)

Argus (Melbourne)

Australasian Sketcher (Melbourne)

Fort Critic (Point Nepean)

Illustrated Australian News (Melbourne)

Leader (Melbourne)

Sentinel (Queenscliff)

United Service Institution of Victoria Journal (Melbourne, 1890-1897)

Victorian Defence Forces list (Melbourne, 1885-1893)

Victorian Naval and Military Forces List (Melbourne, 1894-1901).

Weekly Times (Melbourne)

THESES, REPORTS

Allom, Lovell and Associates. Conservation Management Study for the Command and Staff College, Fort Queenscliff. Melbourne, Commonwealth Department of Housing and Construction and Department of Defence, 1982.

Balderstone, S. and D. Wixted. Point Nepean National Park Gun Emplacement No. 1: Conservation Plan. Prepared for Department of Conservation, Forests and Lands. Melbourne, Ministry of Housing and Construction, Historic Buildings Branch, 1988.

Dept. of Conservation, Forests and Lands, Point Nepean National Park Management Plan – Point Nepean Section June 1989.

Kitson, M. Notes for Guides: Port Phillip Defences, South Channel Fort. Melbourne, Victour Properties, 1987.

Millar, T.B. History of the Defence Forces of the Port Phillip District, Colony of Victoria, 1836-1900. M.A. Thesis, University of Melbourne, 1957.

Morris, D.W. Fortifications at Port Phillip. Department of Architecture, University of Melbourne, 1969.

Power, S., S. Robinson & A. Trumbull-Ward. Analysis of the Heritage Significance of the Commonwealth Holdings at Port Nepean. Portsea. Clayton, Victoria, Graduate School of Environmental Science, 1985. (Environmental Report no. 23).

Public Works Department, Victoria. Proposed Point Nepean National Park Concept Plan Prepared for Department of Conservation, Forests & Lands. Melbourne, 1987.

Summer, R. An Inventory of Historic Resources at Point Nepean. Melbourne National Parks Service, n.d. (Unpublished report)

Robinson, S.W. Fortifications at Point Nepean, Victoria: Problems of Bridging the Transition from Military to Heritage Significance. M. Environmental Science. Monash University, 1984.