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Watts Peninsula, Wellington

Heritage and condition assessment

Report Prepared for Toitū Te Whenua Land Information New Zealand
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Reviewed by: Dr Hayden Cawte
Submitted: December 2022

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Watts Peninsula, Wellington

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Project Details

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Report Submitted	December 2022
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- Kim Wepasnick of LINZ

Ownership and Disclaimer

Cover Photo: "Fort Ballance, Scorching Bay, Wellington", 1885, Photographer Henry Charles Wright, Ref: 1/1-020667-G, Alexander Turnbull Library, https://ndhadeliver.natlib.govt.nz/delivery/DeliveryManagerServlet?dps_pid=IE7107

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1 Introduction

1.1 Brief

Toitū Te Whenua Land Information New Zealand (LINZ), on behalf of the Crown, is leading a programme of works to help establish a reserve at Watts Peninsula, Wellington. The land was acquired under the Public Works Act for defence purpose and was occupied by the defence forces from 1885 to around 2000. In 2017, the land was transferred to Toitū te Whenua Land Information New Zealand (LINZ) for the purpose of reporting on the resources required to declare Watts Peninsula a reserve under the Reserves Act 1977. LINZ is also responsible for improving the public safety of the area within the proposed reserve before it is transferred to the Department of Conservation (DOC). The former Defence land was occupied by Māori for pā, kāinga and mahinga kai and has been utilsed for coastal defence, farming and reformatory purposes throughout the last 160 years. Remnants of these activities remain and 72 hectares are being set aside and protected as a "distinctive national destination" (HNZ, 2020) with "recreational, safety and cultural benefits" (The Treasury and Office of the Minster of Finance, 2019).

The site contains a number of extant strucutres some of which have been proposed for demolition owing to their condition. New Zealand Heritage Properties has been commissioned by LINZ to undertake a heritage and condition assessement of the extant features at Watts Peninsula, Wellington (subject site) as part of the body of work to help establish the reserve.

The purpose of this heritage and condition assessment is to determine the heritage values of features across the subject site, and to provide an overview of the condition of these features, outlining advice for remediation and mangement of these structures. It is not intended for LINZ to undertake all recommendations, only those relating to immediate safety issues. This report will also be used to support any designs, master plan and/or long-term management plan for the proposed reserve, as required. Accordingly, this heritage and condition assessment considers the heritage values of the place, and presents idenitified features as seperate visual assessments with site specific and general recommendations to guide future works and management of the site and site complex as a whole. It is not intended for LINZ to undertake all recommendations, only those relating to immediate safety issues; however, this report will also be used to support any future reserve design/master plan and/or long-term management plant..

1.2 Methodology

This report has adopted a two-staged approach. Stage One includes a desktop assessment and Stage Two includes a site visit.

Stage One: desktop assessment
Previous historical research and heritage assessments were collated as a primary resource. Using this resource and the current heritage values assessment criteria included in the 2014 Heritage New Zealand Pouhere Taonga (HNZPT) Act, a re-evaluation of the heritage values of the place was undertaken. These reassessed values were then summarised to develop a statement of significance for the place.

Stage Two: site survey
A site survey of Watts Peninsula was carried out by Carole-Lynne Kerrigan, built heritage specialist, between 1 and 3 August 2022. The purpose of the survey was to photograph and assess the current condition of the identified features at Watts Peninsula.

Reporting
This report is provided in three parts that are presented as follows:

- Section *1 Introduction* and section *2 Status of the place* provide background information

- Section *3 A history of Watts Peninsula* and section *4 Assessment of heritage values* provide an understanding of the heritage values of the place
- Section *5 Condition assessment* presents a 'snapshopt in time' visual assessment of the place and includes recommendations for future consideration.

1.3 Author identification

This heritage and condition assessment was prepared by Susan Irvine (historian) and Carole-Lynne Kerrigan (built heritage specialist) and has been reviewed and edited by Dr Hayden Cawte.

1.4 Constraints and limitations

The following constraints and limitations should be noted:

- Historical research relies on the collation of previous research undertaken by government agencies and private practice. It does not include additional research.
- Only a visual observation of the features across the subject site was undertaken. No invasive or analytical investigation has been carried out.
- The condition assessment within this report does not comprise a structural and safety assessment.
- This heritage and condition assessment does not present the views or history of tangata whenua regarding the cultural significance of the place. These are statements that only tangata whenua can make and, in this regard, it is our understanding that the LINZ would consult directly with affected parties.

1.5 Photographs

Most of the photographs included in this heritage and condition assessment were taken by Carole-Lynne Kerrigan between 1 and 3 August 2022 during the site visit. All other images have been appropriately acknowledged.

2 Status of the place

2.1 The site

Watts Peninsula (Figure 1 and Figure 2) is located in the suburb of Miramar and to the east of the Wellington CBD. Vehicle access to Watts Peninsula is provided from Shelly Bay in the west and Mahanga Bay at Fort Ballance in the east, while further linkages are provided off Nevay Road and Main Road towards the top of the peninsula. Massey Road provides the boundary at sea level. Watts Peninsula, as the subject site, includes a number of features that relate to previous military and farming activities (Figure 3).

Legal description

The property's legal description is Part Sections 1, 2 and 3 Watts Peninsula District and Section 1 SO 19026. The land is currently being managed by LINZ.

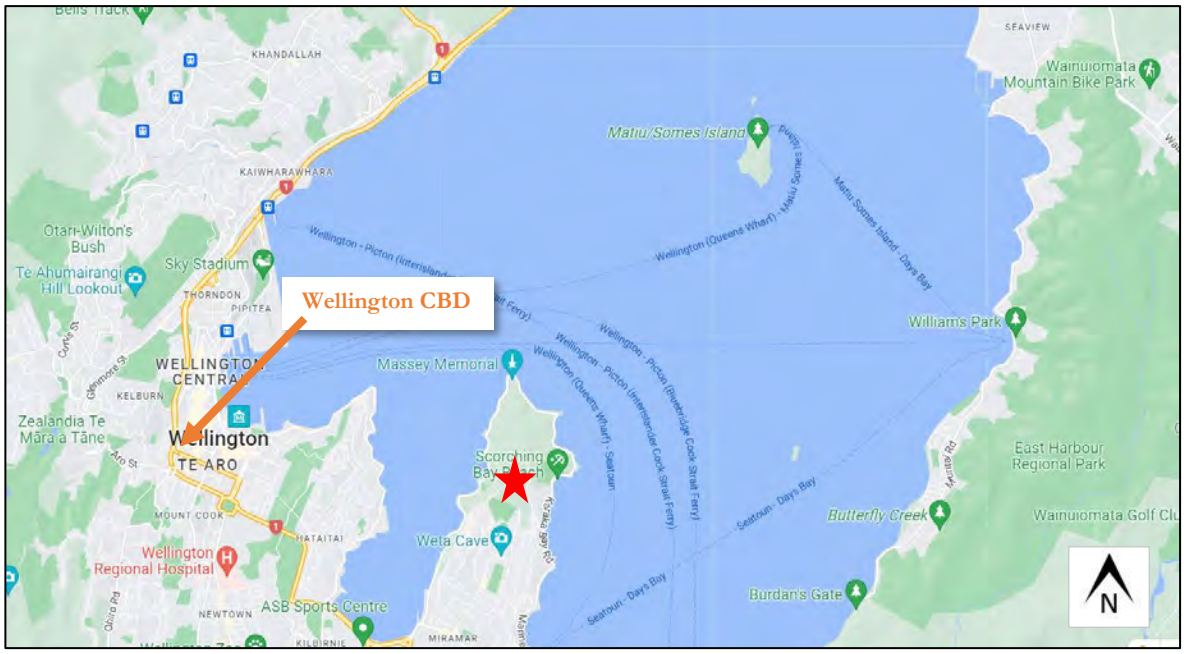

Figure 1: The location of Watts Peninsula (indicated by the red star) in relation to the Wellington CBD (Google Maps).

Figure 2: Aerial view of Watts Peninsula (inset image) relative to the Wellington CBD (Google Maps).

Figure 3: Map of Watts Peninsula with the red line showing the outline of the proposed reserve.

2.2 Heritage Listing

Watts Peninsula includes the Fort Ballance, Fort Gordon and Kau Point Battery military sites.

2.2.1 *Local Authority Designation: Wellington City Council*

Fort Ballance is included as DP Ref# 49 in *SCHED2 – Heritage Structures* in the Wellington City Proposed District Plan (WCPDP). DP Ref# 49 requires protection of 'all above and below ground features associated with Fort Ballance and associated positions at Fort Gordon'. *Fort Ballance* is also included as DP Ref# 6 in *SCHED3 – Heritage Areas*. DP Ref# 6 requires protection to 'Fort Ballance and associated positions at Fort Gordon'.

The *Proposed Kau Point Battery, Motu Kairangi / Miramar Peninsula* is included as DP Ref# 1 in *SCHED4 – Scheduled archaeological sites*. DP Ref# 1 requires protection to the 'proposed extent approximately 0.3 hectares and includes the gun pit, casemate and ammunition store, fire command post and telephone room'.

Understanding significance

The Wellington City Council has a statutory role under the RMA (1991) to protect historic heritage. The current assessment criteria include:

- *A: Historic values: Themes, Events, People, Social*
- *B: Physical values: Archaeological, Architectural, Townscape, Group, Surroundings, Scientific, Technological, Integrity, Age*
- *C: Social values: Sentiment, Recognition, Sense of place*
- *D: Tangata whenua values*
- *E: Rarity*
- *F: Representativeness*

To be included on the WCCDP heritage and archaeological schedules, it is necessary that an item is assessed as fitting one, or more, of the above criteria. The following heritage values have been attributed to the identified heritage items.

- DP Ref# 49:
  - A, B, C, E, F
- DP Ref# 6:
  - A, B, C, D, E, F (Sites of Significance to Māori)
- DP Ref# 1:
  - A, B, C, E, F

2.2.2 *Heritage New Zealand Pouhere Taonga (HNZPT) List Entry*

Fort Ballance (including associated positions at Fort Gordon) is entered on the HNZPT List/ Rārangi Kōrero (the List) as a Historic Place Category 1. Its List number is 5074. The Kau Point Battery is also included on the List as a Historic Place Category 1. Its List number is 7542. Category 1 status is given to places of 'special or outstanding historical or cultural significance or value'. The list has no statutory effect.

2.2.3 *Greater Wellington Regional Council*

The Greater Wellington Regional Council undertakes to "work collaboratively with the community, including volunteers, and in partnership with mana whenua to support recreation, conservation and heritage values and restore healthy ecosystems".(Greater Wellington Regional Council, 2021b). The Regional Council is continuing its work to ensure the Miramar Peninsula is predator free but has no involvement with the heritage values on the proposed reserve (Greater Wellington Regional Council, 2021a).

Understanding significance

The HNZPT has a statutory role under the 2014 Act to separately identify historic places, historic areas, wāhi tūpuna, wāhi tapu, and wāhi tapu areas for incorporation on the List. The criteria for inclusion are included under section 66 Criteria where 66(1) reads:

> *Heritage New Zealand Pouhere Taonga may enter any historic place or historic area in the New Zealand Heritage List/Rarangi Korero if it is satisfied that the place or area has aesthetic, archaeological, architectural, cultural, historical, scientific, social, spiritual, technological, or traditional significance or value*

The significance assessment criteria at the time of registration differ from the current criteria. At the time of registration, the following heritage values were attributed to the identified heritage items.

- List number 5074 (1990):
  - Historical Significance or Value
  - Architectural Quality
  - Townscape/Landscape Value
- List number 7542 (2004):
  - Historical Significance or Value
    (a) The extent to which the place reflects important or representative aspects of New Zealand history
    (b) The association of the place with events, persons, or ideas of importance in New Zealand history
    (c) The potential of the place to provide knowledge of New Zealand history
    (f) The potential of the place for public education
    (g) The technical accomplishment or value, or design of the place
    (j) The importance of identifying rare types of historic places

Archaeological constraints
The Watts Peninsula is a recognised archaeological site (Table 1 section *3 A History of Watts Peninsula*). As a result, an archaeological authority, issued under the HNZPT Act 2014 (Section 42.1) may be required ahead of any works that could impact upon the subsurface. This is a legal requirement.

2.2.4 *Additional non-statutory heritage assessments*

In addition to the heritage listings above, additional heritage assessments have been carried out. These include:

- Crown Land Disposal Heritage Assessment - Defence Force Land, Miramar Peninsula: Parts Sections 1, 2 & 3 Watts Peninsula District and Section 1 SO 19026 (2008)
- New Zealand Defence Force Heritage Inventory: Watts Peninsula (2010)
- Te Motu Kairangi - summary of heritage significance: final draft (2020)

A summary of all statutory and non-statutory heritage assessments is provided at Appendix 1.

3 A History of Watts Peninsula

In this section the many varied histories of Watt's Peninsula are drawn together and summarised to form the historical context of the site and its extant buildings and structures. This section draws in particular on the important work of military historian Peter Cooke and noted heritage consultant Michael Kelly. The contributions of other consultants are also represented here to help form the context of this "unusually diverse historic and cultural landscape" which is among the most nationally significant fortification sites in New Zealand (Blaschke & Rutherford Environmental Consultants, 2012b).

Watts Peninsula is located on Miramar Peninsula, also known as Te Motu Kairangi, and dominates the entrance into Wellington harbour. Mount Crawford, also known as Matai-moana, is the tall spine of the peninsula which slopes down to the tip at Point Halswell. The geographical setting and shape of the peninsula endowed the northern tip with important strategic values. Watts Peninsula has been the site of defence fortifications for centuries, beginning with tangata whenua pā-defences through to the most modern armaments of the Second World War. Intermingled with this defence context were phases of colonial farming and incarceration of prisoners, each ultimately superseded by defence priorities.

In colonial times, Watts Peninsula assumed pre-eminence in Wellington's costal defences from the mid-1880s. The establishment of Victorian defence fortifications on the peninsula, and the continued substantial investment in their upgrade in the first half of the twentieth century, reflected New Zealand's awareness of its isolation on the home front. Engaged in major global conflicts in support of Mother England, the peninsula's fortifications demonstrated an awareness that robust coastal defences were still required at home. The extant structures are a testament to the most modern defence designs, construction methods, craftsmanship and armaments of the time. The evolution of these fortifications also speak to the rapid advances in defence technology that took place over time (M Kelly, n.d.).

The historic importance of the sites and structures on Watts Peninsula to Wellington and indeed New Zealand has been increasingly recognised. Some features of the peninsula have been entered on Wellington City Council's District Plan Heritage Inventory. Similarly, Heritage New Zealand Pouhere Taonga has entered two places on the List/Rārangi Kōrero. A number of archaeological sites on the peninsula have also been entered on the New Zealand Archaeological Association's Recording Scheme Archsite. A summary of these entries is recorded in Table 1 below, accompanied by maps which aid in the location of the various sites (Figure 4 and Figure 5).

Table 1: Heritage Sites and Structures on Watts Peninsula

Date of Construction	Place	WCC Scheduled Heritage Sites	HNZPT List Entry	NZAA Site Recording Scheme	Section
Indigenous-1769	Te Mahanga pā and kāinga	M96	N/A	R27/161	3.1.2
Indigenous pre-1769	Puhirangi pā	M95	N/A	N/A	3.1.3
Indigenous pre-1769	Kau-whakaara-ware pā and kāinga	M93	N/A	N/A	3.1.4
Indigenous pre-1769	Te Mata ki Kai Poinga pā	M94	N/A	R27/112	3.1.5
Indigenous pre-1769	Marukaikura kāinga	N/A	N/A	N/A	3.1.6
Indigenous pre-1769	Sites relating to Māori including middens and terraces	N/A	N/A	R27/57, R27/290, R27/288, R27/289, R27/95, R27/94, R27/292, R27/294, R27/291, R27/296, R27/295, R27/502, R27/287, R27/293	
Unknown	Two barns and yards	N/A	N/A	N/A	3.2.1
1885-	Military road including horse troughs	N/A	N/A	R27/297	3.3.1

Date of Construction	Place		WCC Scheduled Heritage Sites	HNZPT List Entry	NZAA Site Recording Scheme	Section
1885-	Fort Ballance including gun emplacements, artillery store, observation post, magazine and minefield station		Map 13, 49	List No. 5074	R27/161, R27/170	3.3.2
	1887	Sea-saw searchlight site	Map 13, 49	List No. 5074	R27/169	3.3.2
	1891	Fort Gordon including gun emplacement, magazine	Map 13, 49	List No. 5074	R27/180	3.3.2
	1891	Low Battery	Map 13, 49	List No. 5074	R27/707	3.3.2
	1901	Gordon Point Battery (Examination Battery)	Map 13, 6, PC53	List No. 5074	R27/177	3.3.2
1891	Kau Point Battery including gun emplacement, observation post, and magazine		N/A	List No. 7542	R27/168, R27/706	3.3.3
1885	Mount Crawford Redoubt site		N/A	N/A	R27/151	3.3.4
1942	Armament Depot including 12 magazines, guard house shed/laboratory, timber shed, reservoir and fire hydrants		N/A	N/A	R27/241	3.3.5
1942	Mount Crawford Anti-Aircraft Battery site		N/A	N/A	R27/174	3.3.6
1886, 1913-1915, 1919-1920	Point Haswell Women's Reformatory site		N/A	N/A	R27/383, R27/298	3.4

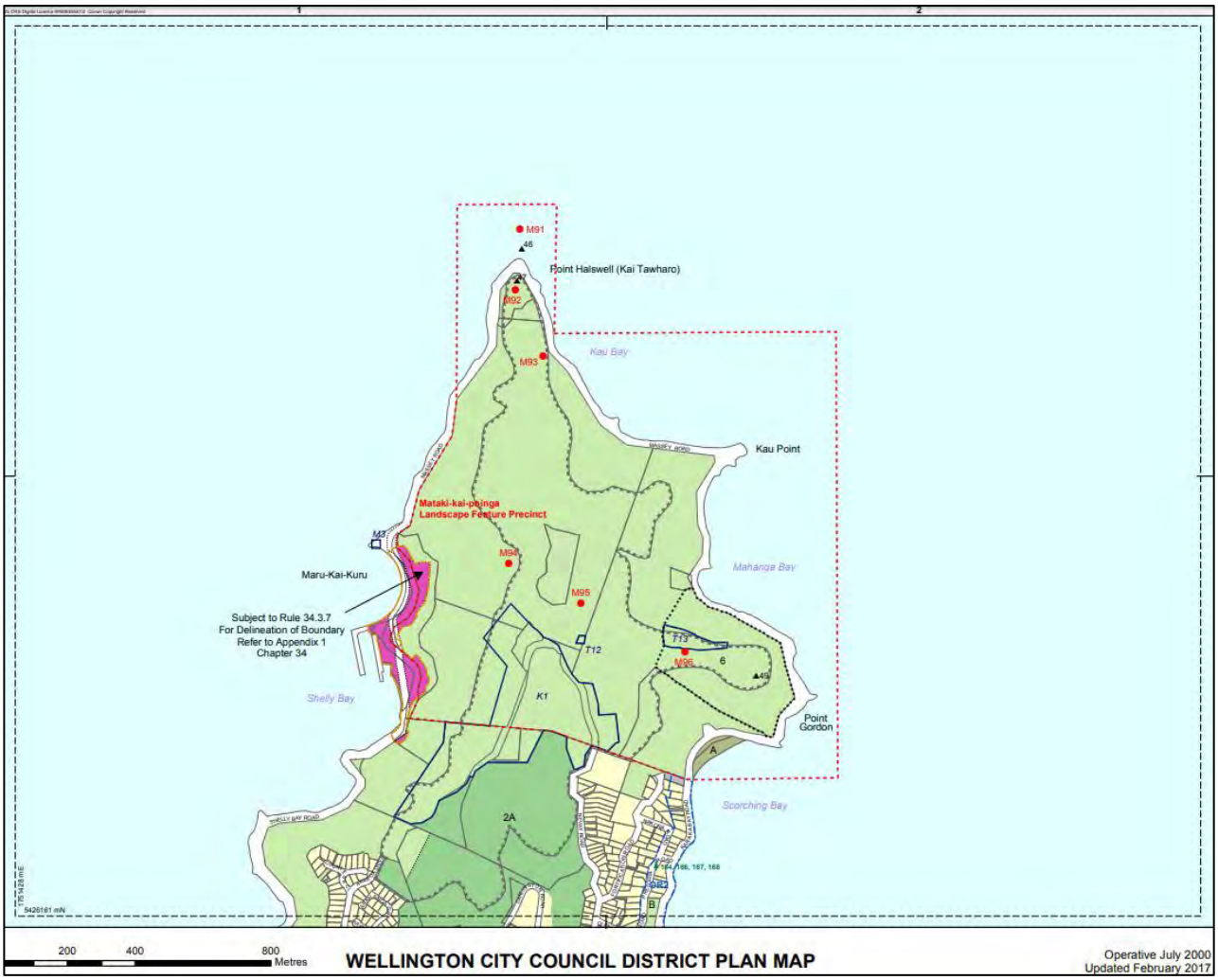

Figure 4: Wellington City Council District Plan Map showing Watt's Peninsula (Wellington City Council, 2017).

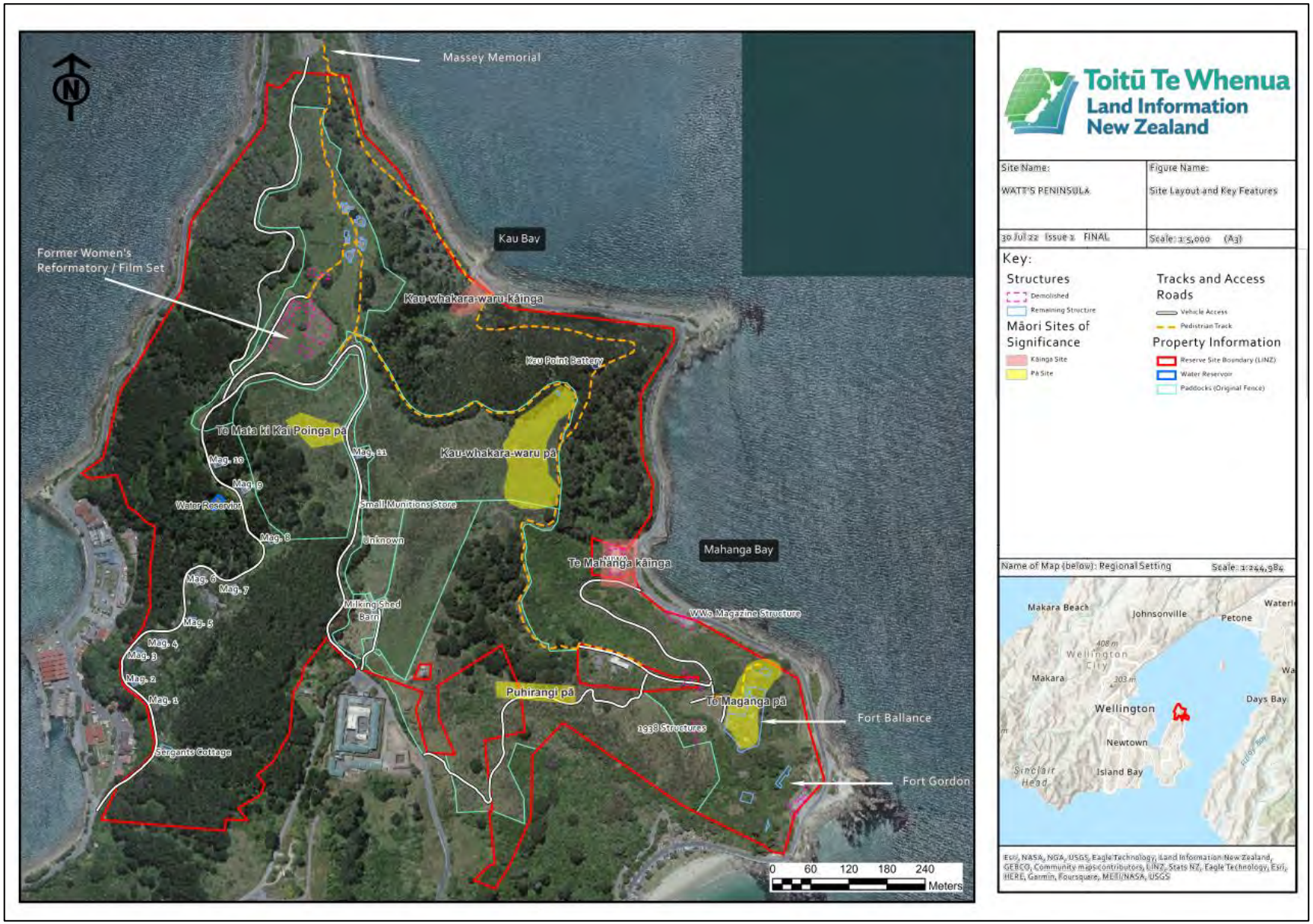

Figure 5: LINZ Map showing locations of Māori pā, the coastal defence sites, and the location of former Point Halswell Women's Reformatory (LINZ, 2022b).

3.1 A Brief History of Māori Settlement

The initial settlement of New Zealand from East Polynesia is believed to have occurred by 1250-1300AD. People rapidly explored and settled the new country shortly after their arrival, evidenced by widespread forest clearance and establishment of fern species in the wake of settlement. Early archaeological deposits containing moa bone and eggshell have been found on Miramar Peninsula, indicating this area was part of the pattern of exploration and settlement (Subsurface Ltd, 2020).

The discovery and naming of Wellington Harbour is credited to Kupe, the explorer who named the harbour Te Upoko o te lka. He is recorded as landing on the Miramar Peninsula at Seatoun (Te-Turanga-o-Kupe), and established cultivations there while he continued to explore Cook Strait (Best 1919). Place names in the vicinity attributed to Kupe include Te Upoko o te Ika (Wellington Harbour), Te Tangihanga a Kupe (Barrett's Reef), Te Aroaro o Kupe (Steeple Rock), and Te Tūranganui a Kupe (Worser Bay). Two islands in Wellington Harbour were named after Kupe's nieces, Matiu (Somes Island) and Makaro (Ward Island) (Subsurface Ltd, 2020; Taranaki Whānui ki Te Upoko o Te Ika, 2020).

Kupe's descendant, Whātonga, is also reported to have visited Wellington Harbour. Whātonga explored much of the lower North Island, and on his return to Māhia, encouraged his sons Tara and Tautoki to migrate and settle the areas he had explored. The Wellington region was divided between Tara and Tautoki. The harbor became known as Whanga-nui a Tara, and Tara's descendants, the Ngāi Tara occupied much of the coastal land around Wellington harbour and the south coast. The name Te Motu Kairangi was bestowed on the Miramar Peninsula: the use of *motu* indicating the land was originally an island. The island was separated from the mainland by Te-Awa-a-Taia (Adkin, 1959; Cowan, 1912; Taranaki Whānui ki Te Upoko o Te Ika, 2020; Waitangi Tribunal, 2003a). Tara, his wife Te Umuroimata and migrating Ngāti Awa from Hawkes Bay lived for a time at Whetukairangi pā[1] on Motu Kairangi. The island came to be embraced as the "fostering parent" of Ngāi Tara, and a safe retreat on the approach of enemies as the tribe remained weak in numbers (Cooke & Love, 2009; Taranaki Whānui ki Te Upoko o Te Ika, 2020; Waitangi Tribunal, 2003a).

During the fifteenth century Muaūpoko are said to have sacked many of the Ngāi Tara pā and kāinga around Wellington Harbour. Ngāi Tara withdrew to their fortifications on Te Motu Kairangi, but Muaūpoko successfully crossed the Te Awa-a-Taia channel: "Efforts were made to burn the defensive stockades by piling masses of dry fern against them and firing them, but so diligent was the garrison in hurling whip spears from the elevated fighting-platforms that this scheme failed. After the lapse of some time, the invaders were much distressed during a severe southerly storm, for they were unable to procure food-supplies from the ocean. The defenders of Te Whetu-kairangi took advantage of the miserable condition of the raiders and attacked them at dawn. They succeeded in defeating them, and the invaders fled to the mainland, a number perishing in the crossing of Te Awa-a-Taia". (Best, 1923). Muaūpoko did not remain in the area and following their departure the Ngāi Tara settlements and fortifications were re-established (Taranaki Whānui ki Te Upoko o Te Ika, 2020). Over the following generations, Miramar and the coastal bays came to be the principal settlements of not only Ngāi Tara, but Rangitane, Ngati-Kahungunu and Ngati-Ira: "The hills of Miramar, cut off by salt water from the mainland …were their strongholds, and there they were close to the good fishing-grounds" (Cowan, 1912).

Around the mid-fifteenth century the favourable defensive nature of Te Motu Kairangi's landscape underwent a seismic shift. The significant Haowhenua earthquake is believed to have happened in 1460AD during the time of Te Aohaeretahi I, great grandson of Tara. Haowhenua saw the harbour coastline significantly altered and an isthmus was raised up, closing off the Te Awa-a-Taia channel and linking Te Motu Kairangi to the mainland. (Best, 1918a; GNS Science, 2015; Taranaki Whānui ki Te Upoko o Te Ika, 2020). Traditional accounts of the history of the peninsula suggest that while Te Motu Kairangi was a popular settlement in the early history of Wellington, it became less so after the Hoawhenua earthquake (Taylor & Sutton, 2009). It seems likely, however, that fishing and seasonal hunting camps would have been maintained.

[1] Outside the proposed reserve area.

The major group occupying Te Whanganui-a-Tara for a number of generations after Hoawhenua were Ngāti Ira, whose origins were on the East Coast. Ira-turoto's descendants spread south over a number of generations, intermarrying with existing peoples along the way: "By the time they settled at Te Whanganui-a-Tara, they were descendants of Tara, Rangitane, Kahungunu and Ira-kai-putahi, as well as Ira-turoto" (Waitangi Tribunal, 2003b). On reaching Te Whanganui-a-Tara, they fought and intermarried with Ngāi Tara. Ngāti Ira then began to establish settlements on Te Motu Kairangi. The Mataki-kai-poinga pā, for example, is believed to have been a lookout belonging to the Ngāti Kaitangata hapū of Ngāti Ira who also settled the Kau-whakāra-waru kāinga located beside the stream in Kau Bay (Ballara, 1990; Cooke & Love, 2009; Subsurface Ltd, 2020).

There were challenges to Ngati Ira's occupation: around 1700, for example, they were attacked by Rangitane who they ultimately defeated. It is said that in the course of conflicts with outsiders, Ngati Ira deserted the southern harbour and Te Motu Karangi (Waitangi Tribunal, 2003b). By the end of the eighteenth century, it appears the northern part of the peninsula was "virtually abandoned" (Ballara, 1990; Taylor & Sutton, 2009).

The early nineteenth century, and the introduction of muskets, saw a time of renewed conflict. The Amiowhenua taua led by Ngāti Whatua from 1821 to 1822 saw the peninsula largely deserted as remaining Ngāti Ira withdrew to refuge pā on Matiu, Makaro and Tapu-te-ranga islands. However, the raids failed to completely drive away Ngāti Ira, and the invading taua did not seek to retain land or establish settlements (McLintock, 1966; Subsurface Ltd, 2020). The 1820s and 1830s saw a number of war parties from Northland and Taranaki begin a series of attacks on Ngati Ira that lead to the settlement in the wider Wellington area of Ngati Toa, Ngati Raukawa, and Taranaki iwi, including Ngati Tama, Ngati Mutunga and Te Ati Awa. Ngāti Ira and Ngāti Kahungunu eventually withdraw to the Wairarapa (Cooke & Love, 2009). The first to settle around Wellington harbour were Ngāti Mutunga and Ngāti Tama, later joined by Te Ātiawa. In 1835 Ngāti Tama and Ngāti Mutunga left for the Chatham Islands and Te Ātiawa took over a number of their settlements around Wellington harbour, including the Miramar Peninsula (Subsurface Ltd, 2020; Waitangi Tribunal, 2003a).

Te Ātiawa became the dominant group in central Wellington through occupation, and rights obtained through gifting and conquest (Waitangi Tribunal, 2003c). In 1835 Te Āti Awa moved to the Miramar Peninsula: "Wi Tako Ngatata took one party to occupy the east coast of the Miramar Peninsula, at Kakariki (Seatoun) and Te Mahanga [Watts Peninsula] while Te Ropiha took Te Matehou hapu to Onehunga (Worser Bay); later the hapu moved to Pipitea" (Ballara, 1990; Taylor & Sutton, 2009).

In the mid to later nineteenth century European ethnographers began to record signs of earlier occupation and the likely locations of pā and kāinga on Te Motu Kairangi. These settlements included Te Mahanga pā and kāinga, Kau-whakaara-waru pā and kāinga, Te Mataki-kai-poinga pā, and Maru-kai-kuru kāinga (Figure 6, Figure 7 and Figure 9). In 1872 James Coutts Crawford, an early land owner on the Miramar Peninsula, noted that the "remains of old habitation on the Miramar Peninsula are numerous, and of considerable interest. Many of the kitchen-middens appear to be of ancient date, as they have been covered by drift sand and afterwards by vegetation, and have now again been uncovered…Some of the timber used in the construction of the pas was got on the peninsula, some from the Hutt. There was at that time a little rimu and totara, with a good deal of tawai, etc., on the eastern or Worser Bay side of the peninsula."(Crawford, 1872). In 1880 Crawford noted the original inhabitants were "more intelligent than the average European. Of course, he knows little of book learning or of philosophy, but he has a name for every tree, shrub, and plant in the islands, and knows the quality of the timber and the purposes for which it may be used. He has a name for every river, and stream, or lake, for every mountain or hill, and is practically acquainted with the geography of the whole country. He is fertile in resource; can find food or catch birds or fish where a white man would starve; can rapidly put up a shed for shelter, or make a temporary canoe for navigating or crossing a river" (Crawford, 1880, p. 355; Taranaki Whānui ki Te Upoko o Te Ika, 2020) (Figure 8).

Today Taranaki Whānui ki Te Upoko o Te Ika are an iwi conglomerate that have maintained the traditional mana and ahikāroa occupation of the tribal takiwā territory Te Whanganui a Tara me ona takiwā, including Te Motu Kairangi. The iwi that make up Taranaki Whānui ki Te Upoko o Te Ika are the Āti Awa confederation of Ngāti Tama, Ngāti Mutunga, Ngāti Maru and Te Āti Awa – Taranaki - Ngāruahinerangi - Ngāti Ruanui - Ngā Rauru. The pā and kāinga sites on Te Motu Kairangi are recognised as an important story of modern day Watts Peninsula (Taranaki Whānui ki Te Upoko o Te Ika, 2020) (Figure 10).

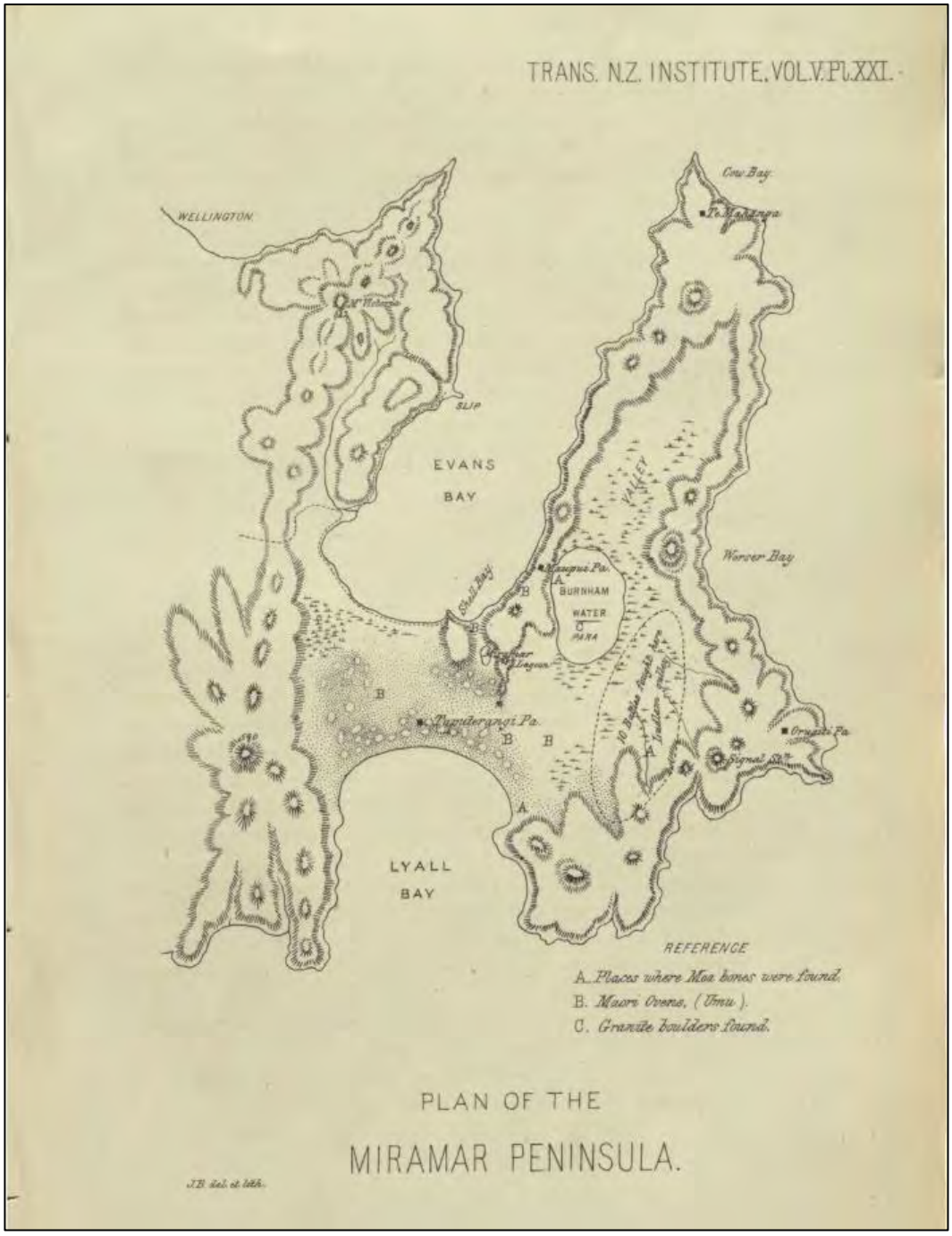

Figure 6: Crawford's plan of the Miramar Peninsula 1872, noting the find spots of moa bones and ovens (Crawford, 1872).

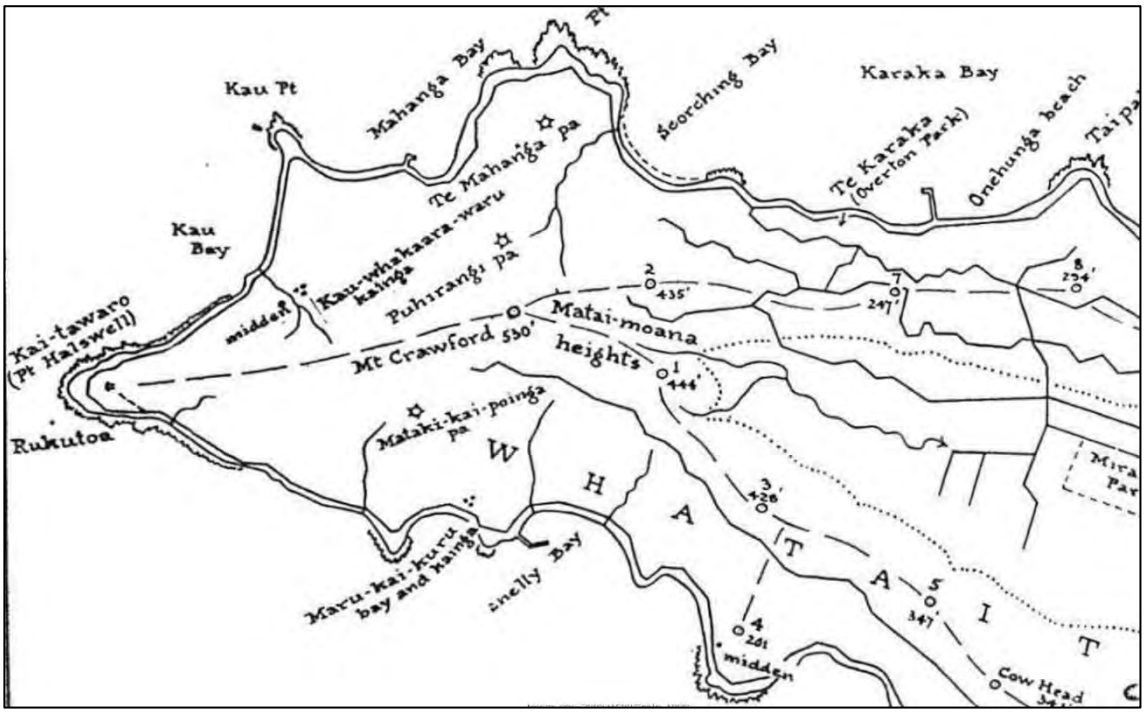

Figure 7: Adkins map of Te Motu Kairangi, noting the location of pā and kāinga (Adkin, 1959, p. 112).

Figure 8: Whare at Karaka Bay, Wellington, in 1879. An example of how the whare on Te Motu Kairangi may have looked (Evening Post, 1879).

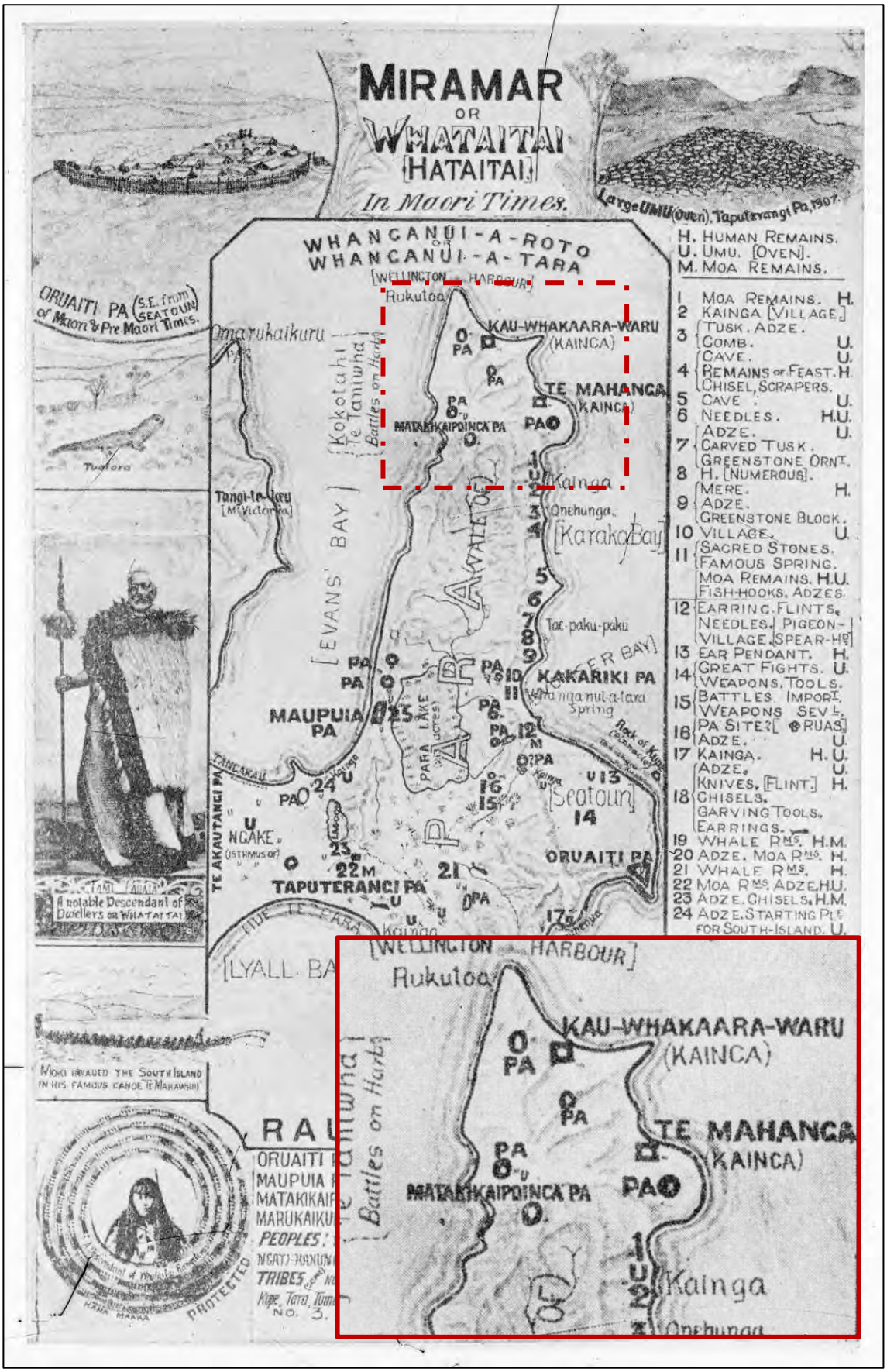

Figure 9: Map of Miramar Peninsula, Wellington, showing pā sites, published by Hector McLeod and Company (Hector McLeod and Company, 1907).

Figure 10: Detail from Wellington City Council District Plan Map 13. The red dotted lines indicate a Māori Precinct Boundary. Within the boundary are Kai-tawaro (M92), Kau-whakaaua-waru (M93), Mataki-kai-poinga (M94), Puhirangi pā (M95), and Te Mahanga (M96) (Wellington City Council, 2020a).

3.1.1 *Matai Moana*

James Cowan in his early twentieth century writings on Wellington's old place names identified Matai-moana as the ancient name of Mount Crawford, the highest hill-top on the Peninsula (Cowan, 1912; Subsurface Ltd, 2020). Cowan described Matai Moana as the name of an old Māori lookout on the ridge-top at Mount Crawford, meaning *view to the ocean* (Adkin, 1959, p. 38). Ethnographer Elsdon Best, however, does not refer to the name in his work on Wellington harbour and Miramar Peninsula (Best, 1918b, 1923). Early land owner James Crawford painted Matai Moana in his 1872 watercolour of the lagoon which he drained in 1847 to make way for his cattle farm (Taranaki Whānui ki Te Upoko o Te Ika, 2020) (Figure 11).

Figure 11: Watercolour showing Pāra-Roto Kura (Burnham Water) in the 1840s. The view is facing northwards up the gully to Mātai Moana (Crawford, 1847; Taranaki Whānui ki Te Upoko o Te Ika, 2020).

3.1.2 *Te Mahanga pā and kāinga*

Te Mahanga pā and kāinga were located on the north eastern edge of the peninsula. Fort Ballance was later built on top of the pā site, reaffirming its natural defensive position (A Dodd, 2019) (Figure 5 and Figure 12). Totara posts were found in the ground during the construction of Fort Gordon that were believed to be part of Te Mahanga kāinga (Taranaki Whānui ki Te Upoko o Te Ika, 2020).

Early ethnographers such as Elsdon Best and John White recorded the history of Te Māhanga, at "Cow Bay" (Kau Bay). Te Māhanga was said to mean *the trap* (White, 1887). The accounts were based on numerous Māori informants, including Te Manihera and Kumeroa from Wairarapa, Tahu of Te Ati Awa and Te Rangiwhaia, wife of Te Whare Te Puni of Te Āti Awa. The traditions went back to the time of Tara and all agreed that the ancient stories of Te Māhanga kāinga spoke of it as a favoured place during peaceful times (Taranaki Whānui ki Te Upoko o Te Ika, 2020).

Taranaki Whānui ki Te Upoko o Te Ika record that a number of Ngāti Te Whiti families settled at Te Karaka and Te Māhanga. Te Māhanga kāinga had the advantage of being sheltered from the pre-dominant 'Uru ma Raki' north west wind, and the mighty 'Tonga Nui' southerly wind (Taranaki Whānui ki Te Upoko o Te Ika, 2020). While Motu Kairangi was largely abandoned by the early nineteenth century. Historian Angela Ballara recorded that Te Āti Awa hapū re-located to Te Māhanga after the migration from Wairarapa in 1835: "Wi Tako Ngātata took one party to occupy the east coast of the Miramar Peninsula at Kākāriki and Te Māhanga, while Te Ropiha Moturoa took Te Matehōu to Onehunga; later this hapū moved to Pipitea."(Ballara, 1990; Taranaki Whānui ki Te Upoko o Te Ika, 2020). As Te Āti Awa were still at war with Ngāti Kahungunu in the east, and Ngāti Raukawa and some Ngāti Toa in the west, Wi Tako Ngātata prepared for an attack by building Te Māhanga pā on the slopes above the kāinga. While there was some dispute as to whether there was a separate pā and kāinga, Tahu of Te Āti Awa who was interviewed by Elsdon Best in 1892 confirmed the existence of "Te Māhanga Pā - Wi Tako Ngātata's hapu's fort" (Taranaki Whānui ki Te Upoko o Te Ika, 2020) (Figure 13).

Best described the remnants of Te Mahanga pā on the spur above the kāinga: "Small terraced hut sites were at one time visible on the hills above, where, in excavating operations for the modern fort, the butts of some totara posts are said to have been unearthed. In the waters below a taniwha or water monster is said to have abode in days yore" (Best, 1919; Taranaki Whānui ki Te Upoko o Te Ika, 2020). Te Mahanga kāinga was down below, in the

only available space in the elbow of the bay. John White described the kāinga as "a large village which was occasionally occupied by the resident people when they were fishing or gathering the eggs of sea birds in the summer near to which was a cave, which they also occupied at night." (White, 1887). In 1919 Best described archaeological remains at the kāinga site: "[t]alus middens are in evidence here, shell and oven refuse" (Best, 1919). Best also described the many remains of occupation found at Scorching Bay, between Te Mahanga and Karaka Bay including midden, moa bone and terraces (Best, 1919).

Figure 12: The locations of Te Mahanga pā and kāinga (Taranaki Whānui ki Te Upoko o Te Ika, 2020).

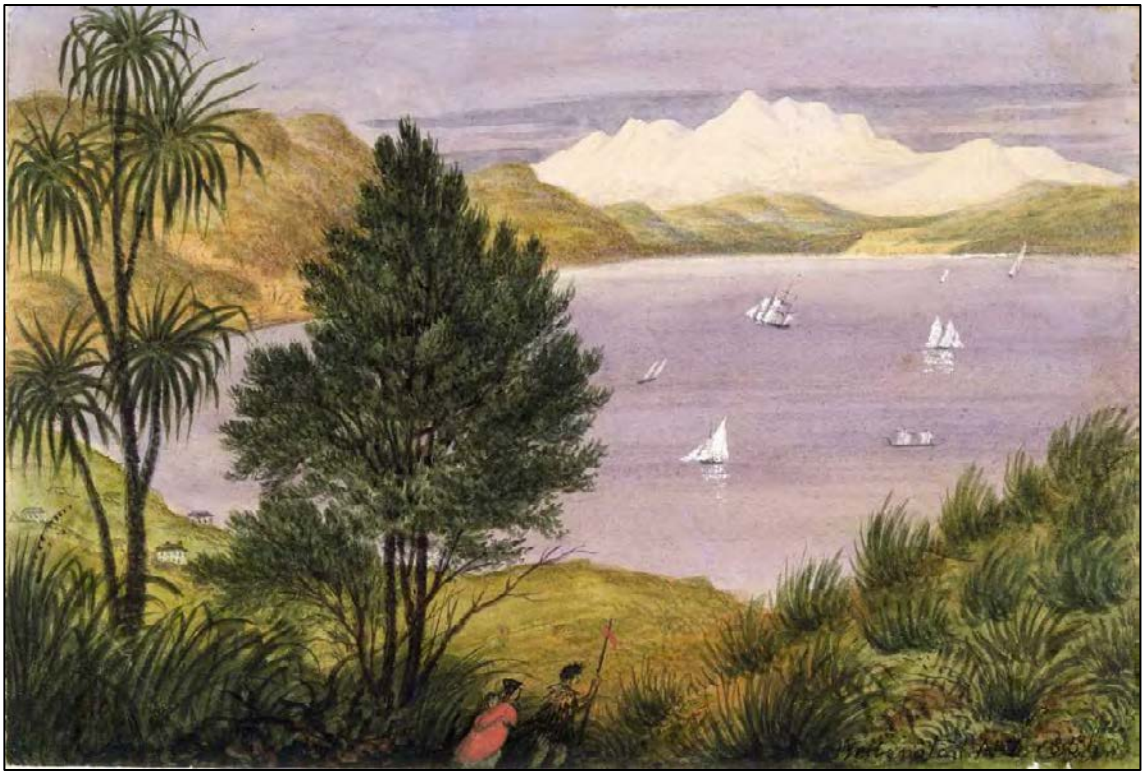

Figure 13: Painting by Charles Emilius Gold, from an elevated height, shows Te Āti Awa men paddling a waka into Māhanga Bay. The large rock behind the waka is Kau Point which separates Māhanga Bay and Kau Bay. The islands of Mātiu and Mokopuna can be seen in the background. Mātiu Island is partly obscured by the Tii Kouka tree in the foreground. (Gold, 1856; Taranaki Whānui ki Te Upoko o Te Ika, 2020).

3.1.3 *Puhirangi pā*

Puhirangi pā was located above and north west of Scorching Bay at the top of the stream flowing in to the Bay, and described by Elsdon Best as a "stockaded village that stood on the ridge above Karaka Bay" (Cooke & Love, 2009; Subsurface Ltd, 2013). Translated as *the feather adorned sky,* Puhirangi pā is the oldest in the northern tip of the peninsula (Taranaki Whānui ki Te Upoko o Te Ika, 2020). In the fourteenth century, Te Whetūkairangi was the primary Ngāi Tara fortress since it was built by Tara in 1350AD. By the early 1500s Puhirangi pā was occupied by Ngāi Tara chief Te Rangitūpewa and was the main fortification site (Taranaki Whānui ki Te Upoko o Te Ika, 2020).

The Puhirangi pā plateau was around 100 metres long and 20 metres wide, providing ample space for a marae and over thirty wharepuni (Taranaki Whānui ki Te Upoko o Te Ika, 2020). The landscape was particularly suited to a fortified pā. The northern edge was bordered by a vertical cliff; the eastern edge by a steep incline; and to the south the land dropped down to a steep gulley. Although the western edge had a steep face up to the summit of Mātai Moana, the high ground did not give an advantage over the pā below "because there is enough ground on the plateau to keep it at a fair distance from the incline" (Taranaki Whānui ki Te Upoko o Te Ika, 2020). The pā had an upper and lower terrace and was sheltered from the predominant winds. Water was provided in the gulley to the immediate south of the pā and a spring at the base of the northern cliff (Taranaki Whānui ki Te Upoko o Te Ika, 2020) (Figure 14).

Best learned of the pā from an old song: a lament by Te lhu-nui-o-tonga, the wife of Tu-te-pewa-a-rangi, a chief of Puhirangi, for her daughter Rangi who had died.

Ko wai rawa ka hua ko koe tonu, e Rangi, e!
Whatatai noa atu e te tinana
I a au ki roto o Puhirangi
E rauwiri noa mai ra a Hine. moana i waho

Who would have thought that you would go, O Rangi!
Wearily inclines the body
As within Puhirangi
I look forth on Hine-moana surging restlessly afar. (Best, 1918c)

Other than this lament, the pā is referred to only in passing by Best in his later account of the history of the Miramar Peninsula. It also appears on Adkin's 1959 map of the area (Adkin, 1959; Taylor & Sutton, 2009).

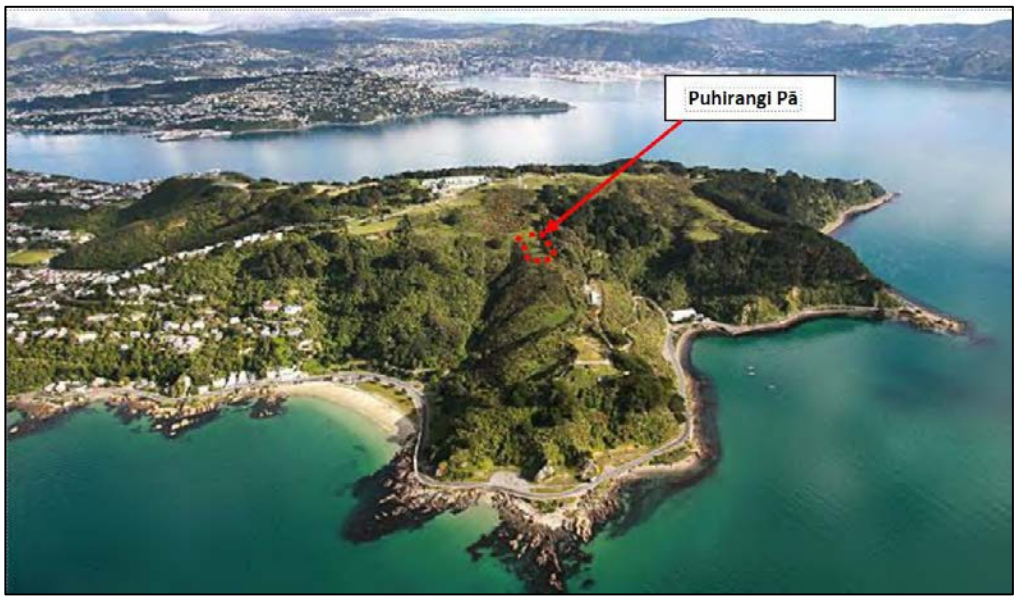

Figure 14: The likely location of Puhirangi pā (Taranaki Whānui ki Te Upoko o Te Ika, 2020).

3.1.4 *Kau-whakaara-waru pā and kāinga*

Kau-whakaara-waru kāinga was located in Kau Bay, to the immediate north-west of Kau Point, beside a small stream in the bay southeast of Point Halswell. The pā was on the hill-ridge above (Adkin, 1959; Cooke & Love, 2009; Taranaki Whānui ki Te Upoko o Te Ika, 2020) (Figure 15 and Figure 16). The earliest known association with Kau-whakāra-waru is Kahukura Te Paku of Ngāi Tara. Kahukura Te Paku was the father of Tūmarō. Tūmarō was the husband of Rakaitekura, a high born Kāi Tahu chieftainess. Tūmarō and his father's people were predominantly Ngāi Tara but also had Ngāti Mamoe lineage from Te Whanganui a Orotū.

> Soon after Tūmarō and Rakaitekura were married, Tūmarō was called to battle away from their home at Hātaitai. In his absence Rakaitekura had a liaison with another Kāi Tahu man, Te Ao Hikuraki. When Tūmarō returned, he discovered that his wife was pregnant and became suspicious of the nature of her pregnancy when the baby only birthed after Tūmarō said the name of Te Ao Hikuraki. Tūmarō named the newborn baby boy Te Hiku-Tawatawa a Rangi and then presented his wife and her newborn in a formal ceremony to Te Ao Hikuraki. Then along with his father Kahukura Te Paku, and their relatives and friends, Tūmarō left Hātaitai (Motukairangi) and migrated to Waimea. As Te Hiku-Tawatawa a Rangi grew up he would overhear taunts about him being an illegitimate child, despite the fact that he was being raised by both his birth parents. When Te Hiku-Tawatawa a Rangi took 70 warriors to Waimea in search of Tūmarō.... The local people of Waimea feigned friendship but planned to attack these strangers. While they were resting in a whare, a local person overheard Te Hiku Tawatawa a Rangi say: "Ko Te Kāho Tūroa tēnā o tōku tipuna, ko Kahukura Te Paku, i waiho rā i rāwahi,i Kau-Whakāra-Waru." "Just like the red battens of my grandfather Kahukura Te Paku's house which he left over the other side at Kau-whakāra-waru.". This was immediately reported to Kahukura Te Paku who then realised that these strangers were led by none other than his own grandson, now a man. Te Hiku Tawatawa a Rangi was then directed to exit the whare via the window in order to lift the tapu from him, due to the intended design to have them killed. Te Hiku Tawatawa a Rangi exited the window and was welcomed by his long removed father and grandfather. However, while incantations were performed over him at the nearest shrine (Tūāhu) Te Hiku Tawatawa a Rangi was still angry (Riri) at the intent to have him and his people killed. From that day on he was known as Tūāhuriri, and the name Te Hiku Tawatawa a Rangi was discarded. Tūāhuriri returned to Hātaitai where the beginnings of the great iwi of Kāi Tahu were forming (Taranaki Whānui ki Te Upoko o Te Ika, 2020).

During the 1700s Ngāti Ira clans began migrating into Te Whanganui a Tara. Kau- whakāra-waru was occupied by the Ngāti Kaitāngata hapū led by their rangatira, Whatu- Kaikore. By the early 1800s, and the arrival of the Āti Awa clans of Ngāti Mutunga and Ngāti Tama, Ngāti Ira had abandoned their occupations on the western side of the harbour and at Hātaitai. They instead concentrated themselves along the eastern side of the harbour from Waiwhetū, Ngutu-Ihe, Oruamotoro, Okiwi and Parāoa-Nui (Taranaki Whānui ki Te Upoko o Te Ika, 2020).

The kāinga site had neighbouring gardens as well as a stream. Early writers noted several large middens, with oven stones remaining in the vicinity and thought there may have been a kumara plantation nearby (Adkin, 1959; Best, 1919; Michael Kelly et al., 2010). Adkin concluded that if the kāinga site did include a kumara garden, then the kāinga itself must have covered a very small area (Adkin, 1959). The pā site appears to have been around 170 metres long and 50 metres wide and was arranged in a horseshoe shape. A knoll on the northern edge of the site was at the narrowest part of the declining ridgeline and provides a natural barrier for the front of the pā inside palisading (Taranaki Whānui ki Te Upoko o Te Ika, 2020).

Figure 15: The likely location of Kau-whakaara-waru pā and kāinga (Taranaki Whānui ki Te Upoko o Te Ika, 2020).

Figure 16: Kau-whakāra-waru pā looking east towards Mākaro Island (Taranaki Whānui ki Te Upoko o Te Ika, 2020).

3.1.5 *Te Mata ki Kai Poinga pā*

The pā site of Te Mata ki Kai Poinga on the western side of Matai Moana (Figure 17 and Figure 18). Elsdon Best recorded Te Mataki-kai-poinga as a pā of ancient times, attacked and taken by Ngai Tahu (Best, 1901). It was home to the great rangatira, Tūāhuriri, previously known as Te Hiku Tawatawa a Rangi. Tūāhuriri had fallen out of favour with a prominent relative called Ikaororoa who had strong ties to Ngāti Kahungunu. Hikaororoa led an assault on the pā with a tauā that included another prominent rangatira – Tūtekawa – who was originally from Tūranga but also a brother-in-law of Tūāhuriri, both of them marrying sisters. When Tūtekawa learned that Tūāhuriri was inside Te Mata ki Kai Poinga he entered the pā via another opening opposite to Hikaororoa and was able to provide a safe passage for Tūāhuriri to escape. After Tūāhuriri had escaped, Tūtekawa decided to execute two of Tūāhuriri's wives – Hine Kaitaki and Tuarā Whati – who remained in the pā. Fearing retribution, Tūtekawa crossed Raukawa Moana to Te Wai Pounamu. It was then that Tūāhuriri decided to leave Hātaitai for good and migrate to Te Wai Pounamu to seek out Tūtekawa and find a peaceful place to live (Taranaki Whānui ki Te Upoko o Te Ika, 2020).

During the 1700s incoming Ngāti Ira clans migrated into Te Whanganui a Tara from the east coast and increasingly pushed out and intermarried with, the remnants of Ngāi Tara, Ngāi Tahu and Ngāti Kahungunu. Like the nearby Kau-whakāra-waru pā, Te Mata ki Kai Poinga pā would also be occupied by the Ngāti Kaitāngata clan of Ngāti Ira, led by their rangatira, Whatu-Kaikore. By the time of the arrival of the Āti Awa clans of Ngāti Mutunga and Ngāti Tama in the early 1800s, Ngāti Ira had abandoned Te Mata ki Kai Poinga along with their occupations on the western side of the harbour and at Hātaitai, (Taranaki Whānui ki Te Upoko o Te Ika, 2020).

The raised pā plateau was approximately 80 metres long and 25 metres wide. It was slightly larger than the neighbouring Puhirangi pā. Approaches to the pā from all four sides had steep inclines providing an excellent defensive position (Taranaki Whānui ki Te Upoko o Te Ika, 2020).

Figure 17: Likely location of Te Mata ki Kai Poinga pā (Taranaki Whānui ki Te Upoko o Te Ika, 2020).

Figure 18: The view looking west from the main ridge across to Te Mata ki Kai Poinga pā. (Taranaki Whānui ki Te Upoko o Te Ika, 2020).

3.1.6 *Marukaikuru kāinga*

The historical narrative records Marukaikura (*Maru the Breadfruit Eater*) as the original name of Shelly Bay (Taranaki Whānui ki Te Upoko o Te Ika, 2020). A kāinga by the name of Maru-kai-kuru was noted in the northern bay of the area now known as Shelly Bay by ethnographer Elsdon (Cooke & Love, 2009). Described as being located on the eastern side of Evans Bay, three-quarters of a mile south of Point Halswell where the Ngati-Mutunga section of Te Āti-Awa had a kāinga. Adkin was doubtful that the village existed, and was likely confused with a kāinga of the same name at nearby Point Jerningham (Taylor & Sutton, 2009). Taranaki whānui, however, have identified Marukaikuru as a place that was occupied by their ancestors Ngati Mutunga from the early 1820s until about 1835, and regard this occupation as the only Māori use of the bay (M Kelly & Cooke, 2019). Pre-European use of Shelly Bay is documented in various accounts and there was evidence on the ground for settlement in the area, with midden, ovens and house sites visible until the early twentieth century (Cooke and Love 2009). The likely location of the kāinga may be in the area between the old military road and the Shelly Bay coast; an area not included within the proposed reserve. (Taylor & Sutton, 2009).

3.2 European Settlement of Watts Peninsula

By the 1830s Te Āti Awa still occupied the Miramar Peninsular but it was not considered an important settlement as there were no major pā or kāinga (Cooke & Love, 2009). In September 1839 William Wakefield, the agent for the New Zealand Company, met Te Āti Awa chiefs Te Puni and Te Wharepōuri on the northern shore of Port Nicholson. After a deed for the purchase of Port Nicholson was signed, the goods forming the basis of the sale were divided into six lots and distributed by Te Puni to the main pā around the harbour. Te Puni understood Te Āti Awa's dominance in the area had been acknowledged. The New Zealand Company understood it now owned all the land between the south coast and the Tararua Range, as well as the islands in the harbour and part of inland Porirua.

Port Nicholson was surveyed by the Company into sections, including Watts Peninsula which was subdivided by New Zealand Company surveyors into eight lots (New Zealand Company, 1840) (Figure 20). The northern tip of the peninsula was one of the first points of refuge for ships entering the harbour. When colonists first arrived, the site carried little forest cover, and was soon covered in open grassland. Kau Bay became a favoured place for settlers to unload cattle from Sydney (Blaschke & Rutherford Environmental Consultants, 2012a). As survey and settlement progressed, tangata whenua continued to dispute European rights to their lands but colonists soon overwhelmed Māori. In 1841 there were 2500 Europeans living around the harbour and by 1843 there were 4000: "One local chief commented that had he known the 'whole tribe' intended to come here, he would never have agreed to any deal" (Ministry for Culture and HIstory, 2021) (Figure 19).

The Miramar Peninsula was subdivided by New Zealand Company surveyors into eighteen lots: the northern edge of Watts Peninsula was subdivided into Lots 1, 2, and 3 (Figure 20). Lots 1 and 2 were purchased by C.H. Luxford. Although the Crown Grant was not issued until 1873 (LINZ, 1858, pp. 442–443; Taylor & Sutton, 2009). William Bowler purchased Section 3, and the Crown Grant was issued in 1857 (LINZ, 1858, p. 444). The first European majority land holder of the peninsula was James Watt, who purchased five lots with a part interest in Lot 3 (Best, 1923; Cooke, 2009). Watt arrived in Port Nicholson in May 1840 on board the *Lady Lilford* from Sydney with a load of sheep and cattle (New Zealand Colonist and Port Nicholson Advertiser, 1842b; New Zealand Gazette and Wellington Spectator, 1840b). He may have acquired the land prior to his arrival, or immediately after, since seven days after his arrival in the colony he was advertising for bullock drivers (New Zealand Gazette and Wellington Spectator, 1840a). Watt, who ran cattle on the peninsula, was described by Wakefield as the "first to attempt agriculture at Port Nicholson" (Nelson Examiner and New Zealand Chronicle, 1846). Watt did not confine his land holdings to the peninsula and owned land in several areas of the fledgling settlement. He was also active in establishing social, public and religious affairs in Port Nicholson (New Zealand Colonist and Port Nicholson Advertiser, 1842a, 1842b).

Given James Watt's extensive land holdings on the peninsula, and perhaps because of his active role in establishing Port Nicholson, the peninsula was named for him. Yet Watt's tenure on the peninsula was extremely short, given that by 1841 John Coutts Crawford was farming the northern end of the peninsula and Watt had settled at Berhampore Farm (New Zealand Gazette and Wellington Spectator, 1842; W. M. Smith, 1841) (Figure 23).

Figure 19: Hand coloured lithograph of Port Nicholson. The southern edge of the Miramar Peninsula is front and centre of the image (Brooks, 1857).

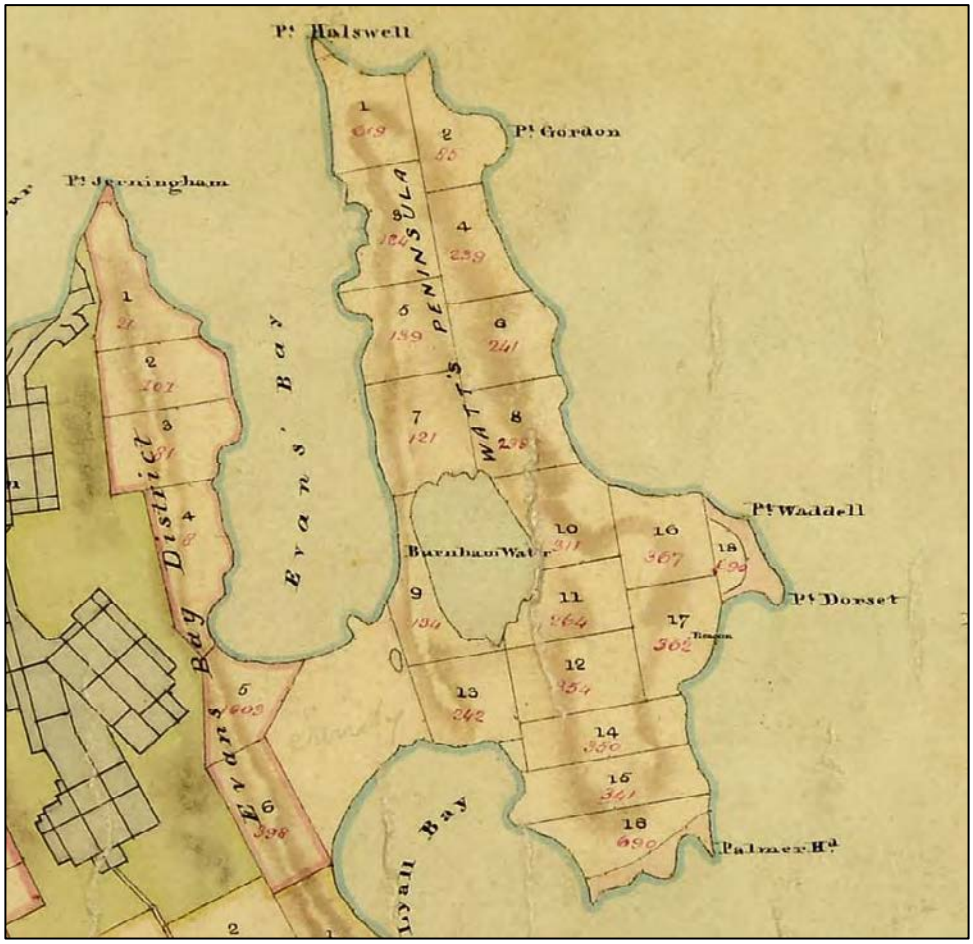

Figure 20: Detail from the New Zealand Company's plan of Port Nicholson showing the first subdivision of Watts Peninsula (New Zealand Company, 1840).

In 1838 James Coutts Crawford, a retired naval officer, had sailed to Sydney, from where he drove a herd of cattle to Adelaide: "one of the first to make the overland journey" (Rossier, 1990). He sailed from Australia in November 1839 on the "Success" and landed at Tītahi Bay. After some exploration of the surrounding environs, Crawford walked to Port Nicholson arriving just after the first immigrant ships. Early in March 1840 he returned to Sydney to purchase horses and cattle for a property he had just purchased on the Watts Peninsula (Rossier, 1990). John Coutts Crawford was later described as "one of the finest pioneers that landed upon the shores of Port Nicholson. Lieutenant in the Navy, son of a naval Captain, grandson of one Admiral and son-in-law of another, the sea was in his blood, and it is scarcely to be wondered at that for his new home he selected the sea-girt peninsula that now forms the closely populated eastern suburbs of the city"(Irvine-Smith, 1948a) (Figure 21).

Crawford originally purchased only Lot 7 and established a cattle farm just north of "Burnham Water". He built his homestead on the slopes of Mount Crawford and called it Glendavr (Crawford, 1845; W. M. Smith, 1841) (Figure 21**Error! Reference source not found.**, Figure 22 and Figure 23). Crawford would eventually purchase most of the land on the northern tip of Watts Peninsula, building a large dairy and butchering business (Irvine-Smith, 1948b). In 1858 he purchased Section 3 from W. Bowler (LINZ, 1858, p. 444). In 1860 he purchased Sections1 and 2 from the G.H. Luxford (LINZ, 1858, pp. 442–443). By the late 1870s Crawford was running 3800 sheep on his hilly farm (Cooke, 2009). Crawford also built what may be New Zealand's first significant tunnel using some 100 yards of bricks. He used the tunnel to drain Burnham Water into Evans Bay: today this is the site of Miramar township.

The name Watts Peninsula was in common usage until 1872, but Crawford was on a campaign to change it. In 1869 Crawford's brother-in-law Major McBarnett had built a house on a hill to the south-east of Evans Bay. He had arrived in Wellington around 1865 and went into partnership with Crawford (Evening Post, 1876). He named his home Miramar, or "wonderful sea", after the "well-known castle of that name on the shores of the Adriatic" (Irvine-Smith, 1948a). Crawford moved from Glendavr to the Miramar house, likely by 1872 when McBarnett was appointed a travelling agent (Evening Post, 1876). The name obviously appealed to Crawford and in 1872, in an address to the Wellington Philosophical Society, he proposed changing the name of the whole peninsula: "The name of Watt Peninsula is neither euphonious nor appropriate. Mr. James Watt had no other connection with the land in question than the fact that he landed a cargo of cattle upon it. The name of "Miramar", or "Behold the sea," is appropriate and suitable to the locality" (Crawford, 1872). The name Miramar would eventually come to describe the peninsula as a whole, although the name Watts Peninsula was still in use for the northern tip by the time it was repurposed from farmland to defence purposes.

By 1878 Crawford's land holdings on the peninsula were substantial, although some of the land was leased (Beere, 1878; Wellington Independent, 1865) (Figure 24). In 1879 Crawford leased the 2000 acres of Watts Peninsula and Evans Bay in lots of three to 90 acres (New Zealand Times, 1879). In 1884 the original sections were subdivided into small farms of 20-40 acres, and Crawford called these holdings the Miramar Estate (Cooke & Love, 2009; Evening Post, 1884). After Crawford's death in 1889, his sons Alexander and Charles were given the greater part of the peninsula, and son Henry was given the "Isthmus"(Irvine-Smith, 1948b).

Figure 21: James Coutts Crawford (Popowitz, 1845).

Figure 22: Glendavar, with Burnham Water in centre and Cook Strait in the distance (Crawford, 1845).

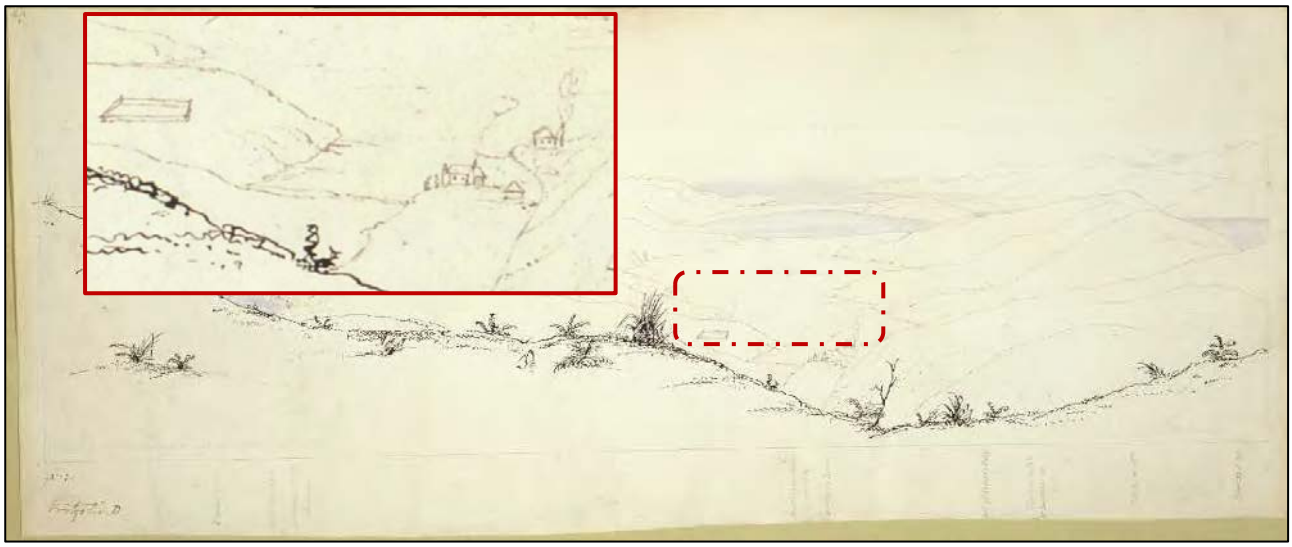

Figure 23: "Sketch on Watt's Peninsula", by Captain William Mein Smith the New Zealand Company's surveyor-general. Crawford's farmhouse is outlined in red (W. M. Smith, 1841)

Figure 24: Plan of Hataitai or Watts Peninsula – Property of JC Crawford, 1878 (Beere, 1878).

3.2.1 *Farm buildings*

Site	Farm buildings
Address	Watts Peninsula
Legal Description	Pt. Section 1 & Section 1 SO 19026
Location	Just north of Mt Crawford Prison, on the ridge between Shelly Bay and Fort Ballance
HNZPT List Entry No.	N/A
WCC Schedule	N/A
Archaeological Site No(s).	N/A
Date of Construction	Unknown
Principal building material	Iron sheets
Architect	Unknown
Significant Uses and Modifications to Structures	Unknown

Little is known about the existing farm buildings and their date of construction. Crawford farmed the area from the 1840s and he began leasing land on the Watts Peninsula from at least 1865 (Wellington Independent, 1865). From the late 1870s there were also several leases farming between three and 90 acres (New Zealand Times, 1879; Wellington Independent, 1874). Although part of the peninsula was used for defence fortifications from 1885, other areas of Watts Peninsula may have continued to be used for faming purposes. Although the defence reserve was established, parts of Section 2 and Section 3 remained in Crawford's ownership (LINZ, 1858, pp. 442–444). Parts of Section 2 were taken in 1927, 1930, 1931 and 1936 as Crown Land for Defence Purposes. It appears no privately owned parts of Section 2 existed after 1936 (LINZ, 1858, p. 443). Parts of Section 3, which also remained in Crawford family hands, were taken for roading purposes in 1894. More land was taken for roading purposes in 1927 (LINZ, 1858, p. 444).

In 1900 much of the defence reserve was being grazed by stock, both officially and unofficially. By 1902 a significant portion of Section 3, and indeed the Miramar Peninsula, remained in the hands of Charles and Alexander Crawford sheep farmers. Over the following years land south of Watts Peninsula was gradually subdivided and sold (WN 115/277).

Farming and military sites may have continued to interact, however, and over time there may have been an exchange of old building materials. Certainly, more farm buildings were once extant on Watts Peninsula (Figure 27). Today it appears that only two barns and the surrounding yards survive as a testament to the farming pursuits on Watts Peninsula (Figure 25 and Figure 26).

Figure 25: View of the large barn with the smaller milking shed to the RHS (NZHP, 2022).

Figure 26: View of the milking shed (NZHP, 2022).

Figure 27: Watts Peninsula likely contained more farm structures than currently remain as this 1938 aerial shows. The solid yellow line surrounds the extant barns. The dotted yellow lines surround structures which no longer survive (Retrolens, 1938a).

3.3 Coastal Defence Fortifications

Port Nicholson's defences were a matter of concern since the establishment of the settlement. The New Zealand Company saw the potential for defensive positions in the headlands of the peninsula and set aside military reserves as early as 1841 (Cooke, 2009) (Figure 28).

Following the Crimean wars of the 1850s, the British and Russian empires kept an uneasy peace. Throughout the latter part of the nineteenth century, Britain and her colonies were "occasionally racked with bouts of "Russopobia", the fear that the great Russian bear was quietly planning a massive invasion of the entire world" (Walzl, 1986). The establishment of a naval port at Vladivostok in 1871 as a base for their Pacific Fleet heightened this sense of concern (Subsurface Ltd, 2020). Although little more than false alarms, panic and hyperbole, New Zealand was deemed both isolated and unprotected.

From the mid-1870s consideration was given to the colony's defences and in 1880, Colonel Scratchley of the Australian armed forces was invited to report on New Zealand's defence requirements. Scratchley reported that New Zealand "need never really fear the prospect of a full scale invasion. Its isolation was its direst line of defence" (Walzl, 1986). In the event of a Commonwealth war, however, New Zealand's lack of defences would lay it open to naval attack. Since the attack was likely to be limited to one or two cruisers. Scratchley recommended that New Zealand could easily defend itself by erecting a system of coastal gun emplacements around each major port. The strategy was mostly a deterrent and given that New Zealand's main ports could only be entered by sailing through entrance channels gun emplacements were a sufficient defence. The report was widely accepted "and in the neurotic climate of the times, the work was undertaken with great zeal" (Walzl, 1986).

In 1885, the governor of New Zealand, Colonel Jervois, ordered the establishment of coastal defence batteries at Point Halswell and Point Gordon (Cooke & Love, 2009). The original reserve was 25 acres, and increased to 250 acres in 1886 when Lots 1-3 were taken under the Public Works Act for the construction of coastal defence works (New Zealand Gazette, 1886; Subsurface Ltd, 2020). Coastal defence construction began in 1885, with numerous modifications made in the following years. During this period two major forts were built, and a series of fixed gun emplacements were raised on the edge of the Miramar Peninsula. They were placed on high ground to protect them from bombardment and protected by encasing them in bomb-proof chambers and great walls of masonry. Ammunition magazines were usually placed below ground or behind ridges (Walzl, 1986).

The coastal defence fortifications relied on local industries to build them. For instance, the Mt Cook Prison brickworks provided bricks by the tens of thousands. Tonks & Andrews carted guns through town for mounting at the emplacements. Luke & Sons Te Aro foundry supplied boilers and other iron work. Local cement works provided cement casks, such as the 50 sent up to Point Gordon Battery in June 1887. Robertson & Co's Phoenix Iron & Brass Foundry in Wellington built rotating shields for observation posts, modified ground-mines for laying in the harbour entrance, and later modified shields for cordite (Cooke & Love, 2009). The building of the defence works also created a short-lived, mini-boom for labour and initially over 100 "ordinary wages men" were employed on the works. Paid labour was expensive, however, and they were later replaced with prison workers (Cooke & Love, 2009). The number of unemployed proved a problem: "the discharge of men from the defence works has over run the town with labour hands" (Evening Post, 1885a).

By 1905 Fort Ballance had 14 guns and the early coastal defence system on Watts Peninsula was at its zenith. By 1910, however, the newly erected Fort Dorset had become the new focus of coastal defence and other garrisons were downgraded or disbanded, and their guns disposed of. The First World War saw a reprieve and forts and emplacements were returned to active duty: "the enemy had changed but the guns had not" (Walzl, 1986). An attack was anticipated from the German East Asiatic Squadron but it's destruction in 1914, followed by the destruction of other German surface raiders, saw Wellington's coastal defences once again reduced (Walzl, 1986).

Between 1918 and 1933 coastal defence was no longer a priority for the New Zealand government. Facilities were reused as storage and ammunition magazines. The rise of Hitler and escalating tension in Europe, however, turned attention once more to the country's defences. A 1933 report indicated that the potential threat was still seaward at the country's main ports and recommended a modernisation programme. A programme of capital works was implemented, of which £309,200 was set aside for improving coastal defence at Wellington and Auckland (Wellington City Council, 2013b, p. 93). Shore-based gun emplacements were also to be supplemented with anti-aircraft (AA) guns. By 1943 most of the extended coastal defence network was in place. As no enemy attack occurred, the guns were periodically fired for training purposes during the Second World War: "reports of broken windows and other minor damage were plentiful" (Walzl, 1986). During the 1950s the remaining guns were occasionally used for training purposes. In the 1960s, however, public opinion turned against these reminders of the War and the remaining guns and defence fortifications were considered dangerous to ramblers and children in particular. Guns were removed and a number of hazards were filled in by the Army during these years.

While coastal defences were often derided as a waste of money because they 'never fired a shot in anger', this was a mark of their success. Their mere existence kept a potential enemy away: "Many warships of powers hostile to the British empire cruised the Pacific in the Nineteenth Century and could well have attempted to cause 'insult to empire' by attacking a port and its wealth…After World War I, New Zealand learnt that the German raider Wolf (which laid mines off Farewell Spit in 1917, sinking the *Port Kembla*) avoided the Wellington heads because of the searchlights and guns the master knew to be mounted there. Not only was the threat real, so too was the solution. World War II confirmed this hypothesis, with enemy ships known in New Zealand waters (from the Orion's minelaying visit in 1940), including Japanese submarines which cruised through Cook Strait and from which an observation plane flew over Wellington on 9 March 1942. Several Australian ports were attacked by the Japanese submarines, reminding NZ that the possibility existed here" (Cooke & Love, 2009). Today little remains of the coastal network of Wellington's fortifications and the remaining structures serve to remind us that it is "our good fortune they have never really been used for the full purpose of their construction" (Walzl, 1986) (Figure 29, Figure 30, Figure 31 and Figure 32).

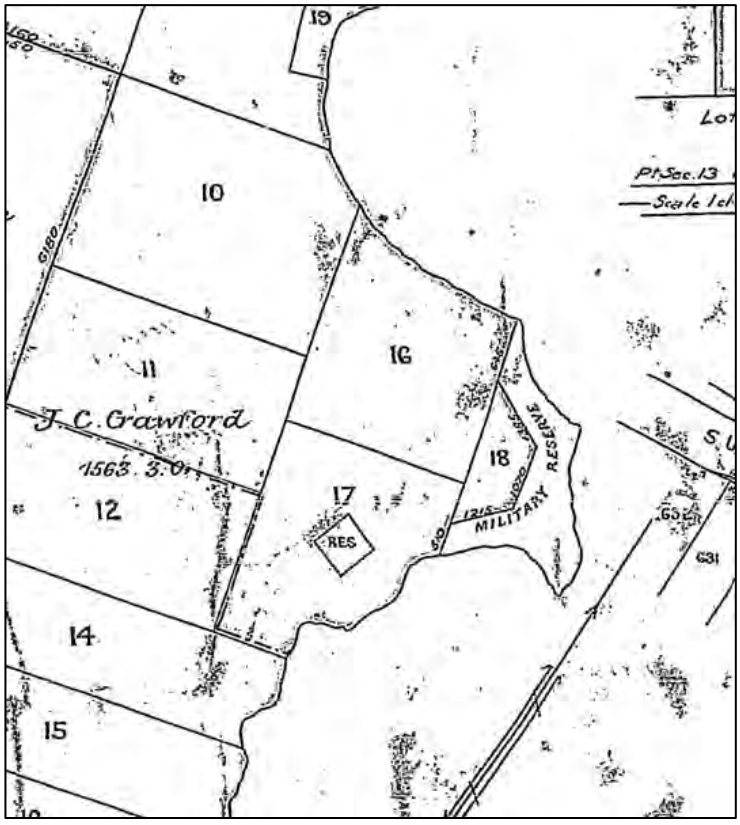

Figure 28: Detail from an early survey plan showing a military reserve at Point Dorset on the peninsula (SO10242, c.1840s).

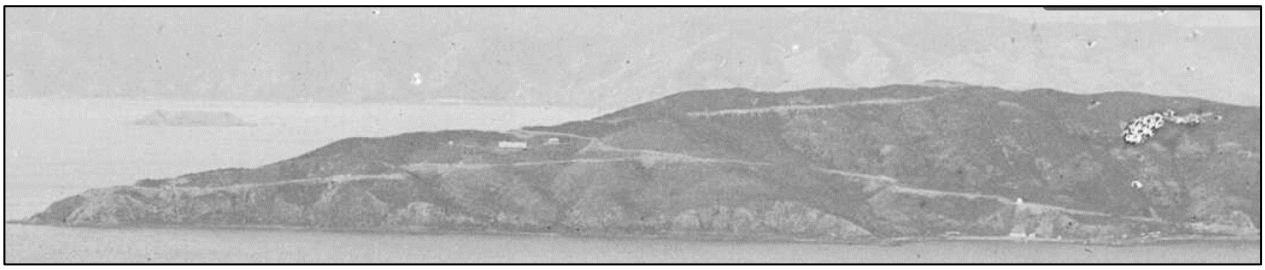

Figure 29: Detail of "A view of Thorndon showing part of Wellington Harbour and Halswell Point", 1885 showing buildings at Point Halswell, Shelly Bay, and the military road. (Williams, 1885).

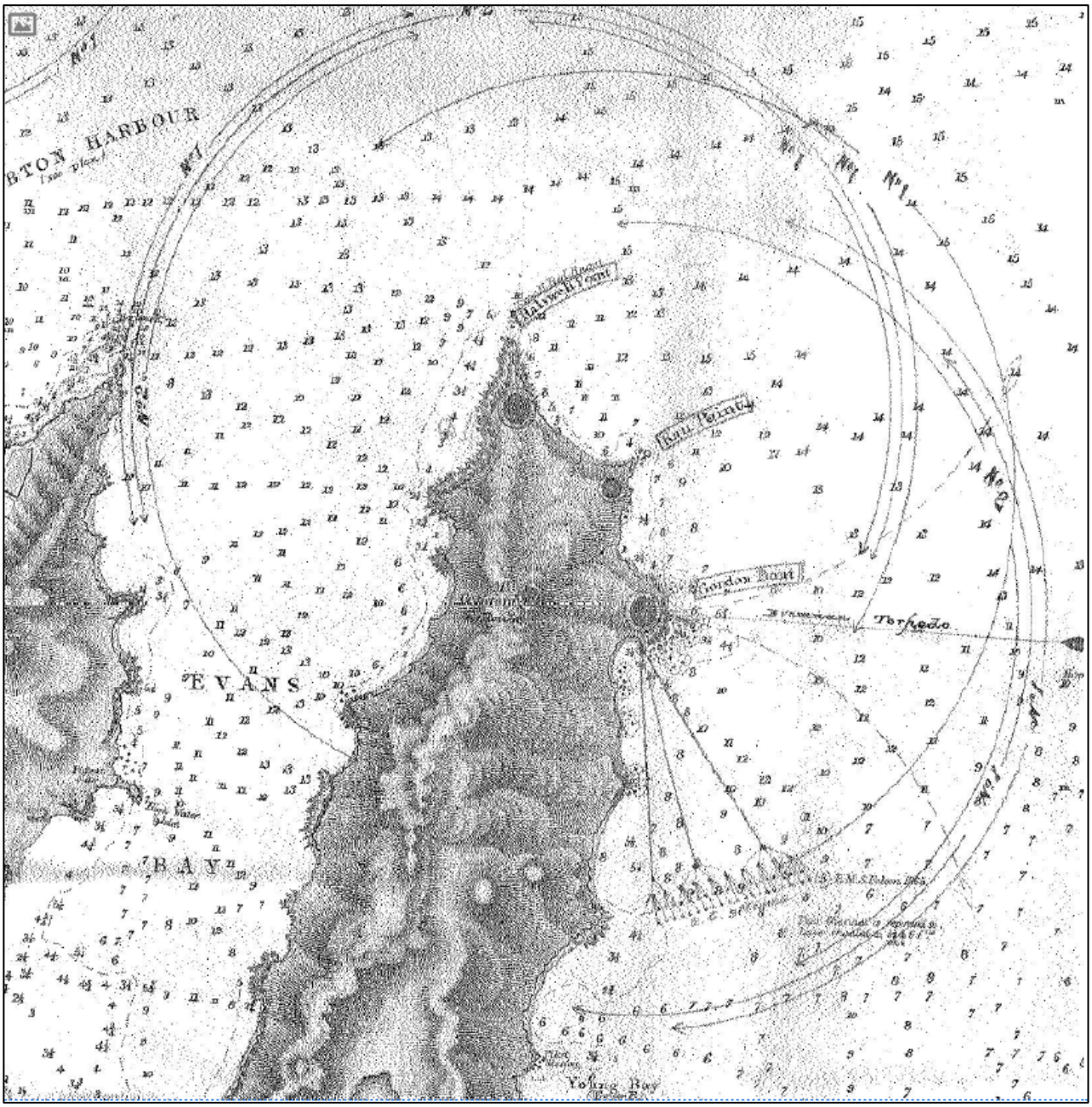

Figure 30: Detail from Colonel Tudor-Boddam's 1885 map showing "arcs of fire" for Point Halswell and Gordon emplacements and controlled minefield (Subsurface Ltd, 2020).

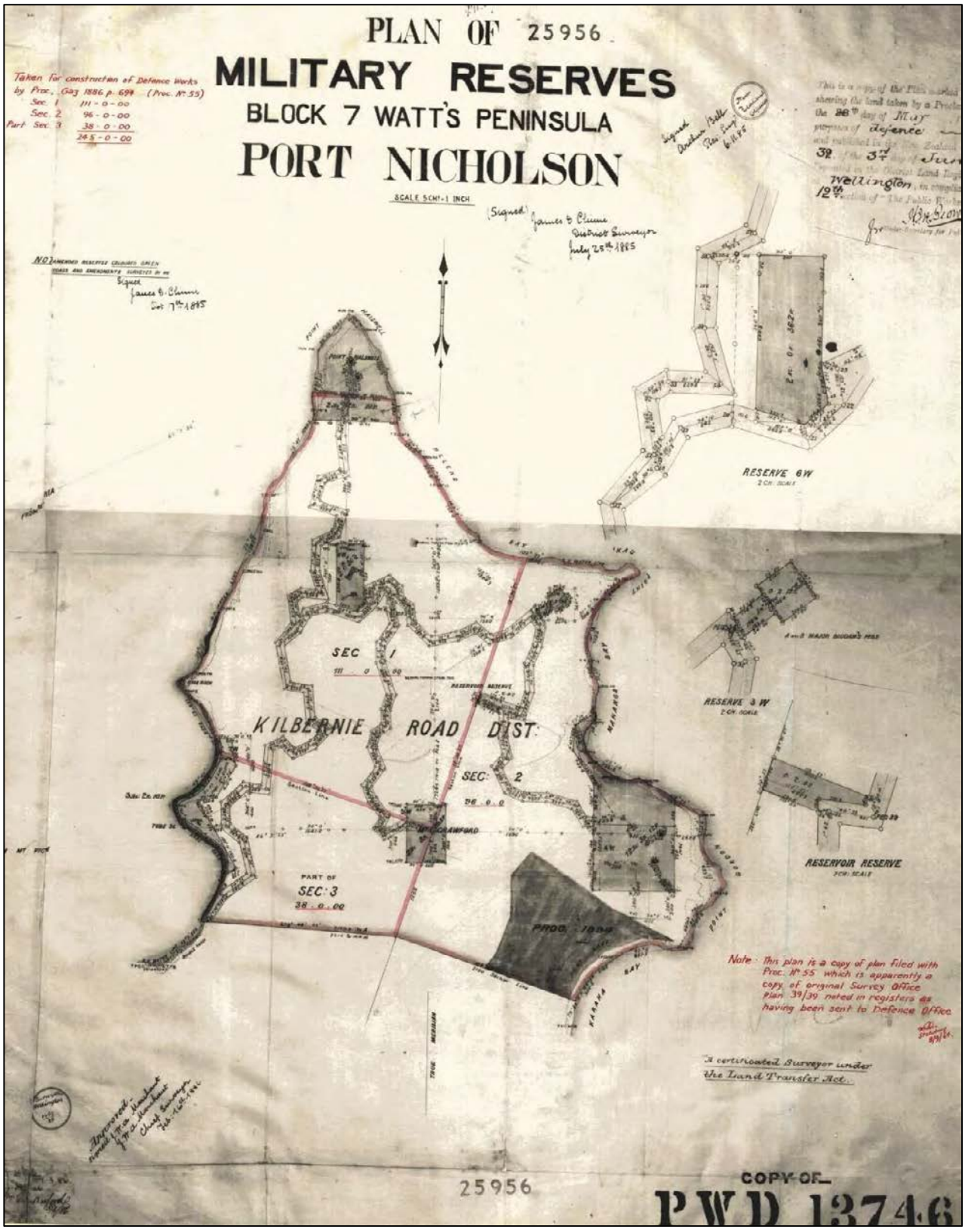

Figure 31: SO 25956 showing the layout of Watts Peninsula in 1886.

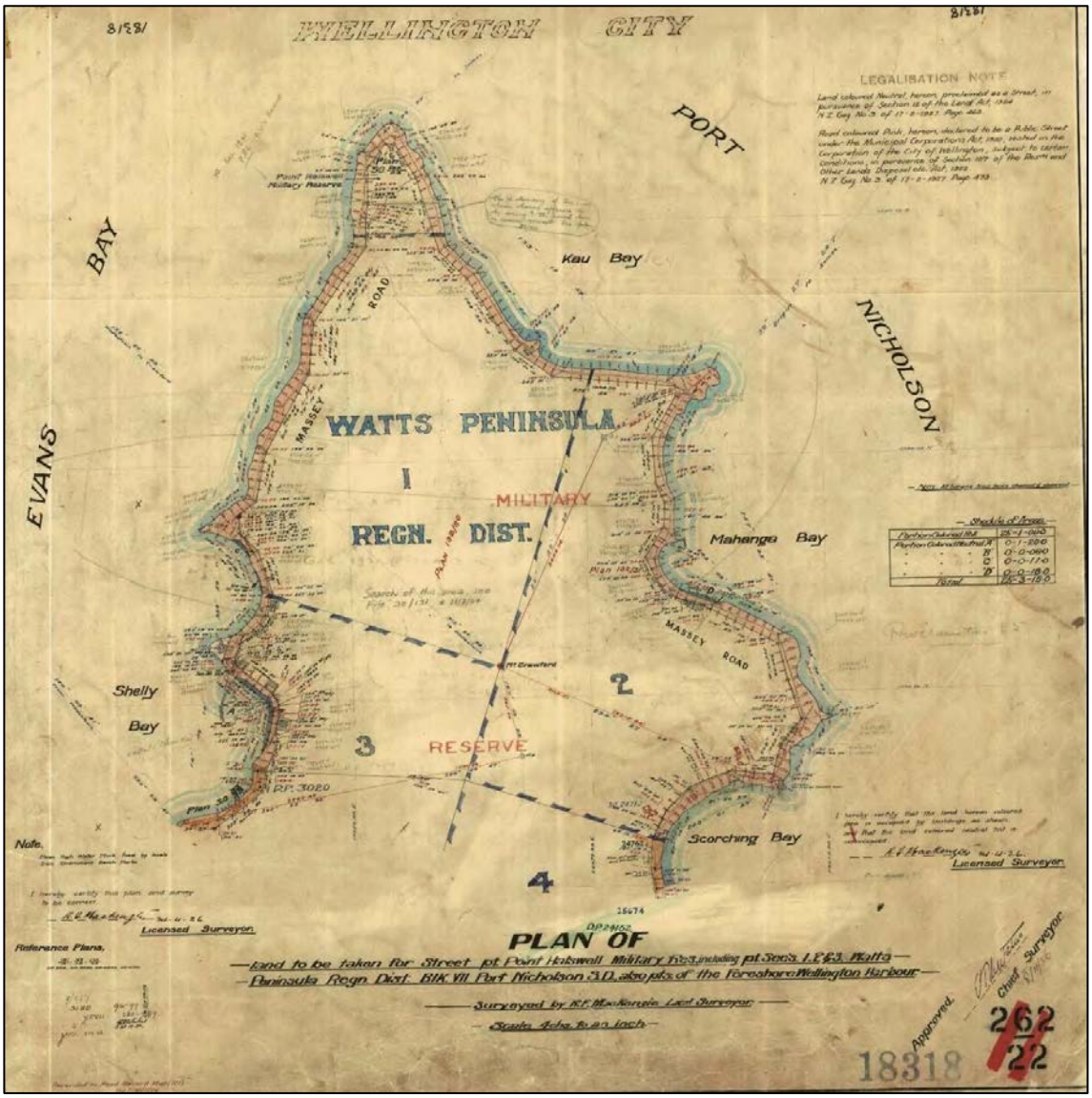

Figure 32: SO 18318 showing the layout of Watts Peninsula in 1926.

3.3.1 *Watts Peninsula Military Road*

Site	Military road	
Address	Watts Peninsula	
Legal Description	Pt. Section 1 & Pt. Section 3, Watts Peninsula District	
Location	Between Shelly Bay and Fort Ballance	
HNZPT List Entry No.	Portion at roadway at Kau Point, Category 1 historic place (List No. 7542)	
WCC Schedule	N/A	
Archaeological Site No(s).	Military road (R27/297)	
Date of Construction	1885-	
Principal building material	Road metal	
Architect	Unknown	
Significant Uses and Modifications to Structures	1898	Road widened
	1913	Diversion added to Reformatory
	c.1942	Shelly Bay end of road sealed along with portion to prison and anti-aircraft battery
	1997	Part of road taken for communications facility

Access to the northern tip of Watts Peninsula was originally by boat, with hazardous landings at its various bays. James Coutts Crawford was the first to form a rough road which ran along the eastern ridge of the peninsula. By 1878 it was known as Crawford Road and ran towards Point Halswell (Beere, 1878). As there was a Government reserve at Point Halswell, it is possible the Government contributed to the cost of cutting or maintaining this road

(Cooke & Love, 2009). Crawford's Road, however, did not provide access to the west or eastern edges of the peninsula (Cooke & Love, 2009). By 1885, when coastal defences began to be erected, Crawford's road was described as "of a primitive character, and we doubt whether the amount of Armed Constabulary labour which will be available for employment will be found sufficient to put these roads in proper order, and render access to the defence works easy" (Evening Post, 1885b). A new road providing access to all the new installations was required.

In November 1885 a military road linking the gun emplacements was surveyed (Cooke & Love, 2009). The new road required Crawford to be recompensed for lost land. The difficulty of negotiating a fair compensation with the land owner saw Lots 1-3 simply taken under the Public Works Act for the construction of coastal defence works (New Zealand Gazette, 1886). This amounted to c.250 acres and was essentially the whole northern tip. Crawford was awarded £6000 in compensation despite a claim for £31000 (Cooke & Love, 2009; Subsurface Ltd, 2013). The works were to be carried out by the Armed Constabulary, which was to be relocated to the peninsula to commence the construction of emplacements (Cooke, 2000, p. 26).

Work on building the new military road across the peninsula from Shelly Bay to Fort Ballance began early in 1885. The completed route would leave Shelly Bay, head north towards Point Halswell, then south east to Kau Point Battery, and further south to reach Fort Ballance. Offshoots were also built to Mount Crawford and the tip of Point Halswell. Visitors to the peninsula in April 1885 observed the defence road already under construction: "About 100 men are employed in road-making under supervision of Mr Connall, of the Public Works Department, and excellent progress has been made. The road starts from Shelly Beach, on the eastern side of Evans Bay, and, after following the shore in a southerly direction for a couple of hundred yards, strikes up the hill, and points to the north-east over a somewhat steep grade.… [D]ynamite has been brought into request in displacing the rock. Up to the present, about half a mile of the road is in a forward state, but this is only a small portion of the work, as we are informed that there is fully six miles of road to be made in connection with these works" (Evening Post, 1885c).

Although the road building was originally undertaken by the Armed Constabulary, "trusty" prisoners from Mt Cook and The Terrace Gaols were soon brought in to hasten the work as access to the defence construction sites was a priority (Cooke, 2000, p. 80; Michael Kelly et al., 2010). Formed 14 feet wide (4.2 metres), the road was built of bench cuts into the hillside. It followed the contours of the land to maintain a gently sloping grade for horse-drawn traffic. Horse troughs were located along the route: one survives near Fort Ballance and another sits near Mount Crawford. Built of concrete, they were set off the main carriageway (Figure 33).

In 1898 the road was widened to 22 feet (6.6 metres), and the work was likely undertaken by prison labour. Despite official directives, the road does not show a consistent width of that extent and is quite narrow at its eastern end. In 1913 another diversion was added to provide access to Point Halswell reformatory which was established in the former Point Halswell Battery barracks. The road was also improved in the late 1920s to aid construction of the Massey Memorial over the Point Halswell Battery, unveiled in 1930. Still much of the road remained unsealed, including its northern and eastern arms.

Other tracks were formed: for example a track was created around the foreshore between Shelly Bay and Mahanga Bay in 1897 (Cooke and Love 2009:62). However, the key coastal defence positions on the eastern side of the peninsula could only be reached via the military road. The mid-1880s roadway was not superseded until the early years of the Second World War, when a road was built up to the encampments from Mahanga Bay (Cooke, 2000, p. 80; Cooke & Love, 2009; Michael Kelly et al., 2010).

After the coastal defences were decommissioned, road traffic fell dramatically with the exception of the Shelly Bay end where the Armament Depot remained in use. Part of the road was taken in 1997 for a communications facility (Cooke & Love, 2009). Apart from the sealed section, today the road is largely overgrown in grass and parts are almost invisible. Having never been incorporated into a public roading network, much of the road retains its

original nineteenth century form, complete with water troughs.(Michael Kelly et al., 2010; Subsurface Ltd, 2013). It is a rare surviving testament to nineteenth century horse-era roads. It is an even more rare extant example of a road built solely for military purposes and is nationally unique (Figure 34 and Figure 35).

Figure 33: Detail from 1926 survey plan showing the military road as black dotted lines highlighted in orange (Lands & Survey Dept, 1926).

Figure 34: A view of a portion of the military road (NZHP, 2022).

Figure 35: Horse trough on the old military road (A Dodd, 2013b).

3.3.2 *Fort Ballance*

Site	Fort Ballance including Fort Gordon, Low Battery, Point Gordon Batteries	
Address	Fort Ballance Road	
Legal Description	Part Section 2, Watts Peninsula	
Location	Point Gordon promontory	
HNZPT List Entry No.	Category 1 historic place (List No. 5074)	
WCC Schedule	Fort Ballance Map 13 item 49	
Archaeological Site No(s).	Fort Ballance (R27/161) See-saw searchlight emplacement (R27/169) Brick/concrete structure (R27/170) Low Battery Point Gordon (R27/177, R27/707) Submarine mining facility (R27/193) Wharf piles (R27/269) Tramway (R27/384) Fire Commander's post (R27/706)	
Date of Construction	1885-	
Principal building material	Brick, concrete	
Architect	Major Henry Cautley and Lieutenant-Colonel E.H. Tudor-Boddam	
Significant Uses and Modifications to Structures	1885	Temporary emergency fort erected to design of Major Henry Cautley
	1886-c.1896	Concrete, brick and plaster structures added, designed by Lieutenant-Colonel E.H. Tudor-Boddam
	1887	"See saw" searchlight erected
	1890	Subterranean Observation Post established at Fort Ballance
	1891	Low Battery established
	1892	Fort Gordon battery established. Installation of two Nordenfelt quick-firing 6-pounder guns
	1893	Racer and magazine for Fort Gordon laid
	1895	Installation of 6 inch BLHP disappearing gun
	1898	Fort Gordon Battery Commander Position roofed
	1898	Two new searchlights added on foreshore. New engine room
	1899	See saw light removed
	1901	Gordon Point Battery established
	1904	Reservoir built at Fort Gordon
	1905	Fire Command Post moved from Kau Point to Fort Gordon
	1906	Fort Gordon communications upgraded
	1911	Fort Ballance operations downgraded
	WWI	Fort Ballance reactivated
	c.1922-1924	Guns removed. Three gun encampments roofed and converted to ammunition storge
	1927	Caretaker's cottage, winch shed and hauling plant erected
	1941	Reoccupied for coastal defence, installation of two 4-inchMkVII guns
	1942	Installation of two 75mm guns
	1941-1945	Accommodation, including houses erected. Road from Mahanga Bay constructed
	1946	Original barracks demolished. Three 40 man huts built
	1946	Part of loop-holed defence wall demolished
	1946-1959	Fort Ballance and Fort Gordon used as ammunition stores
	1950-1990	Army housing removed
	1959	Coastal defences disestablished
	By 1960	All guns removed
	1970s	Many batteries levelled and underground magazines sealed
	2004	Last army house removed
	2013	Fort Gordon's BLHP gun removed for restoration

Fort Ballance was part of the 1885 defence building boom: a response to the fears of an impending war with Russia and the government's acknowledgement that New Zealand could not rely solely on Britain for protection. The fort was Wellington's first and principal channel defence. The location was chosen to prevent enemy ships entering the inner harbour, and to provide cover for the minefield between Gordon Point and Ward Island. The location was also the site of Te Mahanga pā (Cooke, 2000, pp. 50–51; Heritage New Zealand Pouhere Taonga, 1990; Michael Kelly et al., 2010). Although the original encampment was called the Gordon Point Battery, in May 1886 it was renamed Fort Ballance, after then Defence Minister John Ballance. Fort Ballance would give its name to the wider collection of structures and emplacements surrounding the north-eastern promontory of the peninsula (Opus, 2009).

Work began in 1885 and was undertaken originally by the Armed Constabulary, later supplemented by unemployed men on a day-labour basis. As day labour soon proved too expensive, prisoners were brought in to undertake the work (Walzl, 1986). The first building on site was a temporary emergency emplacement, built of timber and containing two Rifle Muzzle Loading (RML) guns separated by an open gallery. The original design was created by Major Henry Cautley RE, who designed most of New Zealand's first port fortifications. Cautley began his military career serving in the Corps of Royal Engineers of the British Army. From 1876 he was an instructor in fortifications at the Royal Military College, Woolwich, England. In 1883 he was brought to New Zealand to advise on coastal defences for the four major ports: Auckland, Wellington, Lyttelton and Port Chalmers. Cautley prepared plans for these fortifications before leaving New Zealand in 1885 (Wellington City Council, 2013a).

In 1886 Fort Ballance's emergency emplacement was supplemented with concrete, and brick and plaster structures designed by Lieutenant-Colonel E.M Tudor Boddam. Tudor Boddam trained at the Royal Military College, Woolwich, and served in the Royal Artillery before being posted to Australia where he was involved with the development of fortifications in Tasmania. While he had no formal training in engineering, Boddam possessed a good knowledge of military engineering and was a "diligent and industrious" draughtsman (Wellington City Council, 2013a). Boddam oversaw the construction of New Zealand's defence fortifications until 1888 when he returned to Australia. Together, Cautley and Tudor Boddam were the most influential architects of New Zealand's nineteenth century coastal fortifications: "The designs they produced, which responded to strategic requirements and the particular circumstances of the various sites, can be regarded as state of the art for the time "(M Kelly, n.d.). Tudor Boddam's design of the main structures at Fort Ballance expanded beyond the simply functional to incorporate "a distinctively Victorian aesthetic quality" (Michael Kelly et al., 2010). His use of concrete at the Fort was also an early example of concrete as a building material (Michael Kelly et al., 2010) (Figure 36).

The "state of the art" design of Fort Ballance was complemented by the most modern of armament technology. The Fort was designed to accommodate the most modern British gun then in production – the Armstrong breech loading hydro-pneumatic gun (BLHP) (M Kelly, n.d.). The BLHP gun, also known as a "disappearing gun", was designed to fire then recoil back down in to the gun pit, allowing them to the be reloaded while the gun and the artillery volunteers were out of view of the enemy. Only ten all-steel BHLP guns were manufactured (New Zealand Defence Force, 2013). The 6-inch disappearing gun was added in 1886 between the two 7-inch RML gun emplacements (Cooke, 2000, pp. 50–51; Michael Kelly et al., 2010; Opus, 2009).

Fort Ballance continued to grow during the late 1880s. In 1887 construction on site was sped up by the addition of a tramway on the northern slope up from the Mahanga Bay wharf, supported by a steam-driven winch (Opus, 2009). The heaviest loads - the pallets of building materials and finally the guns themselves - were dropped off on the shore below the fort. An incline tramway, 12 chains in length, was built up a prepared slope to the fort, and a steam-driven winch erected at the top. This could pull up heavy loads, which were man-handled at each end. The steam engine for the winch was portable, fed off a separate horse-drawn boiler, and was ferried around the country to different sites as required. A 6HP portable engine was used at Point Gordon with a 4HP Robertson engine at Halswell (Cooke & Love, 2009; NZAA, 2020) (Figure 39).

Structures at Fort Ballance included bomb-proof casements that contained war-time accommodation for 40 soldiers, a minefield test room, and an engine room for the searchlight. Protective earthworks moulded on top of the fort not only added a measure of protection but helped to camouflage the installation. Two underground magazines were built to store ammunition. The magazine for the 6-inch BLHP gun had two levels, the lower used for the storage of shells and cartridges which were lifted up to the main level by block and tackle. The magazines were originally lined in wood but later replaced by brick due to water damage (Cooke, 2000, pp. 50–51; Michael Kelly et al., 2010; Opus, 2009). Musketry parapets and loop-holed walls, 130 yards combined, were built to protect the sides and rear of the fort: "a typical feature of 'Russian Scare' style fortifications" (Opus, 2009). These walls, in combination with the extremely steep nature of the front face, created a highly defensible fortification (Opus, 2009).

The fort was manned from 1887 by Wellington Naval Volunteers, described as "high quality". They trained in the use of the armaments and conducted exercises to maintain their readiness in case of attack (Walzl, 1986). More guns arrived in 1890: two 7-inch guns firing armour-piercing projectiles, with a maximum range of 4,000 yards, twice the width of the channel they were protecting. Two 6-pounder guns were added to the flanks in 1893. Another 6-inch BLHP gun later replaced the 7-inch RML gun, which required modification of the gun-pit. A second BLHP gun was added in 1903, when the southern RML pit was altered (Opus, 2009) (Figure 37 and Figure 38).

In 1893 Colonel F.J. Fox's prepared a report for the government on New Zealand's national defences and armaments. Describing Fort Ballance, Fox noted: "Fort trace generally. 6in. gun in left front centre, with bomb-proof wooden gallery (un-altered since '85 scare) to No.2 7in. on right; wooden magazine of '85 between; leaks and unused. No.4 7in. to left, with open way at rear of rampart from 6in., sunk magazine between, with artillery store & co. over. Heavy guns 160 ft apart. QF guns at flank angles. In rear-centre under high cavalier, crowned with musketry parapet, bomb-proof casemates for electric-light engine and mine-field test rooms, and bomb proof living casemates loopholed closing gorge (take 44 men in war). Flanks closed by loop-holed walls joining living casemates. No ditches. Total lengths of musketry parapets and loop-holed walls, 120 yds" (Subsurface Ltd, 2020).

In the wake of Fox's repot, Fort Ballance was upgraded. A new motor-house was added in 1896, using prison labour (AJHRs, 1896). That same year the contract for a new boiler was let (Public Works Department, 1896). In 1898 two new searchlights were added on the foreshore and a new engine room was built 100 yards behind the fort (Historic Places Trust & Department of Conservation, 2006). Additions and alterations continued to be made in the first decade of the twentieth century. In 1903 a new underground test and observing station was added (AJHRs, 1903); in 1908 a new concrete magazine was erected (AJHRs, 1908); and in 1912 a receiving station was built at the fort (AJHRs, 1912). Although the Russian attack had never eventuated, by the first years of the twentieth century Fort Ballance was primed with more guns than any other fort in New Zealand and the layout of the fort was complete (Cooke, 2000, pp. 50–51; Heritage New Zealand Pouhere Taonga, 1990; Michael Kelly et al., 2010; Walzl, 1986) (Figure 40, Figure 41 and Figure 42).

Figure 36: Fort Ballance, c. 1885 (Wright, 1885).

Figure 37: "Gun emplacement at Fort Ballance, Wellington". The date attributed to the photograph, 1884, is likely to be incorrectly assigned (Williams, 1884).

Figure 38: The 12pr Quick Firing gun at Fort Ballance, c.1904 (Cooke & Love, 2009).

Figure 39: A large contingent from NZGA No 9 Company at Mahanga Bay Military Camp, Wellington, March 1912. Note the tramway going up the incline behind to carry goods to Fort Ballance (S. C. Smith, 1912)

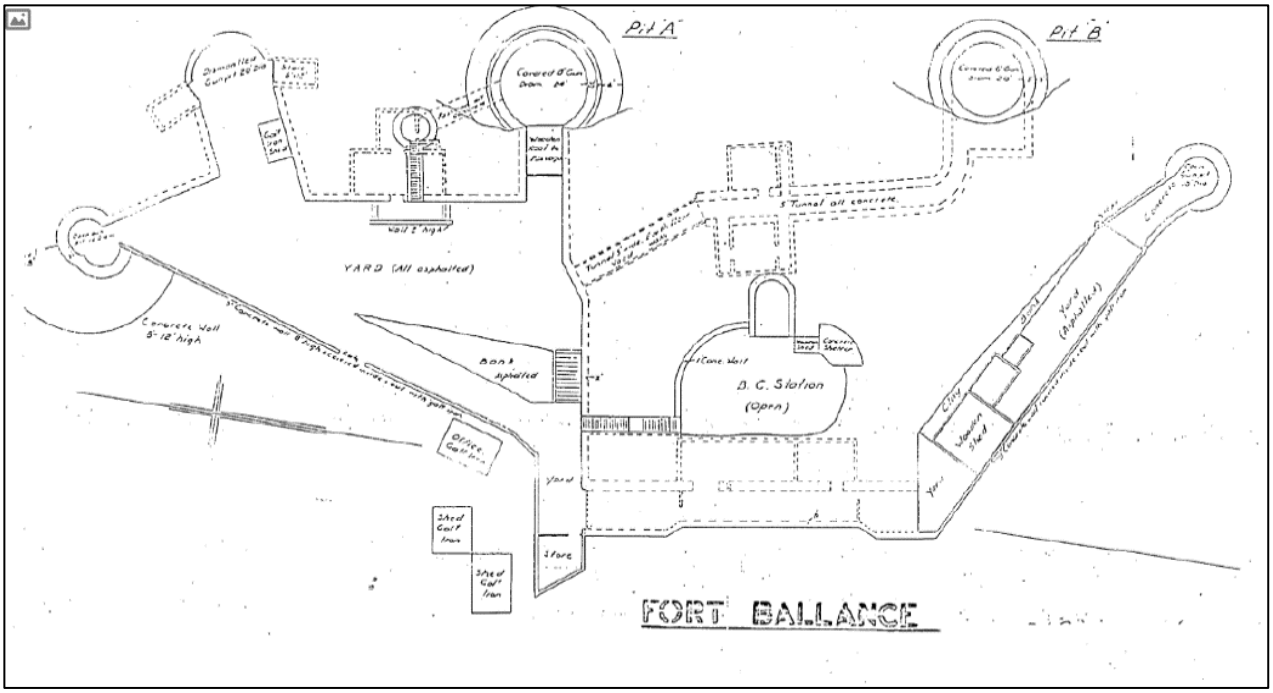

Figure 40: Fort Ballance site plan (A Dodd, 2013a).

Figure 41: Fort Ballance, 2010 (Michael Kelly et al., 2010).

Figure 42-: Fort Ballance, 2022 (NZHP, 2022).

"See-saw" searchlight

In July 1886 a "See-saw" searchlight arrived in Wellington for use at Fort Ballance. Wellingtonians were told that, once erected "it is guaranteed to show clearly a small white buoy at a distance of 2,000 yards. The dynamo will be worked by steam. It is intended to erect the apparatus at Fort Ballance, where it will command the entrance to the Heads and the whole of the harbour-way up to beyond Ward's Island, thus enabling the batteries to have a full view of any vessel entering the Heads or trying to make her way into the harbour" (New Zealand Herald, 1886). The light was installed on the southernmost spur of Gordon Point by March 1887, two years before Wellington's streets were lit by electricity (Cooke & Love, 2009).

The searchlight had the dual purpose of general sweeping as well as illuminating the minefield between Gordon Point and Ward Island. Although the light only moved a small degree to alter the angle of the beam, the see-saw light was a very early example of such technology (Cooke, 2000, p. 51). Military historian Peter Cooke noted that "although the design was Imperial … only a handful were built anywhere in the Empire and this was the only one in New Zealand" (Cooke, 2000, p. 51) (Figure 43). Cooke described the workings of the searchlight: "At the inner end of the beam, under the protection of the concrete structure, sat the searchlight (Brush's type of 50,000 candlepower). At the other end of the long beam (around 5.5m in length) was a mirror, onto which the searchlight shone its light and which reflected it over the bank at the top to illuminate a target on the water. Around the pivot at the bottom the light could be swivelled and elevated to search for a target and follow it once acquired" (Cooke & Love, 2009).

By the late 1890s see-saw light technology was considered obsolete and the light itself was blocking the line of fire from the guns (Subsurface Ltd, 2020). In 1899 the decision was made to remove the light, but the attempt went tragically wrong. The attempt was made using explosives, and three men died when it exploded prematurely. The see saw light was demolished in the blast but the emplacement survived relatively unscathed. Today, the concrete wall and its large earth excavation remain - with rubble at the bottom from the explosion (Cooke, 2000, p. 51; Cooke & Love, 2009; Subsurface Ltd, 2020).

Figure 43: View of a sees-saw searchlight at St Mary's Installation, Chatham England (Cooke & Love, 2009).

Fort Gordon

When additional armaments were seen to be required in 1891, a new gun position was surveyed south of Fort Ballance and named Fort Gordon (Cooke & Love, 2009). The new fort was approximately 73 metres to the south-east of Fort Ballance on the eastern side of the spur of Point Gordon (Figure 45). The new fort was designed, and the construction supervised, by Arthur Dillon Bell, Civilian Engineer for Defence (Cooke, 2000, p. 52). The son of Sir Francis Dillon Bell, he trained as an engineer in England before beginning his successful career in Dunedin. Moving to Wellington in 1884, he became Engineer for Defences in 1888, assuming responsibility for all harbour defence forts in New Zealand (Engineering Heritage Western Australia, 2022; Evening Post, 1888; National Library, n.d.).

In 1892 work began on Fort Gordon, employing prison labour to excavate a half round encampment for an 8-inch BLHP gun. Lieut.-Colonel Fox, in his 1893 report on New Zealand's defences described Fort Gordon as: "Gunpit half round, open slope at gorge, commanded from Mt Crawford parapets, magazine in deep excavation to right, and 2 casemates, bomb-proof accommodation for 15 men in war. Distant from Fort Ballance 80 yards. Electric light "seesaw" emplacement below, at level 100 ft" (Subsurface Ltd, 2020). Work may have stalled, however, as Fox also recommended finishing the Fort Gordon installation. The racer and magazine were laid in 1893 and the completion of the 8-inch BLHP emplacement was recorded that year (AJHRs, 1893; New Zealand Times, 1893). The gun was 'proof-fired' on 30 December 1895 with two full and one reduced-charge rounds. The United Kingdom had taken their BHLPs out of service but the technology was still seen as sufficient for New Zealand's needs (Cooke, 2000, p. 52).

A Battery Commander (BC) position was erected to the west of the emplacement above an underground magazine. It contained a Watkins MkIb DRF. Two 'flank observer' positions, one of which was fitted with telephones, were built on either side of the gun emplacement to assist in the sighting of targets. The use of telephones was one of the earliest uses of such technology in Wellington, and only two years after the first civilian telephone exchange was established (Cooke & Love, 2009). The underground magazine was built to store 100 rounds, and as well as providing storage, it had bomb-proof accommodation for 15 men in times of war (Cooke, 2000, p. 51; Opus, 2009) (Figure 44

The manning of Fort Gordon relied heavily on volunteers: "As there are only sufficient trained gunners to furnish one complete relief to fully man the Fort and as it will be impossible to keep the whole strength constantly ready for action" (Cooke, 2000, p. 52). Once manned, the drawback to Fort Gordon quickly became clear. It was noted in the Fort Record Book that as the fort was 8,000 yards from the harbour entrance "it is therefore not able to produce very effective fire until a vessel has entered some distance into the harbour and is in smooth water" (Cooke, 2000, p. 53).

Some alterations were made to the fort after completion. In 1898 a roof was added to the BC position. A reservoir was built in 1904, in preparation for the Fire Command Post (FCP) which was relocated from Kau Point in 1905. In 1906 the fort received upgrades to its communications gear. In 1907 Fort Gordon's MkIb was upgraded to a MkIIb. When the MkII was fitted the MkI may have been moved to the left flank BC Station or into reserve (Cooke, 2000, p. 51; Michael Kelly et al., 2010).

In 1911 Fort Gordon was downgraded when new MkVII guns at Fort Dorset came on line. At the beginning of the First World War, however, the fort was reactivated. Its 8-inch BLHP gun was modified for use with cordite, which required the rear portion of the shield to be cut away, and the remainder reinforced with a steel frame (Cooke, 2000, p. 54; A Dodd, 2013). After the War, the Fort was used to host gunners on annual territorial training camps (Cooke, 2000, p. 51) (Figure 45 and Figure 46).

Figure 44: View of Wellington Harbour with Fort Gordon visible in the foreground, c.1900 (Unknown, 1900).

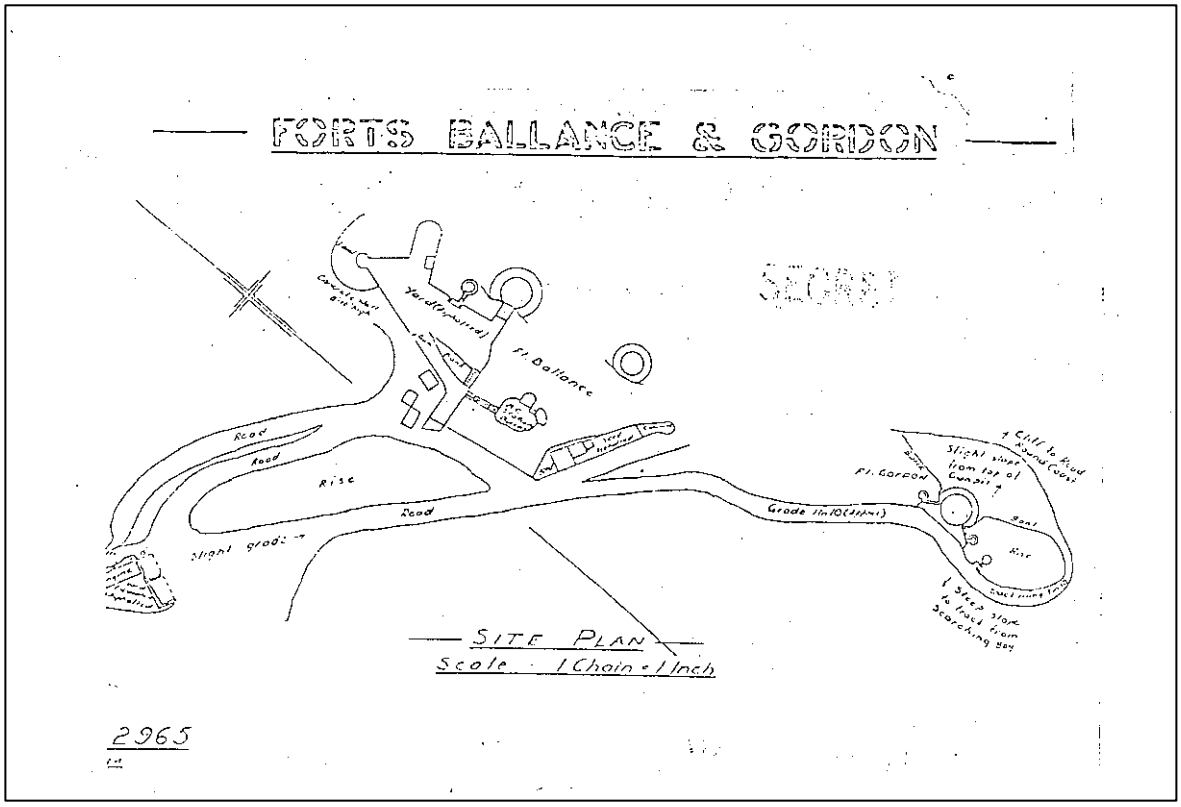

Figure 45: Site plan showing the proximity of Fort Gordon to Fort Ballance (A Dodd, 2013a).

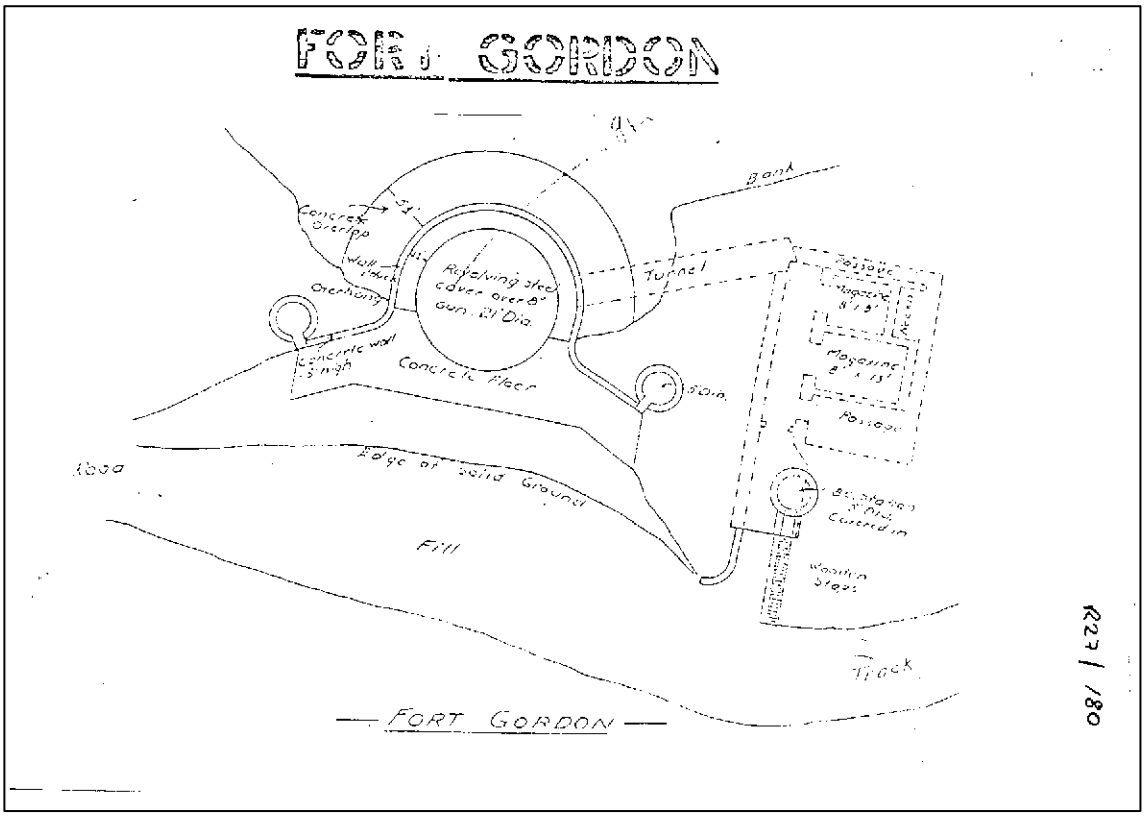

Figure 46: Site plan of Fort Gordon (A Dodd, 2013a).

Low Battery

The large guns at Fort Ballance and Fort Gordon were fired over thick parapets from a high altitude. This left an unguarded area of "dead water" below. To remedy this, a "Low Battery" was built a little further down the hill on the foreshore of Point Gordon. Completed in 1891, the architect was likely Arthur Dillon Bell. The works included a raised parapet with openings for the two guns, and behind this was a platform approximately 55 metres long. The rocky spur on the south side provided concealment from enemy vessels entering the harbour and a 200-round underground magazine faced with brick and concrete was constructed beneath this. The Low Battery was initially armed with two 64-pounder guns converted to RML guns, mounted on wooden carriages. These were replaced by two Quick Firing (QF) guns in 1897, which were well concealed by one of the high rock spurs on Gordon Point (Subsurface Ltd, 2020).

The Low Battery was also essential to the minefield laid out between Point Gordon and Ward Island in 1890. That year, at Fort Ballance, a subterranean Observation Post with an engine room was established just below the northern 7-inch RML gun pit. From there, cabling ran out into the sea opposite the Low Battery. The Minefield Control Post was established at Low Battery, and using a telescope and plotting board observers could predict the position of enemy shipping and remotely detonate seabed mines as they passed over. The post was accessed by a path running along the northern edge of Fort Ballance (Subsurface Ltd, 2020). After Low Battery was completed in 1892, Bell declared "the whole working base for the minefield now centres on the [Low] battery" (Cooke, 2000, p. 54).

In 1893 Lieut.-Colonel Fox described Low Battery as "Well concealed by high rock spur till vessel is opposite: under spur is magazine and firing battery chamber for ground mines. Guns 160 ft apart, firing on minefield waters through embrasures in general parapet. Rear open to steep hillside. Bomb-proof casemate (with cables connecting pits for 10 men in war. No ditches. Total length of parapets for musketry, 60yds" (Subsurface Ltd, 2020).

In 1901 the establishment of Gordon Point Battery made Low Battery almost redundant. When submarine mining was disestablished in 1907, Low Battery became completely superfluous. It was disarmed by 1908 and used for

training camps. The battery was utilised again during the First World War, but afterwards the site reverted to training purposes. During the Second World War, the battery was used for a searchlight (Figure 47). In the post-war years the above ground structures at Low Battery were demolished (Cooke, 2000, p. 54; Cooke & Love, 2009; Heritage New Zealand Pouhere Taonga, 1990; Michael Kelly et al., 2010).

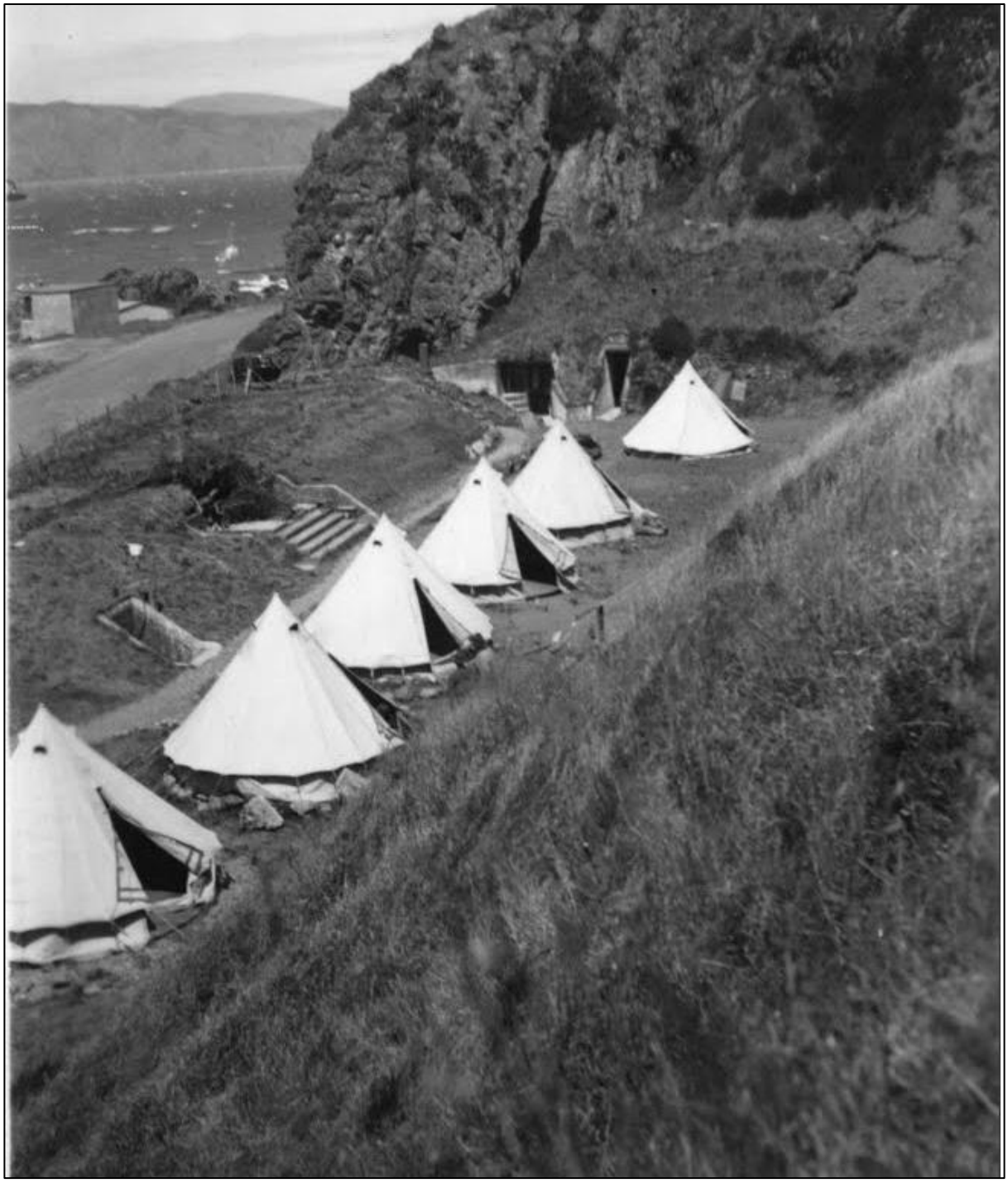

Figure 47: Searchlight camp at former Low Battery, 1940-41 (Unknown, 1941).

Gordon Point Battery (Examination Battery)

In 1901 a new battery was built on a ledge down the hill from Fort Ballance and named Gordon Point. As a 12-pounder battery it made the Low Battery virtually redundant. At Gordon Point Battery two 12-pounder QF guns were mounted on concrete pedestal mounds, about 21 metres apart with vertical and overhead shields. The two guns were connected by an open sunken passage which was fitted with rails. A trolley was used to carry ammunition

from the cartridge store and shell stores to the recesses close to the rear of the guns. The cartridge and shell stores were located underground on the left flank, and reached by an iron ladder. The ammunition was raised to ground level using a derrick. The Battery also included a BOP. It was manned by one officer, five NCOs and 35 gunners as it also had a Support (Examination) Battery role (Cooke, 2000, pp. 54–55).

Despite Fort Ballance losing its strategic importance to Fort Dorset in 1911, Gordon Point Battery remained operational throughout the First World War. The 12-pounder emplacement served as the Examination Battery which was frequently fired for the purpose of 'bringing to' ships for inspection by the examination vessel (Cooke and Love 2009:66) (Figure 48).

Figure 48: Military installations, Point Gordon, Wellington (Evening Post, 1948).

Fort Ballance 1914-2013

During the First World War Fort Ballance continued to operate, despite Fort Dorset becoming the principal defence fortification. After the War the fort was disbanded and in 1922 the BLHP disappearing guns were declared obsolete. In 1924 the guns were removed and sold for scrap, and the 12-pounders were shifted to Fort Dorset. Fort Gordon's BLHP gun was simply tipped over the bank. One gun emplacement at Fort Gordon and two at Fort Ballance were roofed over and used as ammunitions storage (Michael Kelly et al., 2010; Opus, 2009). In 1927 a five-roomed caretaker's cottage was also added to the fort, built in concrete. A winch-shed and hauling plant were erected that same year (AJHRs, 1927).

During the Second World War, Fort Ballance returned to active use. Two 4-inch guns from Fort Dorset were placed on the site of the abandoned 12-pounder battery. Two 75 mm guns were added at Gordon Point, followed by a twin 6-pounder emplacement down on the waterfront. Accommodation, including huts and houses, was added to the fort and by the end of the War there was accommodation for 177 men (Cooke, 2000, p. 56). The guns were manned by the permanent troops of the 72nd Battery, 10 Heavy Regiment. Later renamed the 10 Coast Regiment, it was this group that had the responsibility of operating most of Wellington's coastal defence guns (Michael Kelly et al., 2010; Walzl, 1986).

After the end of the Second World War, Fort Ballance was used for army housing. By 1946, the original 1880s barracks was damp and no longer fit for purpose. Three 40-man huts were constructed in its place behind the fort. Part of the loop-holed defence wall was demolished that same year, providing additional access. Fort Ballance was also used as an ammunition store until 1959 (Figure 49).

Figure 49: Defence Department houses, Fort Ballance (Round, 1990).

In 1959 all New Zealand's coastal defences, including those at Fort Ballance, were disestablished. By 1960 all of the guns at Fort Ballance had been removed and by the 1970s several batteries had been levelled to the ground and underground entrances sealed. Army housing was also gradually removed between 1950 and 1990 until only one house was left standing, in which a caretaker was stationed. When the caretaker position was disestablished in 2004, the house was removed (Michael Kelly et al., 2010; Opus, 2009).

In the 1990s, retired soldiers led efforts to have the earth removed and the fort's importance recognised (Wellington City Council, 2013a). In 2013 Fort Gordon's BLHP gun was retrieved from the bank where it had been tipped in 1924. The gun's carriage remained in situ on further downslope (A Dodd, 2013). NZ Army Engineers carried out the extraction, and the gun was set to be restored with the help of Sir Peter Jackson and The Vintage Aviator Limited. The NZDF noted there were very few eight-inch Breech Loading guns left anywhere in the world: "Only ten of these all-steel guns were ever constructed. With only four other surviving guns of this kind in New Zealand, this is a very rare and fascinating find (New Zealand Defence Force, 2013) (Figure 50).

Today, Fort Ballance has been assessed as "one of the best preserved of a string of nineteenth century coastal defences constructed to protect New Zealand from a naval attack" (Heritage New Zealand Pouhere Taonga, 1990). Not only nationally unique for its collection of nineteenth century defence structures and access roads (1880s and 1941), but it is also internationally significant for the very rare see-saw searchlight emplacement (Cooke & Love, 2009). Designed and built by the New Zealand Government; it is a tangible reminder of the colony's first steps towards independence from Britain. Fort Ballance was the first fort built in Wellington and remained the primary protection for the capital city between 1885 and 1911. The 1880s layout of the Victorian fort is largely unaltered above and below ground (Figure 51 and Figure 52). The collection of largely intact late nineteenth century military structures is a testament to the technology used in the coastal defence network of the 1880s and is an early example of the use of concrete as a building material. In continual use for 105 years, Fort Ballance is a rare testament to the national response to coastal defence as well as developments in military technology from the Victorian era until the Second World War and beyond (Heritage New Zealand Pouhere Taonga, 1990; Wellington City Council, 2013a)

Figure 50: View of the gun before it was removed from the peninsula for restoration (New Zealand Defence Force, 2013).

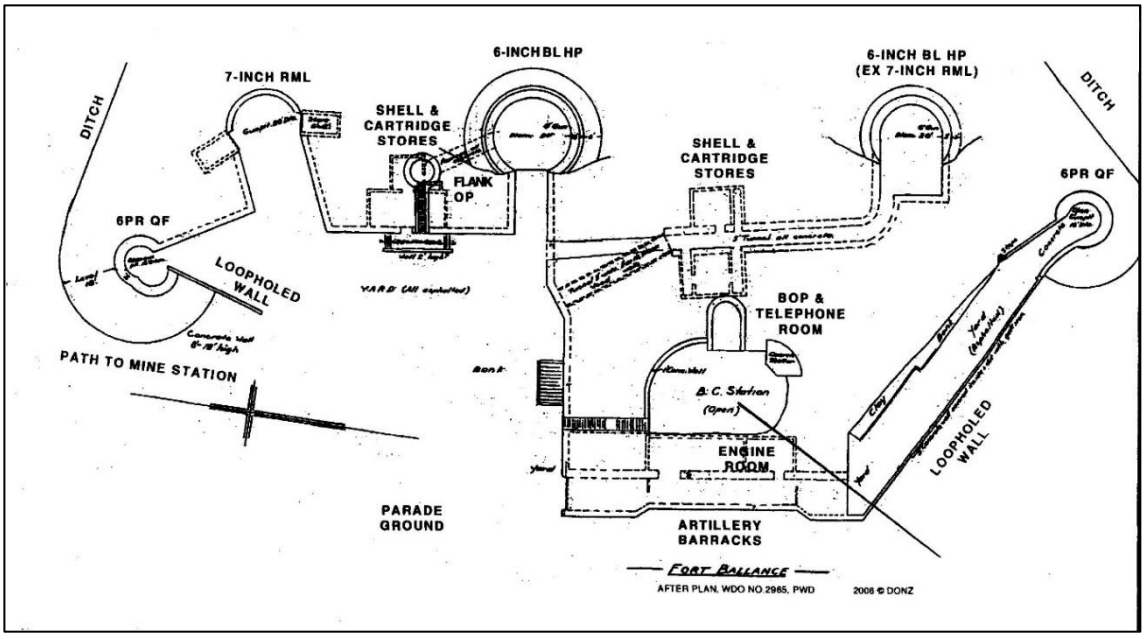

Figure 51: A view of the layout of the fort (A Dodd, 2019).

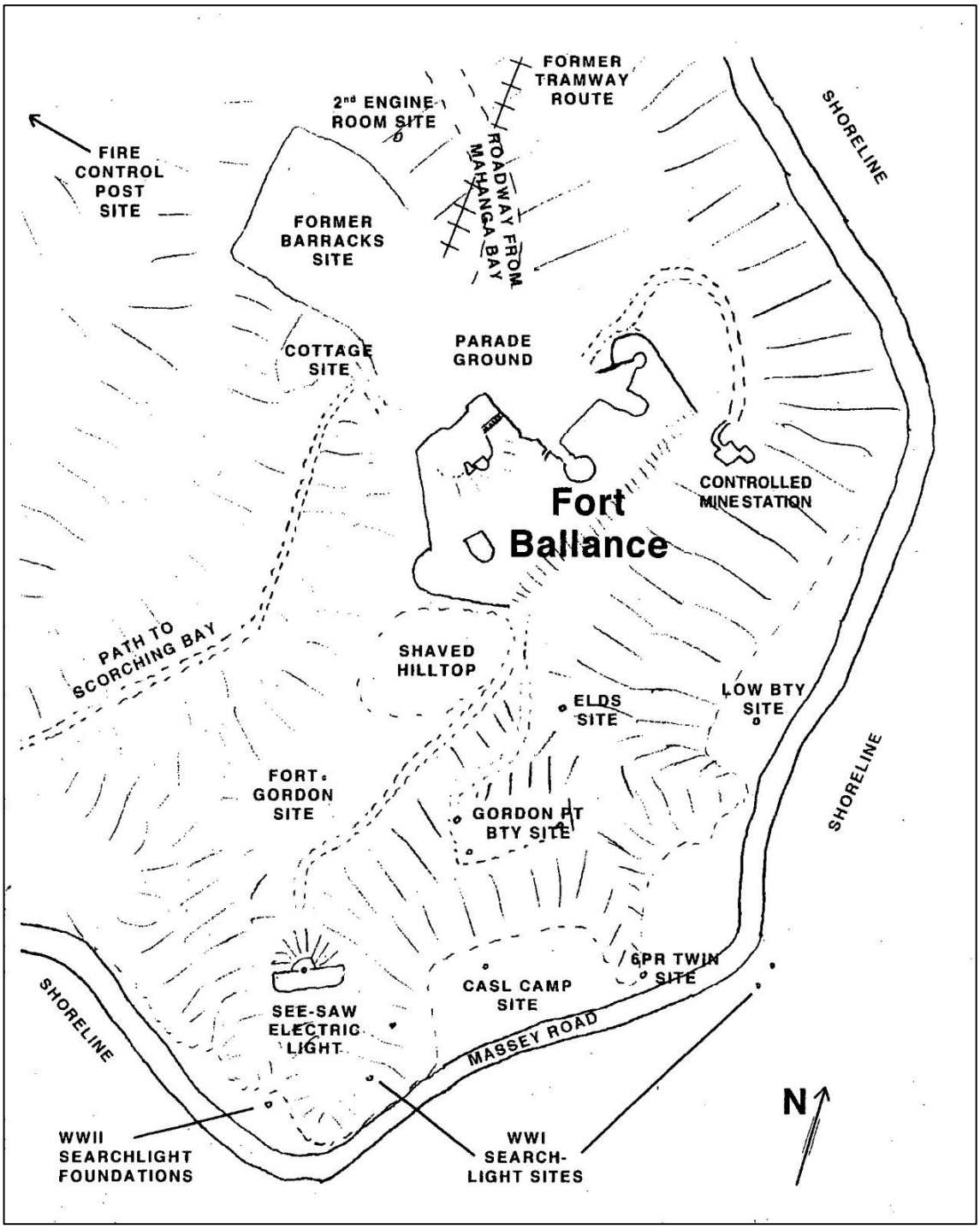

Figure 52: A view of the layout of the fort as it appeared in 2006 (A Dodd, 2019).

3.3.3 *Kau Point Battery*

Site	Kau Point Battery
Address	Massey Road
Legal Description	Pt. Section 2, Watts Peninsula District
Location	On spur above Kau Point
HNZPT List Entry No.	Historic Place Category I (No. 7542)
WCC Schedule	N/A
Archaeological Site No(s).	Gun emplacement (R27/168) Site of Fire Commander's post; probable site of Hotchkiss gun (R27/706)
Date of Construction	1891
Principal building material	Brick, concrete, railway iron

Architect	Arthur Dillon Bell	
Significant Uses and Modifications to Structures	1891	Gun pit, magazine, observation post and three -roomed cottage erected
	n.d.	Emplacement filled in
	n.d.	Cottage removed

Kau Point was named for Kau-whakaara-waru pā (Cooke & Love, 2009). Kau Point Battery was built some distance up the hill from the site of the kāinga, and located between Fort Ballance and the Point Halswell Battery. It contributed to the "arc of fire" intended to defend the entrance to the harbour (Michael Kelly et al., 2010).

Designed by Arthur Dillon Bell, construction on the installation began in 1891. While of a functional design, Bell's design had an "elegant simplicity" (Michael Kelly et al., 2010) (Figure 53). A single half round gun pit was constructed on the ridge above the bay (Cooke & Love, 2009). The rear of the gun pit was straight and about 8 metres long. A deep excavation was made into the hillside behind the rear of the pit and lined with brick to create a magazine for shells and cartridges. Accessed through a narrow entry point behind the gunpit, it was linked to the gun emplacements by a passageway. The magazine contained an artillery store, casemate store, shell store and lamp gallery. The roof was "an innovative use of composite construction" with shallow brick vaulting between railway irons supporting the concrete slabs above (Michael Kelly et al., 2010). Once the magazine was complete, the hill side was then largely restored over the top. An 8-inch BLHP was installed at the battery in May 1891 to augment the RML gun positioned at Fort Ballance in 1885. The heavy gun was hauled up the spine of the ridge from Kau Point by soldiers using block and tackle (Cooke & Love, 2009)

Above and behind the main installation was a Battery Observation Post (BOP) built in concrete. The front part of the post was an excavated pit behind a semi-circular wall. At the rear was a telephone room which likely served as a Fire Control Point for Wellington between 1891 and 1911. Today it is one of only two surviving examples on the peninsula. The rear wall of the telephone room remains painted with the other defensive positions on the peninsula, below which ten telephones were mounted. The telephone room allowed the battery to function as Wellington's first military site to coordinate the communication of its Fire Command Officer via telephone (Heritage New Zealand Pouhere Taonga, 2004). A three-roomed cottage was also part of the Kau Point Battery, which was completed and handed over to the Permanent Artillery in June 1891 (Cooke, 2000, p. 92; Michael Kelly et al., 2010).

In 1893 Lieut.-Colonel Fox described the battery: "Gunpit adapted to natural lie of ground; magazine &c. in deep excavation to rear, and natural hillside largely restored over same. No definite trace. Bomb-proof casemates for 25 men in war. QF guns to occupy detached positions right and left of main work, as contour suits, and deny beach-landings, was well as fire on ships. No musketry parapets." (Subsurface Ltd, 2020). Fox also recorded in his report on New Zealand Permanent and Volunteer Forces that the emplacement of one QF 6-pr Hotchkiss at Kau Point Battery had also been completed, at a cost of £70 (AJHRs, 1893).

During the First World War Kau Point Battery was operational but not continuously manned. In between the War years the battery was used as a magazine for ammunition storage. During the Second World War, from 1942, this magazine served the Mt Crawford anti-aircraft battery. In the period following the War, the gun emplacement was abandoned and largely filled in by the Army. Today, only a small portion is visible (Cooke, 2000, p. 92; Michael Kelly et al., 2010).

Kau Point Battery formed part of a "formidable chain" of defences on the peninsula (Michael Kelly et al., 2010). The site retains an impressive degree of integrity, given the original decorative paint in the telephone room, the relatively good order of the observation post and the intact layout of the magazine. The emplacement may also be the only 8-inch disappearing gun pit left in Wellington (Michael Kelly et al., 2010) (Figure 54, Figure 55 and Figure 56).

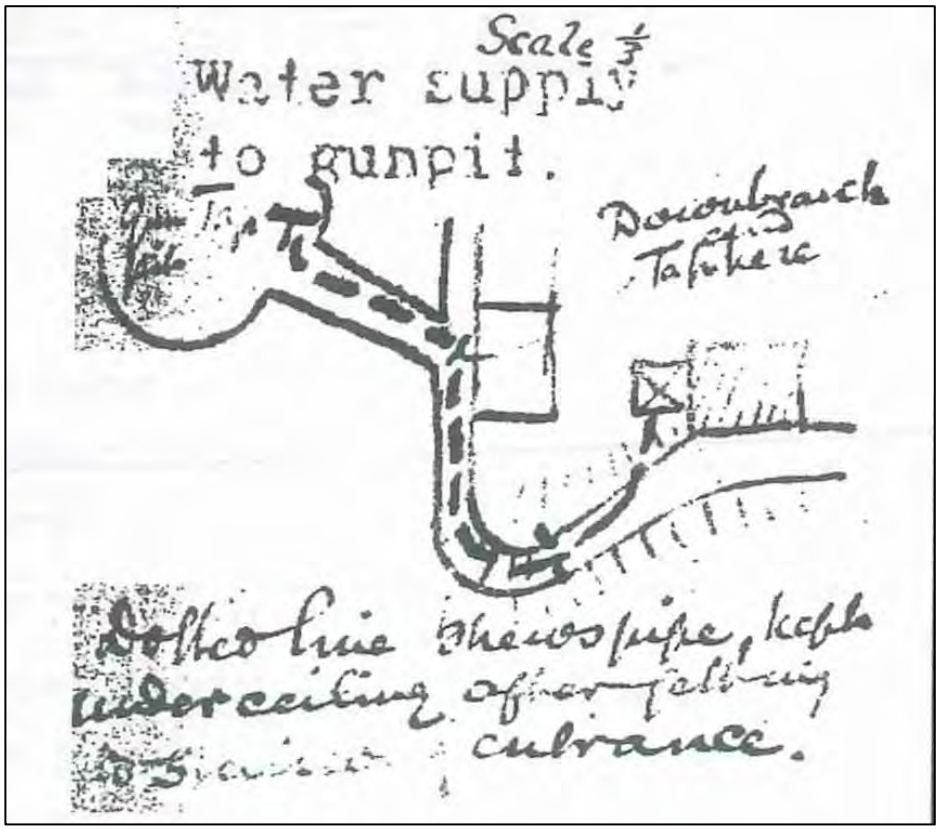

Figure 53: Arthur Bell's plan and notes relating to water supply to the gun pit at Kau Point Battery: "Dotted line shews pipe kept under ceiling after/of the [?] to [?] of entrance" (Cooke, 2000, p. 92).

Figure 54: Kau Point Battery Observation Post (NZHP, 2022).

Figure 55: Painting on the Kau Point Battery Observation Post (phone room) interior (NZHP, 2022).

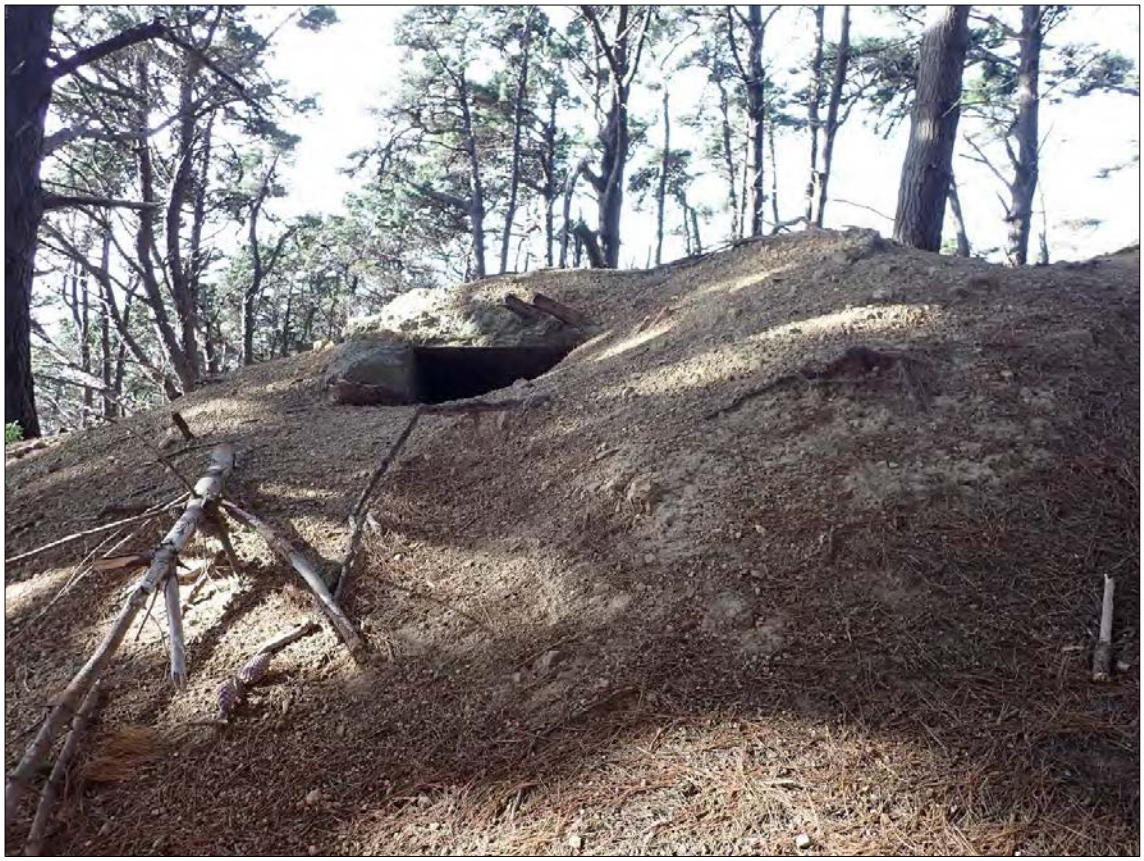

Figure 56: Kau Point gun pit entry (NZHP, 2022).

3.3.4 *Mount Crawford Redoubt*

Site	Mount Crawford Redoubt	
Address	Nevay Road	
Legal Description	Pt. Section 3, Watts Peninsula District	
Location	On the ridge between Shelly Bay and Fort Ballance	
HNZPT List Entry No.	N/A	
WCC Schedule	N/A	
Archaeological Site No(s).	Rifle trenches/musketry parapet (R27/151)	
Date of Construction	1885	
Principal building material	Sod	
Architect	Major Henry Cautley?	
Significant Uses and Modifications to Structures	1891	Redoubt wall extended, sally ports added
	1893.	Gun banks added
	1924	Much of redoubt destroyed
	1985	Site further modified by addition of communications tower

The highest point on Watts Peninsula was named Mount Crawford after James Coutts Crawford. Its height ensured it was quickly seen as an important defensive point, and essential to protect the rear of the coastal forts. According to Major Cautley the "key to the defence of the Peninsular [sic] was an infantry and field artillery position on the highest point of Mt Crawford" (Cooke, 2000, p. 53). In 1885 the erection of a redoubt was authorised by the Government as part of Wellington's coastal defences (AJHRs, 1885). It was built to provide cover, particularly at the rear, for all the forts and batteries on the peninsula by protecting them from land attack.

The redoubt's design, according to a General Shaw, was simple enough for prisoners to build (Cooke, 2000, p. 53). Little is recorded of the redoubt's construction, but it was likely a "basic ditch and bank construction" (Andy Dodd, 2020). As the ditch deepened, the removed fill was thrown up and packed down to form a parapet overlooking the eastern forts and the approaches. Defenders stood on a banquet to fire over the parapet, which was faced in grass sods. The design could be considered "unusual", according to one commentator, as the ditch was built behind the redoubt walls: "but this is no doubt because the land fell away steeply in front of the fort and ditches were not required as an impediment to would-be attackers" (Andy Dodd, 2020). The overall length of the redoubt was around 350 metres and although a blockhouse was intended to be built with the walls, this never eventuated (Cooke, 2000, p. 54; Andy Dodd, 2020).

Much of the hillside below was cleared of scrub to allow a good field of fire. Roading linked the redoubt with forts Ballance, Halswell and the battery at Kau Point so that field gunners could "run to and retire from more advanced positions" (Cooke, 2000, p. 54). The redoubt also became part of various training exercises in the 1880s and 1890s. For example, in 1889 the newspapers of the day recorded a mock training battle taking place on Watts Peninsula to celebrate the Prince of Wales' birthday. The Newtown Rifles occupied the redoubt and two guns were placed in position: "their blank firing creating clouds of smoke"(Cooke & Love, 2009; Evening Post, 1889).

In 1891 the new Minister of Defence, Richard Seddon, authorised additional land be procured to extend the Mount Crawford redoubt. Starting in mid-1891, prison labour from the Point Halswell Prison was used; initially 16 men at a time. Inspector Messenger, in charge of preparing the ground, soon utilised 25 prisoners a day who were "a much better class of prisoner (Cooke, 2000, p. 53). The addition lengthened the eastern side of the wall by around 350 metres toward a small knoll. "Sally ports" were also added allowing 6-pounder Nordenfelt field guns to advance from and retire to it. In 1893, gun banks were added allowing the field guns to be fired from the redoubt (Cooke, 2000; Cooke & Love, 2009; Andy Dodd, 2020). Lieutenant-Colonel Fox in his 1893 report on New Zealand's defences described the redoubt as the key to the defence of the peninsula: "Musketry parapet across top of ridge (total trace, 350yds.). No ditches and no flanking fire. Fires on rear of Gordon Point work and Fort Ballance, and all land approaches. Open gorge, to be covered by blockhouse on hillock in rear. Road for field-guns to run to and retire from more advanced positions. Key of defence." (Subsurface Ltd, 2020).

By the end of the nineteenth century, all of the movable armament used in the peninsula's coastal defences was kept at the redoubt (Cooke, 2000, pp. 53–54). After 1900 it remained in use during training exercises, particularly for troops equipped with 15-pounder BL field guns and Maxim machine guns. After 1908 the redoubt largely fell into disuse (Cooke, 2000, pp. 53–54). When Mount Crawford Prison was built in 1924, much of the redoubt was destroyed. In 1985 the site was further modified by the installation of a communications tower. The remaining section is a part of the 1891 addition: a single length of wall on the ridgeline overlooking Fort Ballance, about 120m long (Cooke, 2000, pp. 53–54; Andy Dodd, 2020).

Earthworking was not unusual in defence fortifications: certainly many pā and redoubts exist from earlier periods. However later earthworks were usually integral to a particular fort or battery. Only three other standalone redoubts were built as a result of the 1885 Russian Scare: Mt Victoria (now demolished), Auckland and Taiaroa Head in Dunedin (Andy Dodd, 2020). The Mount Crawford Redoubt has been described as "the last known independent earthwork fortification built in New Zealand" (Cooke & Love, 2009).

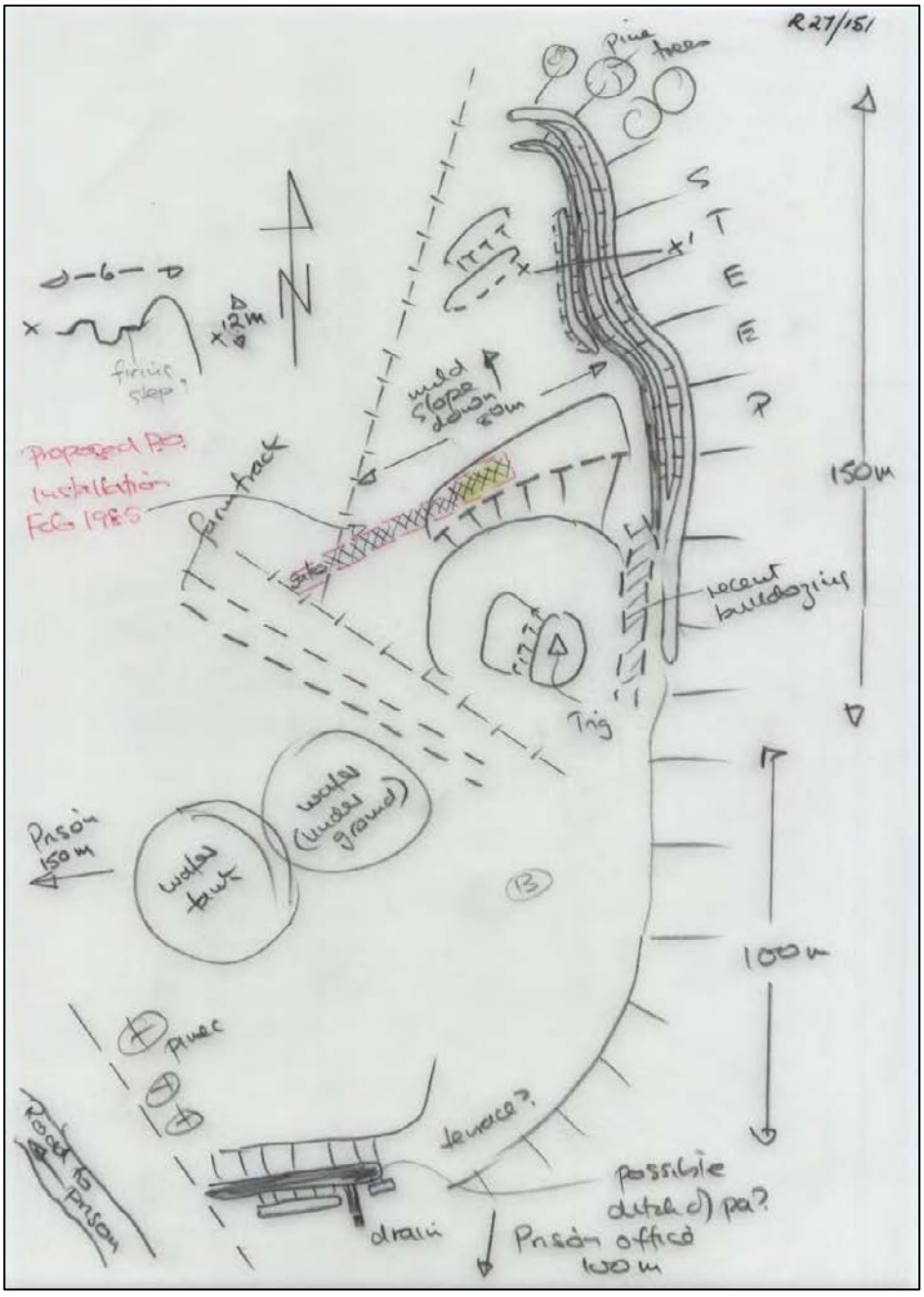

Figure 57: Sketch of the site by A. Walton as it appeared in 1985 (Andy Dodd, 2020a).

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Figure 58: A view of the ditch and parapet of the infantry redoubt remains (Cooke & Love, 2009).

3.3.5 *Shelly Bay (area beyond reserve boundary)*

Shelly Bay is outside the boundaries of the proposed reserve. Wellington City Council owns part of the land, including the road, and the Shipwright's Building, MT Building (No.8), and the line of buildings in front of the officers' mess buildings. Much of the land and buildings seaward of the existing road are owned by Taranaki Whanau ke Te Upoko o Te Ika (Cooke & Love, 2009; Opus & Kelly, 2019). This section has been included to provide important context to the buildings and structures within the proposed reserve footprint.

Submarine Mining Operation

Although Shelly Bay was first noted as a pleasant cove for picnics and excursions, it would become the only site in New Zealand to be connected with all three armed services(M Kelly & Cooke, 2019; Opus & Kelly, 2019) Around 1885 a works camp was established at Shelly Bay for men building the military road to the forts at Point Halswell and Gordon Point (renamed Fort Ballance). In 1886 the two bays that make up Shelly Bay (May Port and Port Janet) were taken for defence purposes and gazetted as a defence reserve. Following an 1887 storm which caused damage to Wellington's submarine base at Thorndon, Shelly Bay was proposed as the new site for the submarine mining facilities. Other facilities associated with Submarine Mining Operations were also located at Mahanga Bay at this time. The Bay provided accommodation for the Thornycroft Torpedo Boat and a depot for the operation and maintenance of the submarine.

Barracks were constructed in 1887 to house prison labour used to prepare the site.[2] In the latter half of 1888 four of the submarine base's buildings were moved to Shelly Bay. By 1889 the Shelly Bay submarine mining depot base had a Whitehead torpedo shed, mine store, general store, offices, blacksmith's shop, carpentry shop, barracks, a tramway connecting the two bays and an 18 metre long L-shaped jetty with a 2-tonne crane (which would be extended in 1902, losing its L-shape (Cooke & Love, 2009; M Kelly & Cooke, 2019; Opus & Kelly, 2019). The permanent New Zealand Torpedo Corps maintained the depot and equipment, while part-time volunteer submarine mining corps came to Shelly Bay to learn the craft. Their first annual camp was held at the Bay in 1887 (M Kelly & Cooke, 2019).

The development of Shelly Bay in the 1880s coincided with the advent of new defence technology. It has been said that the technology employed at Shelly Bay submarine depot was highly advanced, combing new technologies

[2] The barracks survive today as the Chocolate Fish Cafe

developed in a number of different industrial and military fields. Innovations included modern explosives, such as 'Roburite' and gun-cotton; steam torpedo boats; and even a Nordenfelt machine gun. The technology was also tested: in 1890 a rock which was a hazard to shipping in Evans Bay was blasted by a submarine mine. The successful test confirmed that mines still worked after many months in the water. This did not prevent the odd disaster. In 1891 two men were killed in an explosion. The method used at Shelly Bay to manufacture primers was blamed as "obsolete, and should be discontinued" (New Zealand Mail, 1891). The torpedo corps was also reminded to strictly adhere to the rules issued by the British War Office "for use in the Imperial Service" (New Zealand Mail, 1891).

While the Defence Engineer noted in 1891 that the submarine defence of Wellington's harbour existed "in idea only", a resurgence of volunteer interest in submarine mining occurred in the mid-1890s, with such corps forming in all main ports (Cooke, 2000; M Kelly & Cooke, 2019; Wellington City Council, 2022). In 1897 around seventy Māori prisoners from Tarankai were set to work in 1897 to excavate a slipway at Shelly Bay Torpedo Station for the torpedo-boat shed and slipway. They were said to have done "more work in a week than a European prison gang could get through in a month"(Cooke, 2000; Evening Post, 1898; Wellington City Council, 2022). In 1898 the Thorneycroft Spar Torpedo was moved from its location at Mahanga Bay to the southern end of Port Janet.

Facilities required for the Submarine Mining Operation included a number of subsurface installations. These included cable ponds to protect the electrical cables from deterioration, trenches to carry electrical cabling and priming pits where the mine detonators were prepared. These structures were often made of concrete and followed designs provided by the British. A narrow gauge tramway network was also used to move the heavy mine cases around the depot and to the loading jetty (Trilford, 2022).

The buildings at Shelly Bay were not built to last and required increasing maintenance. Roofs were leaking by the 1890s and, for example, in the Dynamo Room it was reported that "the water dripping on to the leads that connect to the switch board insides of Engine Room are also very wet" (M Kelly & Cooke, 2019). The torpedo boats became less and less useful, eventually ending their career as runabouts or umpire boats in civilian regattas. Shelly Bay's Torpedo Boat became redundant about 1900 and was sold at auction in October 1903 and broken up in Port Janet (M Kelly & Cooke, 2019). For over 20 years Shelly Bay had been at the heart of New Zealand's heyday of submarine mining, but the end was near (M Kelly & Cooke, 2019). In 1907 submarine mining as a weapon was disestablished. The Shelly Bay facilities were no longer required and in 1908 removal of the buildings began.

Shelly Bay's isolation, however, saw it remain a popular area for storing explosives: "Even commercial blasting powder, used in civil engineering projects, was stored in magazines on Shelly Bay Road, by Messrs WM Bannatyne & Co, Wellington's only importer of explosives" (Cooke & Love, 2009). In 1910 a quarter-ton of gun-cotton stored at Shelly Bay was used in "rain-making experiments" (Cooke & Love, 2009).

In the early 20th Century and with Europe on the brink of war, Shelly Bay was revived as an active defence force facility. In 1913-1914 three Government magazines were built at Port Janet and linked to the jetty by tramway (Cooke & Love, 2009)[3]. By 1917, 133 mines and over four tonnes of gun-cotton were still being stored there. After the War, in the early 1920s, the submarine base was again mothballed (M Kelly & Cooke, 2019; Opus & Kelly, 2019).

Between the wars Shelly Bay once again became a popular spot for day excursionists, despite it being a prohibited area. In the 1930s, for example, people came to watch the "graceful lines of the topsail schooner Huia which lay at the jetty ready to unload explosives" (Evening Post, 1936). The magazine-keeper had to move on motorists who parked too close to the explosive stores. Guards Vital Point (GVP) were stationed there to protect the magazines, but at the start of the war, Shelly Bay was a run-down military installation (M Kelly & Cooke, 2019).

[3] These magazines were later replaced by the naval base's Officer's Mess.

Figure 59: Star Boating Club Submarine Mining Volunteer Corps, Shelly Bay, Wellington (Unknown, 1899).

Armament Depot

Site	Armament Depot (including magazines)	
Address	Shelly Bay, Watts Peninsula	
Legal Description	Pt. Section 1 and Pt. Section 3, Watts Peninsula District	
Location	Shelly Bay	
HNZPT List Entry No.	N/A	
WCC Schedule	N/A	
Archaeological Site No(s).	Magazine area (R27/241)	
Date of Construction	1942	
Principal building material	Brick	
Architect	Standard Explosive Store House (ESH) architectural plan	
Significant Uses and Modifications to Structures	1942	Ten magazines, fire hydrants, guard house, a hut, and other structures erected for purposes of naval base/armament depot
	1942	Water reservoir built below Magazine 8 for fire hydrants
	c.1942-1945	Two more magazines built
	1946	Site transferred to Airforce but magazines retained as armament storage

With the outbreak of the Second World War the Royal New Zealand Navy (RNZN) required a dedicated naval base in Wellington. Naval vessels had used Wellington's existing port facilities but with new vessels on order, such as minesweepers and motor launches, there would be insufficient accommodation for both naval and merchant shipping. A naval base was also required to house an armament depot and, ideally, this should not be situated near densely built-up environs. Shelly Bay was already used for defence purposes, offered reasonably deep water for vessels, had both flat land and reclaimable areas, and was sufficiently remote for armament storage. Indeed it had been storing explosives from 1888. Planning for the new naval base at Shelly Bay began in 1941 (Michael Kelly et al., 2010; Wellington City Council, 2022).

The first project was to reclaim 2.7 hectares of land to provide space for the additional buildings required to service the boats. Bush on the hillside behind the Bay also began to be cleared and the tramway was re-laid to carry reclamation fill. Over the next two years, the base slowly emerged. Facilities included accommodation blocks, a mess, recreation hall/canteen, hospital, laundry, two boiler houses, store, workshop, shipwright's shop, offices and officers' quarters. The wharves were also considerably extended, and a slipway was built (Opus & Kelly, 2019).

One of the key requirements for the new naval base was an ammunition depot to house the ammunition expected to be used by these various boats: mainly QF 20mm Oerlikon, 2-pounder and 4-inch munitions (Cooke & Love, 2009). To meet this need, ten magazines and a laboratory were built on the military road leading up from Shelly Bay (Figure 61). Using prison labour from neighbouring Mount Crawford prison, work began in April 1942 (Cooke & Love, 2009). The standard Explosive Store House (ESH) architectural plan was used for the construction of these ten magazines, at an estimated total cost of £41, 222. The ESH plan was likely designed under the auspices of Robert Patterson, who became Government architect in 1941. He was involved with the government's large-scale construction of wartime facilities with contractor James Fletcher, and complexes of these armament depots were constructed all over New Zealand (Cooke, 2000; Michael Kelly et al., 2010; National Library, 2022). Of brick construction, the square magazines were c. 11.05m x11.05 metres square with Dutch hip, or Dutch gable style roofs. A sliding metal door on the front elevation sat adjacent to a narrow loading dock. The interior contained two equal sized rooms with a narrow passageway that ran between the outer wall and the inner rooms (Cooke, 2000, p. 114; Michael Kelly et al., 2010; New Zealand Archaeological Association, 2019).

A comprehensive fire-fighting system was used at the Armament Depot to ensure fires or explosions could be dealt with quickly before affecting neighbouring buildings. The Battle of Britain, the first to be fought entirely by air forces and bombing raids, had reinforced the importance of fighting fire. To reduce the risk of the magazines setting off a 'chain reaction' if an explosion occurred, they were set into a protective excavation cut into the bank off the roadway and well distanced from each other to reduce the risk of fire spreading. The excavated material was used in the reclamation of Shelly Bay (Cooke, 2000, p. 114; Michael Kelly et al., 2010; New Zealand Archaeological Association, 2019). The system also relied on fire-fighting equipment and hydrants were installed at regular intervals up the road (Figure 66). These were fed from a reservoir built below the road opposite Magazine No. 9. Integral to the fire-fighting system, the reservoir was an inground water retention pool, with steel access ladder rungs cast into the concrete wall (Figure 67). The reservoir, pipework and hydrants associated with the former system are still present along the accessway and on some of the magazine buildings (Cooke, 2000; Cooke & Love, 2009; M Kelly & Cooke, 2019; Michael Kelly et al., 2010; New Zealand Archaeological Association, 2019). The Wellington City Council have an easement over the reservoir, but to date this has not impacted the overall integrity of the fire-fighting system and the Armament Depot.

The design and location of the laboratory are less clear, and little appears in the record, but may have been placed within the Shelly Bay settlement area. Opposite Magazine 5, a shed or perhaps guard hut was erected. The small structure had a porch, lined interior, window and was supplied with electricity. No records have been found to describe its use (New Zealand Archaeological Association, 2019; Tonkin + Taylor, 2020b) (Figure 64).

The magazines were relatively well camouflaged by trees and the embankment. Other buildings at Shelly Bay were also camouflaged to reduce their chances of being seen by enemy aircraft: "At least one enemy float-plane is known to have flown over the Capital City, in 1942, having taken off from Palliser Bay beside her Japanese submarine mothership" (M Kelly & Cooke, 2019).

Long after works had begun and even some time after the base was first occupied, in June 1944 it was formally commissioned as HMNZS Cook (Cooke, 2000, p. 114; Cooke & Love, 2009). The work of creating the naval base cost a total of £387,463 (approximately $28 million today). It was Wellington's only naval base, and one of only three in New Zealand. The Naval Auxiliary Patrol Service (NAPS) was stationed there from the end of 1942 and, after large slipways were built, it also became a base for outer patrol launches. Air Force Flying Boats also operated out of the base during the Second World War (M Kelly & Cooke, 2019).

The Armament Depot grew to include two additional magazines, built on the road nearer Mount Crawford prison. One was in the style of the original ten magazines, and one was a small brick arms store (Tonkin + Taylor, 2020b) (Figure 62). A guard house was also added to the depot (Cooke & Love, 2009; M Kelly & Cooke, 2019; Tonkin + Taylor, 2020b). Originally known as the Guard house, over time it has also become known as the Sergeant's house and the Cabin. The single-story, timber house was small and simple, designed for one guard (Tonkin + Taylor,

2020b). It was located at the bottom of the road near Shelly Bay, no doubt guarding access to the magazines above. The house was integral to the Armament Depot and is now one the only extant example of a military house on the proposed reserve (Figure 63).

Other ancillary structures may have been added. There is evidence, for example, of a pistol range located between the Magazine 4 and 5. The range included a stop butt, comprised of sand, and approximately 5m x 5m in area. (Tonkin + Taylor, 2020a). A large timber shed was also constructed, close to the rear of Shelly Bay, opposite Magazine 5 (Tonkin + Taylor, 2020a).

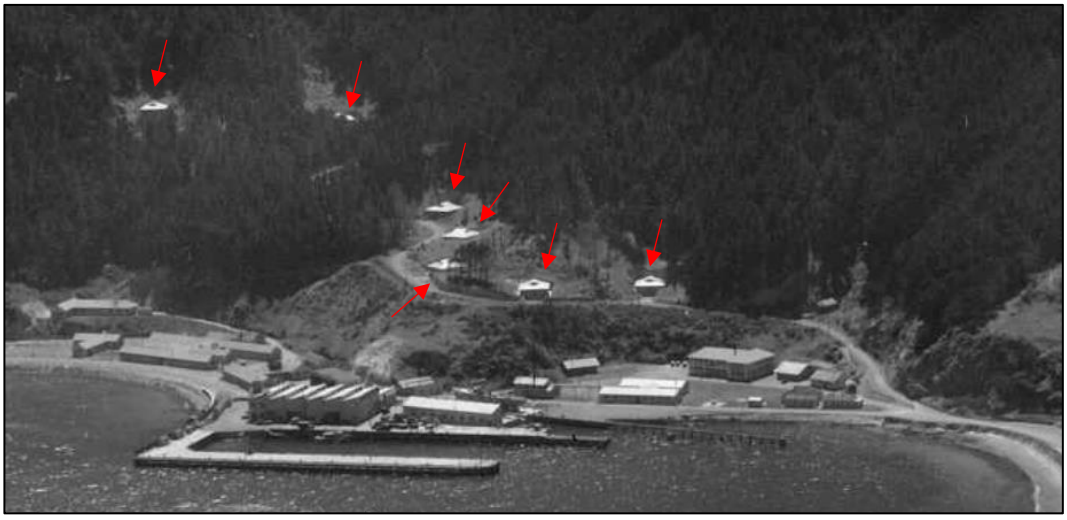

Figure 60: Detail from "Evans Bay Wellington", showing magazines (indicated by red arrows) soon after construction (Whites Aviation Ltd, 1947).

Figure 61: Example of a magazine (NZHP, 2022).

Figure 62: The arms store (NZHP, 2022).

Figure 63: The sergeant's house, or guards house (NZHP, 2022).

Figure 64: View of an ancillary building, which may have been a guard hut or shed (NZHP, 2022).

Figure 65: Timber shed opposite Magazine 5 (Tonkin + Taylor, 2020a).

Figure 66: A water hydrant close to the reservoir (Tonkin + Taylor, 2020a).

Figure 67: The reservoir used for holding water in case of the armaments within the magazines exploding (NZHP, 2022).

Air Force Support Centre

From submarine base to naval base, at the end of the Second World War Shelly Bay was occupied by another branch of the armed services. In March 1946, Air Force assumed control of HMNZS Cook as a Support Centre, "on the undertaking that, should the emergency arise, the Base and its buildings will revert to the Naval Service"(AJHRs, 1947b). The naval base's buildings (outside of the reserve except for the Armament Depot) were utilised for offices for the "Air Department" and accommodation for personnel in Wellington (AJHRs, 1947a). The buildings were used generally as the navy had used them, but a number of existing structures were eventually deemed surplus to requirements and were removed. For example, the Searchlight tower was demolished in 1959 (Figure 68). Others were destroyed in a 1965 fire, including the kitchen, mess and YMCA library (Opus & Kelly, 2019).

The Armament Depot buildings, within the proposed reserve, also continued to be used. The magazines still provided armament storage, but their usefulness diminished over the post-war decades. Unserviceable ammunition was removed in 1949, and presumably dumped at sea. More recently some of the magazines have housed highly flammable nitrate film stock from the New Zealand Film Archive (M Kelly & Cooke, 2019).

Between 1969 and 1995 Shelly Bay was used as a Royal New Zealand Air Force Base (Opus & Kelly, 2019). In 2005 ownership of the road and land to the seaward side was transferred to Wellington City Council. Much of the land and buildings seaward of the existing road (as well as the wharves) were sold to the Taranaki Whanau ke Te Upoko o Te Ika in February 2009. Wellington City Council still owns the slipway, Shipwright's Building, MT Building (No.8), and the line of buildings in front of the officer's mess (Cooke & Love, 2009; Opus & Kelly, 2019).

Figure 68: View of an army explosives truck and an unidentified soldier examining a concrete control tower with plans to demolish it, Wellington Region (Evening Post, 1959b).

3.3.6 *Mahanga Bay*

Mahanga Bay is **outside** the boundaries of the proposed reserve. However, the history of the Bay provides important context to the story of the peninsula's coastal defences. It is also important to note that the building in Mahanga Bay most recently used by the National Institute of Water and Atmospheric Research Ltd (NIWA) is still owned by NIWA (Part Section 2 Watts Peninsula District and Section 3 Survey Office Plan 391376 CT 490203, WN50A/48).

Mahanga Bay is a site with a long history of use by army and naval services, dating to the establishment of coastal defences on Watts Peninsula. In 1885 Mahanga Bay was selected to be an auxiliary submarine mining depot to the main depot at Thorndon. A wharf was built to service a small depot with a mine store and test room. A narrow-gauge tramway linked the depot with a pit for testing primers to the south, and a guncotton pit to the north. This tramway also linked with Fort Ballance's incline tramway, which hauled up materials for building the fort (Cooke & Love, 2009). In 1886 a boatshed and slipway were added for the Thorneycroft spar torpedo boat (Subsurface Ltd, 2020).

In 1889, following a severe storm, it was decided that Mahanga Bay was too exposed to the weather and the torpedo boatshed was relocated to Shelly Bay in October (Subsurface Ltd, 2020).

From the 1880s until just before World War I, Mahanga Bay was regularly used by volunteer soldiers who trained and engaged in wargames over the military reserve. The public visited these camps and viewed the training manoeuvres from a distance. Restrictions on access were gradually introduced leaving the visits to designated open days (Cooke & Love, 2009).

In the early years of the twentieth century, Mahanga Bay continued to be used for defence purposes. Photographs show buildings and structures in the Bay and the slopes behind (Figure 69, Figure 70 and Figure 71). For example, around 1903 a tide gauge was added to the wharf to help calculate the relatively small angle of observation to the target which changed with the rise and fall of the tide. Additional tramway lines were also laid in 1905 and a pumping station was also erected in the hills above Mahanga Bay to take water from a stream into the reservoir behind Fort Ballance (Cooke & Love, 2009).

During the First World War, Mahanga Bay served largely as a storage depot and magazines were added on the road south of the old depot. After the War, it was decided to open the road to the public and the depot was cleared of all armaments. With the advent of the Second World War, work began on an Advanced Mine Depot at Mahanga Bay. By 1943 a large mine store had been erected to service a large minefield laid in the water off the coast in 1942 (Cooke & Love, 2009). In July 1944 the field was detonated, which "raised spectacular walls of water and shook nearby hills… [and] every type of fish life inhabiting Wellington harbour came to the surface, the smallest first and then in increasing size" (Ashburton Guardian, 1944).

In 1970 all buildings at Mahanga Bay were demolished (Tonkin + Taylor, 2020a). From 1975 the building became a temporary seawater hatchery/aquarium. In 1992 the research facility came under the umbrella of NIWA (Cooke & Love, 2009). In recent years NIWA have vacated the site, demolishing the large mine store just prior to their departure. Today only a concrete slab remains

Figure 69: A View of Mahanga Bay. Wellington Volunteer Engineer Corps at Mahanga Bay. (Daroux, 1904).

Figure 70: Mahanga Bay wharf showing 1906 extension, comprising 20 pile stumps on seafloor in L-shaped formation. Remnants of military wharf in operation during the 1880s as part of Wellington's "Russian scare" defences (S. C. Smith, 1908).

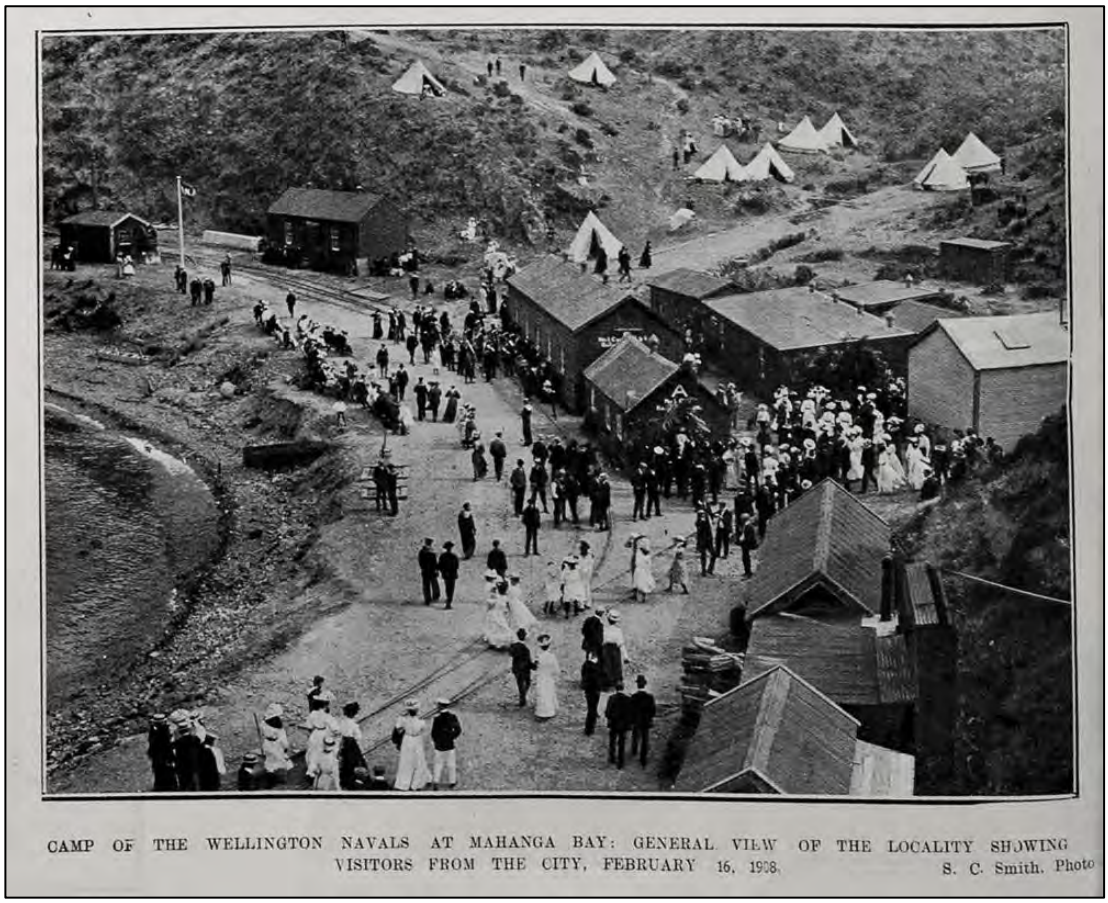

Figure 71: Camp of Wellington Navals at Mahanga Bay. Note the tram lines, buildings and tent camp to the rear (Auckland Weekly News, 1908).

3.3.7 *Mount Crawford Anti-Aircraft Battery*[4]

Site	Mount Crawford Anti-Aircraft Battery	
Address	Mount Crawford	
Legal Description	Pt. Section 1, Watts Peninsula	
Location	Spur to the south of Point Halswell	
HNZPT List Entry No.	N/A	
WCC Schedule	N/A	
Archaeological Site No(s).	Anti-Aircraft Gun Battery (R27/174)	
Date of Construction	1942	
Principal building material	Concrete	
Architect	British War Office	
Significant Uses and Modifications to Structures	1944	Guns withdrawn
	Post WWII	Emplacements and command post stripped

At the start of the Second World War, New Zealand only had a few operational anti-aircraft (AA) guns, despite the 1930s review of coastal defences which had identified the need for anti-aircraft defences. However, planning was well underway to erect AA emplacements and import guns from Britain.

At Mount Crawford, four 3.7-inch guns were to be accommodated. A site was soon chosen on a spur to the immediate south of the Point Halswell Reformatory. Construction of the installation was hasty and used plans from Britain's War Office that arrived in March 1942 (Michael Kelly et al., 2010). Work on constructing emplacements for the heavy AA guns began in April 1942 at six sites, one of which was Mount Crawford. The others were at Somes Island, Mt. Victoria, Brooklyn, Tinakori Hill and Johnsonville. Light AA guns were also emplaced at numerous sites around Wellington (Michael Kelly et al., 2010).

[4] Sometimes colloquially known as the Point Halswell AA Battery, most sources refer to the site as the Mt Crawford Anti-Aircraft Battery. This includes defence historian Peter Cooke.

All structures were constructed of heavy reinforced concrete in accordance with the War Office plans, "but they used so much concrete and scarce reinforcing steel that a New Zealand-modified type of emplacement called Type-C was developed for future sites" (Cooke & Love, 2009). Works were undertaken by Public Works Department staff and subcontractors. Mount Crawford's AA Battery was among the first completed: armed and able to fire by June 1942: The whole complex was constructed at a cost of £16,993 (Cooke & Love, 2009).

The Battery consisted of a command post and four large gun emplacements, each to take one 3.7-inch (94mm) Vickers heavy anti-aircraft guns. The octagonal emplacements, each about 13 metres across, had one segment open to provide access for the wheeled gun to be backed into position and bolted down. The internal space was around seven metres across, with holding-down bolts in the middle (Cooke & Love, 2009). The other seven segments all contained a small chamber, with a door, entered from the gun pit. Complimenting the pit were two or three large and windowless wings containing small five-metre war shelters, entered via the small chambers ringing the gun pit. Each gun had ready-ammunition lockers for complete one-piece rounds. Further ammunition was stored at the old Kau Point emplacement, in the underground magazine.

The command post was a simple rectangle in plan, again with reinforced concrete walls. About 13m x 7m, it was divided into several sections. The building contained a telephone room and two open areas for the height/range finder at one end and the predictor at the other: "This piece of clever equipment predicted the future position of an aircraft target (as 'acquired' by the rangefinder)" (Cooke & Love, 2009). The battery commander position was in the middle. After construction was completed, the guns and command post were camouflaged (Michael Kelly et al., 2010; New Zealand Archaeological Association, 2017). The AA Battery was served by B Troop of 74 Heavy AA Battery (later the 160 Heavy AA Battery) and a camp of wooden huts was also erected for its 109 personnel on the hillside above the women's prison site (Cooke & Love, 2009).

Around December 1943, as the War slowly turned in the Allies favour, the unit was downgraded and only a skeleton crew remained. The guns were removed in February 1944 (Michael Kelly et al., 2010). After the War most AA sites were systematically cleared. The Mount Crawford AA Battery is now one of the best surviving examples of Second World War gun sites and "represents one of the last positions of their kind in the country" (Walzl, 1986) (Figure 72 and Figure 73).

Figure 72: Mt Crawford Anti-Aircraft Battery 2010 (NZHP, 2022).

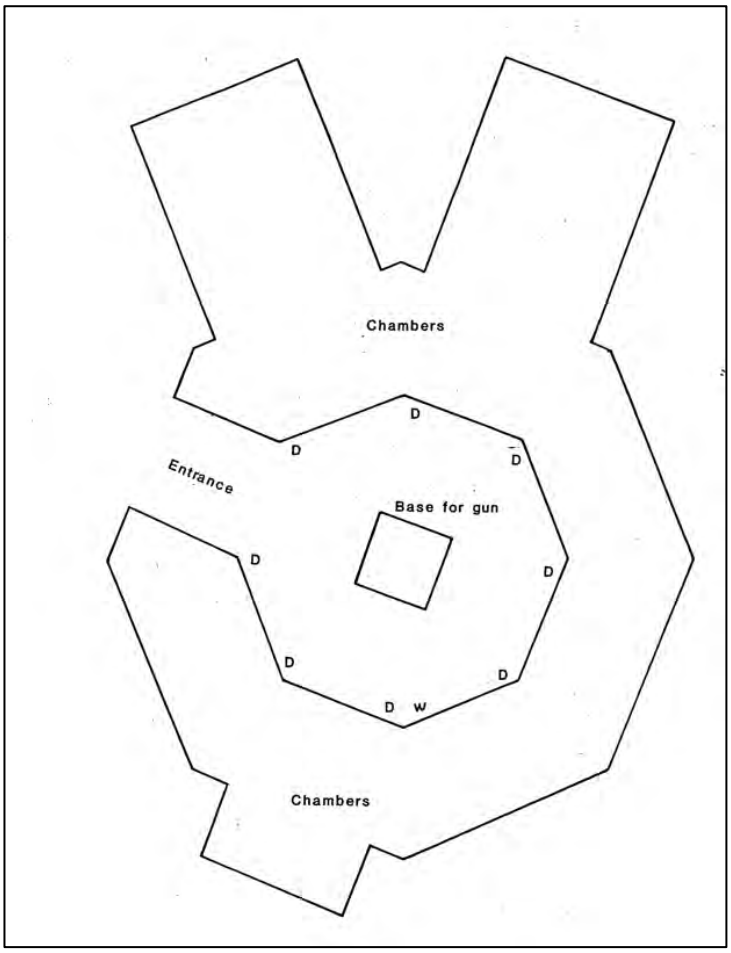

Figure 73: Layout of the AA gun emplacement, 2017 (New Zealand Archaeological Association, 2017).

3.4 Point Halswell Women's Reformatory

Site	Point Halswell Women's Reformatory	
Address	Watts Peninsula	
Legal Description	Pt. Section 1, Watts Peninsula	
Location	Point Halswell – up the spur, and some distance behind the Massey Memorial	
HNZPT List Entry No.	Portion at roadway at Kau Point, Category 1 historic place (List No. 7542)	
WCC Schedule	N/A	
Archaeological Site No(s).	Site of former barracks and women's reformatory (R27/383) Stone wall (R27/298)	
Date of Construction	1889	
Principal building material	Concrete/brick	
Architect	Government Architect	
Significant Uses and Modifications to Structures	1889	Justice Dept convert Halswell Battery into No. 1 Prison for Women
	1914-1915	Additions
	1918	Garden laid out
	1919-1920	1889 barracks extended and renovated to house all women prisoners from the Terrace Prison. Declared as Point Halswell Women's Reformatory
	1922	Dairy and warder's cottage from Mt Crawford added for Matron and staff
	1925	Separate borstal building added
	1927	Fergusson and Wakefield Houses added to site
	1949	Two flats added with plans for two more
	c.1952	Borstal closed and borstal buildings used for prison warders' accommodation
	n.d.	Buildings demolished

3.4.1 *Prison Labour and the 1886 Barracks*

Between 1885 and 1889 a new battery was built at Point Halswell.[5] The construction of the battery required accommodation for workers employed at the site. Plans dating to 1886 show an area set aside for the camp with two buildings already constructed (Figure 31). The larger of these was a barracks for the accommodation of gunners (Subsurface Ltd, 2013, SO 25956). Three years later it was decided to use prison labour to assist with the construction of coastal defences, and the camp was converted into a prison. In 1888 barracks built south of the battery were converted to a temporary gaol for 50 male prisoners employed on building the emplacement. The barrack site was declared a legal prison, fenced in, and Patrick S. Garvey appointed its first gaoler (AJHRs, 1898). Prisoners started work on 12 March 1888 (Cooke & Love, 2009).

Convicts sentenced to hard-labour were seen as a cheap source of labour, and they were used on many of the coastal defence projects. These works included the military road, the 8-inch gun emplacement at Halswell Point and at Fort Ballance. When the torpedo depot was to be moved to Shelly Bay, they extended the road to it and prepared that site. Prisoners worked in gangs of around 20-25, supervised by armed warders. Only "well-behaved and light-sentenced prisoners" were sent to Halswell, and they continued to do light work at the defences and prison farm until 1919 (Cooke & Love, 2009).

3.4.2 *No.1 Prison for Women*

In 1913 the Justice Department leased some of the Defence Reserve and adapted the original 1886 barracks into the No.1 Prison for Women (Cooke, 2000, p. 80; Cooke & Love, 2009). With the advent of the First World War the neighbouring Point Halswell battery was converted into a magazine, except for a brief period in 1914 when it was manned. Its proximity, however, did not prevent the Justice Department leasing more land from the Defence Department and in 1914 it decided to erect a small permanent prison on the site. The 1886 barracks remained at the heart of the prison, but by December 1914 preparations for the enlarged prison were well underway. By the end of 1915 additions had been completed (AJHRs, 1914, 1915). These included wards, a school room, a punishment cell, as well as kitchen and dining facilities (Subsurface Ltd, 2013). In 1918 the gardens area, including the vegetable gardens worked by the inmates, were laid out (AJHRs, 1918).

By 1919 "necessary alterations" had been planned to enable the buildings to be used for female prisoners held in the old Terrace Prison, since the Point Halswell site had "proved itself one of the most healthy in the Dominion" (AJHRs, 1919). As the additions were constructed, however, the institution became more prominent and was no longer hidden from public view. A public outcry saw the buildings under construction finished, but the planned "cell building" was not proceeded with. Further, the Department sought to assure the public that the Point Halswell prison was a temporary measure. (New Zealand Times, 1919).

3.4.3 *The Reformatory*

Following the passage of the Reformatory Institutions Act 1918, there were many conversations with regard to establishing a women's reformatory in the city. Additions and alterations were made and in November 1920 it was announced that the new Reformatory Institution for Women at Point Halswell had opened. The newspaper description indicated it was still the No.1 Prison for Women but under a new name: certainly, it held all the women prisoners from the Terrace Gaol (Evening Post, 1920). The Department explained that as the Point Halswell reformatory buildings were to be "but a temporary institution, until other accommodation may be found, new buildings were not erected, but the timber is sound and the renovations carried out have completely altered their appearance from the time when they were in use as a prison camp for male prisoners" (Evening Post, 1920).

Alterations included the additions of verandahs and porches and "the long barracks and cubicles have been divided, and re-arranged upon a uniform plan…. Each woman has a room, averaging 8 by 9 feet, to herself, for all but one room are single. Each is lit by a curtained window without bars, and placed where a window should be, and is

[5] Some of the battery remains underneath the Massey Memorial. The site of the former battery is outside the project area.

furnished with a hospital spring mattress bed, kapoc mattress, and two pillows, sheets, a strip of carpet, wardrobe, a moveable table, and a chair" (Evening Post, 1920). There were outbuildings, including a laundry, as well lawns and vegetable gardens. The whole of the refit, plumbing and installation of electric lighting was carried out by prison labour from the Terrace Prison (Evening Post, 1920).

By 1922 a dairy was on site, as well as a "nice cottage" for the matron and staff. It was a warder's cottage and moved from Mt Crawford to Point Halswell and "with the addition of a modern windowed front and fresh papering, it masquerades happily as a new-fashioned villa". In 1925 a separate borstal building for younger offenders was added (Cooke & Love, 2009). In 1927 Fergusson and Wakefield Houses were added to the site, which now consisted of about ten buildings (Evening Post, 1927; Michael Kelly et al., 2010) (Figure 74). While several elderly inmates were described in 1920, but 1922 the only residents were "girls…well in health …[who] seem as happy as they can be" (Evening Post, 1922). An article in 1923 explained that the Point Halswell Reformatory was for girls and young women from all of New Zealand, but they were kept "entirely apart from the older women". The reformatory, then, was housed alongside the women's prison.

Writing in 1934, journalist Robin Hyde (the pseudonym of Iris Wilkinson[6]) described the Reformatory as a "strange house by the sea" (Hyde, 1934, p. 203). She wrote that "…Escape from Point Halswell is almost impossible, and the girls are permitted a good deal of outdoor life…There is some attempt at both schooling and pleasure at Point Halswell…. a big, airy schoolroom, occasional dances, the music of an old gramophone, a little circulating library. The wards are christened after departed vice-reines of this Dominion, and the highest 'promotion' an inmate can win is to get to the Lady Alice Fergusson part of the building…There is a 'punishment cell' – unlighted, bleak, unfurnished – a mere concrete tank in stark contrast with pretty little rooms and pretty little ideas….". (Hyde, 1934, p. 203). The proximity of the men's prison up the hill at Mt Crawford meant that the women prisoners had to do all their washing and mending. The reformatory had a small farm with cows and poultry, and inmates undertook milking and gardening (Hyde, 1934, p. 203).

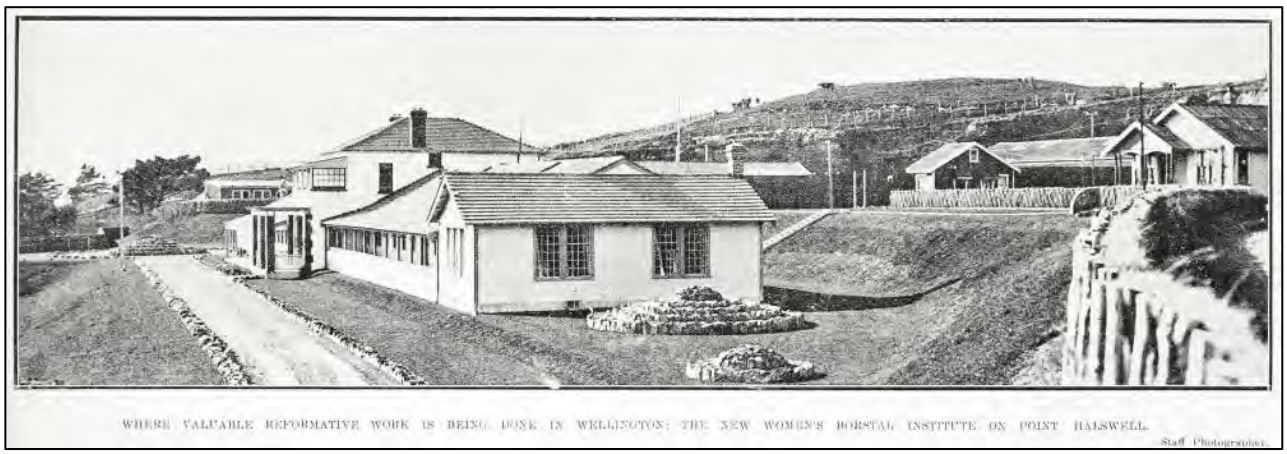

Figure 74: A view of the Borstal, probably taken around 1927 after the construction of Wakefield and Fergusson Houses (Auckland Weekly News, 1927).

A number of significant women were associated with, or incarcerated in, the prison. For example, early poet, journalist, environmentalist and prison reformer Blanche Baugan worked there during the early 1920s. Connie Jones, who was arrested in May 1941 after she gave a speech on pacifism, was sentenced to three months hard labour at Point Halswell, the only woman jailed for expounding such views (Michael Kelly et al., 2010).

In 1940 the Point Halswell Borstal, as it was then known, was described in the newspapers of the day. Noted as the only women's borstal in New Zealand, it contained about 40 young women "in residence": "The Borstal is run on the same lines as the English Institutions, and is not regarded as a prison, but as a place for training and

[6] Robin Hyde, poet, novelist, journalist, is a major figure in New Zealand twentieth-century literature.

discipline. The ages of the girls range from l6 to 23 years, and the period of detention is from one to three years. When first admitted, the girls go into the reformatory section, and, as their conduct improves are promoted to Wakefield and Fergusson Houses, within the Institution. Good marks bring a small monetary reward, and these sums are kept for the girls and paid to them on leaving… School classes up to Standard VI are held, and the girls have their own laundry in which they do the washing for the Government Departments. Cooking is also taught, and, at present a considerable amount of war knitting is being done... After the period of detention the girls are placed on probation for about eighteen months,…and after a few years many of the girls marry and make excellent wives and mothers" (Hutt News, 1940) (Figure 75, Figure 76 and Figure 77).

During World War II the Halswell reformatory/borstal buildings were required by the Navy as accommodation for its Shelly Bay base. The borstal remained open for a time, even after the new Arohata Women's Borstal was built at Tawa Flat in 1944, but later that year the last prisoners left; the Army driving the women to the recently-built Arohata prison (Cooke & Love, 2009; Evening Post, 1944). The Navy then built more accommodation in Shelly Bay itself and no longer required the borstal facilities. The facility was transferred back to the Prisons Dept in 1947. In 1949 two flats were erected and plans were approved to build two more (AJHRs, 1949). By 1952 the borstal had closed and the buildings found a new use as Mt Crawford prison warders' accommodation (Dominion Post, 1952). Buildings began to be demolished from the 1960s and by 1987 there were only a few remnants left on the site (Retrolens, 1987).

The large flat area has since been utilised for films sets including Lord of the Rings (1999), King Kong (2005), Zorro (2005) and Kingdom Come (2009) (Cooke & Love, 2009). Although the site has been cleared, today there are numerous remains, including building foundations, building pads, walls, fences and earthworks, that indicate the general layout of the buildings that were once there. Stone walls also remain around the southern portion of the orchard (Michael Kelly et al., 2010) (Figure 78, Figure 79 and Figure 80).

Figure 75: "Flats at the former borstal building, Wellington", 1955 (Evening Post, 1955b).

Figure 76: The borstal as it looked in 1955 (Evening Post, 1955a).

Figure 77: An aerial view of the borstal, 1938 (Retrolens, 1938b).

Figure 78: Detail of 1938 aerial showing orchard enclosure (Andy Dodd, 2020b).

Figure 79: A stone wall example (NZHP, 2022).

Figure 80: Site of Point Halswell's Women's Reformatory (NZHP, 2022).

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3.5 The Reserve at Watts Peninsula

In 2000 the New Zealand Defence Force determined that their landholding on Watts Peninsula/Te Motu Kairangi was no longer required for defence purposes. Plans were developed by the Ministry for Culture and Heritage to create a reserve, reflecting the area's historical and cultural significance to the Wellington region. In 2011, Cabinet agreed that Te Motu Kairangi/ Watts Peninsula should be "protected, preserved and developed as a distinctive national destination"(Cabinet Economic Growth and Infrastructure Committee, 2011). In 2017, the land was transferred to LINZ for the purpose of reporting on the resources required to declare Watts Peninsula a reserve under the Reserves Act 1977. This responsibility included addressing immediate safety issues and bringing the majority of the proposed reserve to a position where it could be transferred to any agency to develop and manage as a reserve (Cabinet Economic Growth and Infrastructure Committee, 2011) As Te Motu Kairangi sits within the rohe of local iwi Taranaki Whānui ki Te Upoko o Te Ika (Taranaki Whānui), the Crown is also working with their post-settlement governance entity Port Nicholson Block Settlement Trust regarding the future reserve (LINZ, 2022).

The proposed reserve tells a long and important story. The very nature of its setting and landform has seen the peninsula recognised and utilised for its defensive properties for many centuries. From defensive pā protecting inhabitants from local invaders, to Victorian forts guarding against imagined threats, to mid-twentieth century anti-artillery guns employed in a global conflict: how many other sites in New Zealand provide such a strong testament to one historic theme? Interwoven with the story of coastal defence is the history of convicts: their use as unpaid labour and their reforming home on the isolated peninsula, out of sight and out of mind. The reformatory's orchards and gardens were formed from the landscape worked by colonial farmers, following from the tradition of kāinga gardens and the peninsula's mahinga kai resources. The story of the peninsula weaves its way through the centuries drawing together interconnected strands, to form a rare and remarkable picture.

4 Assessment of heritage values

As discussed in *2.2 Heritage Listing,* previously assessed heritage values have been extracted in full and are provided at Appendix 1. These values form a baseline for the following revised assessment of values and statement of significance that seeks to examine the significance of Watts Peninsula as a whole, as a 'site complex' from pre-contact era to World War II.

HNZPT's methodology for determining heritage values and the significance of these values is useful here as are the Heritage New Zealand Pouhere Taonga guideline series for the assessment of heritage values (Sustainable Management of Historic Heritage Guidance Information Sheet 2, NZHPT 2007). HNZPT may enter any place on the List/Rārangi Korero if it is satisfied that the place or area has aesthetic, archaeological, architectural, cultural, historical, scientific, social, spiritual, technological, or traditional significance or value. HNZPT assigns the degree of significance – i.e. Category 1 or Category 2 - on the basis of one or more of the following criteria:

(a) the extent to which the place reflects important or representative aspects of New Zealand history:
(b) the association of the place with events, persons, or ideas of importance in New Zealand history:
(c) the potential of the place to provide knowledge of New Zealand history:
(d) the importance of the place to tangata whenua:
(e) the community association with, or public esteem for, the place:
(f) the potential of the place for public education:
(g) the technical accomplishment, value, or design of the place:
(h) the symbolic or commemorative value of the place:
(i) the importance of identifying historic places known to date from an early period of New Zealand settlement:
(j) the importance of identifying rare types of historic places:
(k) the extent to which the place forms part of a wider historical and cultural area

For the purposes of assessing historic heritage values, the NZHPT 2007 guideline rationalises these qualities into three categories, *Physical*, *Historical* or *Cultural* values with the following values under each category;

Physical

- Archaeological
- Architectural
- Technological
- Scientific, rarity, representativeness, context, integrity and vulnerability

Historical

- People, events, patterns.

Cultural

- Identify, public esteem, commemorative, tangata whenua, commemorative, education and statutory recognition.

Utilising this criteria and on the basis of previous works assessing values (Appendix 1), Watts peninsula is assessed as a 'site complex' under the following categories;

- Archaeological
- Architectural
- Aesthetic
- Technological

- Historical
- Cultural

Having assessed the values, the level of significance is then described in standardised terms. The Wellington City Council has established standardised terminology for describing levels of significance which are useful here (Wellington City Council, 2020b). These terms are:

- None or N/A
- Little
- Some
- Significant

The breadth of this significance or the area in which the place has value is also important to consider, and can be also described in standardised terms as having a certain level of significance at a certain geographic extent. These levels are:

- Local
- Regional
- National
- International

Certain values, particularly those related to architecture may also be a particularly good example of the type. Where relevant, the following standardised terms may be used:

- **A fine example** - the building/object displays a large number or range of characteristics that is typical of the class; the building/object displays characteristics that are of a higher quality or historical relevance than are typical of buildings/objects in the class; or the building/object displays the principal characteristics of the class in a way that allows the class to be easily understood/ appreciated.
- **A highly intact example** – the building/object displays characteristics of the class that remain mostly unchanged from the historically important period of development or use of the building/object
- **An influential example** – the building/object contains physical characteristics of design, technology or materials that were copied in subsequent buildings/objects of the class (direct physical influence), or other buildings/object were created, altered or used in response to the characteristics of this building/object.
- **A pivotal example** - the building/object encapsulates a key evolutionary stage in the development of the class.

Each value concludes with a statement that clearly states the level of significance identified and the community or geographical area in which the value is grounded. After the level of significance has been assigned to each value, a statement of significance summarises the overall level of importance of the place. This overall significance is described as:

- Little overall historic heritage value
- Some historic heritage values
- Significant historic heritage values.

4.1 Heritage Values

In this section the heritage values of Watts Peninsula are described. Our research has found that overall, the buildings and structures on the Peninsula contain special archaeological, aesthetic, architectural, historical, cultural and technological significance or value.

Archaeological

Watts Peninsula contributes archaeological information about the human history of the region and contains several archaeological sites. Given the dense activity and occupation of the area, there is also potential for the discovery of other sub-surface remains. Previously identified archaeological values include:

- Indigenous sites include the remains of pā and kāinga including middens and terraces.
- Military installations dating from 1885. The military road, Fort Ballance, Kau Point Battery, and Mount Crawford Redoubt are all examples of archaeological sites relating to the history of Watt's Peninsula as a military reserve.
- The site of the former Point Halswell Women's Reformatory

As well as previously recorded archaeological sites, there are likely to be many unrecorded sites throughout the peninsula including those relating to Māori occupation of the area, colonial settlement and farming, and other infrastructure relating to the use of the peninsula in defence and reformatory purposes.

For these reasons, the **archaeological** values of Watts Peninsula are considered **significant** on a **regional** level**.**

Aesthetic

Aesthetic values are defined by the visual interest and characteristics of a place. This includes its setting and streetscape, townscape, landscape and/or landmark value. The aesthetic values embodied on Watts Peninsula include:

- The original design of the main structures at Fort Ballance exhibit a Victorian aesthetic, whether deliberate or simply an unconscious effect of the era.
- Later buildings and structures were functional in design but reflected an elegant simplicity.
- Some detailing in the features and fittings remain, including painted signage at the battery observation post at Kau Point. These are an important testament to the original aesthetic.
- Although built during the Second World War, the Shelly Bay Armament Depot exhibits a strong from and pleasing geometric quality.
- The picturesque remnants of the bleak borstal, and associated plantings are an example of the way penal labour changed the landscape.
- The military buildings and farmstead structures on the Peninsula are a testament to their era, particularly in their use of materials and finishes.
- Watts Peninsula with its defensive fortifications is a prominent Wellington landscape feature.
- As most of the remaining buildings and structures are military in origin and purpose, they share a common appearance, atmosphere and setting.

For these reasons, the **aesthetic** values of Watts Peninsula are considered to be **significant** at a **regional** level**.**

Architectural

Architectural values consider the significance of the architectural elements, as well as rarity, representativeness, integrity, vulnerability and group context. Architectural values include:

- Early military installations were designed by Major Henry Cautley and Lieutenant-Colonel E.H. Tudor-Boddam. Later installations were designed, and the construction supervised, by Arthur Dillon Bell, Civilian Engineer for Defence. Cautley, Tudor Boddam and Bell are perhaps the most influential architects of New Zealand's nineteenth century coastal fortifications.
- Cautley and Tudor-Boddam's plans for the Victorian-era coastal defence fortifications were "state of the art" for the time.
- The remains of the forts and related structures are a remarkably cohesive group of military sites influenced by three important military architects and engineers across key period in both the 19th and 20th centuries. They are now an increasingly rare testament to New Zealand's coastal defences.
- The coastal defences have a high degree of integrity retaining significant original fabric from the period in which they were built. The original layout of the Victorian forts, in particular, is largely unaltered above and below ground.
- A high quality of workmanship is evident in many of the original buildings and structures, as exemplified in plastered finishes and detailed features.

- Watts Peninsula includes structures based on British War Office plans. These remaining structures represent New Zealand's reliance on Britain, at least in matters of defence, from the 1880s through to the 1940s. They represent not only the type of defence structures common to New Zealand, but are a rare example of British-designed defence structures.
- After the Second World War most Anti-Aircraft sites were systematically cleared. The Mount Crawford AA Battery is now one of the best surviving examples of Second World War gun sites and represents one of the last positions of its kind in New Zealand.

For these reasons, the **architectural** values of Watts Peninsula are considered to be **significant** on a **national** level and **a fine example** of coastal defence fortifications on a **national** level.

Historical

Historic values can be defined by a place's connection with people, events, and patterns. The historic values connected with Watt's Peninsula include:

- The story of Te Motu Kairangi/Watts Peninsula is remarkably historically cohesive. For example, the setting and landscape of Watts Peninsula has seen it recognised and utilised for defence fortifications for many centuries. Also, prison orchards and gardens were formed from the landscape worked by colonial farmers, following from the tradition of kāinga gardens and the peninsula's mahinga kai resources.
- Te Motu Kairangi was the site of several pā and kāinga including Te Mahanga, Puhirangi, Kau-whakaara-waru, Te Mata ki Kai Poinga and Marukaikuru and are key landmarks interwoven in the cultural narrative and history of the region. These sites also form connections to iwi outside of the region via migration.
- Watts Peninsula is named for James Watt, the first European settler in Wellington to establish large scale agriculture: the first European use of the Peninsula.
- The Peninsula is associated with noted Wellington settler, James Coutts Crawford, who ran a sheep farm on the northern tip of the Peninsula. He would be responsible for the nomenclature of Miramar Peninsula.
- In continual use for around 120 years, the Peninsula is a rare testament to the national response to coastal defences from the Russian scare of the Victoria era to twentieth century global warfare.
- The place is connected with noted military architects and engineers: Major Henry Cautley and Lieutenant-Colonel E.H. Tudor-Boddam, Arthur Dillon Bell, and 1940s Government Architect Robert Patterson.
- The coastal fortifications on Watts Peninsula are nationally unique and the best-preserved string of nineteenth century coastal defences in New Zealand.
- The military installations are a testament to the colony's first steps towards independence from Britain.
- Fort Ballance was the first fort built in Wellington and remained the primary protection for the capital city between 1885 and 1911. It remains one of the country's pre-eminent Victorian forts. Kau Point Battery exemplifies many of the same attributes, although on a smaller scale.
- Only four standalone redoubts were built as a result of the 1885 Russian Scare. The Mount Crawford Redoubt has been described as the last known independent earthwork fortification built in New Zealand.
- The see-saw searchlight emplacement is internationally significant for its rarity.
- The military road retains its original nineteenth century form, complete with water troughs. It is a rare surviving testament to nineteenth century horse-era roads.
- The military road is a rare extant example of a road built solely for military purposes and is nationally unique.
- The site complex has international appeal and relevance for its connection to wider Empire and commonwealth war efforts from the Russian Scare through to the end of WWII.
- The Shelly Bay Armament Depot and related buildings are a testament to Shelly Bay's regional and national significance as a military base of operations for over a century.
- The defence fortifications are connected with various elite groups including the Wellington Naval Artillery Volunteers, and the Submarine Mining Corps.
- The Peninsula is connected with Wellington's early penal era, and prison labour was a reoccurring theme in the construction of the coastal defence fortifications.

- From 1888 a temporary goal, in the form of barracks, was erected on the Peninsula. These barracks would become the foundation of a prison for women. The barracks were extended, and the site enlarged to become the Point Halswell Women's Reformatory, later borstal, in 1919. In 1940 it was described as the only woman's borstal in New Zealand.
- Since 1999 the Point Halswell Women's Reformatory site has found a new life as a movie set.

For these reasons, the **historic** values of Watts Peninsula are considered to be **significant** at both a **national** and **international** level.

Cultural

Cultural values can be defined by a place's value in terms of identity, public esteem, commemorative, and educational potential. Cultural values are also determined by its association with tangata whenua. Te Motu Kairangi has seen centuries of tangata whenua occupation, including utilisation of its defensive properties and mahinga kai resources. The sites chosen for batteries were also often the location of pā and they contain important cultural value, particularly to descendants of Ngai Tara and others who fought defensive battles there.

Although a full cultural values statement had not yet been prepared by iwi, Taranaki Whābui ki Te Upoko o Te Ika prepared a cultural safety report in 2020 to raise awareness of sites of national significance from the perspective of tangata whenua (Taranaki Whānui ki Te Upoko o Te Ika, 2020). This report indicated that the peninsula holds significant cultural values to iwi including:

- Te Āti Awa occupied several traditional pā and kāinga sites on Motukairangi. On the northern tips these sites were identified as Te Māhanga kāinga and pā, Ngāti Mutunga, Marukaikuru, Te Karaka, Puhirangi, Kau-whākara-waru, and Te Mata ki Kai Poinga (Taranaki Whānui ki Te Upoko o Te Ika, 2020).
- These occupation sites represent "a time of turbulent and violent inter-iwi musket wars, and the last areas of Motukairangi to be traditionally occupied by Te Āti Awa under tikanga māori during increasing urbanisation at the turn of the 20th century." (Taranaki Whānui ki Te Upoko o Te Ika, 2020).
- Minhinga mātaitai/fishing grounds are of cultural value: "our Mahinga Mātaitai (fishing grounds) from Marukaikuru on the western side, around the northern end of Kau Bay and Te Māhanga Bay, then down the east and south coasts to Tarakena Bay is the last vestige of our traditional fishing rights on Motukairangi that we have always maintained, and, shared" (Taranaki Whānui ki Te Upoko o Te Ika, 2020). Ruku-Toa s the marine environment at the northern tip of Motukairangi (Point Halswell: "As the name denotes it is a diving (Ruku) ground for only the strongest (Toa) divers" (Taranaki Whānui ki Te Upoko o Te Ika, 2020).

Other cultural values on Watts Peninsula's include:

- Watts Peninsula has a cohesive identity for its remarkable chain of coastal defence fortifications. It has been utilised for military purposes from the Victoria era to the twenty-first century. It provides strong evidence of historical and cultural continuity.
- Watts Peninsula is known as a military reserve and there is significant interest concerning the site. It is a particular focus of interest for military researchers and historians. The future of the headland is of increasing public interest, particularly since the decision to open the reserve to the public. Once this is achieved, and interpretation of the historic sites is provided, public esteem for the area will be significantly elevated.
- Watts Peninsula is historically connected with the Massey Memorial at Point Halswell. The reserve also has a commemorative value for its long history as a coastal defence fortification. Several lives have been lost over the decades as a result of the defence work on the Peninsula. Many Māori lives were likely lost in skirmishes defending pā sites. These lives could also be commemorated on site.
- The Peninsula has enormous potential to contribute, through public education, to the awareness, understanding and appreciation of New Zealand's history. From pre-contact occupation of Te Motu Kairangi, wider Māori settlement, occupation, and defence, to early settlement and early farming practices; the Russian Scare, to the development of coastal defence fortifications; Second World War

defences and the establishment of an Armament Depot; to penal life and the effects of all these factors on the landscape. Each of these has a compelling story to tell.

For these reasons, the **cultural** values of Watts Peninsula are considered to be **significant** on a **national** level**.**

Technological

Technological and engineering values are based on whether the place contributes information about technological or engineering history. For example, whether the place demonstrates innovative or important methods of construction or design; whether it contains unusual construction materials; or if it is an early example of the use of a particular construction technique. The technological values demonstrated on Watts Peninsula include:

- The use of concrete in the 1880s fort constructions was an early example of its use as a building material.
- The collection of military structures is a testament to the most modern military technology as it existed at the time, from the Victorian era until the Second World War and beyond.
- The emplacements were designed to accommodate the most modern British guns then in production. Various remains demonstrate the advances in defence technology in guns, ammunition, explosives and communications that took place over nineteenth and twentieth centuries
- The military road was constructed in a time before internal combustion engines and reflects the needs and gradient of horse drawn vehicles. The extant road is a testament to this period and level of technology.
- The see-saw light was a very early example of such technology. Only a few were built anywhere in the Empire and this was the only one in New Zealand
- The use of telephones was one of the earliest uses of such technology in Wellington.

For these reasons, the **technolcoigcal** values of Watts Peninsula are considered to be **significant** on a **national** level and **a fine example** of coastal defence fortifications on a **national and international** level.

4.2 Statement of significance

The sum of the individual values, and their individual significance is that Watts Peninsula has outstanding heritage significance at a national level. It has been assessed as incorporating special archaeological, aesthetic, architectural, historical, cultural and technological values. As a landscape adopted by tangata whenua for its defensive properties, the limited development of the Peninsula has helped to preserve the remains of these stories. European settlement saw the Peninsula associated with the first attempts at agriculture in the form of James Watts, for whom the Peninsula is named, followed by James Coutts Crawford, prominent for his role in the development of the wider Miramar Peninsula. Acknowledging the need to provide for our own defence in the face of the 1885 "Russian Scare", the colony took its first steps towards independence from Britain with the construction of Fort Ballance. It remains New Zealand's pre-eminent Victorian fort. The military installation and its gradual expansion was designed by Major Henry Cautley, Lieutenant-Colonel E.H. Tudor-Boddam, and Arthur Dillon Bell. Together they were the pioneering architects of New Zealand's nineteenth century state of the art coastal fortifications. The Mount Crawford Redoubt formed part of the expanding chain of military defensive works and is the last known independent earthwork fortification built in New Zealand. The see-saw searchlight was one of a few ever built in the wider Empire and it was the only one erected in New Zealand. The military road linking the chain of installations is now a rare surviving testament to nineteenth century horse-era roads. Prison labour was used to construct these Victorian-era defence works, and the story of penal servitude continued with the establishment of a women's prison on Watts Peninsula. Later converted into a reformatory, by 1940 it was New Zealand's only female borstal.

The Peninsula remained in use for military purposes over the course of the twentieth century. New buildings and structures were often based on British War Office plans. These structures represent New Zealand's continued reliance on Britain, at least in matters of defence, through to the 1940s. The Second World War saw Shelly Bay

become a navy base and armament depot, which today retains a high degree of integrity. The Mount Crawford AA Battery is now one of the best surviving examples of Second World War gun sites and represents one of the last positions of its kind in New Zealand.

From the pre-contact period to the early years of the twenty first century, Watts Peninsula has been in continual use for its defensive properties. The place tells a long and interwoven story of national significance. With a high degree of integrity, the increasingly rare buildings and structures are a testament to New Zealand's response to coastal defences from the Victorian era to twentieth century global warfare. For these reasons, Watts Peninsula, as a site complex, is considered to have **significant historic heritage values** on a **national** and **international** level.

Given the level of significance and the importance of the current structures to the cultural historical narrative of the site, it is important the site is carefully managed and maintained to preserve these values. Accordingly, the following section considered the current condition of these structure and provides recommendations for their ongoing preservation including remedial maintenance.

5 Condition assessment

The following section 5.1 to section 5.7 documents the features assessed across subject site during a site visit between 1 and 3 August 2022 (Figure 81). A copy of all images taken during the site visit is available at Appendix 2. High resolution copies of these images can be made available on request.

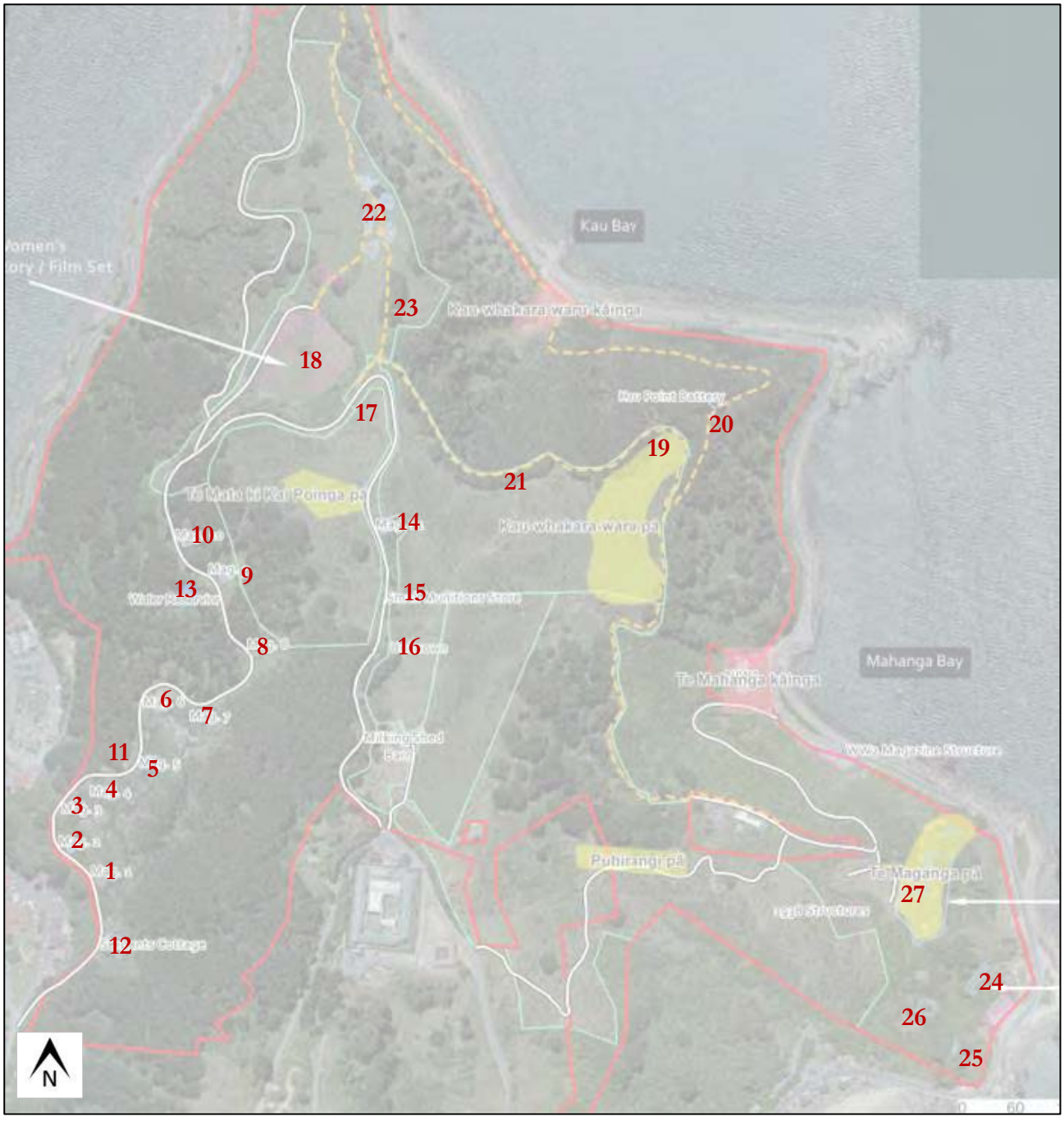

Figure 81: Enlarged map showing numbered features across the subject site. These features relate to the following condition survey discussion.

5.1 Shelly Bay Armament Depot

5.1.1 *Feature 1: Magazine 1*

The following selected images provide a visual record of the condition of Magazine 1 on 1 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 82. Feature 1: Magazine 1. Looking towards the western (front) elevation. Graffiti is present. The roof is missing.

Figure 83. Feature 1: Magazine 1. Looking north across the overgrown, narrow loading deck that extends across the front elevation.

Figure 84. Feature 1: Magazine 1. Looking along the northern (side) elevation. Graffiti is present. A slip has occurred to the rear, and vegetation and debris has accumulated against the side of the structure.

Figure 85. Feature 1: Magazine 1. Interior - Looking towards the entrance. Horizontal cracking is indicated at the corners.

Figure 86. Feature 1: Magazine 1. Interior - Horizontal cracking is indicated at the rear northeastern corner.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations*.

- The accumulation of overgrowth and debris can both conceal decay and cause decay. Clear all overgrowth and debris from around the structure and expose the original concrete footpath perimeter. Clearance should include any debris from recent and more historical 'slips'. Following clearing, it may be appropriate to regrade the natural ground level to ensure that rainwater drains away from the structure. Dependant on the extent of regrading works, an archaeological authority may not be required. Investigate the introduction of suitable plantings, or engineered solutions, to facilitate ground stabilisation above the cutting as this will assist with future maintenance.
- Mature growth and self-seeded saplings are either touching or are very close to the structure. Investigate the removal of saplings and/or the installation of tree root barriers in areas of risk. Such work should be advised by an arborist. The arborist will also be able to provide advice on pruning trees so as to prevent overgrowth.
- Consider reinstating the missing roof. New roof and associated rainwater disposal to match the design and profiles of the original roofs, and to match the materiality and finish of roofed magazine structures.
- Service the external roller door to ensure it is fully functional and operates with ease.
- Fully expose the narrow loading deck by removing debris and vegetation growth. Once cleared, structural engineer to assess any cracking to the deck supporting wall. Consider making good the deck platform in keeping with the original concrete finish.
- Structural engineer to investigate horizontal cracking that is typical at the corners of the structure, both internal and external.
- Clear any debris, or stored goods, from the passage between the inner and outer wall of the structure.

- Ensure external vents to the passage between the inner and outer wall of the structure are vermin proof. Reinstate metal covers in keeping with the original design. Magazine 11 provides a good example of this detail.
- There is rust present on non-structural metal surfaces such as the external hanging door. Rust should be stabilised using a treatment such as fish oil. Following stabilisation, fish oil should then be reapplied regularly. Metals should generally only be painted based on historical research. Paint colours are to rely on 'paint scrapings' that will provide evidence of the original paint colour.
- The structure is being vandalised with graffiti. Consider investigating the removal of graffiti using a paint stripper such as Soy Gel or Peel Away as a test patch initially. Be aware that different parts of a feature may respond differently to treatments. Do not use any high pressure removal treatments and do not apply anti-graffiti coatings.
- Consider the introduction of surveillance methods to discourage vandalism.
- Avoid using a 'weed eater' for lawn maintenance against the structure as this has the potential to damage early fabric.
- All new works should be in keeping with the original and should be executed by professionals with experience in conservation principles that include minimal intervention. In addition, keep a record of all work (including general maintenance) carried out to the structure. This should include the contact details of the professional who carried out the works.

5.1.2 *Feature 2: Magazine 2*

The following selected images provide a visual record of the condition of Magazine 2 on 1 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 87. Feature 2: Magazine 2. Looking towards the western (front) elevation. Graffiti is present. There is vegetation on the roof and in the gutters, and the narrow loading deck is being 'colonised' by vegetation.

Figure 88. Feature 2: Magazine 2. Looking along the northern (side) elevation. A slip has occurred to the rear; and vegetation and debris has accumulated against the side of the structure.

Figure 89. Feature 2: Magazine 2. Looking along the southern (side) elevation. Ivy is growing up the wall, and vegetation and debris has accumulated against the side of the structure.

Figure 90. Feature 2: Magazine 2. Looking along the southern (side) elevation. Ivy is growing up the wall and graffiti is present.

Figure 91. Feature 2: Magazine 2. Looking along the eastern (rear) elevation. A slip has occurred to the rear, and vegetation and debris has accumulated against the side of the structure.

Figure 92. Feature 2: Magazine 2. Interior – Water is entering the structure and graffiti is present. Some material goods associated with the most recent occupation remain within the structure.

Figure 93. Feature 2: Magazine 2. Interior – Ceilings are present and fluorescent light fittings are indicated.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations.*

- The accumulation of overgrowth and debris can both conceal decay and cause decay. Clear all overgrowth and debris from around the structure and expose the original concrete footpath perimeter. Clearance should include any debris from recent and more historical 'slips'. Following clearing, it may be appropriate to regrade the natural ground level to ensure that rainwater drains away from the structure. Dependant on the extent of regrading works, an archaeological authority may not be required. Investigate the introduction of suitable plantings, or engineered solutions, to facilitate ground stabilisation above the cutting as this will assist with future maintenance.
- Mature growth and self-seeded saplings are either touching or are very close to the structure. Investigate the removal of saplings and/or the installation of tree root barriers in areas of risk. Such work should be advised by an arborist. The arborist will also be able to provide advice on pruning trees so as to prevent overgrowth.
- Poison the ivy ensure that it is dead prior to removing gently from walls. Ensure that brickwork and mortar is not damaged during the process
- Remove plant matter (debris and new growth) from roof surface.
- Ensure all rainwater goods are cleaned of debris and are fully functional. Gutters should fall towards downpipes that discharge water away from the building using original gully traps or rainwater channels. To ensure functionality, all new rainwater goods to be compatible with the existing roofing material and rainwater goods, and their associated fixings. Further, ensure compatibility of profiles.
- Investigate the build-up of water within the structure and remediate. Water penetration may be the result of roof failure, impeded rainwater goods, the accumulation of debris against the structure, inappropriate falls to the natural ground level, or a combination of all these factors.

- Service the external hanging door to ensure it is fully functional and operates with ease. Service the internal door, as necessary.
- Fully expose the narrow loading deck by removing debris and vegetation growth. Once cleared, structural engineer to assess any cracking to the deck supporting wall. Consider making good the deck platform in keeping with the original concrete finish.
- Structural engineer to investigate horizontal cracking that is typical at the corners of the structure, both internal and external.
- Clear any debris, or stored goods, from the passage between the inner and outer wall of the structure. Clear any remaining material goods that are no longer of use from within the structure.
- Ensure external vents to the passage between the inner and outer wall of the structure are vermin proof. Where necessary reinstate vermin proofing and metal covers in keeping with the original design. Magazine 11 provides a good example of this detail.
- There is rust present on non-structural metal surfaces such as the external hanging door. Rust should be stabilised using a treatment such as fish oil. Following stabilisation, fish oil should then be reapplied regularly. Metals should generally only be painted based on historical research. Paint colours are to rely on 'paint scrapings' that will provide evidence of the original paint colour.
- The structure is being vandalised with graffiti. Consider investigating the removal of graffiti using a paint stripper such as Soy Gel or Peel Away as a test patch initially. Be aware that different parts of a feature may respond differently to treatments. Do not use any high pressure removal treatments and do not apply anti-graffiti coatings.
- Consider the introduction of surveillance methods to discourage vandalism.
- Investigate the ongoing provision of electricity to the structure. The use of suitable lighting can discourage vandalism. Any introduction of security lighting should be in consultation with an electrical engineer familiar with working in a heritage environment.
- Avoid using a 'weed eater' for lawn maintenance against the structure as this has the potential to damage early fabric.
- All new works should be in keeping with the original and should be executed by professionals with experience in conservation principles that include minimal intervention. In addition, keep a record of all work (including general maintenance) carried out to the structure. This should include the contact details of the professional who carried out the works.

5.1.3 *Feature 3: Magazine 3*

The following selected images provide a visual record of the condition of Magazine 3 on 1 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 94. Feature 3: Magazine 3. Looking towards the western (front) elevation. Graffiti is present and there is vegetation in the gutters. The narrow loading deck is overgrown on the outer perimeters.

Figure 95. Feature 3: Magazine 3. Looking towards the western (front) elevation. Horizontal cracking beneath the loading deck concrete slab is indicated.

Figure 96. Feature 3: Magazine 3. Looking along the northern (side) elevation. Graffiti it present. Vegetation is also present against the side of the structure, particularly towards the rear (LHS image). Original firefighting system and concrete perimeter around the magazine are evident (RHS image).

Figure 97. Feature 3: Magazine 3. Looking along the southern (side) elevation. Vegetation is present against the side of the structure; ivy is growing up the wall and graffiti is present.

Figure 98. Feature 3: Magazine 3. Typical horizontal crack is evident at the corner of the southern (side) elevation.

Figure 99. Feature 3: Magazine 3. Looking along the eastern (rear) elevation. Debris and vegetation have accumulated against the structure. Graffiti is present.

Figure 100. Feature 3: Magazine 3. Interior – Ceiling is present and fire sprinklers are evident. Graffiti is present. Typical horizontal crack at corner is indicated.

Figure 101. Feature 3: Magazine 3. Interior – Fluorescent lights are suspended from the sprinkler system. Water penetration is not evident. Some material goods associated with the most recent use remain within the structure.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations*.

- The accumulation of overgrowth and debris can both conceal decay and cause decay. Clear all overgrowth and debris from around the structure and expose the original concrete footpath perimeter. Clearance should include any debris from recent and more historical 'slips'. Following clearing, it may be appropriate to regrade the natural ground level to ensure that rainwater drains away from the structure. Dependant on the extent of regrading works, an archaeological authority may not be required. Investigate the introduction of suitable plantings, or engineered solutions, to facilitate ground stabilisation above the cutting as this will assist with future maintenance.
- Mature growth and self-seeded saplings are either touching or are very close to the structure. Investigate the removal of saplings and/or the installation of tree root barriers in areas of risk. Such work should be advised by an arborist. The arborist will also be able to provide advice on pruning trees so as to prevent overgrowth.
- Remove any plant matter accumulation (debris and new growth) from roof surface.
- Poison the ivy and ensure that it is dead prior to removing gently from walls. Ensure that brickwork and mortar is not damaged during the process
- Make good closed eaves as necessary. Closed eaves can assist with vermin proofing.
- Ensure all rainwater goods are cleaned of debris and are fully functional. Gutters should fall towards downpipes that discharge water away from the building using original gully traps or rainwater channels. To ensure functionality, all new rainwater goods to be compatible with the existing roofing material and rainwater goods, and their associated fixings. Further, ensure compatibility of profiles.
- Should it be required that asbestos roofing materials are removed, it is recommended that the following approach is undertaken:
    - Step 1: Non-removal of the asbestos roof sheets and the effectiveness of applying an encapsulating coating.
    - Step 2: Replace asbestos roof sheets using fibre cement sheets with a length and profile that matches the existing. Rainwater goods to be altered to fibre cement. Do not use uPVC rainwater goods. Downpipe diameter and half round profile rainwater channels to be in keeping with the original material.
    - Step 3: Replace asbestos roof sheets using corrugated metal roof sheets with a length and profile that matches the existing. Colour: gull grey to match the unpainted finish as suggested by Figure 62. All rainwater goods to be altered to metal. Do not use uPVC rainwater goods. Downpipe diameter and half round profile rainwater channels to be in keeping with the original material.
- Service the external hanging door to ensure it is fully functional and operates with ease. Service the internal door as necessary.
- Fully expose the narrow loading deck by removing debris and vegetation growth. Once cleared, structural engineer to assess any cracking to the deck supporting wall. Consider making good the deck platform in keeping with the original concrete finish.
- Structural engineer to investigate horizontal cracking that is typical at the corners of the structure, both internal and external.
- Clear any debris, or stored goods, from the passage between the inner and outer wall of the structure. Clear any remaining material goods that are no longer of use from within the structure.
- Ensure external vents to the passage between the inner and outer wall of the structure are vermin proof. Where necessary reinstate vermin proofing and metal covers in keeping with the original design. Magazine 11 provides a good example of this detail.
- There is rust present on non-structural metal surfaces such as the external hanging door and firefighting water supply. Rust should be stabilised using a treatment such as fish oil. Following stabilisation, fish oil should then be reapplied regularly. Metals should only be painted based on historical research. Paint colours are to rely on 'paint scrapings' that will provide evidence of the original paint colour.

- The structure is being vandalised with graffiti. Consider investigating the removal of graffiti using a paint stripper such as Soy Gel or Peel Away as a test patch initially. Be aware that different parts of a feature may respond differently to treatments. Do not use any high pressure removal treatments and do not apply anti-graffiti coatings.
- Consider the introduction of surveillance methods to discourage vandalism.
- Investigate the ongoing provision of electricity to the structure. The use of suitable lighting can discourage vandalism. Any introduction of security lighting should be in consultation with an electrical engineer familiar with working in a heritage environment.
- Avoid using a 'weed eater' for lawn maintenance against the structure as this has the potential to damage early fabric.
- All new works should be in keeping with the original and should be executed by professionals with experience in conservation principles that include minimal intervention. In addition, keep a record of all work (including general maintenance) carried out to the structure. This should include the contact details of the professional who carried out the works.

5.1.4 *Feature 4: Magazine 4*

The following selected images provide a visual record of the condition of Magazine 4 on 1 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 102. Feature 4: Magazine 4. Looking towards the northern (front) elevation. Graffiti is present and there is vegetation in the gutters. Some of the gutter is missing. The narrow loading deck is becoming 'colonised' by vegetation.

Figure 103. Feature 4: Magazine 4. Looking along the northern (front) elevation. Typical horizontal crack is indicated at the corner. Boarding to the closed eaves has come away and rainwater goods are missing.

Figure 104. Feature 4: Magazine 4. Looking towards the northern (front) elevation. Horizontal cracking beneath the loading deck concrete slab is indicated.

Figure 105. Feature 4: Magazine 4. Looking along the northern (front) elevation. Original firefighting system is evident.

Figure 106. Feature 4: Magazine 4. Looking along the western (side) elevation. Debris and vegetation have accumulated against the structure. Graffiti is present.

Figure 107. Feature 4: Magazine 4. Interior – Ceiling is present and fluorescent lights and sprinkler system remain. Graffiti is present. Water penetration is not evident.

Figure 108. Feature 4: Magazine 4. Interior.

Figure 109. Feature 4: Magazine 4. Interior – Typical horizontal corner crack indicated.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations*.

- The accumulation of overgrowth and debris can both conceal decay and cause decay. Clear all overgrowth and debris from around the structure and expose the original concrete footpath perimeter. Clearance should include any debris from recent and more historical 'slips'. Following clearing, it may be appropriate to regrade the natural ground level to ensure that rainwater drains away from the structure. Dependant on the extent of regrading works, an archaeological authority may not be required. Investigate the introduction of suitable plantings, or engineered solutions, to facilitate ground stabilisation above the cutting as this will assist with future maintenance.
- Mature growth and self-seeded saplings are either touching or are very close to the structure. Investigate the removal of saplings and/or the installation of tree root barriers in areas of risk. Such work should be advised by an arborist. The arborist will also be able to provide advice on pruning trees so as to prevent overgrowth.
- Remove any plant matter accumulation from roof surface.
- Consider reinstating and making closed eaves to match original. Closed eaves can assist with vermin proofing.
- Ensure all rainwater goods are cleaned of debris and are fully functional. Gutters should fall towards downpipes that discharge water away from the building using original gully traps or rainwater channels. To ensure functionality, all new rainwater goods to be compatible with the existing roofing material and rainwater goods, and their associated fixings. Further, ensure compatibility of profiles.
- Should it be required that asbestos roofing materials are removed, it is recommended that the following approach is undertaken:
    - Step 1: Non-removal of the asbestos roof sheets and the effectiveness of applying an encapsulating coating.
    - Step 2: Replace asbestos roof sheets using fibre cement sheets with a length and profile that matches the existing. Rainwater goods to be altered to fibre cement. Do not use uPVC rainwater goods. Downpipe diameter and half round profile rainwater channels to be in keeping with the original material.
    - Step 3: Replace asbestos roof sheets using corrugated metal roof sheets with a length and profile that matches the existing. Colour: gull grey to match the unpainted finish as suggested by Figure 62. All rainwater goods to be altered to metal. Do not use uPVC rainwater goods. Downpipe diameter and half round profile rainwater channels to be in keeping with the original material.
- Service the external hanging door to ensure it is fully functional and operates with ease. Service additional double leafed external door and the internal door as necessary.
- Fully expose the narrow loading deck by removing debris and vegetation growth. Once cleared, structural engineer to assess any cracking to the deck supporting wall. Consider making good the deck platform in keeping with the original concrete finish.
- Structural engineer to investigate horizontal cracking that is typical at the corners of the structure, both internal and external.
- Clear any debris, or stored goods, from the passage between the inner and outer wall of the structure.
- Ensure external vents to the passage between the inner and outer wall of the structure are vermin proof. Where necessary reinstate vermin proofing and metal covers in keeping with the original design. Magazine 11 provides a good example of this detail.
- There is rust present on non-structural metal surfaces such as the external doors and firefighting water supply. Rust should be stabilised using a treatment such as fish oil. Following stabilisation, fish oil should then be reapplied regularly. Metals should only be painted based on historical research. Paint colours are to rely on 'paint scrapings' that will provide evidence of the original paint colour.
- The structure is being vandalised with graffiti. Consider investigating the removal of graffiti using a paint stripper such as Soy Gel or Peel Away as a test patch initially. Be aware that different parts of a structure may

respond differently to treatments. Do not use any high pressure removal treatments and do not apply anti-graffiti coatings.

- Consider the introduction of surveillance methods to discourage vandalism.
- Investigate the ongoing provision of electricity to the structure. The use of suitable lighting can discourage vandalism. Any introduction of security lighting should be in consultation with an electrical engineer familiar with working in a heritage environment.
- Avoid using a 'weed eater' for lawn maintenance against the structure as this has the potential to damage early fabric.
- All new works should be in keeping with the original and should be executed by professionals with experience in conservation principles that include minimal intervention. In addition, keep a record of all work (including general maintenance) carried out to the structure. This should include the contact details of the professional who carried out the works.

5.1.5 *Feature 5: Magazine 5*

The following selected images provide a visual record of the condition of Magazine 5 on 1 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 110: Feature 5: Magazine 5. Looking towards the western (front) elevation. Graffiti is present and there is vegetation in the gutters.

Figure 111. Feature 5: Magazine 5. Looking along the western (front) elevation – image cropped. Vegetation is starting to 'colonise' the cracked loading deck.

Figure 112. Feature 5: Magazine 5. Looking along the southern (side) elevation. A concrete perimeter to the structure is evident, and graffiti is present.

Figure 113. Feature 5: Magazine 5. Eastern (rear) elevation. Typical horizontal corner crack is indicated. Possible anti-graffiti coating.

Figure 114. Feature 5: Magazine 5. Interior – Water is entering the structure and some material goods associated with the most recent occupation remain within the structure.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations*.

- The accumulation of overgrowth and debris can both conceal decay and cause decay. Clear all overgrowth and debris from around the structure and expose the original concrete footpath perimeter. Clearance should include any debris from recent and more historical 'slips'. Following clearing, it may be appropriate to regrade the natural ground level to ensure that rainwater drains away from the structure. Dependant on the extent of regrading works, an archaeological authority may not be required. Investigate the introduction of suitable plantings, or engineered solutions, to facilitate ground stabilisation above the cutting as this will assist with future maintenance.
- Mature growth and self-seeded saplings are either touching or are very close to the structure. Investigate the removal of saplings and/or the installation of tree root barriers in areas of risk. Such work should be advised by an arborist. The arborist will also be able to provide advice on pruning trees so as to prevent overgrowth.
- Remove debris from roof surface.
- Ensure all rainwater goods are cleaned of debris and are fully functional. Gutters should fall towards downpipes that discharge water away from the building using original gully traps or rainwater channels. To ensure functionality, all new rainwater goods to be compatible with the existing roofing material and rainwater goods, and their associated fixings. Further, ensure compatibility of profiles.
- Should it be required that asbestos roofing materials are removed, it is recommended that the following approach is undertaken:
    - Step 1: Non-removal of the asbestos roof sheets and the effectiveness of applying an encapsulating coating.
    - Step 2: Replace asbestos roof sheets using fibre cement sheets with a length and profile that matches the existing. Rainwater goods to be altered to fibre cement. Do not use uPVC rainwater goods.

Downpipe diameter and half round profile rainwater channels to be in keeping with the original material.

- Step 3: Replace asbestos roof sheets using corrugated metal roof sheets with a length and profile that matches the existing. Colour: gull grey to match the unpainted finish as suggested by Figure 62. All rainwater goods to be altered to metal. Do not use uPVC rainwater goods. Downpipe diameter and half round profile rainwater channels to be in keeping with the original material.

- Investigate the build-up of water within the structure and remediate. Water penetration may be the result of roof failure, impeded rainwater goods, the accumulation of debris against the structure, inappropriate falls to the natural ground level, inappropriate falls to the natural ground level, or a combination of all these factors.
- Service the external hanging door to ensure it is fully functional and operates with ease. Service the internal door, as necessary.
- Fully expose the narrow loading deck by removing debris and vegetation growth. Once cleared, structural engineer to assess any cracking to the deck supporting wall. Consider making good the deck platform in keeping with the original concrete finish.
- Structural engineer to investigate horizontal cracking that is typical at the corners of the structure both internal and external.
- Clear any debris, or stored goods, from the passage between the inner and outer wall of the structure. Clear any remaining material goods that are no longer of use from within the feature.
- Ensure external vents to the passage between the inner and outer wall of the structure are vermin proof. Where necessary reinstate vermin proofing and metal covers in keeping with the original design. Magazine 11 provides a good example of this detail.
- There is rust present on non-structural metal surfaces such as the external hanging door. Rust should be stabilised using a treatment such as fish oil. Following stabilisation, fish oil should then be reapplied regularly. Metals should generally only be painted based on historical research. Paint colours are to rely on 'paint scrapings' that will provide evidence of the original paint colour.
- The structure is being vandalised with graffiti. Consider investigating the removal of graffiti using a paint stripper such as Soy Gel or Peel Away as a test patch initially. Be aware that different parts of a structure may respond differently to treatments. Do not use any high pressure removal treatments and do not apply anti-graffiti coatings.
- Consider the introduction of surveillance methods to discourage vandalism.
- Investigate the ongoing provision of electricity to the structure. The use of suitable lighting can discourage vandalism. Any introduction of security lighting should be in consultation with an electrical engineer familiar with working in a heritage environment.
- Avoid using a 'weed eater' for lawn maintenance against the structure as this has the potential to damage early fabric.
- All new works should be in keeping with the original and should be executed by professionals with experience in conservation principles that include minimal intervention. In addition, keep a record of all work (including general maintenance) carried out to the structure. This should include the contact details of the professional who carried out the works.

5.1.6 *Feature 6: Magazine 6*

The following selected images provide a visual record of the condition of Magazine 6 on 1 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 115. Feature 6: Magazine 6. Looking towards the northwestern (front) elevation. Graffiti is present and there is vegetation in the gutters

Figure 116. Feature 6: Magazine 6. Looking along the northwestern (front) elevation. Vegetation is starting to 'colonise' the cracked loading deck.

Figure 117. Feature 6: Magazine 6. Looking along the northwestern (side) elevation. Graffiti it present. Vegetation and debris are present against the side of the structure (LHS image). A rainwater downpipe is broken (RHS image).

Figure 118. Feature 6: Magazine 6. Looking along the southwestern (side) elevation. Debris has accumulated against the structure. Graffiti is present.

Figure 119. Feature 6: Magazine 6. Looking along the southeastern (rear) elevation – image cropped. A slip has occurred, and debris has accumulated against the structure.

Figure 120. Feature 6: Magazine 6. Looking along the southeastern (rear) elevation – image cropped. Graffiti is present.

Figure 121. Feature 6: Magazine 6. Interior – Water penetration is evident. Some material goods remain within the structure.

Figure 122. Feature 6: Magazine 6. Interior – Water penetration is evident. Some material goods remain within the structure.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations*.

- The accumulation of overgrowth and debris can both conceal decay and cause decay. Clear all overgrowth and debris from around the structure and expose the original concrete footpath perimeter. Clearance should include any debris from recent and more historical 'slips'. Following clearing, it may be appropriate to regrade the natural ground level to ensure that rainwater drains away from the structure. Dependant on the extent of regrading works, an archaeological authority may not be required. Investigate the introduction of suitable plantings, or engineered solutions, to facilitate ground stabilisation above the cutting as this will assist with future maintenance.
- Mature growth and self-seeded saplings are either touching or are very close to the structure. Investigate the removal of saplings and/or the installation of tree root barriers in areas of risk. Such work should be advised by an arborist. The arborist will also be able to provide advice on pruning trees so as to prevent overgrowth.
- Remove plant matter accumulation (debris and new growth) from roof surface.
- Ensure all rainwater goods are cleaned of debris and are fully functional. Gutters should fall towards downpipes that discharge water away from the building using original gully traps or rainwater channels. To ensure functionality, all new rainwater goods to be compatible with the existing roofing material and rainwater goods, and their associated fixings. Further, ensure compatibility of profiles.
- Should it be required that asbestos roofing materials are removed, it is recommended that the following approach is undertaken:
    - Step 1: Non-removal of the asbestos roof sheets and the effectiveness of applying an encapsulating coating.
    - Step 2: Replace asbestos roof sheets using fibre cement sheets with a length and profile that matches the existing. Rainwater goods to be altered to fibre cement. Do not use uPVC rainwater goods. Downpipe diameter and half round profile rainwater channels to be in keeping with the original material.
    - Step 3: Replace asbestos roof sheets using corrugated metal roof sheets with a length and profile that matches the existing. Colour: gull grey to match the unpainted finish as suggested by Figure 62. All rainwater goods to be altered to metal. Do not use uPVC rainwater goods. Downpipe diameter and half round profile rainwater channels to be in keeping with the original material.
- Investigate the build-up of water (ponding, rising and falling damp) within the structure and remediate. Water penetration may be the result of roof failure, impeded rainwater goods, the accumulation of debris against the structure, inappropriate falls to the natural ground level, or a combination of all these factors.
- Service the external hanging door to ensure it is fully functional and operates with ease. Service the internal doors, as necessary.
- Make good ceiling to match existing.
- Fully expose the narrow loading deck by removing debris and vegetation growth. Once cleared, structural engineer to assess any cracking to the deck supporting wall. Consider making good the deck platform in keeping with the original concrete finish.
- Structural engineer to investigate horizontal cracking that is typical at the corners of the structure, both internal and external.
- Clear any debris, or stored goods, from the passage between the inner and outer wall of the structure. Clear any remaining material goods that are no longer of use from within the structure.
- Ensure external vents to the passage between the inner and outer wall of the structure are vermin proof. Where necessary reinstate vermin proofing and metal covers in keeping with the original design. Magazine 11 provides a good example of this detail.
- There is rust present on non-structural metal surfaces such as the external hanging door. Rust should be stabilised using a treatment such as fish oil. Following stabilisation, fish oil should then be reapplied regularly.

Metals should generally only be painted based on historical research. Paint colours are to rely on 'paint scrapings' that will provide evidence of the original paint colour.

- The structure is being vandalised with graffiti. Consider investigating the removal of graffiti using a paint stripper such as Soy Gel or Peel Away as a test patch initially. Be aware that different parts of a structure may respond differently to treatments. Do not use any high pressure removal treatments and do not apply anti-graffiti coatings.
- Consider the introduction of surveillance methods to discourage vandalism.
- Investigate the ongoing provision of electricity to the structure. The use of suitable lighting can discourage vandalism. Any introduction of security lighting should be in consultation with an electrical engineer familiar with working in a heritage environment.
- If appropriate, regrade the natural ground level to ensure that rainwater drains away from the structure. It may be appropriate to introduce rainwater channels in front of openings. It is essential that 'ponding', external and internal to the structure, does not occur.
- Avoid using a 'weed eater' for lawn maintenance against the structure as this has the potential to damage early fabric.
- All new works should be in keeping with the original and should be executed by professionals with experience in conservation principles that include minimal intervention. In addition, keep a record of all work (including general maintenance) carried out to the structure. This should include the contact details of the professional who carried out the works.

5.1.7 *Feature 7: Magazine 7*

The following selected images provide a visual record of the condition of Magazine 7 on 1 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 123. Feature 7: Magazine 7. Looking towards the northern (front) elevation. Graffiti is present. There is vegetation in the gutters.

Figure 124. Feature 7: Magazine 7. Northern (front) elevation. Typical horizontal corner crack is indicated.

Figure 125. Feature 7: Magazine 7. Looking along the northern (front) elevation – cropped image. Vegetation is starting to 'colonise' the cracked loading deck.

Figure 126. Feature 7: Magazine 7. Looking along the eastern (side) elevation. Vegetation and debris are accumulating against the side of the structure.

Figure 127. Feature 7: Magazine 7. Interior – typical horizontal corner crack indicated. Ceiling is failing in places.

Figure 128. Feature 7: Magazine 7. Interior – typical horizontal corner crack indicated. Ceiling is failing in places.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations*.

- The accumulation of overgrowth and debris can both conceal decay and cause decay. Clear all overgrowth and debris from around the structure and expose the original concrete footpath perimeter. Clearance should include any debris from recent and more historical 'slips'. Following clearing, it may be appropriate to regrade the natural ground level to ensure that rainwater drains away from the structure. Dependant on the extent of regrading works, an archaeological authority may not be required. Investigate the introduction of suitable plantings, or engineered solutions, to facilitate ground stabilisation above the cutting as this will assist with future maintenance.
- Mature growth and self-seeded saplings are either touching or are very close to the structure. Investigate the removal of saplings and/or the installation of tree root barriers in areas of risk. Such work should be advised by an arborist. The arborist will also be able to provide advice on pruning trees so as to prevent overgrowth.
- Ensure all rainwater goods are cleaned of debris and are fully functional. Gutters should fall towards downpipes that discharge water away from the building using original gully traps or rainwater channels. Consider installing metal rainwater goods in keeping with the existing metal roofing material. Downpipe diameter and half round profile rainwater channels to be in keeping with original material. Consider painting roof gull grey to match the unpainted finish as suggested by Figure 62.
- Investigate the build-up of water (ponding, rising and falling damp) within the structure and remediate. Water penetration may be the result of roof failure, impeded rainwater goods, the accumulation of debris against the structure, inappropriate falls to the natural ground level, or a combination of all these factors.
- Service the external hanging door to ensure it is fully functional and operates with ease.
- Fully expose the narrow loading deck by removing debris and vegetation growth. Once cleared, structural engineer to assess any cracking to the deck supporting wall. Consider making good the deck platform in keeping with the original concrete finish.
- Structural engineer to investigate horizontal cracking that is typical at the corners of the structure, both internal and external.
- Make good ceiling to match existing.
- Clear any debris, or stored goods, from the passage between the inner and outer wall of the structure.
- Ensure external vents to the passage between the inner and outer wall of the structure are vermin proof. Where necessary reinstate vermin proofing and metal covers in keeping with the original design. Magazine 11 provides a good example of this detail.
- There is rust present on non-structural metal surfaces such as the external hanging door. Rust should be stabilised using a treatment such as fish oil. Following stabilisation, fish oil should then be reapplied regularly. Metals should generally only be painted based on historical research. Paint colours are to rely on 'paint scrapings' that will provide evidence of the original paint colour.
- The structure is being vandalised with graffiti. Consider investigating the removal of graffiti using a paint stripper such as Soy Gel or Peel Away as a test patch initially. Be aware that different parts of a structure may respond differently to treatments. Do not use any high pressure removal treatments and do not apply anti-graffiti coatings.
- Consider the introduction of surveillance methods to discourage vandalism.
- Investigate the ongoing provision of electricity to the structure. The use of suitable lighting can discourage vandalism. Any introduction of security lighting should be in consultation with an electrical engineer familiar with working in a heritage environment.
- Avoid using a 'weed eater' for lawn maintenance against the structure as this has the potential to damage early fabric.
- All new works should be in keeping with the original and should be executed by professionals with experience in conservation principles that include minimal intervention. In addition, keep a record of all work (including

general maintenance) carried out to the structure. This should include the contact details of the professional who carried out the works.

5.1.8 *Feature 8: Magazine 8*

The following selected images provide a visual record of the condition of Magazine 8 on 1 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 129. Feature 8: Magazine 8. Looking towards the western (front) elevation. Graffiti is present, the hipped gable is damaged, there are no gutters, and the narrow loading deck is being 'colonised' by vegetation.

Figure 130. Feature 8: Magazine 8. Looking along the western (front) elevation. Vegetation is 'colonising' the loading deck.

Figure 131. Feature 8: Magazine 8. Looking along the northern (side) elevation. Graffiti is present, and vegetation and debris are accumulating against the side of the structure. A slip is visible towards the rear.

Figure 132. Feature 8: Magazine 8. Looking along the southern (side) elevation. Graffiti is present and water is ponding at the base of the structure.

Figure 133. Feature 8: Magazine 8. Looking at the southeastern (rear) corner. A typical horizontal crack is indicated.

Figure 134. Feature 8: Magazine 8. Looking along the eastern (rear) elevation. A slip has occurred, and vegetation and debris are accumulating against the side of the structure.

Figure 135. Feature 8: Magazine 8. Looking along the eastern (rear) elevation. Ponding is evident.

Figure 136. Feature 8: Magazine 8 Interior – Substantial horizontal corner crack indicated. Some material goods associated with the most recent use remain within the structure.

Figure 137. Feature 8: Magazine 8 Interior – Ceiling and fluorescent lights are present. Material goods associated with the most recent use remain within the structure.

Figure 138. Feature 8: Magazine 8 Interior – Water is entering the structure.

Figure 139. Feature 8: Magazine 8 Interior – Typical debris accumulation in the narrow passageway between the outer wall and the inner room – image cropped.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations*.

- The accumulation of overgrowth and debris can both conceal decay and cause decay. Clear all overgrowth and debris from around the structure and expose the original concrete footpath perimeter. Clearance should include any debris from recent and more historical 'slips'. Following clearing, it may be appropriate to regrade the natural ground level to ensure that rainwater drains away from the structure. Dependant on the extent of regrading works, an archaeological authority may not be required. Investigate the introduction of suitable plantings, or engineered solutions, to facilitate ground stabilisation above the cutting as this will assist with future maintenance.
- Mature growth and self-seeded saplings are either touching or are very close to the structure. Investigate the removal of saplings and/or the installation of tree root barriers in areas of risk. Such work should be advised by an arborist. The arborist will also be able to provide advice on pruning trees so as to prevent overgrowth.
- Remove the accumulation of plant matter (debris and new growth) from roof surface.
- Make good the gable to the Dutch gable styled roof.
- Install metal rainwater goods in keeping with the existing roofing material. Do not introduce uPVC rainwater goods. Downpipe diameter and half round profile rainwater channels to be in keeping with original material. Gutters should fall towards downpipes that discharge water away from the structure using original gully traps or rainwater channels. Repair fascias as necessary. Any new fascias are to match the profile of the existing. Consider painting roof gull grey to match the unpainted finish as suggested by Figure 62.
- Investigate the build-up of water (ponding, rising and falling damp) within the structure and remediate. Water penetration may be the result of roof failure, impeded rainwater goods, the accumulation of debris against the structure, inappropriate falls to the natural ground level, or a combination of all these factors.

- Service the external hanging door to ensure it is fully functional and operates with ease. Service the internal doors, as necessary.
- Fully expose the narrow loading deck by removing debris and vegetation growth. Once cleared, structural engineer to assess any cracking to the deck supporting wall. Consider making good the deck platform in keeping with the original concrete finish.
- Structural engineer to investigate horizontal cracking that is typical at the corners of the structure, both internal and external.
- Clear any debris, or stored goods, from the passage between the inner and outer wall of the structure. Clear any remaining material goods that are no longer of use from within the structure.
- Ensure external vents to the passage between the inner and outer wall of the structure are vermin proof. Where necessary reinstate vermin proofing and metal covers in keeping with the original design. Magazine 11 provides a good example of this detail.
- There is rust present on non-structural metal surfaces such as the external hanging door. Rust should be stabilised using a treatment such as fish oil. Following stabilisation, fish oil should then be reapplied regularly. Metals should generally only be painted based on historical research. Paint colours are to rely on 'paint scrapings' that will provide evidence of the original paint colour.
- The structure is being vandalised with graffiti. Consider investigating the removal of graffiti using a paint stripper such as Soy Gel or Peel Away as a test patch initially. Be aware that different parts of a structure may respond differently to treatments. Do not use any high pressure removal treatments and do not apply anti-graffiti coatings.
- Consider the introduction of surveillance methods to discourage vandalism.
- Investigate the ongoing provision of electricity to the structure. The use of suitable lighting can discourage vandalism. Any introduction of security lighting should be in consultation with an electrical engineer familiar with working in a heritage environment.
- Avoid using a 'weed eater' for lawn maintenance against the structure as this has the potential to damage early fabric.
- All new works should be in keeping with the original and should be executed by professionals with experience in conservation principles that include minimal intervention. In addition, keep a record of all work (including general maintenance) carried out to the structure. This should include the contact details of the professional who carried out the works.

5.1.9 *Feature 9: Magazine 9*

The following selected images provide a visual record of the condition of Magazine 9 on 1 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 140: Feature 9: Magazine 9. Looking towards the western (front) elevation. Graffiti is present. The roof is missing.

Figure 141. Feature 9: Magazine 9. The narrow loading deck at the western (front) elevation is becoming 'colonised' by vegetation.

Figure 142. Feature 9: Magazine 9. The retaining wall to the front of the narrow loading deck is overturning – image cropped.

Figure 143. Feature 9: Magazine 9 Looking along the northern (side) elevation. Graffiti is present and water is ponding against the side of the structure.

Figure 144. Feature 9: Magazine 9. Looking along the southern (side) elevation. Graffiti is present. Diagonal crack associated with horizontal cracking is indicated. Vegetation and debris have accumulated against the side of the structure.

Figure 145: Feature 9: Magazine 9. Interior – Typical debris accumulation in the narrow passageway between the outer wall and the inner room – image cropped.

Figure 146. Feature 9: Magazine 9. Interior – Typical horizontal cracking to corners is indicated. Graffiti is present.

Figure 147. Feature 9: Magazine 9. Interior – Typical horizontal cracking to corners is indicated. Graffiti is present.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations*.

- The accumulation of overgrowth and debris can both conceal decay and cause decay. Clear all overgrowth and debris from around the structure and expose the original concrete footpath perimeter. Clearance should include any debris from recent and more historical 'slips'. Following clearing, it may be appropriate to regrade the natural ground level to ensure that rainwater drains away from the structure. Dependant on the extent of regrading works, an archaeological authority may not be required. Investigate the introduction of suitable plantings, or engineered solutions, to facilitate ground stabilisation above the cutting as this will assist with future maintenance.
- Mature growth and self-seeded saplings are either touching or are very close to the structure. Investigate the removal of saplings and/or the installation of tree root barriers in areas of risk. Such work should be advised by an arborist. The arborist will also be able to provide advice on pruning trees so as to prevent overgrowth.
- Consider reinstating the missing roof. New roof and associated rainwater disposal to match the design and profiles of the original roofs, and to match the materiality and finish of roofed magazine structures.
- Service the external hanging door to ensure it is fully functional and operates with ease.
- Fully expose the narrow loading deck by removing debris and vegetation growth. Once cleared, structural engineer to assess any cracking to the deck supporting wall and to investigate the overturning of this element. Consider making good the deck platform in keeping with the original concrete finish.
- Structural engineer to investigate horizontal cracking that is typical at the corners of the structure, both internal and external. Structural engineer to also investigate diagonal cracking at the outer skin of the southern elevation.
- Clear any debris, or stored goods, from the passage between the inner and outer wall of the structure.
- Ensure external vents to the passage between the inner and outer wall of the structure are vermin proof. Where necessary, reinstate vermin proofing and metal covers in keeping with the original design. Magazine 11 provides a good example of this detail.
- There is rust present on non-structural metal surfaces such as the external hanging door. Rust should be stabilised using a treatment such as fish oil. Following stabilisation, fish oil should then be reapplied regularly. Metals should generally only be painted based on historical research. Paint colours are to rely on 'paint scrapings' that will provide evidence of the original paint colour.
- The structure is being vandalised with graffiti. Consider investigating the removal of graffiti using a paint stripper such as Soy Gel or Peel Away as a test patch initially. Be aware that different parts of a structure may respond differently to treatments. Do not use any high pressure removal treatments and do not apply anti-graffiti coatings.
- Consider the introduction of surveillance methods to discourage vandalism.
- Investigate the ongoing provision of electricity to the structure. The use of suitable lighting can discourage vandalism. Any introduction of security lighting should be in consultation with an electrical engineer familiar with working in a heritage environment.
- Avoid using a 'weed eater' for lawn maintenance against the structure as this has the potential to damage early fabric.
- All new works should be in keeping with the original and should be executed by professionals with experience in conservation principles that include minimal intervention. In addition, keep a record of all work (including general maintenance) carried out to the structure. This should include the contact details of the professional who carried out the works.

5.1.10 *Feature 10: Magazine 10*

The following selected images provide a visual record of the condition of Magazine 10 on 1 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 148. Feature 10: Magazine 10. Looking towards the western (front) elevation. Graffiti is present. The gutters are missing, and the narrow loading deck is being 'colonised' by vegetation.

Figure 149. Feature 10: Magazine 10. Looking east towards the western (front) elevation. Typical horizontal corner crack is indicated.

Figure 150. Feature 10: Magazine 10. Looking along the northern (side) elevation. Anti-graffiti coating is present.

Figure 151. Feature 10: Magazine 10. Northern (side) elevation. Underside eaves is damaged.

Figure 152. Feature 10: Magazine 10. Looking along the southern (side) elevation. Graffiti is present and a slip has occurred to the rear.

Figure 153. Feature 10: Magazine 10. Looking along the eastern (rear) elevation. Vegetation and debris have accumulated against the side of the structure. Graffiti is present.

Figure 154. Feature 10: Magazine 10. Looking along the eastern (rear) elevation. The underside eaves is damaged.

Figure 155. Feature 10: Magazine 10. Interior – Accumulation of straw(?) in the narrow passageway between the outer wall and the inner room – image cropped.

Figure 156. Feature 10: Magazine 10. Interior – Ceiling is present. Room dividers associated with the most recent use remain within the structure.

Figure 157. Feature 10: Magazine 10. Interior – Water is entering the structure.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations*.

- The accumulation of overgrowth and debris can both conceal decay and cause decay. Clear all overgrowth and debris from around the structure and expose the original concrete footpath perimeter. Clearance should include any debris from recent and more historical 'slips'. Following clearing, it may be appropriate to regrade the natural ground level to ensure that rainwater drains away from the structure. Dependant on the extent of regrading works, an archaeological authority may not be required. Investigate the introduction of suitable plantings, or engineered solutions, to facilitate ground stabilisation above the cutting as this will assist with future maintenance.
- Mature growth and self-seeded saplings are either touching or are very close to the structure. Investigate the removal of saplings and/or the installation of tree root barriers in areas of risk. Such work should be advised by an arborist. The arborist will also be able to provide advice on pruning trees so as to prevent overgrowth.
- Remove the accumulation of plant debris from roof surface.
- Make good eaves as necessary. Closed eaves can assist with vermin proofing.
- Install metal rainwater goods in keeping with the existing roofing material. Do not introduce uPVC rainwater goods. Downpipe diameter and half round profile rainwater channels to be in keeping with original material. Gutters should fall towards downpipes that discharge water away from the structure using original gully traps or rainwater channels. Repair fascias as necessary. Any new fascias are to match the profile of the existing Consider painting roof gull grey to match the unpainted finish as suggested by Figure 62.
- Investigate ponding within the structure and remediate. Water penetration may be the result of roof failure, impeded rainwater goods, the accumulation of debris against the structure, inappropriate falls to the natural ground level, or a combination of all these factors.
- Service the external hanging door to ensure it is fully functional and operates with ease. Service the internal doors, as necessary.
- Fully expose the narrow loading deck by removing debris and vegetation growth. Once cleared, structural engineer to assess any cracking to the deck supporting wall. Consider making good the deck platform in keeping with the original concrete finish.
- Structural engineer to investigate horizontal cracking that is typical at the corners of the structure, both internal and external.
- Clear any debris, or stored goods, from the passage between the inner and outer wall of the structure. Clear any remaining material goods that are no longer of use from within the structure.
- Ensure external vents to the passage between the inner and outer wall of the structure are vermin proof. Where necessary reinstate vermin proofing and metal covers in keeping with the original design. Magazine 11 provides a good example of this detail.
- There is rust present on non-structural metal surfaces such as the external hanging door. Rust should be stabilised using a treatment such as fish oil. Following stabilisation, fish oil should then be reapplied regularly. Metals should generally only be painted based on historical research. Paint colours are to rely on 'paint scrapings' that will provide evidence of the original paint colour.
- The structure is being vandalised with graffiti. Consider investigating the removal of graffiti using a paint stripper such as Soy Gel or Peel Away as a test patch initially. Be aware that different parts of a structure may respond differently to treatments. Do not use any high pressure removal treatments and do not apply anti-graffiti coatings.
- Consider the introduction of surveillance methods to discourage vandalism.
- Investigate the ongoing provision of electricity to the structure. The use of suitable lighting can discourage vandalism. Any introduction of security lighting should be in consultation with an electrical engineer familiar with working in a heritage environment.

- Avoid using a 'weed eater' for lawn maintenance against the structure as this has the potential to damage early fabric.
- All new works should be in keeping with the original and should be executed by professionals with experience in conservation principles that include minimal intervention. In addition, keep a record of all work (including general maintenance) carried out to the structure. This should include the contact details of the professional who carried out the works.

5.1.11 *Feature 11: Hut – former use unknown*

The following selected images provide a visual record of the condition of the hut (former use unknown) on 1 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 158. Feature 11: Hut (former use unknown). Looking southwest. Graffiti is present, weatherboards are coming away and rainwater goods are no longer in position.

Figure 159. Feature 11: Hut (former use unknown). Looking towards the western elevation. Graffiti is present, weatherboards are coming away, window and rainwater goods are no longer in position.

Figure 160. Feature 11: Hut (former use unknown). Looking towards the northern elevation. The weatherboards have come away and the remains of a small entrance porch is visible to the RHS.

Figure 161. Feature 11: Hut (former use unknown). Interior – Timber louvre in northern elevation. Graffiti is present. Wall panelling has half round coverstrips.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations*.

- The original use of this structure has not been determined and the report will be updated once additional information is found. It is therefore recommended that it is mothballed until it's potential heritage value can be determined. Mothballing recommendations are included at Appendix 3. It is worth noting that this structure includes some construction detailing in keeping with the former sergeant's house (Feature 12).

5.1.12 *Feature 12: House – former sergeant's house*

The following selected images provide a visual record of the condition of the house (former sergeant's house) on 1 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 162. Feature 12: Former sergeant's house. Looking towards the western (front) elevation. Graffiti is present and openings have been boarded up. Vegetation is encroaching onto the house.

Figure 163. Feature 12: Former sergeant's house. Looking along the northern (side) elevation. Window boarding has been partially removed and access to the house is possible. Debris, the result of a slip, has accumulated against the house.

Figure 164. Feature 12: Former sergeant's house. Looking along the southern (side) elevation. Graffiti is present and openings have been boarded up. Vegetation is encroaching onto the house and there is vegetation in the gutters.

Figure 165. Feature 12: Former sergeant's house. Looking along the eastern (rear) elevation. A slip has occurred, and debris and vegetation have accumulated against the structure. Graffiti is present.

Figure 166. Feature 12: Former sergeant's house. Interior.

Figure 167. Feature 12: Former sergeant's house. Interior.

Figure 168. Feature 12: Former sergeant's house. Interior.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations*.

- The accumulation of overgrowth and debris can both conceal decay and cause decay. Clear all overgrowth and debris from around the structure, expose subfloor vents and re-establish the original perimeter boundary. Clearance should include any debris from recent and more historical 'slips'. Following clearing, it may be appropriate to regrade the natural ground level to ensure that rainwater drains away from the structure. Dependant on the extent of regrading works, an archaeological authority may not be required. Investigate the introduction of suitable plantings, or engineered solutions, to facilitate ground stabilisation above the cutting as this will assist with future maintenance.
- Mature growth and self-seeded saplings are either touching or are very close to the structure. Investigate the removal of saplings and/or the installation of tree root barriers in areas of risk. Such work should be advised by an arborist. The arborist will also be able to provide advice on pruning trees so as to prevent overgrowth.
- Reinstate mothballing measures while ensuring access is still provided for general maintenance. Mothballing recommendations are included at Appendix 3.
- Ensure all rainwater goods are cleaned of debris and are fully functional. Gutters should fall towards downpipes that discharge water away from the structure using original gully traps or rainwater channels.
- Should it be required that asbestos roofing materials are removed, it is recommended that the following approach is undertaken:
    - Step 1: Non-removal of the asbestos roof sheets and the effectiveness of applying an encapsulating coating. Rainwater goods to be altered to fibre cement. Do not use uPVC rainwater goods. Downpipe diameter and half round profile rainwater channels to be in keeping with the original material.
    - Step 2: Replace asbestos roof sheets using fibre cement sheets with a length and profile that matches the existing. Rainwater goods to be altered to fibre cement. Do not use uPVC rainwater goods.

Downpipe diameter and half round profile rainwater channels to be in keeping with the original material.

- Step 3: Replace asbestos roof sheets using corrugated metal roof sheets with a length and profile that matches the existing. Colour: gull grey to match the unpainted finish as suggested by Figure 62. All rainwater goods to be altered to metal. Do not use uPVC rainwater goods. Downpipe diameter and half round profile rainwater channels to be in keeping with the original material.

- The structure is being vandalised with graffiti. Consider investigating the removal of graffiti using a paint stripper such as Soy Gel or Peel Away as a test patch initially. Be aware that different parts of a structure may respond differently to treatments. Do not use any high pressure removal treatments and do not apply anti-graffiti coatings.
- Consider the introduction of surveillance methods to discourage vandalism.
- Investigate the ongoing provision of electricity to the structure. The use of suitable lighting can discourage vandalism. Any introduction of security lighting should be in consultation with an electrical engineer familiar with working in a heritage environment.
- Consider the replacement of timber weatherboards and corner boards that have failed. New timbers are to match the existing.
- All new works should be in keeping with the original and should be executed by professionals with experience in conservation principles that include minimal intervention. Keep a record of all work (including general maintenance) carried out to the structure. This should include the contact details of the professional who carried out the works.

5.1.13 *Feature 13: Reservoir*

The following selected images provide a visual record of the condition of the reservoir on 1 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 169. Feature 13: Reservoir. Graffiti is present.

Figure 170. Feature 13: Reservoir has been fenced off and the indicated opening has been created to facilitate access.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. It is noted that WCC is responsible for this feature. General recommendations are provided at *5.8 Recommendations*.

- Mature growth and self-seeded saplings are either touching or are very close to the structure. Investigate the removal of saplings and/or the installation of tree root barriers in areas of risk. Such work should be advised by an arborist. The arborist will also be able to provide advice on pruning trees so as to prevent overgrowth.
- It is not necessary to remove moss or lichen from the structure. Moss and lichen contribute to the historical setting.
- The structure is being vandalised with graffiti. Consider investigating the removal of graffiti using a paint stripper such as Soy Gel or Peel Away as a test patch initially. Be aware that different parts of a structure may respond differently to treatments. Do not use any high pressure removal treatments and do not apply anti-graffiti coatings.

5.1.14 *Feature 14: Magazine 11*

The following selected images provide a visual record of Magazine 11 on 2 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 171. Feature 14: Magazine 11. Looking towards the western (front) elevation. Graffiti is present. The roof is missing.

Figure 172. Feature 14: Magazine 11. Looking north across the narrow loading deck that extends across the front elevation.

Figure 173. Feature 14: Magazine 11. Typical horizontal crack is evident at the corner of the western (front) elevation.

Figure 174. Feature 14: Magazine 11. Looking along the southern (side) elevation. Vegetation is accumulating against the side of the structure.

Figure 175. Feature 14: Magazine 11. Looking along the southern (side) elevation. Vent cover to passage between inner and outer wall of structure is missing.

Figure 176. Feature 14: Magazine 11. Example of vermin proofing to vent between inner and outer wall of structure.

Figure 177. Feature 14: Magazine 11. Example of cover to vent between inner and outer wall of structure.

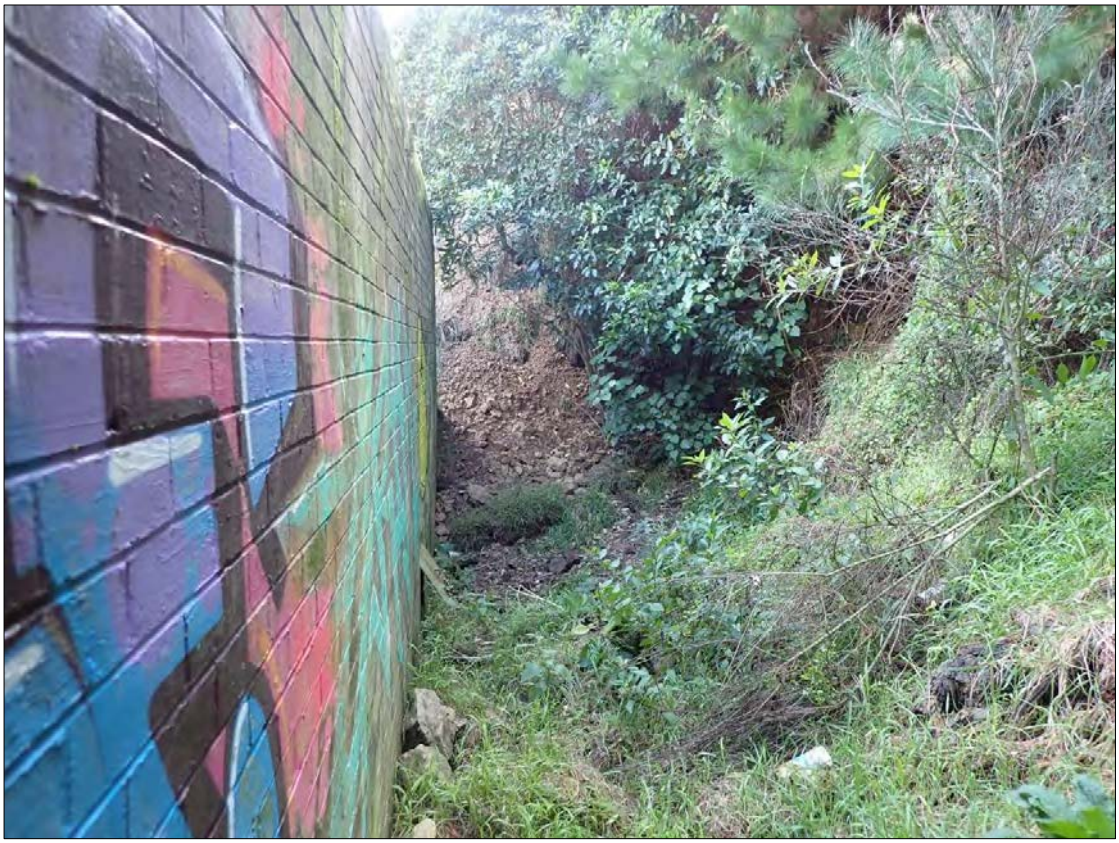

Figure 178. Feature 14: Magazine 11. Looking along the eastern (rear) elevation. A slip has occurred to the rear; and vegetation and debris has accumulated against the side of the structure.

Figure 179. Feature 14: Magazine 11. Interior – Internal door to the structure. Graffiti is present.

Figure 180. Feature 14: Magazine 11. Looking towards the interior. Door barricade to internal door indicated.

Figure 181. Feature 14: Magazine 11. Interior – Graffiti is present.

Figure 182. Feature 14: Magazine 11. Interior – Typical horizontal cracking to corners is indicated.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations*.

- The accumulation of overgrowth and debris can both conceal decay and cause decay. Clear all overgrowth and debris from around the structure and expose the original concrete footpath perimeter. Clearance should include any debris from recent and more historical 'slips'. Following clearing, it may be appropriate to regrade the natural ground level to ensure that rainwater drains away from the structure. Dependant on the extent of regrading works, an archaeological authority may not be required. Investigate the introduction of suitable plantings, or engineered solutions, to facilitate ground stabilisation above the cutting as this will assist with future maintenance.
- Mature growth and self-seeded saplings are either touching or are very close to the structure. Investigate the removal of saplings and/or the installation of tree root barriers in areas of risk. Such work should be advised by an arborist. The arborist will also be able to provide advice on pruning trees so as to prevent overgrowth.
- Consider reinstating the missing roof. New roof and associated rainwater disposal to match the design and profiles of the original roofs, and to match the materiality and finish of roofed magazine structures.
- Service the external hanging door to ensure it is fully functional and operates with ease. Service the internal door, as necessary.
- Fully expose the narrow loading deck by removing debris and vegetation growth. Once cleared, structural engineer to assess any cracking to the deck supporting wall. Consider making good the deck platform in keeping with the original concrete finish.
- Structural engineer to investigate horizontal cracking that is typical at the corners of the structure, both internal and external.
- Clear any debris, or stored goods, from the passage between the inner and outer wall of the structure.
- Ensure external vents to the passage between the inner and outer wall of the structure are vermin proof. Where necessary reinstate vermin proofing and metal covers in keeping with the original design.
- There is rust present on non-structural metal surfaces such as the external hanging door. Rust should be stabilised using a treatment such as fish oil. Following stabilisation, fish oil should then be reapplied regularly. Metals should generally only be painted based on historical research. Paint colours are to rely on 'paint scrapings' that will provide evidence of the original paint colour.
- The structure is being vandalised with graffiti. Consider investigating the removal of graffiti using a paint stripper such as Soy Gel or Peel Away as a test patch initially. Be aware that different parts of a structure may respond differently to treatments. Do not use any high pressure removal treatments and do not apply anti-graffiti coatings.
- Consider the introduction of surveillance methods to discourage vandalism.
- Investigate the ongoing provision of electricity to the structure. The use of suitable lighting can discourage vandalism. Any introduction of security lighting should be in consultation with an electrical engineer familiar with working in a heritage environment.
- Avoid using a 'weed eater' for lawn maintenance against the structure as this has the potential to damage early fabric.
- All new works should be in keeping with the original and should be executed by professionals with experience in conservation principles that include minimal intervention. In addition, keep a record of all work (including general maintenance) carried out to the structure. This should include the contact details of the professional who carried out the works.

5.1.15 *Feature 15: Unidentified structure remnant proximal to arms store*

The following selected images provide a visual record of the unidentified structure remnant proximal to the arms store on 2 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 183. Feature 15: Wall plinth remnant north of the arms store.

Figure 184. Feature 15: Location of the wall plinth remnant relative to the arms store.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations*.

- Leave as is and continue the existing maintenance regime.

5.1.16 *Feature 16: Arms store*

The following selected images provide a visual record of the arms store on 2 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 185. Feature 16: Arms store. Looking towards the western elevation. Graffiti is present and the entrance door has come off its hinges.

Figure 186. Feature 16: Arms store. Looking towards the western elevation. The entrance door has come off its hinges.

Figure 187. Feature 16: Arms store. Looking at the northern elevation. Graffiti is present and a large has fallen to the rear.

Figure 188. Feature 16: Arms store. Looking at the southern elevation. A slip has occurred, and vegetation and debris are accumulating against the side of the structure.

Figure 189. Feature 16: Arms store. Interior - Remnant timber strip flooring. Graffiti is present.

Figure 190. Feature 16: Arms store. Interior – Ceiling has been damaged. Graffiti is present.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations*.

- The accumulation of overgrowth and debris can both conceal decay and cause decay. Clear all overgrowth and debris from around the structure, expose subfloor vents with vermin proofing and re-establish the original perimeter boundary. Clearance should include any debris from recent and more historical 'slips'. Following clearing, it may be appropriate to regrade the natural ground level to ensure that rainwater drains away from the structure. Dependant on the extent of regrading works, an archaeological authority may not be required. Investigate the introduction of suitable plantings, or engineered solutions, to facilitate ground stabilisation above the cutting as this will assist with future maintenance.
- Remove fallen tree and investigate pruning of mature trees that are very close to the structure. Such work should be advised by an arborist.
- Ensure the malthoid roof finish is weathertight.
- Install rainwater goods if there is evidence of a previous installation. It is recommended that any new rainwater goods are in keeping with those at the magazine structures. Gutters should fall towards downpipes that discharge water away from the structure using original gully traps or rainwater channels. Repair fascias as necessary. Any new fascias are to match the profile of the existing.
- Consider reinstating the timber strip flooring. Ensure that subfloor ventilation is provided.
- Consider repairing the steel entrance door. As an immediate short-term solution, it is acceptable to place the door in secure storage with a view to reinstallation following repair. In the interim, consider introducing a lockable gate, fixed to existing timber frame, as a temporary security measure.
- Consider making good ceiling to match existing.
- Ensure all wall 'air bricks' are vermin proof.
- There is rust present on non-structural metal surfaces such as the door and gable ends. Rust should be stabilised using a treatment such as fish oil. Following stabilisation, fish oil should then be reapplied regularly. Metals should generally only be painted based on historical research. Paint colours are to rely on 'paint scrapings' that will provide evidence of the original paint colour.
- The structure is being vandalised with graffiti. Consider investigating the removal of graffiti using a paint stripper such as Soy Gel or Peel Away as a test patch initially. Be aware that different parts of a structure may respond differently to treatments. Do not use any high pressure removal treatments and do not apply anti-graffiti coatings.
- Consider the introduction of surveillance methods to discourage vandalism.
- Avoid using a 'weed eater' for lawn maintenance against the structure as this has the potential to damage early fabric.
- All new works should be in keeping with the original and should be executed by professionals with experience in conservation principles that include minimal intervention. In addition, keep a record of all work (including general maintenance) carried out to the structure. This should include the contact details of the professional who carried out the works.

5.2 Former Women's Reformatory

5.2.1 *Feature 17: Unidentified structure remnant southeast of Former Women's Reformatory*

The following selected images provide a visual record of the unidentified wall remnant southeast of Former Women's Reformatory on 2 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 191: Feature 17: Wall remnant southeast of Former Women's Reformatory

Figure 192: Feature 17: Wall remnant. The location of the Former Women's Reformatory is indicated.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations*.

- Leave as is and continue the existing maintenance regime.
- It is not necessary to remove moss or lichen from the structure. Moss and lichen contribute to the historical setting.
- Should the feature be vandalised with graffiti in the future, remove immediately using a paint stripper such as Soy Gel or Peel Away. Do not use any high pressure removal treatments and do not apply anti-graffiti coatings.

5.2.2 *Feature 18. Former Point Halswell Women's Reformatory*

The following selected images provide a visual record of the condition of the site of the former Point Halswell Women's Reformatory on 1 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 193. Feature 18: Former Point Halswell Women's Reformatory. Looking south-east across the site towards a planted bank featuring exotic plantings.

Figure 194. Feature 18: Former Point Halswell Women's Reformatory. Looking south-east across the site towards a planted bank featuring exotic plantings. Building platform remnants are visible in the foreground.

Figure 195. Feature 18: Former Point Halswell Women's Reformatory. Looking south towards Te Mata ki Kai Poina pā.

Figure 196. Feature 18: Former Point Halswell Women's Reformatory. Looking south towards a landscape of exotic and native plantings.

Figure 197. Feature 18: Former Point Halswell Women's Reformatory. Looking east, between the former reformatory and the vegetable garden, towards a brick wall remnant. The wall is being vandalised with graffiti.

Figure 198. Feature 18: Former Point Halswell Women's Reformatory. Looking north towards terracing associated with the former vegetable gardens. The Mount Crawford Anti-Aircraft Battery is indicated. A wall remnant is visible in the foreground.

Figure 199. Feature 18: Former Point Halswell Women's Reformatory. Looking north along a vegetable garden terrace. Remnant stone retaining structure is indicated. it is accentuated by a hedgerow.

Figure 200. Feature 18: Former Point Halswell Women's Reformatory. Looking south towards the wall remnant in Figure 198.

Figure 201. Feature 18: Former Point Halswell Women's Reformatory. Looking south across the vegetable gardens towards the wall remnant (indicated) in Figure 10. A hedgerow is in the foreground and Te Mata ki Kai Poina pā is in the background.

Figure 202. Feature 18: Former Point Halswell Women's Reformatory. Looking north along the former military road to the west of the reformatory (behind the hedgerow).

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations*.

- Continue the existing maintenance regime.
- It is not necessary to remove moss or lichen from the external surfaces of the structure. Moss and lichen contribute to the historical setting.
- Some features are being vandalised with graffiti. Consider investigating the removal of graffiti using a paint stripper such as Soy Gel or Peel Away as a test patch initially. Be aware that different parts of a feature may respond differently to treatments. Do not use any high pressure removal treatments and do not apply anti-graffiti coatings.
- Consider the introduction of surveillance methods to discourage vandalism.
- Consider commissioning a landscape historian to undertake research into the associated landscape that includes walls, plantings, and gardening techniques employed at the former prison and, later, reformatory before being acquired by the navy.

5.3 Kau Point Battery

5.3.1 *Feature 19: Kau Point Battery - Battery Observation Post*

The following selected images provide a visual record of the Battery Observation Post at Kau point Battery on 2 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 203. Feature 19: Kau Point Battery. Excavated pit to the front of the telephone room at the Battery Observation Post.

Figure 204. Feature 19: Kau Point Battery. Telephone room at the Battery Observation Post.

Figure 205. Feature 19: Kau Point Battery. Compass direction points on underside of the barrel vault roof of the telephone room at the Battery Observation Post.

Figure 206. Feature 19: Kau Point Battery. Other defensive positions painted on the walls of the telephone room at the Battery Observation Post. Graffiti is present.

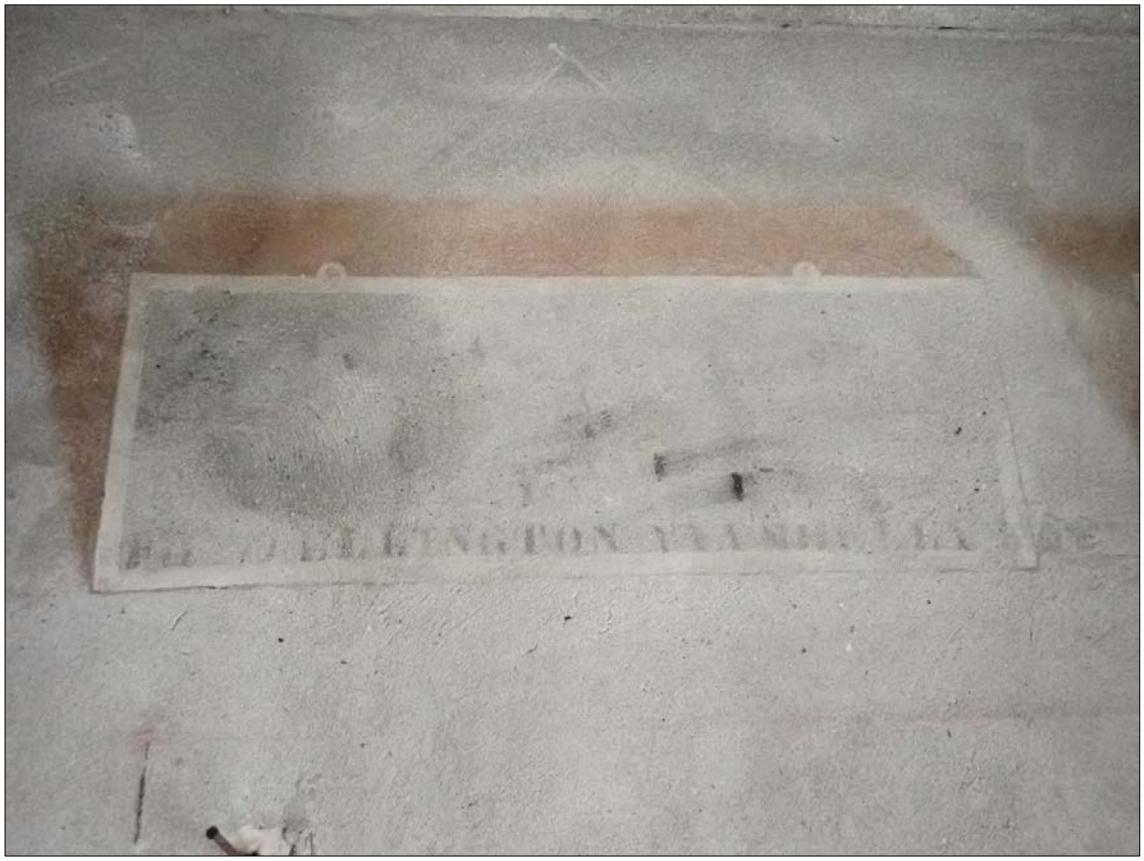

Figure 207: Feature 19: Kau Point Battery. Other defensive position painted on the wall of the telephone room at the Battery Observation Post.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations*.

- Consider removing debris from the excavated pit behind the semi-circular wall to re-establish original ground levels.
- Consult an arborist on the mature tree that is currently touching the structure. The arborist will also be able to provide advice on pruning the tree to prevent overgrowth.
- Consider engaging a photographer to develop a photographic record of the painting/signage and the compass direction points on underside of the barrel vault roof.
    - Images should be of printable quality, at least 1440 pixels by 960 pixels for a 4"x 6" print at a minimum resolution of 240
    - PPI. Images should also be recorded in RAW format to capture the maximum amount of information.
    - Images should be labelled with the position on site or in relation to the site, date and photographer's name, and submitted to the client as individual image files with a plan showing photograph locations.
- To discourage vandalism of the above features, and as an immediate interim solution, provide a lockable gate fixed to the existing timber frame as a security measure.
- The structure is being vandalised with graffiti. Consider investigating the removal of graffiti using a paint stripper such as Soy Gel or Peel Away as a test patch initially. Do not use any high pressure removal treatments and do not apply anti-graffiti coatings. During graffiti removal, ensure that the original painting/signage associated with the structure is not compromised.

5.3.2 *Feature 20: Kau Point Battery – Gun pit entry*

The following selected images provide a visual record of the gun pit entry at Kau point Battery on 2 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 208. Feature 20: Kau Point Battery. Gun pit entry.

Figure 209. Feature 20: Kau Point Battery. Descending towards the gun pit entry from the Battery Observation Point.

Figure 210. Feature 20: Kau Point Battery. Looking up towards the indicated location of the Battery Observation Point from the gun pit entry.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations*.

- There appears to have been recent attempts to gain access to the structure. Consider securing the entrance to discourage entry and vandalism.

5.4 Military Road

5.4.1 *Feature 21: Military Road*

The following selected images provide a visual record of a section of the military road on 2 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 211. Feature 21: A section of the original military road to Kau Point Battery.

Figure 212. Feature 21: A section of the original military road to Kau Point Battery.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations*.

- Continue the existing maintenance regime that allows the former military road to remain accessible.

5.5 Mount Crawford Anti-Aircraft Battery

5.5.1 *Feature 22: Mount Crawford Anti-Aircraft Battery*

The following selected images provide a visual record of the condition of the Mount Crawford Anti-Aircraft Battery on 2 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 213. Feature 22: Mount Crawford Anti-Aircraft Battery. Looking north.

Figure 214. Feature 22: Mount Crawford Anti-Aircraft Battery. Looking north over a gun emplacement.

Figure 215. Feature 22: Mount Crawford Anti-Aircraft Battery. Looking south towards two gun emplacements.

Figure 216. Feature 22: Mount Crawford Anti-Aircraft Battery. Looking over the chambers of a gun emplacement.

Figure 217. Feature 22: Mount Crawford Anti-Aircraft Battery gun emplacement example. Looking over the base for the gun towards the chambers. Graffiti is present.

Figure 218. Feature 22: Mount Crawford Anti-Aircraft Battery gun emplacement example. Looking over the base for the gun towards the chambers. Graffiti is present.

Figure 219. Feature 22: Mount Crawford Anti-Aircraft Battery gun emplacement example. Looking towards the chambers. Graffiti is present.

Figure 220. Feature 22: Mount Crawford Anti-Aircraft Battery gun emplacement. typical example of a chamber interior. Graffiti is present.

Figure 221. Feature 22: Mount Crawford Anti-Aircraft Battery gun emplacement. typical example of a chamber interior. Graffiti is present.

Figure 222. Feature 22: Mount Crawford Anti-Aircraft Battery gun emplacement. typical example of a chamber interior. Graffiti is present.

Figure 223. Feature 22: Mount Crawford Anti-Aircraft Battery gun emplacement. typical example of a chamber interior. Water is visible in a number of chambers. Graffiti is present.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations*.

- Mature growth and self-seeded saplings are either touching or are very close to some structures. Investigate the removal of saplings and/or the installation of tree root barriers in areas of risk. Such work should be advised by an arborist. The arborist will also be able to provide advice on pruning trees so as to prevent overgrowth.
- Remove the accumulation of washout debris and general litter from within the structures. Where appropriate, and to facilitate ongoing maintenance, regrade the ground level in selected areas to ensure that rainwater drains away from the structures. It will be useful to understand the ground levels at the time of construction, and to conform with these levels. Regrading to ground levels at the time of construction will not require an archaeological authority. It is essential that 'ponding', external and internal to the structure, does not occur.
- Maintain grassed areas so that they do not compromise the structures or concreted circulation spaces. Avoid using a 'weed eater' for maintenance against the structure as this has the potential to damage early fabric.
- It is not necessary to remove moss or lichen from the external surfaces of the structure. Moss and lichen contribute to the historical setting.
- There is rust present on structural and non-structural metal surfaces. Rust should be stabilised using a treatment such as fish oil. Following stabilisation, fish oil should then be reapplied regularly. Rusted structural elements should be assessed by a structural engineer in the first instance. Metals should only be painted based on historical research. Paint colours are to rely on 'paint scrapings' that will provide evidence of the original paint colour.
- Where access to the structure is undesirable, consider introducing lockable gates. Introduced gates should be fixed to existing timber frames only. Where a timber frame is not present, a built heritage specialist will be able to provide case-by-case acceptable solutions.

- The structure is being vandalised with graffiti. Consider investigating the removal of graffiti using a paint stripper such as Soy Gel or Peel Away as a test patch initially. Be aware that different parts of a structure may respond differently to treatments. Do not use any high pressure removal treatments and do not apply anti-graffiti coatings.
- Consider the introduction of surveillance methods to discourage vandalism.
- Keep a record of all work (including general maintenance) carried out to the structure. This should include the contact details of the professional who carried out the works.

5.5.2 *Feature 23: Water reservoir remnant proximal to Mount Crawford Anti-Aircraft Battery*

The following selected images provide a visual record of the water reservoir remnant proximal to the Mount Crawford Anti-Aircraft Battery on 2 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 224. Feature 23: Concrete associated with water reservoir remnant proximal to Mount Crawford Anti-Aircraft Battery.

Figure 225. Feature 23: Approximate ridge location of water reservoir remnant south of Mount Crawford Anti-Aircraft Battery and beneath macrocarpa grove east of the former Point Halswell Women's Reformatory.

Figure 226. Feature 23: Approximate ridge location of water reservoir remnant south of Mount Crawford Anti-Aircraft Battery and beneath macrocarpa grove east of the former Point Halswell Women's Reformatory.

Figure 227. Feature 23: Looking north from the water reservoir remnant towards Mount Crawford Anti-Aircraft Battery.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations*.

- Leave as is.

5.6 Fort Gordon and Fort Ballance

5.6.1 *Feature 24: Fort Gordon magazine*

The following selected images provide a visual record of the Fort Gordon magazine on 3 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 228. Feature 24: Fort Gordon magazine concealed by vegetation.

Figure 229. Feature 24: Fort Gordon. Underground feature associated with the fort.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations*.

- Overgrowth around the structure can conceal decay and cause decay. Overgrowth can also obscure a structure, assisting with the protection from vandalism. If it is preferred that the structure be interpreted more fully, investigate the removal of saplings and/or the installation of tree root barriers in areas of risk. Such work should be advised by an arborist. The arborist will also be able to provide advice on pruning so as to restrict overgrowth.
- It is not necessary to remove moss or lichen from the structure. Moss and lichen contribute to the historical setting.
- Should the feature be vandalised with graffiti in the future, remove immediately using a paint stripper such as Soy Gel or Peel Away. Do not use any high pressure removal treatments and do not apply anti-graffiti coatings.

5.6.2 *Feature 25: Fort Ballance 'see-saw' searchlight*

The following selected images provide a visual record of the see-saw searchlight at Fort Ballance on magazine on 3 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 230. Feature 25: Fort Ballance. Looking east. See-saw searchlight concealed by vegetation. A roll of barbed wire is indicated.

Figure 231. Feature 25: Fort Ballance. Steel formwork/reinforcement to underside see-saw searchlight structure.

Figure 232, Feature 25: Fort Ballance. Cracking adjacent to opening at see-saw searchlight structure.

Figure 233. Feature 25: Fort Ballance. Looking south. See-saw searchlight concealed by vegetation.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations*.

- Consider removing debris from the excavated pit behind the semi-circular wall to re-establish original ground levels. It is likely that this level is a concrete slab, compacted basecourse, or similar. It may be appropriate to investigate the introduction of suitable plantings, or engineered solutions, to facilitate ground stabilisation of the embankment as this will assist with future maintenance.
- Overgrowth around the structure can conceal decay and cause decay. Overgrowth can also obscure a structure, assisting with the protection from vandalism. If it is preferred that the structure be interpreted more fully, investigate the removal of saplings and/or the installation of tree root barriers in areas of risk. Such work should be advised by an arborist. The arborist will also be able to provide advice on pruning so as to restrict overgrowth.
- Cracking of the structure and the rusting of structural steel is evident. Undertake a structural assessment of the structure. If considered appropriate, the rust could be stabilised using a treatment such as fish oil. Following stabilisation, fish oil should then be reapplied regularly.
- It is not necessary to remove moss or lichen from the structure. Moss and lichen contribute to the historical setting.
- Should the feature be vandalised with graffiti in the future, remove immediately using a paint stripper such as Soy Gel or Peel Away. Do not use any high pressure removal treatments and do not apply anti-graffiti coatings.

5.6.3 *Feature 26: Fort Gordon Battery Commander position*

The following selected images provide a visual record of the potential Battery Commander position at Fort Gordon on 3 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 234. Feature 26: Fort Gordon. Looking north across the potential Battery Commander position. No structure visible.

Figure 235. Feature 26: Fort Gordon. Looking south across the potential Battery Commander position. No structure visible.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations*.

- Leave as is and continue the existing maintenance regime.

5.6.4 *Feature 27: Fort Ballance*

The following selected images provide a visual record of Fort Ballance on 3 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 236. Feature 27: Fort Ballance. Looking east towards the artillery barracks. The structure has been extensively graffitied.

Figure 237. Feature 27: Fort Ballance. Looking east towards the shell and cartridge stores.

Figure 238. Feature 27: Fort Ballance. Looking south towards the artillery barracks from the shell and cartridge stores. The structures have been extensively graffitied.

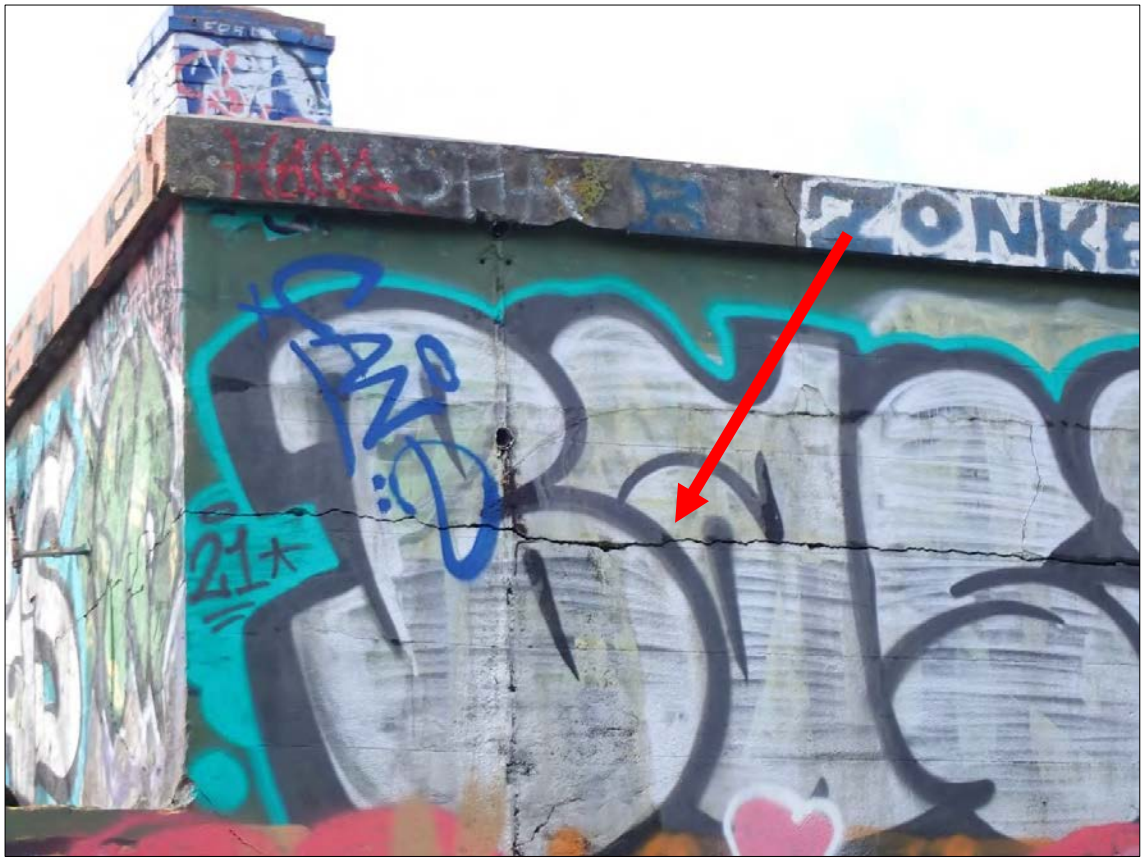

Figure 239: Feature 27: Fort Ballance. Artillery barracks. Typical example of horizontal cracking.

Figure 240. Feature 27: Fort Ballance. Artillery barracks. Typical example of horizontal cracking.

Figure 241. Feature 27: Fort Ballance. Artillery barracks. Original shutter remains.

Figure 242. Feature 27: Fort Ballance. Artillery barracks. Water is ponding internally, and graffiti is present.

Figure 243. Feature 27: Fort Ballance. Artillery barracks. There is extensive graffiti to the interior.

Figure 244. Feature 27: Fort Ballance. Artillery barracks. Original fireplace.

Figure 245. Feature 27: Fort Ballance. Artillery barracks. Underside roof steel reinforcement is rusting.

Figure 246. Feature 27: Fort Ballance. Artillery barracks. Graffiti obscures original scored concrete detailing to engine room. Image cropped.

Figure 247. Feature 27: Fort Ballance. Artillery barracks. There is extensive graffiti and ponding to the engine room.

Figure 248. Feature 27: Fort Ballance. Artillery barracks. Accumulation of rubbish in room adjacent to the engine room.

Figure 249. Feature 27: Fort Ballance. Artillery barracks roof planting.

Figure 250. Feature 27: Fort Ballance. Artillery barracks roof. Original chimney has been increased in height.

Figure 251. Feature 27: Fort Ballance. Artillery barracks roof. Original chimney increased in height using 'prison' bricks.

Figure 252. Feature 27: Fort Ballance. Artillery barracks roof. Unmodified chimney.

Figure 253. Feature 27: Fort Ballance. Pit B lookout. Underside slab reinforcement corroding and spalling of concrete, and extensive graffiti.

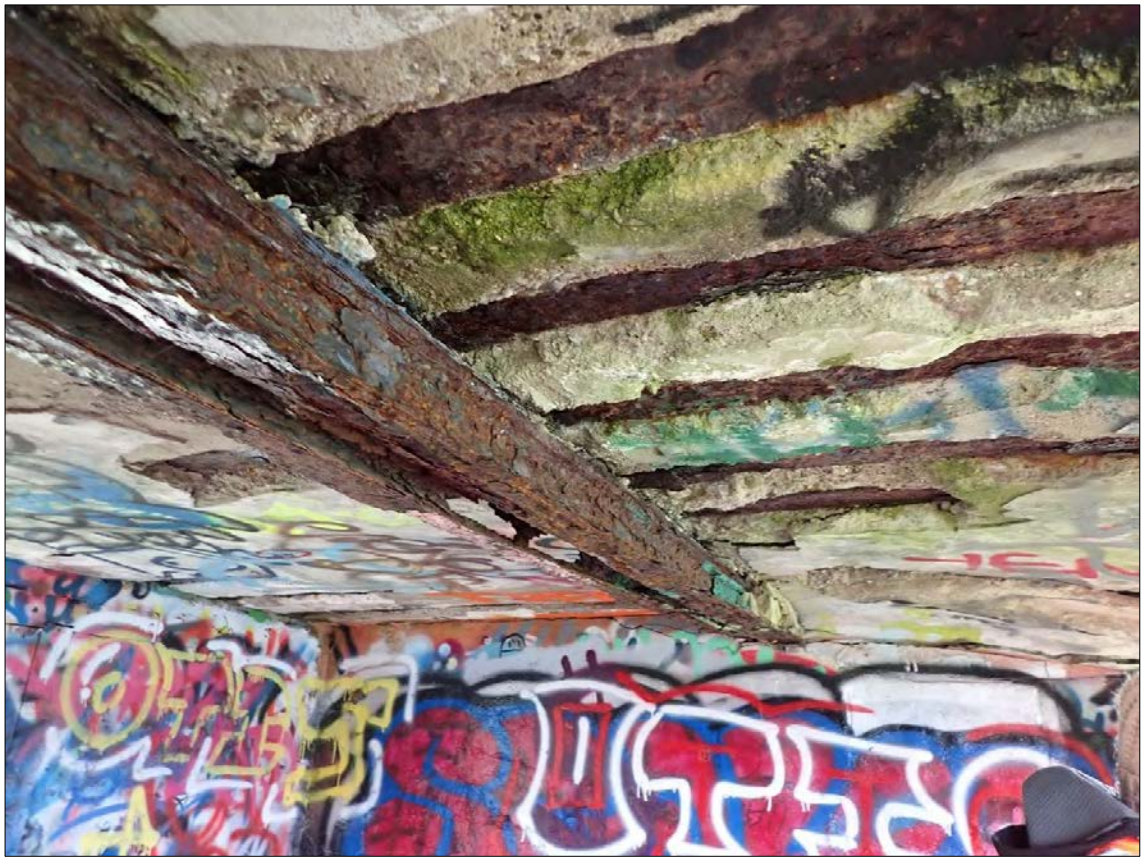

Figure 254. Feature 27: Fort Ballance. Pit B lookout. Underside slab reinforcement corroding and spalling of concrete.

Figure 255. Feature 27: Fort Ballance. Location of the disappearing gun at 6inch BLHP.

Figure 256. Feature 27: Fort Ballance. Earth build-up at tunnel entrance to the disappearing gun at 6inch BLHP (Pit A). Image cropped.

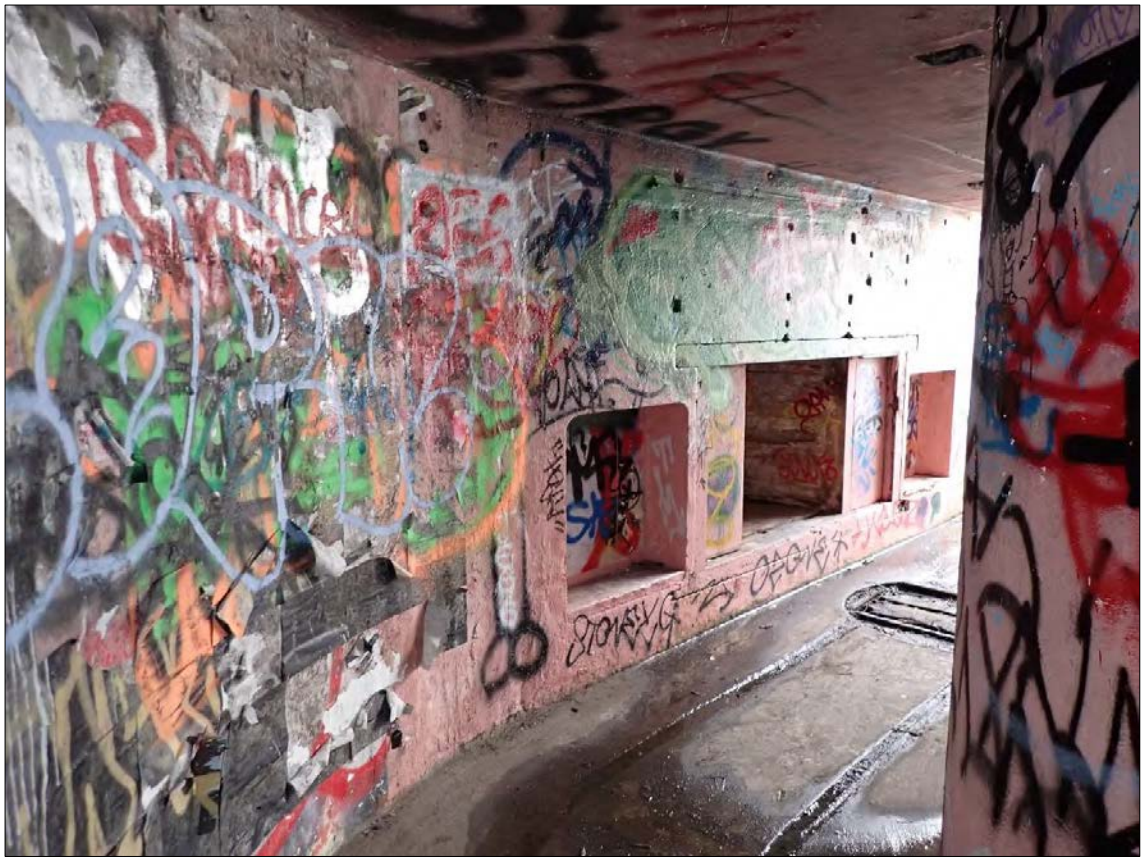

Figure 257. Feature 27: Fort Ballance. Trolley tracks at tunnel to the disappearing gun at 6inch BLHP.

Figure 258. Feature 27: Fort Ballance. Extensive cracking at the 6QR PF.

Figure 259. Feature 27: Fort Ballance. Example of cracking to walls.

Figure 260. Feature 27: Fort Ballance. Example of cracking to walls.

Figure 261. Feature 27: Fort Ballance. Loopholed wall to the east of the artillery barracks. Some corrugated metal formwork remains in position. The wall has been extensively graffitied.

Figure 262. Feature 27: Fort Ballance. Example of graffitied loopholed wall.

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *5.8 Recommendations.*

- Mature growth and self-seeded saplings are either touching or are very close to some structures. Investigate the removal of saplings and/or the installation of tree root barriers in areas of risk. Such work should be advised by an arborist. The arborist will also be able to provide advice on pruning trees so as to prevent overgrowth.
- Investigate ponding within some structures. Ponding may be the result of failed roof waterproofing, structural cracking, ground level heights and falls, windblown rain, or a combination of all these factors. It is essential that 'ponding', external and internal to the structure, does not occur.
- Where appropriate, and to facilitate ongoing maintenance, regrade the ground level in selected areas to ensure that rainwater drains away from the structures. It will be useful to understand the ground levels at the time of construction, and to conform with these levels. Regrading to ground levels at the time of construction will not require an archaeological authority.
- Investigate the artillery barracks roof plantings and their potential to damage the structure. Remedy under the guidance of a landscape architect.
- Maintain grassed areas so that they do not compromise the structures, circulation spaces or gun pits. Avoid using a 'weed eater' for maintenance against the structure as this has the potential to damage early fabric.
- Clear the washout debris from the tunnel entrance to the disappearing gun at 6inch BLHP (Pit A).
- Many of the structures feature large cracks and show signs of displacement. Undertake a structural assessment of all the structures.
- Cracking of the structures, spalling, and the rusting of structural and non-structural metal is evident. Undertake a structural assessment of the structures. If considered appropriate, the rust could be stabilised using a treatment such as fish oil. Following stabilisation, fish oil should then be reapplied regularly.

- Where access to the structure is undesirable, consider introducing lockable gates. Introduced gates should be fixed to existing timber frames only. Where a timber frame is not present, a built heritage specialist will be able to provide case-by-case acceptable solutions.
- The structures are being vandalised with graffiti. Consider investigating the removal of graffiti using a paint stripper such as Soy Gel or Peel Away as a test patch initially. Be aware that different parts of a structure may respond differently to treatments. Do not use any high pressure removal treatments and do not apply anti-graffiti coatings.
- Consider the introduction of surveillance methods to discourage vandalism.
- Keep a record of all work (including general maintenance) carried out to the structure. This should include the contact details of the professional who carried out the works.

5.7 Farmstead

5.7.1 *Feature 28: Farmstead*

The following selected images provide a visual record of recent features within the farmstead on 7 July and 3 August 2022. This visual record forms the basis for the site-specific recommendations that follow.

Figure 263. Feature 28: Farmstead. Shed built using salvaged material. Date of construction not known.

Figure 264. Feature 28: Farmstead. Shed interior

Figure 265. Feature 28: Farmstead. Original milking shed.

Figure 266. Feature 28: Farmstead. Milking shed interior. Roof being supported with an Acroprop. Horizontal cracking is also evident.

Figure 267. Feature 28: Farmstead. Milking shed interior displaying rising and falling damp, and horizontal cracking.

Figure 268. Feature 28: Farmstead. A remnant concrete wall is indicated. The milking shed is the RHS.

Figure 269. Feature 28: Farmstead. Concrete water trough.

Figure 270. Feature 28: Farmstead. Example of early/original timber posts and reused hardware.

Figure 271. Feature 28: Farmstead. Example of early/original timber posts with gudgeon.

Figure 272. Feature 28: Farmstead. Looking east from the farmstead towards Fort Gordon (indicated).

Figure 273. Feature 28: Farmstead. Looking south from the farmstead over the former prison (indicated).

Site specific recommendations

Based on the site observations presented above the following site specific recommendations are made. General recommendations are provided at *7.0 Recommendations*.

- The farmstead is currently being managed privately. Continue to provide support to the lessee as required.
- Consider replacing the roof structure to the milk shed. It will be appropriate that this work is guided by an engineer in consultation with a built heritage specialist.
- Keep a record of all work (including general maintenance) carried out to the structure. This should include the contact details of the professional who carried out the works.
- Consider commissioning an oral historian, or suitably qualified person, to develop an oral history of the farmstead for archival purposes.

6 Discussion

LINZ is facilitating a body of work in order to establish a reserve at Watts Peninsula, Wellington. They have been tasked with addressing immediate safety issues and bringing the site to a position where it can be transferred to an agency to develop and manage as a reserve (Cabinet Economic Growth and Infrastructure Committee, 2011). The former Defence land was occupied by pre-European Maori for pā, kāinga and mahinga kai and has been utilsed for coastal defence, farming and reformatory purposes throughout the last 160 years. Remnants of these activities remain and 72 hectares of the peninsular are being set aside and protected as a "distinctive national destination" (HNZPT 2020) with "cultural and recreational potential" (LINZ, 2022). The site contains a number of extant structures some of which have been proposed for demolition owing to their condition.

New Zealand Heritage Properties has undertaken a heritage and condition assessement of the extant features across the project area and provided an overview of the condition of these features. The heritage and condition assessment provides advice for remediation and mangement of these structures including those proposed for demolition, in line with their heritage values and the value they contribute to the site as a whole. Recommendations are also presented to guide future works and management of the complex as a whole, to ensure preservation and management of values in the creation of a public reserve.

Research undertaken here, in combination with previous individual assessments, reports, and histories of Watts Peninsula, show that, as a site-complex, the peninsula is considered to have **significant historic heritage values** at a **national** level with elements important at an **international** level.

From the pre-contact period to the early years of the twenty first century, Watts Peninsula has been in continual use for its defensive properties. The place tells a long and interwoven story of national significance. With a high degree of integrity, the increasingly rare buildings and structures are a testament to New Zealand's response to coastal defences from the Victorian era to twentieth century global warfare.

Watts Peninsula, and the proposed 72 hectare reserve, is unique in the range of heritage and archaeological features and site types present, the depth of time covered, and in being former Defence land, the lack of previous commecial or residential development that has allowed for its unique preservation. Watts Peninsula provides an unprecedented opportunity to showcase Māori and European history in the same location across common themes that pervade all narratives – *sustenance/lifeways* and *defence* across a period of nearly 1000 years.

Cultural and archaeological evidence of pits, midden, kāinga, farmstead, outbuildings, fencing shows how the area was utilised by Māori and European alike for food production and sustenance.

Māori pā and colonial coastal defences, span centuries and different periods of tension and conflict as well as advances in technology. These periods are often reflected in the landscape and within the structures, which show how both Māori and Europeans utilised the landscape and topography for defence and security purposes.

As well as the key and prominent defensive structures, including the likes of Fort Ballance, there are numerous notable features spaced across the peninsula that have particular value or provide further opportunities for public interpretation and way finding. Many of these are along the route of, or intersected by, the military road. The road itself is a rare example of a road built solely for military purposes and was constructed for horse drawn traffic at a gradient suitable for horses. The road has not been significantly modified since its construction and still contains obvious markers of this initial activity with period features still present at points along its route, one of which is an in situ horse trough.

The road presents an opportunity of considerable public amenity and interpretation value by contributing to the circulation of the public through the site with relevant information presented to the public about it and the features seen from it as it snakes across the peninsula. However, in order to realise this amenity value while preserving its

heritage value, it is best that the road remain maintained but not significantly modified – instead it could be part of walking and/or cycling track(s) that will have little impact upon it.

Other opportunities for interpretation include the Mt Crawford redoubt and Mt Crawford Battery. The redoubt is the last known independent earth bank fortification in the country and the Mt Crawford Battery is one of the best surviving examples of a WWII gun site. The reservoir and pipework for fire suppression is evident on some magazines as well as along the route between the magazines. These features allow the public to interpret and understand the genuine risks of storing ammunition while the presence of the firing range provides stark realisation of the very real need to be prepared for conflict.

Along with its defensive history, the peninsula has considerable prison, reformatory, and borstal history as well as the use of prison labour in the construction of defence structures. This includes Māori prisoners from Taranaki who worked on constructing a slipway at Shelly Bay and women 'inmates' are known to have contributed to the duties and activities on the peninsula.

The contribution from individual heritage items and their relevance and importance to the wider landscape is considerable. In this vein the Guard house or Sergeant's house is noted as being important to the complex as the only extant example of a military house on the proposed reserve.

The Watts Peninsula complex requires careful consideration and management in order to protect this highly valued cultural historical asset. The existing structures, including the landscape modification for pa, make a considerable contribution to the heritage values and uniqueness of the site. They also represent the greatest opportunities for public interpretation, appreciation and amenity value and therefore, attempts should be made to conserve all existing structures across the site including those in a poor state. Or at least, mothballed to stem the deterioration further until an overarching interpretation and management plan is constructed.

Overall, the structures at Watts Peninsula are in fair to good condition, however, they are displaying significant signs of vandalism and varying levels of wear and tear. Accordingly, it is proposed that the 'site specific recommendations', generally the deferred maintenance, are implemented in line with good conservation practice and ongoing preventative conservation. Preventative conservation, as a proactive approach, focuses on identifying and understanding the causes of deterioration rather than treating the symptoms. This approach manages various threats to heritage significance and thereby reduces the frequency and extent of repair, loss and replacement. To achieve this, preventative conservation relies on regular surveys, the monitoring of the environmental conditions and ongoing maintenance.

In addition to the 'site specific recommendations', 'general recommendations' as long term proposals have also been provided. General recommendations support preventative conservation; ensure the heritage significance of Watts Peninsula is retained and enhanced in the future; and provides the means to share the history of the place collectively, and individually, to the local community and tourists.

There are considerable archaeological values relating to Māori occupation and use of the peninsula. A cultural management plan should be established with iwi in order to protect and maintain integrity of sites including appropriate tikanga for public visitation of such sites. The possible restoration of at least one pā or some elements of the pā (cross section) would significantly enhance user experience and provide considerable balance to the Māori/European and visual narrative on the peninsula (subject to iwi consultation and appropriateness).

Although beyond the scope of LINZ's current mandate, other plans or strategies required with the establishment of a reserve at Watts Peninsula include but not limited to;

- An overarching heritage management plan for the operation and management of heritage values within the reserve,

- An overarching site conservation management plan which provides the framework for the informed and appropriate treatment of heritage structures in order to maintain their heritage values.
- A maintenance plan which sets out the maintenance programme for existing structures
- An interpretation strategy for how cultural and heritage values are interpreted and incorporated into the visitor experience and how public use of, and circulation through, the reserve will be managed.
    - it is important to consult and consider the views of iwi and incorporate cultural values into site management and interpretation strategies and plans. Consideration must also be given to how user access will be enabled and controlled and how security will be maintained across the reserve.

Overall, the creation of a reserve on Watts Peninsula presents an opportunity with significant social, historical cultural and economic benefit, all on the doorstep of Wellington city. Watts Peninsula reserve will be an asset of national significance and one that will garner international interest.

7 Recommendations

The heritage values and condition assessment has shown that the proposed Watts Peninsula reserve has **significant historic heritage values** at a **national** level with some elements important at an **international** level. The creation of the 72 hectare reserve will see increased public access and improved amenity value and considerable opportunities for tourism and education through onsite interpretation.

Accordingly, there are a number of short and long term recommendations to ensure these significant values are managed and protected and the opportunities realised. These recommendations are not within LINZ's current mandate, but should be considered as implementation of the reserve progresses.

In addition to the site specific recommendations included at section 5.1 to section 5.7, the following general recommendations are made:

- Develop a maintenance plan for the extant features at Watts Peninsula. The maintenance plan should identify the following types of work:
    - Corrective maintenance – work necessary to bring the asset to an acceptable standard.
    - Planned maintenance – work to prevent failure which recurs predictably within the life of an asset.
    - Emergency corrective maintenance – work that must be initiated immediately for health, safety or security reasons; or any work that if not undertaken will result in the rapid deterioration of the asset.

  Maintenance can also be categorised according to who carries out the work:
    - Housekeeping maintenance – carried out by asset managers.
    - Second line maintenance – carried out by specialist tradespeople.

  Any subsurface works may require an archaeological authority from Heritage New Zealand Pouhere Taonga so an archaeologist should be consulted during planning of works.

- On basis of findings presented here and the unique contribution each extant structure makes to the overall significance of the site-complex, it is recommended that all existing structures be preserved on site and in situ including those previously proposed for demolition. Where land instability has been the leading cause of dilapidation, should a structure need temporary relocation or significant modification, to facilitate land remediation, consult and engineer and built heritage specialist in the first instance.

- Develop an interpretation strategy that identifies appropriate ways of retaining and making the significance of Watts Peninsula understood. Interpretation is a means of sharing history and culture with local communities, visitors, and people overseas. It encompasses all the ways in which an item can become known and appreciated, strengthening and sustaining the relationships between the community and its heritage.
    - An interpretation strategy should be developed in consultation with iwi, and attention should be given to enhancing the narrative of pre-European Māori occupation and use of the peninsular. This would create greater balance to the highly visual colonial history of the peninsula. That is to say, the extant structures at Watts Peninsula make its former colonial use more obvious, and thus, methods are needed to 'balance' this occupation with the ca. 800 years of Māori occupation of the area. This can be through displays or interpretation methods. Given that there is a common theme running through both Māori and European occupation, - sustenance and defence - there is a great opportunity to discuss and showcase (where appropriate in consultation with iwi) Māori pā construction, methodology, purpose, discussion of battles, kāinga and mahinga kai.
    - In consultation with iwi, and where appropriate to do so, consideration should be given to restoring at least a section of one of the pā sites. Archaeological excavation could be used to attempt to locate position of the palisade defences for restoration.
    - It will be appropriate that the interpretation strategy considers the connections between Watts Penenisula and similar fortifications across New Zealand and the Commonwealth.

- In coordination with the interpretation strategy and conservation management plan noted below, an overarching management should be completed for the operation of the reserve. The plan should outline a circulation plan for how and where visitors will be given access to the site and how they may circulate through it. The plan should also identify procedures for controlling access to sensitive sites and procedures for minimising risks of unintended damage and destruction As well as, how access to all areas will be controlled and how security will be maintained across the reserve as a whole?

- Consider undertaking an oral history of the farmstead for archival purposes. Also investigate the potential of interviewing military personnel previously associated with the military bases at Watts Peninsula. An oral history is a first-hand eyewitness account and is a 'primary-source' for history. Oral history is potentially powerful for interpretation because it records personal experiences, reactions and emotions.

- Develop a conservation management plan for Watts Peninsula. Conservation plans are imperative for the informed and appropriate treatment of historic structures and features such as the military road. As a standard reference work on a place, they relate to the nature, complexity and problems of a site while providing structure and framework to conservation planning. By integrating a number of disciplines, conservation plans explain why a place is significant, what that significance is and how that significance can be retained in the future.

- Mt Crawford prison is not included in the proposed reserve and has not been assessed here, however it also contains significant heritage values.

- It is recommended that discussion be undertaken with the Wellington City Council and Heritage New Zealand Pouhere Taonga so that Watts Peninsula, as a site complex, be given highest protections on the WCC district plan and included on the Heritage New Zealand list.

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