



REGISTER OF HERITAGE PLACES

Supporting Documentation

11. ASSESSMENT OF CULTURAL HERITAGE SIGNIFICANCE

Cultural heritage significance means aesthetic, historic, scientific, social or spiritual value for individuals or groups within Western Australia.

In determining cultural heritage significance, the Heritage Council has had regard to the factors in the *Heritage Act 2018* and the indicators adopted on 14 June 2019.

11(a) Importance in demonstrating the evolution or pattern of Western Australia's history

World War II Buildings, Oliver Hill Battery and Signal Ridge, Wadjemup/Rottnest Island is important as a component of Australia's coastal defence system erected in response to external threats during World War II. Wadjemup/ Rottnest Island was a site of strategic importance. The installation of 6" and 9.2" gun batteries at Bickley Point and Oliver Hill, and the construction of the Battery Observation Post /Fire Command Central at Signal Ridge, formed part of the chain of gun emplacements erected in Western Australia, known as 'Fremantle Fortress', stretching from between Swanbourne, Cape Peron, Leighton, Woodman Point, Fremantle, Meelup/Garden Island, and Wadjemup/Rottnest Island.

The large number of military structures and archaeological remnants within *World War II Buildings, Oliver Hill Battery and Signal Ridge, Wadjemup/Rottnest Island*, including the intact 9.2" guns at Oliver Hill, and the World War II buildings at Signal Ridge, illustrate the Island's military history and its role in national coast defences.

World War II Buildings, Oliver Hill Battery and Signal Ridge, Wadjemup/Rottnest Island is largely intact and understandable remnant of the Fremantle Fortress, demonstrating distinctive method of coastal defence that is no longer relevant in the age of modern warfare. The Battery Observation Post was critical to the operation of the Oliver Hill Battery and other sites in the Fremantle Fortress. Oliver Hill Battery, comprising many and various intact components of a large calibre gun battery, is the only surviving World War II gun emplacement associated with the Fremantle Fortress in Western Australia.

World War II Buildings, Oliver Hill Battery and Signal Ridge, Wadjemup/Rottnest Island is important in demonstrating the significant role of women in the communications and defence forces in Western Australia during World War II. Due to a shortage of manpower, Australian Women's Army Service personnel were posted to multiple locations on Wadjemup/Rottnest Island. The role of the AWAS

in the underground plotting rooms at Oliver Hill Battery and at the Battery Observation Post on Signal Ridge was vital to the operation of Oliver Hill Battery, while the Womens Royal Auxillary Naval Service (WRANS) manned the Port War Signal Station, and occupied the adjacent WRANS House at Signal Ridge.

11(b) Importance in demonstrating rare, uncommon or endangered aspects of Western Australia's heritage

World War II Buildings, Oliver Hill Battery and Signal Ridge, Wadjemup/Rottnest Island is a discontinuous precinct comprising intact and understandable remnants of the Fremantle Fortress, demonstrating distinctive method of coastal defence that is no longer relevant in the age of modern warfare.

World War II Buildings, Oliver Hill Battery and Signal Ridge, Wadjemup/Rottnest Island comprises rare evidence of both occupation and accommodation for World War II service-women, including the army (AWAS) and naval (WRANS) services. Examples of former women's barracks include the WRANS House at Signal Ridge, and archaeological evidence of the AWAS barracks at Oliver Hill.

Oliver Hill Battery is the only example in Australia of a gun battery with 9.2" guns remaining in situ. It is also one of only five battery sites worldwide that still retain their guns in their World War II location.

The Battery Observation Post and Signal Station at Signal Ridge are rare remnants of a combined observation and fire command post and a Port War Signal Station in Australia.

The location of a scientific research station at Signal Ridge, chosen due to the isolated and exposed location, allowed the collection of a range of data about the surrounding environment, providing a wealth of information about the Island.

11(c) Potential to yield information that will contribute to an understanding of Western Australia's history;

The place has importance for its ability to demonstrate the preparations that were undertaken to protect Fremantle Port from enemy attack during World War II. The positioning and installation of the 9.2" long range guns at Oliver Hill Battery, as managed by the operators at the Battery Observation Post on Signal Ridge could comprehensively repel and attack enemy warships approaching from the northwest with the intention of bombarding Fremantle.

As a result of the retention of 9.2" H1 and H2 guns *in situ*, along with the associated infrastructure and detailed interpretation at Oliver Hill and Signal Ridge, *World War II Buildings, Oliver Hill Battery and Signal Ridge, Wadjemup/Rottnest Island* has high scientific value for its ability to contribute information leading to a wider understanding of Australia's defence and military history.

Archaeological investigation of Oliver Hill Battery and Signal Ridge has the potential to reveal information regarding the military occupation of the sites during World War II, including the construction of the battery as well as its occupation and decommissioning, the informal military features installed in the surrounding

landscape and information regarding the service men and women who were accommodated nearby.

Archaeological investigation of Signal Ridge has the potential to provide further evidence and information about the occupation of and defence facilities at the site during World War II, including and information regarding the service men and women who were accommodated nearby.

11(d) Its importance in demonstrating the characteristics of a broader class of places;

As part of the Rottnest Fortress, *World War II Buildings, Oliver Hill Battery and Signal Ridge, Wadjemup/Rottnest Island* is representative of places commandeered by the military during wartime and adapted for the purposes of national defence.

Oliver Hill Battery is representative of the breech-loading gun batteries established to protect strategic defence positions during World War II in Commonwealth countries. It demonstrates the two-gun batteries that were installed in Australia between 1935 and 1945 and represents an integral component of the network of Fremantle Fortress coastal defence batteries that was developed to protect the Port of Fremantle in Western Australia during World War II.

11(e) Any strong or special meaning it may have for any group or community because of social, cultural or spiritual associations;

World War II Buildings, Oliver Hill Battery and Signal Ridge, Wadjemup/Rottnest Island and the other military sites located on the island are highly valued by the community of war veterans and the broader community because of their role in the defence of Western Australia, especially during World War II. The place reflects the importance of both the army and naval services and the naming of WRANS House after the female branch of the naval service recognises the contribution made by service women in defence communications.

World War II Buildings, Oliver Hill Battery and Signal Ridge, Wadjemup/Rottnest Island and the other military sites which formed part of the Fremantle Fortress are highly valued by engineering groups and enthusiasts for its demonstration of the place's role in the defence of Fremantle Port and the significant technical achievement of its construction at the time.

World War II Buildings, Oliver Hill Battery and Signal Ridge, Wadjemup/Rottnest Island are valued by the general community for its historic and military associations, and by those who enjoy the area for recreation.

The area along Signal Ridge and the Signal Station are associated with the Fremantle Harbour Trust and the staff who manned signal station operations at the site in the first half of the twentieth century.

As the site of the former scientific research station, Signal Ridge is valued by the scientific community and staff and students from the University of Western Australia undertook site recording, field trips and other research activities throughout the latter half of the twentieth century.

Wadjemup/ Rottnest Island is of cultural and spiritual significance to Whadjuk and Noongar people of the South-West as a place where the spirits of deceased ancestors travelled after death and is *winnaitch* (a place that should be avoided). Wadjemup/ Rottnest Island is of cultural significance to Aboriginal people in the context of stories explaining the sea level rising (7,000-6,500 BP) and the separation of the island from the mainland.

11(f)¹ Its importance in exhibiting particular aesthetic characteristics valued by any group or community;

World War II Buildings, Oliver Hill Battery and Signal Ridge, Wadjemup/ Rottnest Island illustrates a significant period of occupation and utilisation of Wadjemup/ Rottnest Island. Collectively the individual elements, including the H1 and H2 9.2” guns and infrastructure, underground tunnels, railway lines, trenches and remnant structures within the landscape at Oliver Hill, and the Battery Observation Post, Signal Station and remnants of military installations located on Signal Ridge, combine to form a significant military cultural environment.

The functional requirements for elevated and panoramic views from both Oliver Hill and Signal Ridge necessitated the situation of Oliver Hill Battery, Signal Station and Battery Observation Post amid the highest points of Wadjemup/Rottnest Island. Their location reflects their importance as sites for observation, communication and defence facilities, values for which they continue to be valued by visitors to the island. The prominent landmark sites that form *World War II Buildings, Oliver Hill Battery and Signal Ridge, Wadjemup/ Rottnest* contribute to the visitors’ and residential community’s sense of place.

World War II Buildings, Oliver Hill Battery and Signal Ridge, Wadjemup/ Rottnest demonstrates a vernacular military aesthetic characterised by pragmatic forms that are sited to take advantage of the natural landscape. Constructed to facilitate utilitarian purposes these structures are distinctive in employing simple forms, materials appropriate for local conditions and a narrow palette of colours.

The Signal Station at Signal Ridge is a simple but attractively designed and well resolved structure demonstrated by the symmetrical planning and orderly appearance enhanced by timber detailing.

11(g) Any special association it may have with the life or work of a person, group or organisation of importance in Western Australia’s history;

World War II Buildings, Oliver Hill Battery and Signal Ridge, Wadjemup/Rottnest Island is associated with the Australian Women’s Army Services (AWAS), who worked in the underground plotting rooms at Oliver Hill Battery and the Battery

¹ For consistency, all references to architectural style are taken from Apperly, R., Irving, R., Reynolds, P. *A Pictorial Guide to Identifying Australian Architecture. Styles and Terms from 1788 to the Present*, Angus and Robertson, North Ryde, 1989.
For consistency, all references to garden and landscape types and styles are taken from Ramsay, J. *Parks, Gardens and Special Trees: A Classification and Assessment Method for the Register of the National Estate*, Australian Government Publishing Service, Canberra, 1991, with additional reference to Richards, O. *Theoretical Framework for Designed Landscapes in WA*, unpublished report, 1997.

Observation Post and were housed in temporary wartime hut camps in close proximity at Oliver Hill during World War II.

World War II Buildings, Oliver Hill Battery and Signal Ridge, Wadjemup/Rottnest Island is associated with WRANS Moira Macmillan (later Adams); First Officer Sheila Kenworthy; First Officer Dolly Morgan; Dorothea Gapes; Eileen Cook; Beryl Robinson; Laurel Weston; Norma Skipplings; and Marion Crew, who operated the Port War Signal Station on Signal Ridge under Chief Yeoman Harry Needle, and were accommodated at the WRANS House.²

Oliver Hill Battery is associated with the 6th Heavy Battery Royal Australian Artillery and Royal Australian Engineers, who were stationed at Wadjemup/Rottnest prior to World War II and installed the guns and associated equipment.

World War II Buildings, Oliver Hill Battery and Signal Ridge, Wadjemup/Rottnest Island is associated with a number of military figures, including Lieutenant-General Sir John Talbot-Hobbs, who undertook a reconnaissance survey of Wadjemup/Rottnest Island in 1934, and who along with Colonel Vernon Sturdee, advised on the location of the guns and other military installations on the island; Major E Scriven, who visited the island to inspect and advise on construction; Captain Frank Hussey, Engineer-In-Charge and for whom the diesel railcar which conveys passengers on the restored railway to Oliver Hill has been named; architect Malcolm Finlayson; Major Pain and Lieutenant Colonel Lucas.

The Signal Station buildings at Signal Ridge are associated with Mr Matthew Lyle Pym, who worked for over 35 years as a signalman at Wadjemup/Rottnest Island.

11(h) Its importance in demonstrating a high degree of creative or technical achievement;

The construction of the *World War II Buildings, Oliver Hill Battery and Signal Ridge, Wadjemup/Rottnest Island* as part of an integrated coastal defence system, and in association with the other installations on Wadjemup/Rottnest Island, was a significant technical achievement during the wartime period. The transportation of equipment from the harbour to Oliver Hill and Signal Ridge, the construction of the facilities and the successful installation of high precision artillery equipment demonstrates a considerable technical innovation at the time.

The Signal Ridge Battery Observation Post combined observation post and command centre functions, demonstrating a high degree of technical achievement. The BOP oversaw close defence fire control operating procedures for Oliver Hill Battery on one floor while acting as the Fire Command Centre for day command of the Fremantle Fortress batteries on another. Information from the smaller military installations was transmitted to Signal Hill and the battery plotting rooms at Oliver Hill and Bickley via heavy armoured underground cables installed by the Army in 1938.

The scientific research station located at Signal Ridge throughout the latter half of the twentieth century, was utilised to record a range of data about the surrounding environment, providing valuable tertiary education facilities and information about the Island.

² Palassis, 2005, op cit., p. 11 John Taylor Architect, 2003, pp. 49-50

12. DEGREE OF SIGNIFICANCE

12.1 CONDITION

Overall, the condition of Oliver Hill Battery is good, as a result of ongoing conservation works, most recently in 2013. The condition of individual elements within the place varies, depending on the level of exposure and conservation work that has been undertaken. Ongoing conservation works are likely to be required to protect the structural steel associated with the H1 and H2 9.2” guns from corrosion.

The Signal Station underwent a conservation programme of restoration and reconstruction works in 2001 and is currently in good condition although there is some deterioration to the paintwork internally and externally

The 2003 Conservation Plan noted that the Battery Observation Post was in a severely deteriorated condition at that time. Since then, remedial conservation works have been undertaken, however it is still considered to be in poor condition.

Overall WRANS House is in poor condition as a result of minimal maintenance and low quality repair work being completed over the years. The roof is a recent replacement (likely from 2018) in good condition and is protecting the quarters from further damage.

Wadjemup/ Rottneest Island comprises a complex archaeological landscape which encompasses terrestrial and maritime evidence of Aboriginal and non-Aboriginal occupation and activities across the island. Based on the nature of use and the level of disturbance to Oliver Hill and Signal Ridge after the conclusion of World War II, it is likely that there are intact archaeological deposits and low to moderate artefact scatters dating from the military occupation across both areas. The significance (or research potential) of areas of known and potential archaeology, including those which comprise Aboriginal, non-Aboriginal and both values, has not been assessed.

12.2 INTEGRITY

This section explains the extent to which the fabric is in its original state.

Oliver Hill Battery has a high degree of integrity. Some ancillary built structures, machinery and fittings have been removed from the place. However a considerable number of extant and restored equipment and built elements associated with the World War II phase of operations remain.

The Signal Station has a moderate degree of integrity. Although all the original equipment had been removed the timber building remains in its original state except for the recently replaced roof, rainwater goods and steel balustrading replacement to the observation tower.

The Battery Observation Post has a moderate degree of integrity. Since 2003 modifications designed protect the building such as structural steel reinforcing and window panel infill has altered its appearance. Heavy corrosion has resulted in the loss of external steel elements.

WRANS House has a low to moderate degree of integrity. The recent roof replacement has removed the original features of the shortsheets galvanised roofing, rolled ridge capping and round steel down pipes. However, the rendered

chimney and the rendered masonry fireplace are still intact. The original external wall is highly intact with the original weatherboards, windows and doors in place.

12.3 AUTHENTICITY

This section explains the extent to which the original intention is evident, and the compatibility of current use.

Oliver Hill Battery has particular significance as an authentic example of such guns in situ. The place has a high degree of authenticity as a military base. Although the place no longer functions as part of the Fremantle Fortress coastal defences, it is now a tourist attraction in which the extant elements of the site are interpreted and exhibited in a manner to explain their original use.

The Signal Station has a moderate degree of authenticity as a signal station building. The place no longer retains operable observation, communication but these functions can be clearly interpreted in the remaining fabric.

The Battery Observation Post has a moderate degree of authenticity as combined observation and fire command post. The place no longer retains operable observation, communication, or defence facilities but these functions can be clearly interpreted in the remaining fabric.

WRANS House has a moderate degree of authenticity as modest residential quarters with its original layout still intact. Its currently unoccupied with rooms such as the kitchen utilised for cold storage.

Most of the evidence of the research function which operated at Signal Ridge for half a century has been removed.

13. SUPPORTING EVIDENCE

The documentation for this place is based on the following documents, with amendments and additions by the Heritage Council and the Department:

- Oliver Hill Battery Conservation Plan completed on behalf of the Rottnest Island Authority by Palassis Architects, in December 2005
- Conservation Plan for Signal Ridge Rottnest Island Western Australia prepared by John Taylor Architect for Rottnest Island Foundation in December 2003.

13.1 DOCUMENTARY EVIDENCE

World War II Buildings, Oliver Hill Battery and Signal Ridge, Wadjemup/Rottnest Island comprises the World War II sites located at Oliver Hill Battery and Signal Ridge, including two 9.2 inch (9.2") breech loading guns (1937; 1938) and emplacements (1937), underground infrastructure, and the site of the AWAS hutted camp at Oliver Hill; and the Battery Observation Post (1939), (Post War) Signal Station (1939) and WRANS House (1940) on Signal Ridge. The extant buildings and equipment, together with ruins and archaeological features and deposits associated with them, formed part of a series of coastal defences located at Wadjemup/ Rottnest Island during World War II for the purpose of protecting the Port of Fremantle from bombardment and attack by enemy naval vessels.

Wadjemup/ Rottnest Island

Known to Whadjuk Noongar traditional owners as Wadjemup, Wadjemup/ Rottnest Island is the largest island on the continental shelf near Perth. Approximately twenty kilometres from Fremantle, it is a popular holiday destination for day trips and short-stay holidays.

The Noongar name for Wadjemup means 'place across the water where the spirits are'³. The island was uninhabited when Europeans began arriving in the seventeenth century.⁴ However Wadjemup remained then and now a highly significant place for Whadjuk and Noongar people, as a resting place of the spirits.⁵ Wadjemup/ Rottnest Island separated from the mainland some 6,500 to 10,000 years ago. Recent archaeological research suggests that Aboriginal Western Australians may have been present on across Greater Swan region, including Wadjemup, for at least 20,000 years.⁶ Whadjuk people believe the connection is much longer.

European knowledge of Wadjemup/ Rottnest Island commenced in 1611 with Dutch navigators in search of a shorter route from the Cape of Good Hope to Batavia (now Jakarta). In 1696, William de Vlamingh, searching for a missing ship, landed on and explored Wadjemup/ Rottnest Island.⁷ The most common story

³ Rottnest Island Authority, 2018, Source: <https://rotnestisland.com/the-island/about-the-island/our-history/aboriginal-history>, Accessed 2020.

⁴ TPG for RIA, 'Rottnest Island (Wadjemup) Cultural Landscape Management Plan', May 2015, pp.9-10

⁵ Rottnest Island Authority, 2018, Source: <https://rotnestisland.com/the-island/about-the-island/our-history/aboriginal-history>, Accessed 2020.

⁶ Dortch, Charles & Joe Dortch 2012, 'Archaeological evidence for early human presence in the western reaches of the Greater Swan Region, WA', *Fremantle Studies*, 7: 51-76; Dortch, Joe & Dortch, Charles 2019, Late Quaternary Aboriginal hunter-gatherer occupation of the Greater Swan Region, south-western Australia, *Australian Archaeology*, 85:1, 15-29

⁷ TPG op cit, p.15

about Wadjemup's colonial name ascribes it to Willem de Vlamingh who, on 29 December 1696, mistook quokkas for large rats ('rattenest': 'rat's nest').⁸

After the establishment by the British of the Swan River Colony in 1829, Europeans soon settled on Wadjemup/ Rottnest Island, attracted by the prospects of salt harvesting, farming and fishing. William Nairne Clarke and Robert Thomson were the first to take up town lots and pastureland on the island⁹.

Aboriginal Prison Period (1839 – 1902)

In June 1839, the Colonial Secretary announced in June 1839 that Rottnest Island would become a penal establishment for Aboriginal people. The Crown resumed all land¹⁰ and restricted access to the Island, compensating settlers with property on the mainland. For almost a century the place served as a prison for Aboriginal men and boys. During its time as a prison, some 3,700 Aboriginal men and boys, from many parts of the State, were held there.¹¹

One of the consequences of the Aboriginal Prison period was that Wadjemup/ Rottnest Island was almost entirely developed by forced Aboriginal labour. Over the prison period, the prisoners constructed many buildings and other structures including the seawall and lighthouses.¹²

Oliver Hill was named after Mr. Adam Oliver who was a gaol warder in the 1860s.¹³

The Rottnest Aboriginal prison formally closed in 1902, as regional gaols were being used instead for the detention of Aboriginal prisoners.¹⁴ Fremantle Prison continued to use the island as an annex until 1931. Closure turned the attention of the public and the Government to Wadjemup/ Rottnest Island's possibilities as a leisure destination.

Island Communications (1840–1949)

Wadjemup/Rottnest Island was a first sight of land for many travellers arriving in Perth and Fremantle in the nineteenth and early twentieth. However, for some time the only communication between the island and mainland was via boat.¹⁵ Ships often anchored off Rottnest Island awaiting a berth or a pilot into Fremantle port.¹⁶ A lookout and signal station established at Arthur's Head in 1840 received flag and ball signals from the island, notifying pilot boats to escort vessels into Port.¹⁷

⁸ Somerville, W., *Rottnest Island: Its History and Legends* (Perth: Rottnest Board, 1948), p. 31, citing *Extract from the Journals of a Voyage Made to the Unexplored South Land...* (Amsterdam, 1701); Joske, P., Jeffrey, C., & Hoffman, L., *Rottnest Island: a Documentary History* (Nedlands: Centre for Migration and Development Studies, UWA, 1995), pp. 10-11, 18

⁹ Ferguson, *Rottnest Island*, p. 7

¹⁰ *Government Gazette*, 1 June 1839

¹¹ TPG op cit., p.28

¹² TPG op cit., p.28.

¹³ Rottnest Island Authority, undated, Rottnest Island Oliver Hill Battery Heritage Trail.

¹⁴ In 1881 the State Government established the Rottnest Island Boys' Reformatory for colonial boys adjacent to, but separate from, the Aboriginal Prison. The Reformatory operated for 20 years and closed in 1901.

¹⁵ John Taylor Architect, 2003, Conservation Management Plan for Signal Ridge, Rottnest Island, p. 30

¹⁶ TPG for RIA, 'Rottnest Island (Wadjemup) Cultural Landscape Management Plan (Draft)', January 2015, p.37

¹⁷ John Taylor Architect, 2003, p. 30.

When the Rottnest Island Pilot Station was established at Thomson Bay Settlement¹⁸ in 1848 it was staffed by experienced sailors who guided ships around the dangerous reefs and into Fremantle Harbour.

Lighthouses played a key role in the pilot boat operations by providing a communication link between the pilot boat station and incoming ships. The Island's first lighthouse was constructed on Wadjemup Hill with Aboriginal prisoner labour, and was completed in 1849. Half a century later it was replaced with a new, taller lighthouse on Wadjemup Hill¹⁹; and a third was built in 1900 at Bathurst Point²⁰.

The Pilot Station operated until 1903, when a new system was established with a signal station established near Bathurst Lighthouse²¹ by the Fremantle Harbour Trust. However, it was dismantled in 1904 and re-erected on a rise near Wadjemup Lighthouse, also known as Rottnest Island Light Station, which enabled a 360 degree view of the sea²². At that time the rise became known as Signal Hill, although it later became known as Lighthouse Ridge and Signal Ridge.²³

An internal telephone system linking the lighthouse, pilot station and Bathurst Point lookout tower was in operation from 1892. In 1900 a submarine cable between the mainland and the island was opened. The main switchboard for the Rottnest Island telephone system was located within the Signal Station, with other switchboards located elsewhere, including at the Prison Superintendent's office and the main lighthouse.²⁴ Once a vessel was sighted, the news was telephoned to the lighthouse in Fremantle and a steam-powered pilot boat dispatched from there.

Fog signal apparatus was installed on Wadjemup Hill in 1906. Communications further improved with the establishment of public holiday accommodation from 1910, when telephone cabinets were erected for public use. However, the Signal Station maintained the capacity to cut into lines for urgent communications.²⁵

Repairs and renovations to the Signal Station were undertaken in 1928 and 1931, before it was briefly relocated and then removed shortly after the construction of a Port War Signal Station in 1939 during the World War II Defence force occupation of Rottnest Island. The (Port War) Signal Station remained in operation until 1949 when compulsory pilotage was abolished, and it became redundant. The Signal Station was restored in 2002, and is located within *World War II Buildings, Oliver Hill Battery and Signal Ridge, Wadjemup/Rottnest Island*

Holiday Playground (1902 – Present)

From 1902, ferries carried tourists to Wadjemup/Rottnest Island on Sundays. During these times visitors and prisoners were kept well apart. The telephone exchange workers, lighthouse men, signalmen and pilots were free to mingle with

18 P516 *Thomson Bay Settlement, Wadjemup/Rottnest Island* (RHP)

19 P3254 *Rottnest Island Light Station* (RHP, also known as Wadjemup Lighthouse)

20 P517 *Bathurst Lighthouse & Quarters* (RHP). Bathurst Point and Wadjemup Hill lighthouses remain today, with the latter opened to the public on 2 November 2005.

21 P517 *Bathurst Lighthouse & Quarters* (RHP)

22 P3254 *Rottnest Island Light Station* (RHP)
John Taylor Architect, 2003, p. 34.

23 The term Signal Hill was also originally given to the former site of the heliograph first established near the Salt Store in the Thomson Bay Settlement at Wadjemup/ Rottnest Island. This area is still known as Signal Hill.
John Taylor Architect, 2003, p. 27.

24 John Taylor Architect, 2003, pp. 34, 57.

25 John Taylor Architect, 2003, pp. 35, 58.

the holidaymakers. In 1907 plans for transforming Wadjemup/Rottnest Island from a prison settlement to a recreation and holiday Island were drawn up by the Colonial Secretary's Department.²⁶

In 1917 Rottnest Island was declared an A-Class Reserve (excluding the lighthouses and prison) under the *Parks and Reserves Act* (1895) and the Rottnest Board of Control was formed.²⁷ A series of improvements to the facilities across the island were progressively implemented, including the conversion of many prison buildings into tourist accommodation, offices and facilities, tree planting and the construction of tea rooms, stores and additional accommodation.²⁸ Recreational and holiday pursuits have continued on Wadjemup/Rottnest Island from 1902 to the present day except for its closure during the World Wars for military functions and during the 2020 COVID-19 pandemic.

The discontinuous precinct of *World War II Buildings, Oliver Hill Battery and Signal Ridge, Wadjemup/Rottnest Island* forms part of a series of former military sites across Wadjemup/Rottnest Island valued and visited for their contribution to the defence of the Fremantle Harbour during World War II. A reconstructed railway runs between *Thomson Bay Settlement* (RHP), *Kingstown Barracks* (RHP) and Oliver Hill Battery, and interpretive signage and guided tours provide additional information on the World War II history. The ruins of coastal defence systems²⁹ at Oliver Hill Battery and Bickley Battery, also form part of series of heritage walking trails across the island. Visitors and tourists can also access *Wadjemup Lighthouse* on Wadjemup Hill and the Signal Ridge area, including the exteriors of Battery Observation Post (BOP) and the Port War Signal Station (PWSS), by foot, bicycle or shuttle bus.

Military Operations (1914–1915; 1935–1950)

World War I

World War I was declared on 4 August 1914. Rottnest Island was commandeered for use as an Internment Camp by the Department of Defence. Rottnest Camp, was located in the north of the Thomson Bay Settlement area, but only operated until November 1915.³⁰ The Defence Department handed the island back to State Government control in December 1915.

Rottnest Island Fortress (1935 – 1945)

As early as 1925, it was recognised by the governments of both Australia and Great Britain that Australia's coastal defences, including Fremantle, required improvement, and recommendations were made to the Commonwealth Government by the Committee of Imperial Defence. However, despite the priority given to defend vulnerable points along the Australian coastline, by early 1934

²⁶ Somerville, *Rottnest Island*, p. 94

²⁷ TPG op cit., p.46

²⁸ TPG op cit., p.46

²⁹ The sites and remnants of former fortress observation points, search-light emplacements, dummy gun emplacements, bunkers and other military installations are also located elsewhere on Wadjemup/Rottnest Island.

³⁰ Between 1914 and 1926, and again between 1939 and 1971, all immigrants or 'aliens' to Australia who were not British subjects were required to register with authorities following the outbreak of war. Aliens were classified according to their nationality in the following categories: Allied, Neutral, Indeterminate and Enemy. Approximately 700 men of Serbian, Croatian and Dalmatian background were held at Rottnest Camp. Source: National Archives of Australia, <http://www.naa.gov.au>, Accessed August 2020.

limited improvements had been made at Darwin, and little had been done to improve the defences at Fremantle.³¹

As the international situation in Europe deteriorated during the 1930s, the Australian Military Board submitted an urgent Minute to the Minister for Defence on 17 April 1934 recommending that the British Chief of the Imperial General Staff be requested to expedite the conversion and despatch of 9.2 inch (9.2") guns for Sydney and Fremantle.³²

At the July 1934 meeting of the Defence Committee, the Chief of the Australian Naval Staff, Vice Admiral Sir Francis Hyde, expressed the view that as Fremantle had now been decided upon as the Convoy Assembly Port, it should figure next to Sydney in priority for the completion of its Coastal Defences. The Chief of the Australian General Staff, Major-General Bruce stated that it was the intention that Sydney would receive the first two Batteries of 9.2" guns on order and the next Battery would go to Rottnest Island.³³

This strategy of coastal defence using 9.2-inch guns was based on the view that the likely aggressor - the Japanese - would be deterred by the presence of the British base at Singapore from sending battleships and aircraft carriers south to Australia. The most likely Japanese attack force would comprise cruisers, armed merchant vessels, submarines, and aircraft carried on these vessels, which could be dealt with by the planned 9.2-inch guns. However, as Japanese cruisers were restricted to 8-inch guns, under the terms of the Washington Agreement, and as these guns outranged the 9.2-inch coast guns by some 1,200 yards, the coast gun positions needed to be at least that distance forward of the areas they were to protect. In addition, to provide close protection against enemy craft that might venture closer to harbour facilities, the 6-inch guns, with their lower trajectory and faster rate of fire, were also necessary, as well as various anti-aircraft weapons.³⁴

A preliminary reconnaissance of Wadjemup/ Rottnest Island to select the sites for the 9.2" and 6" gun batteries was conducted by Lieutenant-General Sir J.J. Talbot Hobbs, Brigadier Martin, Major Pain and Lieutenant Hussey during late May 1934.³⁵ A further and more involved report on the 'Rottnest Defences' was prepared by Major Pain and Lieutenant Hussey on 10 September 1934.³⁶

In late September, the Prime Minister informed the Western Australian Premier:

I desire to inform you that it is proposed to proceed in the near future with certain important fortification works on Rottnest Island for the protection of the Port of Fremantle. When the plans are further advanced you will be advised in greater detail, especially as to the areas of land which will be used for barrack and armament sites. In the meantime it may be assumed that the work to be

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- 31 Engineers Australia, Western Australia Division, August 2010 (March 2011 version), Nomination of Fremantle Fortress - Rottnest Island WW2 Coastal Defence Facilities for a Engineering Heritage National Landmark, p. 9.; Australian Military Board Minute Agenda No. 26/1934 dated 17/4/1934
- 32 ibid
- 33 Defence Committee Minute No. 46/1934 dated 19/7/1934
- 34 David Homer, *The Gunners: A History of Australian Artillery*, Allen and Unwin, Sydney, 1995, p 204-205, cited in Palassis Architects, 2005, Oliver Hill Battery Conservation Plan, p. 8
- 35 NAA: CRS/B197, File No. 1855/1/192
- 36 NAA: CRS/B197, File No. 1855/1/215

undertaken will not only not cause any detriment to the island as a holiday resort, but will add considerably to its interest in this respect.³⁷

The construction of new facilities at Wadjemup/ Rottneest Island significantly expanded the existing coastal defence system for the Port of Fremantle, known as the 'Fremantle Fortress'.³⁸ The existing guns installed in 1907 at Arthur's Head and North Fremantle to defend the Fremantle Harbour were retained. Two 9.2 inch gun batteries were constructed Western Australia, at Wadjemup/ Rottneest Island (Oliver Hill), and Meeandip/ Garden Island³⁹, as part of seven installed across Australia, including one in the Northern Territory in Darwin, and four in New South Wales.⁴⁰ In addition, 6 inch gun batteries were installed on Wadjemup/ Rottneest Island (Bickley Battery), Buckland Hill, Swanbourne and Fremantle, and in Queensland and New South Wales.⁴¹

The Rottneest Island Fortress was to comprise Oliver Hill Battery and quarters, Bickley Point Battery and quarters, a Battery Observation Post, Port War Signal Station (PWSS) and barracks at Signal Ridge, permanent army accommodation at Kingstown Barracks, as well as four Fortress Observation Posts and six searchlights located at strategic locations around the island.⁴² Major construction works commenced in 1935. The jetty located at the southern end of Thomson Bay was extended and a heavy lift overhead gantry was installed.⁴³ A narrow gauge railway connecting the Army Jetty to the proposed sites for the *Kingstown Barracks*⁴⁴, and Bickley and Oliver Hill Batteries was completed in April 1936.⁴⁵ To save costs, sleepers, rails, fish plates, dog spikes and ten sets of points and crossings were removed from the disused Henderson Naval Base.⁴⁶ Additional second hand rails were purchased from Western Australian Government Railways.⁴⁷ The railway was manned by army personnel and initially used to carry all the heavy equipment up to Oliver Hill and Bickley Batteries.⁴⁸ The embankments and sand hill cuttings were replanted and camouflaged with the assistance of the State Government botanist.⁴⁹

Oliver Hill Battery

37 cited Ferguson, *Rottneest Island*, p. 95

38 Engineers Australia, 2010 op cit, p. 3.

39 J Battery or Challenger Battery (1942), was located at the north western tip of the island; Beacon Battery (1942), located at Beacon Head. The two largest gun emplacements (1943) were located on Scriven Hill in the centre of the island.

40 North Head, Sydney Harbour; Cape Banks, La Perouse; Fort Drummond, Wollongong; and Fort Wallace, Newcastle

41 Engineers Australia, 2010 op cit, pp. 3, 10; Palassis 2005, op cit., p. 8.

42 GB Hill and Partners, 1995, op cit. p 12; NAA: 1855//1/215, 1906-1935; Engineers Australia, 2010, op cit., p. 26; John Taylor Architect, 2003, p. 3; Ralph Hoare Architect, 2000, Kingstown Barracks Rottneest Island Conservation Plan, prepared for Rottneest Island Authority, p. 11

43 Palassis, 2005 op cit., p. 9.

44 P525 *Kingstown Barracks* (RHP)

45 NAA: MP729/6, File No. 23/406/65; Palassis, 2005, op cit., p. 9.

46 DOI Bill of Quantities and Estimate for Construction of a Railway at Rottneest Island dated 3/9/1935

47 Palassis, 2005 op cit., p. 9.

48 The line was later extended to quarries, gun sites and other construction sites.

GB Hill & Partners Pty Ltd, November 1995, Oliver Hill Battery Conservation Assessment, for Rottneest Island Authority, p. 10; Rottneest Island Authority brochure 'Rottneest Island Oliver Hill Battery'

49 Palassis, 2005 op cit., p. 9.

The majority of the construction at Oliver Hill Battery including the tunnels, buildings, concrete emplacement structures, engine rooms and search light emplacements was undertaken by civilian contractors, with specialised work performed by military personnel.⁵⁰ Construction of the Oliver Hill Battery complex was challenging due to both the isolation of the post as well as the limited facilities and transport. All materials other than sand and water were required to be transported by barge from Fremantle, and shipments were delayed by a number of factors, including poor weather, the sinking of one of the barges and the weight of the individual elements for installation.⁵¹

Construction of the gun emplacements commenced in March 1936 and was completed in December 1937. The work was undertaken by Contractor F.J. Deacon at a cost of £55,344, under the supervision of Captain (later Brigadier) Frank Hussey of the No.5 Fortress Company, Royal Australian Engineers (RAE).⁵² Captain Hussey had previously carried out the initial site surveys of the island.

The two 9.2" guns (H1 and H2), each weighing approximately 28 tons, and were transported to Fremantle separately in 1937; H1 aboard MV Wairangi and H2 on MV Karamia. Each gun, its mountings, sights and sundry equipment cost £40,400.⁵³ The 9.2" H1 gun barrel was manufactured in 1901 by Elswick Ordnance Company (UK) and was originally supplied to the Royal Navy, for use in Hong Kong. The breach block was manufactured by the Elswick Ordnance Co. The gun was transferred to the British Army for land service in 1910.⁵⁴ The 9.2" H2 gun had been used by the British Army at Portland Harbour in the United Kingdom in 1919. The breach block is stamped 1902.⁵⁵

H1 and H2 were installed in 1937 and 1938 respectively by the No. 6 Heavy Battery of the Royal Australian Artillery under the supervision of Major F. Nurse and Warrant Officer Gallagher⁵⁶. A gantry was transported from Sydney and temporarily erected over the emplacements to enable the installation.⁵⁷

The two 9.2" guns were proof fired on 21 November 1938. In 1939, the 9.2" guns were fitted with fire control equipment and searchlights were erected. The guns had an effective range of about 29,000 metres and their primary role was counter bombardment.⁵⁸

The power house (Engine Room) equipment was installed by the Royal Australian Engineers under Warrant Officer Lake by 1938. The underground combined Fortress and Battery Plotting Room was constructed from the surface by open excavation, and completed in November 1939. Armoured underground electrical

50 GB Hill and Partners, 1995, op cit. p 11.

51 A complete gun turret and all its components weighed 142.2 tonnes.

GB Hill and Partners, 1995, op cit., p. 10; Rottnest Island Authority brochure 'Rottnest Island Oliver Hill Battery'

52 Engineers Australia, 2010 op cit, pp. 3, 10, 14.

53 GB Hill and Partners, 1995, cited in Engineers Australia, 2010 op cit, p. 14

54 GB Hill and Partners, 1995, cited in Engineers Australia, 2010 op cit, p. 14

55 Engineers Australia, 2010 op cit, p 14.

56 Engineers Australia, 2010 op cit, p. 14.

57 GB Hill & Partners Pty Ltd, 1995, op cit., p. 10

58 Bickley Battery with two 6" guns was proof fired on 25 July 1939, and fully operational from December 1939. Its primary role was close defence of the shipping channel known as the South Passage between Wadjemup and Carnac Island.

The Coast Defences of Western Australia 1826-1963: R.K. Glyde, 1995 unpublished

cables allowed the transmission of target bearings to the Fortress and Battery Plotting Room from the Fortress observation posts across the island.⁵⁹ Due to delays, the artillery fire control equipment was not operational at Oliver Hill until late circa 1940 or early 1941.⁶⁰

The following description of the individual elements installed at Oliver Hill Battery is taken from the Oliver Hill Battery Conservation Plan.

The surface features of the Battery comprised the two 9.2-inch guns, the steel gun housing and gun pit below, as well as the crew shelter and gun store. Below ground structures included the Pump Chamber, Shell Store, Cordite Room, Engine Room, Casualty Clearing Station, connecting tunnels and the Fortress and Battery Plotting Rooms- were built after open excavation of the site, with soil and planting replaced over these on completion of the works. Reinforced concrete construction was the building material adopted throughout, with the roof over the engine room, pump chamber, magazines and plotting rooms constructed using folded steel sheeting, over which reinforced concrete was placed.⁶¹

There were two 9.2-inch BL MkX guns (on MkVII mountings) on Oliver Hill, with the easternmost H1 situated on the 129-foot contour line, while H2 was located on the 107-foot contour. Both of these guns, as well as other above-ground structures, were concealed with camouflage netting. The Close Defence Battery Observation Post (CDBOP) was sited on the highest point of the [Wadjemup] Hill. In normal circumstances, the guns were electrically and hydraulically operated, although they could be manually operated in an emergency. The electrical supply was provided by an underground engine room situated between the two gun emplacements- at a point known as 'Hell's Gully'- the place to which the light railway ran. Power was supplied from two 180 HP 6 VCR Ruston Hornsby diesel engines, directly coupled to a DC generator producing 440 volt power. From the generating equipment, electric power was distributed to a pump chamber at each gun, where high pressure oil was used to position the gun, as well as operating the gun hoist, loading and wash out gear.⁶²

Also constructed at Oliver Hill were two dummy guns and a dummy railway line made from old sleepers and lengths of jarrah timber. These decoys, built on the high ground north of the Battery Parade Ground, were camouflaged with wire netting, and scrimmed with painted off-cuts of sheet metal.⁶³ They were later removed and installed some distance from Oliver Hill.⁶⁴

Signal Ridge

Signal Ridge is located on Wadjemup Hill, the highest point on Wadjemup/Rottnest at approximately forty-five metres above sea level. When the Defence Department

59 GB Hill & Partners Pty Ltd, 1995, op cit., pp. 10-11, 14, 22

60 GB Hill & Partners Pty Ltd, 1995, op cit., pp. 10, 11, 14

61 Hill and Partners, Oliver Hill Battery Conservation Assessment, p. 22., cited in Palassis, 2005, op cit., p. 11

62 Clyde, The Coast Defences of Western Australia, p. 98, cited in Palassis, 2005, op cit., p. 12

63 From the account of John Houlton, 'Bickley Battery, Rottnest Island', in Joske et al, Rottnest Island, pp. 271-272, cited in Palassis, 2005, op cit., p. 12.

64 Palassis, 2005, op cit., pp. 11-12.

provided a generator for use by the Wadjemup Lighthouse and the Signal Station in 1936, the area became known as Lighthouse Ridge.⁶⁵

In 1937, discussions between the Navy and the Fremantle Harbour Trust were held regarding the construction of a new signal station both parties could jointly occupy. The Harbour Trust wanted a two-storey building so the signalmen could work unimpeded by Navy personnel, while the Navy required sole use of the building during hostilities. It was understood that the Harbour Trust would retain the building, and any other facilities constructed in the vicinity, for its sole use in peacetime.⁶⁶

The Port War Signal Station was designed by Commonwealth Department of Works architect, M. Finlayson. Some amendments to the plan were requested by the Harbour Trust manager G. McGartney, and construction on the two-storey weatherboard building commenced September 1939. Construction of the Station and a small power plant⁶⁷ was completed by the Navy in October 1939. As agreed, it was occupied by both Navy and Trust signalmen operators. The original signal station was relocated nearby while the new station was being built, after which it was removed.⁶⁸ The Navy signalmen were accommodated in relocated timber barracks nearby.⁶⁹ An iron stable building was also built in the location for the signalmen's horses.

Construction of a Battery Observation Post (BOP) on Lighthouse Ridge was commissioned in February 1938 and completed in May 1939. Battery Observation Posts housed instruments to measure target information, which was passed onto the underground battery plotting room and then on to the guns. The single-storey Bickley BOP was constructed near that battery. By placing the three-storey BOP for Oliver Hill on the adjacent Wadjemup Hill, the building had 360 degrees visual observation and additional oversight functions, that would not have been possible had it been sited on Oliver Hill.⁷⁰

The brick and concrete BOP was built to the specifications of the Department of the Interior Director-General of Works by contractor F. J. Deacon. Holt Engineering Pty Ltd supplied the windows and shutters. The interior of the building was painted light-green, while dull-toned paint was used for the exterior. A timber and sand barricade, approximately two-storeys high, was installed around the building in 1942.⁷¹ Internal furniture and equipment was supplied by the Defence Department, including Optical Depression Position Finders (ODPF), Time of Flight Indicator, Ballistic Correction Calculator and telescopes.⁷²

During wartime operations the area was known as Signal Ridge. The Signal Ridge BOP combined the functions of the BOP, Fortress Observation Post (FOP) and Command Centre across the three levels of the building. Code named 'The Fork' and nicknamed 'Queen Anne's Mansions', the building was manned by Army

65 John Taylor Architect, 2003, pp. 41, 58

66 John Taylor Architect, 2003, p. 46

67 The hut was located in a small hollow between the Station and the BOP.

68 The exact location is not known.

69 John Taylor Architect, 2003, p. 46

70 Palassis, 2005, p. 12, John Taylor Architect, 2003, pp. 40, 44

71 John Taylor Architect, 2003, pp. 42-4, 59

72 The ODPF plotted the position of moving targets via a pen on a grid chart, and required installation above mean sea level. John Taylor Architect, 2003, p. 44

personnel. Due to the sightlines on the guns at Bickley and Oliver Hill, targets in certain areas around Wadjemup could only be engaged by both batteries under the command of the Signal Ridge the Battery Observation Post/Fortress Fire Command building.⁷³ It shared command for the Fremantle Fortress batteries with the Swanbourne Fortress Observation Post on the mainland.⁷⁴

Slit trenches were constructed for Naval personnel working on Signal Ridge. In November 1941, a Monkey Island, comprising a small tower established on the east side of the Port War Signal Station building and accessed via a timber walkway and stairs adjacent to the upper floor verandah, was erected to improve observations and communications with Arthur's Head on the mainland. Any buildings not already painted appropriately were painted in dull tones as additional camouflage.⁷⁵

*Bickley Battery and Barracks*⁷⁶

Work on the Bickley Battery gun emplacements, roads and water services was completed by private contractor between September 1937 and April 1938. A single storey Battery Observation Post (BOP) was also constructed by private contractor and comprised facilities for instruments and living quarters with a separate engine room. The Mark XI 6 " guns were transferred to the island in late 1938 and were operational by 1939.⁷⁷

Army personnel manning the Oliver Hill and Bickley Batteries were quartered in temporary hutted camps near each. The 10th Garrison Infantry Battalion⁷⁸, responsible for defending the batteries, was stationed in a hutted camp between Bickley and Oliver Hill. The Battalion installed trenches, weapon pits, and obstacles across the island to impede commando infantry assault. Machine gun emplacements were also installed at Bickley, Oliver Hill, and Signal Ridge to defence against air-borne attack.⁷⁹

Completed in September 1937, P525 *Kingstown Barracks* (RHP) was occupied by Army personnel, including administrative staff and the defence gunnery school of the 6th Heavy Battery RAA and the 5th Fortress Company RAE. Kingstown Barracks was expanded in 1938. In addition to the main barracks block, the complex comprised an administrative building, married quarters, mess, canteen, hospital and other facilities. A telephone switchboard in the administrative building was connected to the new submarine cable installed in 1936.⁸⁰

Women's Barracks

⁷³ Palassis, 2005, p. 12, John Taylor Architect, 2003, p. 44

⁷⁴ John Taylor Architect, 2003, p. 45

⁷⁵ John Taylor Architect, 2003, p. 47

⁷⁶ P3321 Bickley Battery is located within the curtilage of P525 *Kingstown Barracks* (RHP).

⁷⁷ John Taylor Architect, 2003, p. 41, Ralph Hoare Architect, 2000, pp. 12-13

⁷⁸ 10th Garrison Infantry Battalion was relieved by the 5th Garrison Infantry Battalion in April 1944. In November 1944, the 5th Garrison Battalion was disbanded and B Company, 10th Garrison Battalion took over protecting Wadjemup. The remainder of the 10th protected the mainland fortress defence facilities.

⁷⁹ John Taylor Architect, 2003, p. 39

⁸⁰ P3321 Bickley Battery is located within the registered curtilage of P525 *Kingstown Barracks* (RHP) NAA: K1067/118; John Taylor Architect, 2003, pp. 38, 39

Women's branches of the Australian Defence Services were formed in 1941. The Women's Royal Australian Navy Service (WRANS) and Australian Women's Army Service (AWAS) were both employed at Wadjemup/Rottnest.

From 1942, Australian Women's Army Service personnel were sent to Wadjemup/Rottnest Island to operate the underground Plotting Rooms. Those allocated to Bickley Battery were billeted in married quarters at Bickley Swamp. An additional fifty AWAS personnel at Oliver Hill Battery were temporarily housed in the married quarters at *Kingstown Barracks* (RHP) before a purpose-built hutted camp was constructed at Oliver Hill.⁸¹ The women stationed there may also have worked at the BOP on Signal Ridge.⁸²

WRANS House was constructed at the Naval Direction Finding Station at North Point in 1937, originally for use by station staff. The timber framed weatherboard quarters building was constructed using day labour, supervised by Department of the Interior Works Office foreman, T. J. Green. Between April and July 1940, the quarters were relocated to Signal Ridge for the use of Naval Communication Branch Ratings. During refurbishments to accommodate the larger group, a laundry and showers were installed and the verandah was enclosed. In 1941 additional improvements included replacing the canvas blinds on the verandahs with sliding glass windows, installation of fencing and bitumen around the perimeter and laying of electric wiring, powered by the Signal Ridge power plant.⁸³

From 1941 to 1943, the four Harbour Trust signalmen working in the Signal Station were accommodated in the quarters building.⁸⁴ In September 1943, the building was modified for use as accommodation by the Women's Royal Australian Naval Service, which gave the place the current name of WRANS House. Improvements included upgrades to the bathroom and installation of a new toilet block and hot water system, installation of mirrors, hat and coat hooks, and additional furniture. An additional long Army hut was erected between the WRANS House and the Wadjemup Lighthouse and was used by the WRANS and other units as a recreation hut.⁸⁵

Other Infrastructure

A new 8-pair submarine telephone cable was established between the mainland and Wadjemup/Rottnest Island was completed in 1936, with four channels dedicated to the Defence forces stationed on the island.⁸⁶

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- 81 Brief on Rottnest Island for the Visit by the Hon. L.H Barnard, Minister for Defence on 3 August 1974; John Taylor Architect, 2003, p. 40; Information provided by the Rottnest Voluntary Guides Association (Inc) indicates that AWAS personnel were housed in No 1 and No 2 Cottages, constructed as on-site residences for senior Battery personnel.
- 82 John Taylor Architect, 2003, p. 40
- 83 John Taylor Architect, 2003, pp. 48-49; 59
- 84 John Taylor Architect, 2003, pp. 48-49.
- 85 John Taylor Architect, 2003, p. 50.
- 86 John Taylor Architect, 2003, pp. 36, 37

Six searchlights with their own engine houses were also installed in strategic locations at Phillip Point, Thomson Bay, Bickley Point, North Point, Cape Vlamingh and Kitson Point to provide illumination so that the guns could be fired at night.

The Fire Command system on Rottnest Island comprised nine buildings, the BOPs at Signal Ridge and Bickley, the Command Post at Oliver Hill, and four FOPs located at Bare Hill, Tree Hill, Mt Herschell and Cape Vlaming. Early warning aircraft radar stations were stationed at three of these, manned by RAAF personnel.

World War II

On Sunday 3 September 1939 the two Rottnest Island Batteries together with the 6" Batteries at Swanbourne and Arthur's Head, Fremantle were placed on war alert. In June 1940 Rottnest was declared a prohibited area and all recreational activity ended.⁸⁷

When Japan entered the war on 7 December 1941 a general strengthening of all gun batteries took place. However, as there was a shortage of manpower due the requirement for military reinforcements in Darwin and the newly commissioned batteries in Timor and New Guinea, Wadjemup/Rottnest Island received its first posting of service-women, with 30 AWAS personnel dispatched to work at Bickley Battery. In 1942, 50 AWAS personnel were dispatched to operate the underground Plotting Rooms at Oliver Hill Battery.⁸⁸

Although the inner approaches to the Port of Fremantle were well protected by the existing facilities, additional batteries were installed on Meeandip/ Garden Island, Fremantle Harbour, Leighton and Swanbourne (north of Fremantle) and P3365 *Cape Peron K Battery Complex* (RHP) (south of Meeandip/ Garden Island) during the war. The Fremantle Fortress, and in particular the two Wadjemup/Rottnest Island batteries, provided long range protection against potential damage to the Port delivered by ship-borne long range guns.⁸⁹ The specific role of Oliver Hill Battery was counter bombardment for targets in excess of 10,000 yards. Operating with a 360 degree traverse and a maximum range of 29,500 yards, the guns provided protection for vessels awaiting entry into the Port of Fremantle.⁹⁰

Throughout the war all gun batteries in the Fremantle Fortress, including Oliver Hill and Bickley, were controlled from the Battery Observation Post/Fortress Fire Command building, located at Signal Ridge. The Battery Observation Post for Oliver Hill Battery was located on the top floor. The Fire Command Post functions and the Command Centre for Northern Fire Command were coordinated from the second top floor.⁹¹ The lower floors were occupied by other fire control staff and extensive communication equipment, both telephone and radio. Information and cross bearings were transmitted via heavy armoured underground cables running from the FOPs across the island to the Battery Plotting Rooms at the Batteries and the Fire Command Post.⁹²

87 *West Australian*, 11 September 1940
 88 Palassis, 2005, op cit., p. 11
 89 Engineers Australia, 2010 op cit, p. 3.
 90 GB Hill & Partners Pty Ltd, 1995, op cit., p. 9
 91 Palassis, 2005, op cit., p. 12
 92 John Taylor Architect, 2003, pp. 43-44

Between 1939 and 1943, the Port War Signal Station was occupied by the Harbour Trust signalmen on the upper floor and the Naval Communication Branch on the ground floor. The Signalmen monitored and reported on merchant ship movements for Port piloting purposes, while the Naval personnel reported the appearance and movement of military vessels to the mainland. From August 1943, Navy signal staff took over the work of the Harbour Trust signalmen.⁹³

In September 1943, WRANS House was modified for use by the Women's Royal Australian Naval Service. Between 1943 and 1945, the WRANS operated the Port War Signal Station on Signal Ridge, in association with the operations of the combined Battery Observation Post/Fortress Fire Command building.⁹⁴ The Navy detachment comprised 11 WRANS (eight signallers, one cook and two stewardesses), an officer, a chief yeoman and an able seaman. The service women worked in shifts of four hours on and eight hours off, and rotated duties between Wadjemup and the Fremantle Signal Station on the mainland.⁹⁵

The WRANS who were stationed at the WRANS' House and the Signal Station included Moira Macmillan (later Adams), First Officer (August 1943 to early 1945); Sheila Kenworthy, First Officer (1945); Dolly Morgan; Dorothea Gapes; Eileen Cook; Beryl Robinson; Laurel Weston; Norma Skippings and Marion Crew. The Chief Yeoman was Harry Needle.

In early 1945, Moira Macmillan was transferred from Rottnest to the Port War Signal Station at Fremantle because of her association with an Army officer on Rottnest, whom she later married. Serious relationships between members of the services stationed at the same place were not allowed, as it was considered they detracted from attention to duty and presented a possible security risk.⁹⁶

None of the guns on Wadjemup/Rottnest Island ever fired a shot in anger throughout World War II. A shift in focus saw a decline in Australia's involvement in the Pacific in 1944. Oliver Hill Battery ceased operational duties on 1 December 1944. In January 1945, the Commonwealth War Cabinet directed the majority of coastal defence equipment at Fremantle be placed in 'care and maintenance'.⁹⁷ Oliver Hill Battery and Bickley Battery were each placed in combat storage, and their full-time troops disbanded or transferred.⁹⁸

By September 1945, the Signal Station had been returned to the Harbour Trust, and Trust Signalmen were occupying WRANS House.⁹⁹ By December 1945, tourists were once again visiting Wadjemup/ Rottnest Island.¹⁰⁰

Post World War II

In November 1949, compulsory pilotage was abolished and the Signal Station was closed. The Signal Station and WRANS House, renovated 1949, were formally handed back to the Navy in 1950. The three-pair telephone lines and steel poles

93 John Taylor Architect, 2003, p. 51

94 Palassis, 2005, op cit., p. 11 John Taylor Architect, 2003, pp. 49-50

95 Palassis, 2005, op cit., p. 11 John Taylor Architect, 2003, pp. 49-50

96 John Taylor Architect, 2003, p. 62

97 Palassis, 2005, op cit., p. 13.

98 Palassis, 2005, op cit., p. 13; The Coast Defences of Western Australia 1826-1963: R.K. Glyde, 1995, unpublished

99 John Taylor Architect, 2003, p. 54

100 Joske, Jeffery & Hoffman, *Rottnest Island*, p. 277

running between the Station, Thomson Bay Settlement and Wadjemup Lighthouse, were removed sometime after this.¹⁰¹

When the Harbour Trust handed back the Signal Station and WRANS House to the Navy, it was discovered that, contrary to expectation, the buildings were not located on Commonwealth land. A survey of the site was undertaken in 1953, and an L-shaped site designated Swan Location 5363 was created, encompassing the former Port War Signal Station, WRANS House and Location 4130, the site of the BOP, which was already in Commonwealth ownership.¹⁰²

In 1953, Location 5363 was leased under peppercorn rent to the State Department of Fisheries for use as a research station in a joint venture between UWA Zoology Department, State Fisheries Department and the CSIRO Division of Fisheries (1953-2002).¹⁰³ A series of student research camps had been held prior to this, using the buildings in the settlement. The Commonwealth retained control of Location 4130 and the BOP, however the Signal Station, WRANS House, several outbuildings including an engine shed, and water tanks were transferred. It has been suggested the engine shed may have referred to the building originally used as the signalmen's stables.¹⁰⁴

The Rottneest Biological Station Committee managed the facility, under the chairmanship of A. J. Fraser, Superintendent of Fisheries for WA. The Station was run as a joint venture of the UWA Zoology Department, State Fisheries Department and the CSIRO Division of Fisheries. The buildings were all reportedly in poor condition at the time and were refurbished and maintained by the volunteer labour of students, technical staff and officers of the Department of Fisheries.

In 1960, the derelict Oliver Hill railway, used to transport the guns and infrastructure to the site and which had been buried in sand and vegetation, was reinstated. No. 44 Railway Squadron RAE, in a mission code-named 'Operation Quokka', removed the 9.2" ammunition stored on site and transported it to the Army Jetty via the railway. The heavy calibre artillery shells, weighing approximately 100 tons, were then disposed of at sea.¹⁰⁵

All remaining underground equipment at Oliver Hill Battery, including diesel engines and generators, was removed in 1963. All guns remaining on Wadjemup/Rottneest Island, with the exception of those at Oliver Hill Battery, were dismantled the same year.¹⁰⁶ The H1 and H2 guns at Oliver Hill Battery remained in situ.

In the late 1960s, a research station laboratory and additional accommodation facilities associated with the research station at WRANS House was construction adjacent to the building. The research station was brought under the sole responsibility of the University of Western Australia (UWA) in 1985.¹⁰⁷ The research station hosted numerous academic groups investigating a variety of

101 John Taylor Architect, 2003, p. 58

102 John Taylor Architect, 2003, pp. 27, 54

103 John Taylor Architect, 2003, p. 60

104 John Taylor Architect, 2003, pp. 27, 54, 60

105 Palassis, 2005, op cit., p. 13

106 The guns at Bickley Battery were sold for scrap. The fittings were removed and the gun was cut into pieces. Two sections of the barrel were left near the mounting and a second barrel were buried in the sand until they were salvaged for refurbishment in 1980 by the Australian Army. Naval Historical Society of Australia, Source: <https://www.navyhistory.org.au/ww2-bickley-naval-guns-at-rotnneest-island-w-a/2/>, Accessed November 2020.

107 John Taylor Architect, 2003, p. 60

topics including zoology, botany, architecture and physics. The Research Station relocated to Airport House in October 2002.¹⁰⁸

In 1969 the Bureau of Meteorology requested the use of the site of the now redundant BOP for the establishment of an automatic weather station, which was accordingly established to the south-west of the Signal Station. Other weather recording instruments were installed in the area. A Repeater Station for RIA operations and a 'Multi-Filter Rotation Shadow Band Radiometer' (solar photometer), owned by National Aeronautics and Space Administration (NASA) and providing data for use by the Curtin University Physics Department, were erected on the roof of the BOP in the 1990s.¹⁰⁹

Heritage and Tourism

Oliver Hill Battery was classified by the National Trust in 1980, and included on the Register of the National Estate in 1982. In 1982, 'All constructions on the Commonwealth Reserve both on the surface and underground including the railway installations, tunnel complex and gun mountings and at Signal Ridge near the main Lighthouse the three story brick Battery Command Post building', were entered on the Register of National Estate.

Restoration work to the H1 gun, partly funded by a Commonwealth Bicentennial Grant of \$60,000, was undertaken in 1986, with the assistance of the 5th Military District Workshop Company Royal Australian Electrical Mechanical Engineers and other volunteers.¹¹⁰ Further work was undertaken in 1990, including the installation of interpretation. From 1989, the guns and tunnels of Oliver Hill Battery have been tourist attraction on the island.¹¹¹

Oliver Hill Battery, Wadjemup /Rottnest Island was entered in the State Register of Heritage Places in 1992.

In 2000, refurbishment of the H1 gun was undertaken by Clifton Coney Stevens, Taywood Engineering Ltd. and BMP Industrial Pty. Ltd., at a cost of approximately \$135,000.¹¹² In 2004, the Rottnest Island Foundation obtained funds under the 2003/04 Lotterywest Conservation of Cultural Heritage Grants Program for the conservation of the Battery Observation Post. In 2005 a Conservation Plan was prepared for Oliver Hill Battery on behalf of the Rottnest Island Authority by Palassis Architects.

In 2001 conservation works were undertaken on the Signal Station. In 2002, the UWA Research Station was relocated to another site on the island to facilitate use of Wadjemup Hill as a tourist venue. The Signal Station was opened to the public by the Rottnest Island Authority for use and promotion as a heritage tourist site. The buildings associated with the research station had been removed from the site by 2003, and it is thought that the monitoring instruments were removed from the roof sometime after this.

Interpretive signage relating to the military history of the place has also been placed around the site as part of a walking trail established around 2012-2015. Wadjemup

108 John Taylor Architect, 2003, p. 55
 109 John Taylor Architect, 2003, p. 45
 110 GB Hill & Partners Pty Ltd, 1995, op cit., p. 9
 111 Palassis, 2005, op cit., p. 14
 112 *ibid.*

Hill is included in the Rottnest Island Bus Tour and although there is public access to the site, there is no internal access to Signal Station, BOP or WRANS' House. Other above-ground and sub-surface elements, including barbed wire fencing and other steel remnants thought to be associated with the defence installations, are also present in the area to the north west of the Signal Station and the BOP. Formerly used as visitor and RIA staff accommodation, WRANS House has been vacant, and in use primarily for storage and as a power source for a mobile food and beverage van since 2003.¹¹³

In 2010, Engineering Heritage Australia awarded the Fremantle Fortress – Rottnest Island WW2 Coastal Defence Facilities, including Oliver Hill Battery, its highest accolade of Engineering Heritage National Landmark in recognition of the significant technical achievement in installing the facilities and the considerable social significance that the place holds for many ex-service men and women who served on Wadjemup/ Rottnest Island during World War II.¹¹⁴

In 2013 the Rottnest Island Authority undertook urgent conservation works to the guns and tunnels at Oliver Hill Battery. The works included concrete repair at various locations at H1 and H2, repairs to and replacement of the drainage system to both gun pits, replacement of steel gun doors, repainting and installation of camouflage netting. The 1.2 million dollar refurbishment included works to both Oliver Hill Battery and Bickley Battery and was completed in time for celebration of 75 years of artillery in Western Australia at Wadjemup/ Rottnest Island, which also marked the 75th anniversary of the proofing of the gun in readiness for work in World War II.¹¹⁵

In 2014 Rottnest Island Authority was awarded a Western Australian Heritage Award for 'Outstanding conservation of a non-residential place' for the Rottnest Island WWII Defence Establishment, Rottnest Island, for the work undertaken at Oliver Hill Battery and Bickley Battery.¹¹⁶

Wadjemup/Rottnest Island was temporarily closed during the COVID-19 pandemic. A series of conservation and other upgrade works were undertaken in 2020-2021, including Electrical Upgrade works, and regrading of footpaths and roads. New backlighting and fences were installed at the BOP during these works. Other conservation work includes the installation of Perspex on the windows and other weathered elements and the use of preventative protective spray on the brickwork. Tours by the Rottnest Island Voluntary Guides continue to take visitors through the underground tunnels and to view the restored H1 and H2 guns.¹¹⁷

13.2 PHYSICAL EVIDENCE

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- 113 Engineers Australia, Western Australia Division, August 2010 (March 2011 version), Nomination of Fremantle Fortress - Rottnest Island WW2 Coastal Defence Facilities for an Engineering Heritage National Landmark, p. 25, John Taylor Architect, 2003, pp. 4-5, 60
- 114 Engineers Australia, Western Australia Division, Fremantle Fortress - Rottnest Island WW2 Coastal Defence Facilities Engineering Heritage National Landmark, November 2010.
- 115 Weekend Notes, 2013, Project 2013 - Commemoration of Artillery, Source: <https://www.weekendnotes.com/project-commemoration-of-artillery/>, Accessed October 2020
- 116 Government of Western Australia, 2014, Media Statements, Outstanding heritage projects awarded, <https://www.mediastatements.wa.gov.au/Pages/Barnett/2014/04/Outstanding-heritage-projects-awarded.aspx>, Accessed October 2020.
- 117 Oliver Hill was closed in October 2020 for construction works Source: Rottnest Island Authority.

The following physical descriptions for the place are based on the Conservation Plans prepared for the Signal Ridge group of buildings and Oliver Hill Battery completed in 2003 and 2005 respectively, with regard to site visits undertaken by the Department in 2021 and 2022.

Oliver Hill Battery comprises two 9.2" breech loading guns and their emplacements and underground facilities, railway lines and paths, archaeological features and remnant structures located in and around the undulating landscape of Oliver Hill which formed part of the coastal defence system established during World War II to defend the Port of Fremantle.

The place is located across an area of approximately 44.74 hectares over Oliver Hill, approximately 3 kilometres west of P516 *Thomson Bay Settlement, Wadjemup/ Rottnest Island* (RHP) and 800 metres to the east of P3254 *Rottnest Island Light Station* (RHP) on the adjacent Wadjemup Hill. The airstrip, P516 *Thomson Bay Settlement, Wadjemup/ Rottnest Island* (RHP) and the mainland can all be seen from Oliver Hill Viewpoint, however the dominant features comprise the Battery Observation Post on Signal Ridge, Lake Serpentine and Government House Lake beyond.

Oliver Hill comprises two spurs orientated in a north-east direction. The eastern most spur houses the Oliver Hill Battery H1 gun emplacement and the western most spur houses the Oliver Hill Battery H2 gun emplacement. 'Hell's Gully' runs between the two.

These gun emplacements provide the dominant features of the site and along with the site of the former 'dummy guns', also located on these spurs, provide excellent viewing locations. The underground magazines, pump chambers, engine room, tunnels and plotting rooms, which illustrate the facilities required to make the guns operational, are largely concealed from view. Entries to the underground facilities and ventilation cylinders are discernible at close range.

A series of pathways and steps connects these facilities across the site. Railway lines, which originally accessed the gun emplacements and underground facilities, are in evidence throughout the site...

...The passenger railway, the road and the walking track meet approximately 100 metres to the south-west of H1 gun emplacement and terminate at the Oliver Hill Train Station and the bitumen turning circle adjacent to the H1 Gun emplacement.

There are a number of historic structures still extant on site. Only the H1 Gun emplacement and associated underground magazine and pump chamber, tunnels and engine room are available for (guided) public access. These facilities have been fitted with interpretive signage and panels.¹¹⁸

The following elements are located on Oliver Hill and are associated with the wartime operations of the Battery. The two 9.2" guns H1 and H2 and their associated infrastructure are addressed separately due to differences in condition and public access, although the operation was the same. Each gun location comprised a reinforced concrete gun store and crew shelter about a small parade ground.¹¹⁹ Below ground structures including the Pump Room, shell Magazine, cordite Magazine and Casualty Clearing Station. H1 was also connected via

118 Palassis, 2005, op cit., p. 32

119 Palassis, 2005, op cit., pp. 35-6

underground tunnels to the Engine Room, while H2 was connected to the Fortress and Battery Plotting Room.¹²⁰

H1 Gun and associated infrastructure

The element comprises

- Gun emplacement including 9.2” gun piece, gun platform and gun pit
- H1 Gun Store and Crew Shelter
- H1 underground tunnels, Magazine, Casualty Clearing Station, Pump Chamber and Engine Room

The H1 gun is intact. The remnant fabric includes the original H1 gun and revolving Gun House or turret, gun barrel, breech mechanism, operating levers, and steel operating mechanisms.¹²¹ The following description is taken from the 2005 Conservation Plan.

The surviving fabric includes the original guns and revolving gun platform, including the gun piece, breech mechanism, operation levers, gun elevation mechanism (to raise the gun from 5 degrees depression to 35 degrees elevation), ammunition hoist from the gun pit, hydraulic rammer and recoil mechanism. The lower gun pit contains the gun pedestal and mechanism, including hydraulic oil motors to swivel the gun through 360 degrees. The gun pit also contains ammunition trolleys and the fire doors to the no longer extant ammunition hoist in the magazine below. There are several gun shells (which appear to be either replicas or solid training rounds) on display.

In addition to the gun emplacements, the underground structures are constructed of reinforced concrete, which has been painted a cream colour. The roofs to magazines, engine room and pump rooms comprise steel C-section sheeting, placed alternatively upwards and downwards to support the reinforced concrete above. The magazines each contain separate rooms for handling the cordite and shells and the mechanical hoist to lift these to the gun pit above. The below ground pump chambers no longer contain any equipment.¹²²

Following the 2000 conservation works, the H1 gun and underground tunnels and rooms were stabilised.¹²³ The steel components were painted light green and the concrete components a cream colour.¹²⁴ Additional works were undertaken during the 2013 conservation works to repair concrete, metal conservation to the guns including the reinstatement of the original colour scheme and interpretation of the camouflage paint scheme.

The Crew Shelter includes an interpretative display and photographs and forms the starting point for the guided tour, while visitor’s belongings can be stored in the former Gun Store during the tour.¹²⁵

120 GB Hill & Partners Pty Ltd, 1995, op cit., p.22.

121 GB Hill & Partners Pty Ltd, 1995, op cit., p. 35

122 Palassis, 2005, op cit., pp. 35-6

123 Engineers Australia, 2010 op cit., p. 14

124 Palassis, 2005, op cit., p. 36

125 Engineers Australia, 2010 op cit., p. 14

An external flight of concrete stairs, with steel balustrade, descending to the west of H1, provides access to the underground facilities of Casualty Clearing Station and a tunnel which leads to the Magazine and Pump Chamber.¹²⁶ Another entrance accesses a tunnel in the valley to the west of H1, which leads to the Engine Room and up into the Magazine.¹²⁷

H2 Gun and associated infrastructure

The element comprises

- Gun Emplacement including 9.2” gun piece, gun platform and gun pit
- H2 Gun Store and Crew Shelter
- H2 underground tunnels, Magazine, Casualty Clearing Station and Pump Chamber

Conservation, stabilisation and repair works were undertaken on the H2 gun housing and barrels in 2013. The steel components were painted dark green.

The underground facilities for H2 are located south-west of H2. The steel service entry door accesses the Casualty Clearing Station and a tunnel which leads to the Magazine and Pump Chamber.¹²⁸

Engine room

The underground Engine Room is located in the valley between H1 and H2, and is accessed via tunnels from H1. Constructed in reinforced concrete, with cream walls, the roof comprises folded steel sheeting, over which the reinforced concrete was installed.¹²⁹

The two diesel engines, generators and control systems which powered both H1 and H2 guns were removed in 1963, although evidence of the concrete housing for the engines is still extant. Interpretation panels are mounted on the walls of the room.¹³⁰ The underground cables to H1 and H2 are thought to remain extant.

Battery Plotting Rooms

The underground Battery Plotting Rooms are located separately in a valley south of H2, and accessed via a single above ground entry point. No equipment associated with the operation of the Battery is located in this area and they are not open to the public.¹³¹

Remnant Structures/Ruins

Evidence of the following elements, in varying degrees of condition and intactness, are still present within the curtilage of Oliver Hill Battery.

- Dummy guns 1 and 2; located on the northern-most point of each spur.

126 This entrance was the entry point for the delivery of shells and cordite. GB Hill & Partners Pty Ltd, 1995, op cit., p. 24

127 This entrance was widened to provide access for stretcher cases and first aid facilities. GB Hill & Partners Pty Ltd, 1995, op cit., p. 24; Palassis, 2005, op cit., p. 36

128 Palassis, 2005, op cit., p. 36

129 GB Hill & Partners Pty Ltd, 1995, op cit., p. 22, Palassis, 2005, op cit., p. 36

130 Engineers Australia, 2010 op cit., p. 14

131 Engineers Australia, 2010 op cit., p. 14; Palassis, 2005, op cit., p. 36

- (Gunner's) Cottages No.1 and No. 2
- Water tanks
- Workshop
- Latrine block
- Oil & Paint store
- Skidding store
- Close defence battery observation post
- Remnant rail lines - visible in Hell's Gully and adjacent to H1 gun emplacement, and may be present in other locations.

Although the elements are no longer structurally intact, it is likely that archaeological artefacts or deposits are present in these locations.

Remnant elements, including railway embankments, vents, trenches, weapon pits, gun placements, dugouts and bunkers, are present in various states of ruin across the place. Remnants of the boundary fence, comprising barbwire fencing on timber posts and star pickets are also present.¹³²

AWAS Barracks and Camp Sites

The accommodation facilities located at Oliver Hill Battery are no longer extant. The men stationed at Oliver Hill were accommodated in a campsite west of H2 Gun. Substantial concrete footings, water tanks, trenches, dugouts and bunker remnants are present across the area.

The members of the AWAS who operated Oliver Hill Battery were apparently housed in hutted accommodation north of the Battery.¹³³ Other sources suggest the AWAS camp was located just south of the H1 gun.¹³⁴ Evidence of footings, brick fragments and other building remnants are located across the area.

Archaeology

It is likely that there are intact archaeological deposits and low to moderate artefact scatters dating from colonial settlement to the present within the curtilage of Oliver Hill Battery. Archaeological investigation within the area is likely to reveal further information regarding operation of the Battery. Archaeological elements may be associated with the construction, operation and decommissioning phases of the battery railway line, including but not limited to: the barracks, cottages and other building remnants across the site; anti-aircraft guns; search light positions; the underground electrical cables between built elements. The archaeological features associated with the site of the camp, west of the gun emplacements, are likely to be intact.

Aboriginal artefacts have been found elsewhere on Wadjmeup/ Rottnest Island and it is possible that artefacts or other evidence of occupation may be present within the curtilage of Oliver Hill Battery. Additional information on the colonial farming

¹³² GB Hill & Partners Pty Ltd, 1995, op cit., p. 54; Palassis, 2005, op cit., p. 49

¹³³ GB Hill & Partners Pty Ltd, 1995, op cit., p. 32

¹³⁴ Hand drawn map displayed in military exhibit in Salt Store Museum, Wadjemup/ Rottnest Island. Investigation into archival records are likely to provide further information on this matter.

occupation, and the long-term use of the island as a holiday destination is also likely to be discernible from the archaeological record. The significance (or research potential) of areas of known and potential archaeology, including those which comprise Aboriginal, non-Aboriginal and both values has not yet been comprehensively assessed.

Visitor Facilities

The modern Oliver Hill Station comprises a brick paved station platform and a white picket fence, located at the end of the rail line below H1 gun. A timber picnic shelter, modern toilet block and signage have been erected for the use of tourists. Interpretation panels and exhibits have been installed in and around the H1 gun, Crew Shelter, Gun Store, Tunnel and Engine Room. New paths have also been constructed to two lookouts to each gun.

Signal Ridge

The principal structures at Signal Ridge comprise Signal Station (1904, 1939); Battery Observation Post (1939); and WRANS' House and Outbuildings (1940).

The three buildings encircle the crest of Wadjemup Hill in triangular formation, with the Battery Observation Tower to the north, Signal Ridge to the east and WRANS house to the west. The ring road that surrounds WRANS House is the endpoint of Wadjemup Road, that provides vehicle access to the three buildings and Rottnest Island Light Station¹³⁵ (Wadjemup Lighthouse).

Former Signal Station building and apparatus (1904-1939)

The former Rottnest Island Signal Station was relocated from Bathurst Point in 1904 and replaced by the existing Signal Station building in 1939. Concrete pads and other surface and sub-surface artefacts may be present associated with this building. Remnants of instruments and signalling equipment, such as the fog signal mast and cabin may also be present.

The plinth of the rocket signal apparatus erected adjacent to the Signal Station building is still evident in 2022.

Signal Station

The Signal Station (1939) is a two-story timber framed weatherboard clad building that is box like in form and has a pyramid shaped roof elevated over a second story four-sided balcony. A tall cross braced timber framed platform tower is attached to its eastern side via a timber staircase.

External

The building sits on a small red brickwork plinth at the top of a small hill and is approached by a steep bitumen driveway. The base of the building is surrounded by a path of bituminised concrete hard standing on all four sides, with the natural ground level falling away from the edge.

The almost square plan form of the Signal Station is symmetrical with an identical rectangular recess across each of the four corners.¹³⁶

The external walls are clad in horizontal timber weather boards that break at the water proof membrane covered deck on the second floor and recommence up to

¹³⁵ P3254 *Rottnest Island Light Station* (RHP)

¹³⁶ John Taylor Architect, 2003, op cit., p125

the rail height of the balcony. The second floor Observation Room has the same weather board cladding below a continuous row of windows and vertical timber board cladding above.

The front (north) elevation is dominated by a large recess which once held the main water tank on a timber platform that protrudes out from the building line. The platform, which is a decked and cross-braced bare timbered structure, still remains. There are two smaller water tanks on either side of the platform within the recesses. One is held on a smaller platform to the left of the recess and the other is located above the WC on the right. A small window on left is protected by galvanised steel bird mesh.

The rear (south) elevation is similar to the north, with a shorter recess that is gated with four steel mesh panels. The two central panels have posts that are fixed into the concrete slab porch. On the central post there is a fixed commemorative plaque dated 11 Jan 2002. The outer two panels are operable gates which provide entry to the building.

The side elevations (east and west) are close to identical with a central window comprising of two sash windows that are now covered with steel bird mesh. Above the window are two decorative metal wall vents, which are concealed on the western side. The west side also contains a small window with a sewerage pipe that extends past the roof line.

A series of verandah posts that are concealed below the timber balustrade continue through to support the roof structure. Each of the four corners has a timber post and two additional posts either side with three bands of decorative horizontal timber mouldings.

The corrugated galvanised steel roof has four equal eaves that hang over the building. The previous fibre cement roofing, guttering and downpipes appear to have been replaced since the 2003 assessment.

The Observation Tower, historically known as 'Monkey Island'¹³⁷ sits to the eastern side of the main building and is connected via an open staircase that leads from the second story verandah and rises above eaves height of the Signal Station. The base of the tower sits on two concrete strip footings and is constructed as a two level, six posted and cross braced timber structure with a platform deck. The rectangular deck features two small, cantilevered extensions on the east and west sides. The open staircase and deck both have a simple steel balustrade that comprises of a top rail and mid rail, which replaced the original timber balustrade during conservation works in 2001.¹³⁸ The observation deck once held a large signalling projector and equipment that is no longer intact.

Peripheral Structures

Remnant external structures include a square limestone plinth located to the north western corner of the hard standing which has deteriorated significantly. Located slightly further to the south are remnants of the timber flag staff post with metal ring which is embedded in a concrete footing that is inscribed with the date 15.2.28. Modern meteorological equipment is present to the south west of the site.

¹³⁷ John Taylor Architect, 2003, op cit., p125

¹³⁸ John Taylor Architect, 2003, op cit., p126

Internal

The ground floor comprises of a semi enclosed porch on the south side of the building with a stepped concrete floor, two interconnected rooms (Rooms 1 and 2), a WC and narrow open riser stair that leads to the Observation Room on the second floor.

Ground floor

The WC room is located to the far-left corner with a ledged and braced boarded door that contains a modern toilet. The concrete floor has a paint finish and there is a small louvred window behind the toilet which is seen on the eastern elevation. Adjacent to the WC is a door to Room 1 which did not appear on the 1940 plans.

Room 1 and Room 2 are two adjoining equal sized rooms that are interconnected by a single doorway and run east to west. The 1940 plans indicate the previous functions as Store and Office/Kitchen respectively. Both rooms each have a large double hung sash window located on opposite ends to the centre of the external wall, having prominence on the east and west elevations.

The internal walls have a timber dado with a profiled rail at mid height, painted vertical timber panelling and quarter round skirting. Above the dado is plasterboard lining with timber battens that continues to the ceiling. There are exposed ceiling beams that support the Observation room above. The architraves around the window and door openings are simple with limited moulding. The electrical fixtures and conduiting have been replaced with modern and are wall surface mounted.

The rooms have matching jarrah timber floor boards, with some modification differences in each room. To the northeast corner of Room 1 is a concrete footing embedded into the flooring that was previously used for mounting an engine ¹³⁹. Room 2 has a rectangular section of modified flooring that is framed with larger boards running perpendicular to the main flooring over a concrete pad. There is no remnant fabric to indicate its purpose. ¹⁴⁰

The staircase is a simple open riser stair in a straight run with a simple timber balustrade on one side that comprises of a chamfered edge timber top rail and smaller mid rail in between posts.

Second floor

The floor of the verandah is water proof membrane covered deck which extends beyond the walls with its edge expressed on the external elevations. The verandah posts sit in small steel brackets and there is a visible gap between the recommencement of cladding to allow for water egress. The internal side of the verandah cladding is flat fibre cement sheeting and simple bevelled handrail caps the balustrading. There are also some remnant fixtures on verandah posts and equipment mounting for telescopes. ¹⁴¹

The Observation Room is a single room surrounded entirely by a verandah and is accessed by a single door on the western side. The room has tung oiled jarrah floorboards and the internal walls comprise of a stained timber dado with quarter round skirting and vertical timber panelling to the window ledge and a plaster board and batten upper wall and ceiling. The continuous timber windows, (both fixed and sliding) and the glazed upper panel of the timber framed and ledged entry door

139 John Taylor Architect, 2003, op cit., p144

140 John Taylor Architect, 2003, op cit., p144

141 John Taylor Architect, 2003, op cit., p144

provide a 360 degree view past the verandah. On the south side there is a bank of low level shelving and 'pigeon holes' that match the finish of the timber panelling.

The electrical fixtures and conduiting have been replaced with modern and are wall surface mounted and modern fluorescent light fittings to the ceiling.

The Signal Station has been finished internally and externally with a 'Sienna' & 'Tobacco' paint colour scheme which was established through paint scapes during the 2001 conservation works at the place. These are believed to be representative of the earlier Fremantle Harbour Trust use of the place as the structures at Signal Ridge were painted in 'dull tonings' for camouflage in 1942. It is believed the Signal Station was painted a standard Navy grey colour.¹⁴²

The Battery Observation Post

The Battery Observation Post (BOP) is a four storeyed brick and reinforced concrete tower which is almost square in plan form with a flat concrete deck roof.¹⁴³ It contains an independent structure of concrete columns and beams that rise through the lower three levels of the building. The timber roof deck, metal balustrading and rooftop equipment are no longer intact.

External

The building sits within an eroded bitumen hardstand and is fenced with a recently installed timber post and rail fencing with a coated metal chain infill. Low level dunes appear to bunker around the structure stopping at the bitumen access road. Remnant building debris sits scattered in the surrounding dunes.

All four sides of the lower two levels are constructed using red brickwork in a stretcher bond pattern. The entrance is located on the southwest elevation with a small concrete stair of four risers that meets a recessed steel front door with a projecting concrete lintel above.

A timber sash window on the first floor is aligned with the front door. It has a concrete sill below the frame and a concrete lintel above, that extends past the window with an exposed metal flashing. The windows design is repeated for all windows located within the brick work on the first two levels. There are four windows spaced equally with two on each level to the Southeast and Northwest elevations with the lower two protected with hinged steel shutters. The northeast elevation has a single window within the brick work on the first level. Three of the windows have Perspex fixed over the face of their concrete lintels with screw fixings into mortar.

Terracotta capped wall vents are also located on the southwest and northeast walls, evenly spaced with two on each level, and either side of the windows.

The reinforced concrete upper level which has been recently repainted white, is set back from the line of the brick work wall and has high level steel ribbon windows on levels three and four.

The third level has two sets of high-level double windows on each that are separated by three concrete piers. The fourth level has a full-length of ribbon windows on the northeast and southwest elevation that wrap past the corner of the

¹⁴² John Taylor Architect, 2003, op cit., p126

¹⁴³ John Taylor Architect, 2003, op cit., p132

building by two windows. With most of the glazing now gone, the steel frames have been fitted with Perspex and stud framing.

There are remnants of the shutters that were once intact over the upper-level ribbon windows. Triangular brackets remain over the window that once had 'L' shaped metal sheeting fixed to them.¹⁴⁴ Below each window are steel reinforcing bar remnants that previously held concrete corbels. Only a few of these corbels remain intact. The corbels once supported the bottom hung hopper windows.¹⁴⁵

Recent external conservation works to BOP has included painting of the upper concrete level and concrete lintels, lower steel shutters and a clear coating to seal the brickwork.

Internal

The building contains an internal independent structure of instrument columns that rise through the structure penetrating the flooring on all four levels, designed to support heavy equipment on the fourth floor. In plan, the large square columns are located offset from the external wall and positioned at the centre of each wall. The columns are at each level with supporting beams in a rhombus shaped formation and penetrate through the partitions.

Ground Floor

The ground floor is partitioned with jarrah clad stud framed wall at the entrance that divides most of the space. Four timber framed bunk beds remain behind the partition. The flooring is jarrah, and the brick walls are painted. The jarrah floor structure above is exposed and there is no ceiling. A steep ladder with timber tread and a steel pole rail rises through to the first level, to the centre of the building which is repeated at each level

Second Floor

At the top of the stair, the central jarrah partition divides the space in half with a passage opening. Some timber shelves remain with chalk inscription with names and dated with the earliest being 1965. The concrete floor above acts as the ceiling.

Third floor

The concrete floor has a poured finish that is jointed and appears to be a recent repair. The concrete wall has been recently patched and painted. A covered manhole is present towards the centre. Face brickwork partitions, sixteen courses high are built against the columns and external walls.

There is a noticeable amount of spooling to the instrument columns with loss of material and exposed reinforcing visible. They appear to have been recently treated and painted. Structural remediation works have also been undertaken with installation of a number of support columns and diagonal steel rod ties.

Fourth Floor

The concrete floor has the same repaired finish as the third and the concrete walls have been recently painted and patched.

There is a sixteen-course face brick wall partition with a header course between two parts of the original circular optical depression instrument. They are installed over the instrument apparatus on painted brick work plinths and rendered brickwork

144 John Taylor Architect, 2003, op cit., p132

145 John Taylor Architect, 2003, op cit., p132

piers. The ceiling is concrete and features an exposed central steel 'I' beam with remnants of attached suspended pulleys. A man hole in the ceiling that provides access to the roof deck is above and has a simple steel ladder fixed in between. There is a considerable amount of remnant exposed conduit and electrical outlets, switches, and wall fixings.

Structural remediation works have been undertaken with a number of steel support columns installed to the corners and beside the exposed ceiling beam. The steel work and exposed corroded elements also appear to have been treated and painted.

WRANS House

WRANS House (1940) is a rectangular, single storey timber framed weatherboard clad residential quarters with a hipped corrugated galvanised steel roof and painted masonry chimney. The associated outbuildings are two small toilet blocks and a large semi submerged water tank.

External

The outer walls of WRANS House are constructed by enclosing the original wrap-around verandah under the eaves of its rectangular hipped roof. The verandah infill between the original verandah posts is a later modification, generally composed of a lower section of weatherboard cladding and an upper section of either timber windows or flat fibre cement sheeting.

The lower section of weatherboard cladding is predominantly wide fibre cement board, introduced later to replace the earlier jarrah cladding.¹⁴⁶ Only some small sections of the original jarrah cladding remain.

The timber windows sit over the weatherboard cladding generally in a series of four equal rectangular windows between verandah posts with some variation to accommodate entry doors and a couple of smaller windows. Plain timber doors provide access the building on three sides.

On the northwest side, two long awnings in corrugated sheeting extend from the eaves over the windows either side of a small porch. The porch is a roughly formed concrete slab with a timber framed canopy and clad to match the building.

On the southeast side, a longer roughly formed concrete porch remains under the two entry doors, with the door on the right that provides direct access to the kitchen and main room. The former timber carport once attached to the entrance has been demolished with the section of unpainted eaves indicating where it was previously fixed.

Exposed down-pipes are visible on the southwest and southeast sides that connect horizontally and direct the rainwater to the large circular water tank. The pipes are supported above ground level on brick piers around the outside of the house in an ad-hoc arrangement. The original steel pipe work arrangement has been replaced with PVC. The galvanised roof sheeting and rain water goods are recent replacement.

Internal

¹⁴⁶ John Taylor Architect, 2003, op cit., figs 39-43, pp 96-98

The internal layout is rectangular with the enclosed verandah wrapping around the original external walls and stopping either side of the kitchen, which protrudes to the roof line on the southeast side.

Internal partitioning of the verandah to the northeast side accommodates four smaller rooms. The rest of the verandah to the southwest side is divided into two spaces.

The original external walls remain visible from inside the enclosed verandah. They are clad with jarrah weatherboards and feature framed double hung sash windows and jarrah doors that vary in style. The internal leaf of the verandah infill below the windows is generally flat fibre sheeting with battens, as is the ceiling.

The layout of the inner rooms comprises of the main room to the southwest separated from the other rooms towards the centre by a hallway. On the other side to the northeast is the kitchen with a short hall running behind connecting two small bathrooms and two small rooms.

Generally, the internal walls of the inner rooms have a timber dado with a profiled rail at mid height, painted vertical timber panelling and quarter round skirting. Above the dado is plasterboard lining with timber battens that continues to the ceiling. The architraves around the window and door openings are simple with limited moulding. Above some of the windows are wall vents. The detailing throughout is basic and is mostly representative of the Inter-War period.¹⁴⁷ Except for the flooring, there is a white or cream paint finish throughout.

The carpet and vinyl flooring conceals the jarrah timber flooring which is partially exposed on the outside of the building. The electrical fixtures and conduiting have been replaced with modern and are wall surface mounted throughout. The masonry fireplace located in the kitchen has been boarded up.

Some cabinetwork remains but is likely to be representative of the period when the building was used as a research station. There is little evidence of the wartime use of the building. Consistency in fabric variations and construction techniques provide clear evidence of different periods of construction and alterations.

Outbuildings

The two small toilet block outbuildings are located to the northwest and southwest away from the quarters and constructed as simple timber framed fibre cement clad structures with skillion roofs. The toilet block to the southwest northwest has been replaced with a new structure similar to the original. Concrete slabs on the ground in the vicinity of these two structures cover septic tanks for each building.¹⁴⁸

To the west of the cottage is a large, partially submerged circular water tank which is connected via a long horizontal downpipe that extends from the southwest side of the quarters building.

Remnants of free-standing meteorological monitoring equipment are located to the south-west of the Signal Station, and the footprints of Research Station structures removed in late 2002 are visible ground level.

Archaeology

¹⁴⁷ John Taylor Architect, 2003, op cit., p156

¹⁴⁸ John Taylor Architect, 2003, op cit., p138

Above-ground remnants of underground cables, water tanks, ladders, fences, lights and other military installations are present in and around the BOP, Signal Station and the surrounding undulating landscape to the north of the two structures. Defence fortifications such as machine gun emplacements, fox holes, barbed wire fencing, concrete pads were intentionally hidden, and have since become more obscured through abandonment and vegetation growth.

It is likely that there are intact archaeological deposits and artefact scatters relating to the World War II operations across Signal Ridge. Archaeological investigation within the area may reveal further information regarding the military activities in the area, including both the army and naval contingents. The archaeological features in the northwest portion of the Signal Ridge are likely to be intact.

Aboriginal artefacts have been found elsewhere on Wadjmeup/ Rottnest Island and it is possible that artefacts or other evidence of occupation may be present along Signal Ridge. Additional information relating to the use of the area by the Harbour Trust, and the long-term use of the island as a holiday destination may also be discernible from the archaeological record. The significance (or research potential) of areas of known and potential archaeology, including those which comprise Aboriginal, non-Aboriginal and both values has not yet been comprehensively assessed.

13.3 COMPARATIVE INFORMATION

Principal Australian Historic Theme(s)

- 7.6.12 Conserving Australia's heritage
- 7.7.1 Providing for the common defence
- 7.7.3 Going to war
- 8.1.4 Enjoying a natural environment

Heritage Council of Western Australia Theme(s)

- 501 World Wars and Other Wars
- 506 Tourism

Comparative Analysis

Fremantle Fortress

World War II Buildings, Oliver Hill Battery and Signal Ridge, Wadjemup/Rottnest Island form part of the coastal defence system established between June 1934 and 1944 known as the Fremantle Fortress. The Battery Observation Post at Signal Ridge was a key component in the operation of not only Oliver Hill Battery on the island, but the other gun emplacements in the Fremantle Fortress.

Six other 9.2" gun batteries were constructed in Australia before and during World War II, including one other in Western Australia at Meeandip/ Garden Island, one in the Northern Territory at Darwin, and four in New South Wales at North Head, Sydney Harbour; Cape Banks, La Perouse; Fort Drummond, Wollongong; and Fort Wallace, Newcastle. Six inch guns were also installed in Brisbane Port, Sydney Harbour, Botany Bay and elsewhere at Wadjemup/ Rottnest Island.¹⁴⁹

¹⁴⁹ Engineers Australia, 2010 op cit, p. 10; Palassis 2005, op cit., p. 8.

In 1946, all the 9.2" batteries around Australia were placed in storage condition, except those at North Head (NSW) and Meeandip/ Garden Island (WA), which were maintained for training purposes. As a result, the majority of 9.2" guns in Australia were scrapped or removed from their locations during decommissioning. In most cases, the batteries themselves are no longer extant or still in Defence ownership and have restricted access. North Head Battery in Sydney is the site of a National Artillery Museum, which conducts tours of the complex and underground tunnels, however its guns are no longer extant.¹⁵⁰

Elsewhere, gun battery sites retaining 9.2" guns in situ and operate as tourist attractions are located in O'Hara in Gibraltar and on Robben Island in South Africa. Other tourist attractions are located in Sydney (North Head Battery), Darwin, New Zealand, Canada, Hong Kong and Singapore although the 9.2" guns are no longer extant. Pre-World War II guns are retained in situ in Bermuda.¹⁵¹

Oliver Hill Battery is the only example in Australia of a gun battery with 9.2" guns remaining in situ. It is also one of only five battery sites worldwide that still retain their guns in their World War II location.

The following examples comprise other WWII coastal defence sites in Western Australia:

- P3247 *Leighton Battery* (RHP) comprises a complex of underground tunnels, rooms and an observation post, a semi-buried command post, two 6" gun emplacements (all 1942), two 5.25" gun emplacements one of which remains buried (1944-45), and a radar hut (c. 1947).
- P26 *Albany Forts* (RHP) comprises a renovated artillery battery and army barracks, consisting of two guns, an underground magazine, numerous transported buildings, ruins, a few substantially reconstructed buildings and a parade ground. This place has a lengthy association with coastal defences and was also utilised during WWII.
- P3365 *Cape Peron K Battery Complex* (RHP) comprises Gun Emplacements North and South and their associated and adjacent Ready Ammunition and Storage Bunkers, a Battery Observation Post, an Operations Centre, archaeological deposits. The place has been associated with the defence of Australia since its acquisition by the Commonwealth in 1916 and was a component of Australia's coastal defence system in WWII, and demonstrates the military importance of Cockburn Sound.

World War II Buildings, Oliver Hill Battery and Signal Ridge, Wadjemup/Rottneest Island remains a largely intact and understandable remnant of the Fremantle Fortress, demonstrating distinctive method of coastal defence that is no longer relevant in the age of modern warfare.

Architect Malcom Finlayson

Architect Malcom Finlayson was employed by the Commonwealth Department of Works in Western Australia during World War II and was Principal Architect from 1946 to 1950. In addition to his work on the Port War Signal Station in 1938, he designed the Hobbs Artillery Park at Karrakatta for the 3rd Field Artillery (1939)

¹⁵⁰ Palassis, 2005, op cit., pp. 55-57

¹⁵¹ Palassis, 2005, op cit., p. 57

and the 1939-1941 additions to Swan Barracks, Francis Street, Northbridge. As a member of the Department of Works architectural team, and its principal architect for four years, he was almost certainly involved in the design and construction of other military buildings in the State between 1938 and 1950.¹⁵²

The Role of Women in World War II

Women's branches of the Australian Defence Services were formed in 1941. Approximately 6,500 women had enlisted by 1945, taking on roles as clerks, cooks, typists, waitresses, telephonists, canteen attendants, ward orderlies, tailors, textile refitters, drivers, storekeepers, and stewards.

The Women's Royal Australian Navy Service (WRANS) and Australian Women's Army Service (AWAS) were both employed at Wadjemup/Rottneest. The three buildings on Signal Ridge reflect the importance of the role of the WRANS. Similarly, Oliver Hill Battery was the World War II workplace of the members of the Australian Women's Army Service, who operated the plotting rooms.

Other key defence communications sites include:

- P16785 RAAF Headquarters Bunker (fmr), Belmont (RHP), the RAAF Fighter Sector Headquarters and radar station centre in 1945 during WWII played an important role for the Civil Defence and Emergency Department as an available operational headquarters in case of national emergency from 1967 to 2003, and particularly during the Cold War period (1948 to 1989). The place also played a role in the development of the Woman's Auxiliary Australian Air Force (WAAAF) and the Volunteer Air Observer Corps (VAOC), as there were women from the WAAAF as well as volunteers from VAOC working at the Fighter Sector Headquarters.
- P261 Naval Communications Station (Harold E Holt), a United States naval communications station established at three separate sites in Exmouth in use by the United States Navy from 1963 to 1989, and for the Royal Australian Navy since 1963, for whom it continues to provide communication facilities.
- P18682 Loran Radar Station, Sir Graham Moore Island, the remains of a United States Army Air Forces (Army Airways Communications System) Master Loran Station, including Loran and Radio buildings, a Power House and a campsite, all from the World War Two period.

The above examples indicate that the World War II sites at Oliver Hill and Signal Ridge are excellent example of the active involvement of women in the communications and defence forces in Western Australia during World War II. Both have considerable significance in demonstrating the role of women in World War II. Both sites also comprise rare examples of former women's barracks, including WRANS House at Signal Ridge, and archaeological evidence of the AWAS barracks at Oliver Hill.

13.4 KEY REFERENCES

Oliver Hill Battery Conservation Assessment, completed on behalf of Rottneest Island Authority by GB Hill & Partners Pty Ltd, in November 1995.

¹⁵² John Taylor Architect, 2003, p. 61

Oliver Hill Battery Conservation Plan completed on behalf of the Rottnest Island Authority by Palassis Architects, in December 2005

Rottnest Island/Wadjemup Cultural Landscape Management Plan, completed on behalf of Rottnest Island Authority by TPG, in May 2015.

13. 5 FURTHER RESEARCH
