# Belconnen Naval Transmitting Station

## Heritage Management Plan

**Report prepared for Defence Housing Australia**

**Public Access Version**

**September 2020**

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## Report Register

The following report register documents the development and issue of the report entitled Belconnen Naval Transmitting Station—Heritage Management Plan, undertaken by GML Heritage Pty Ltd in accordance with its quality management system.

| Job No. | Issue No. | Notes/Description | Issue Date |
|---|---|---|---|
| 18-0556 | 01 | Draft Report | 18 January 2019 |
| 18-0556 | 02 | Final Draft Report | 31 May 2019 |
| 18-0556 | 03 | Final Report | 30 June 2020 |
| 18-0556 | 04 | Public Access Version | 15 September 2020 |

## Quality Assurance

GML Heritage Pty Ltd operates under a quality management system which has been certified as complying with the Australian/New Zealand Standard for quality management systems AS/NZS ISO 9001:2016.

The report has been reviewed and approved for issue in accordance with the GML quality assurance policy and procedures.

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# Abbreviations and Definitions

## Abbreviations

The following table outlines a range of standard abbreviations used in the preparation of HMPs as well as specific abbreviations for this report.

| Term | Definition |
|---|---|
| AAP | Area of Archaeological Potential |
| AHC | Australian Heritage Council |
| AHDB | Australian Heritage Database |
| AR | Archival Recording |
| AWA | Amalgamated Wireless (Australasia) Pty Ltd |
| BCA | Building Code of Australia |
| CAMBA | China-Australia Migratory Birds Agreement |
| CAS | Canberra Archaeological Society |
| CHL | Commonwealth Heritage List |
| Cwlth | Commonwealth |
| DAWE | Department of Agriculture, Water and the Environment (previously DoEE) |
| DEHPD | Directorate of Environment and Heritage Policy Development |
| DCP | Development Control Plan |
| EIS | Environmental Impact Statement |
| EPBC Act | *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) |
| GML | GML Heritage Pty Ltd |
| HA | Heritage Assessment |
| HIA | Heritage Impact Assessment |
| HMP | Heritage Management Plan |
| ICOMOS | International Council on Monuments and Sites |
| JAMBA | Japan-Australia Migratory Birds Agreement |
| LGA | Local Government Area |
| NC Act | *Nature Conservation Act 2014* (ACT) |
| NES | National Environmental Significance |
| NAA | National Archives of Australia |
| NCA | National Capital Authority |
| NCP | National Capital Plan |
| NHL | National Heritage List |
| PAD | Potential Archaeological Deposit |
| PER | Public Environment Report |
| PR | Photographic Recording |

| Term | Definition |
|---|---|
| RAAF | Royal Australian Air Force |
| RAN | Royal Australian Navy |
| RNE | Register of the National Estate |
| ROKAMBA | Republic of Korea-Australia Migratory Bird Agreement |
| STC | Standard Telephones and Cables Pty Ltd |
| TEC | Threatened Ecological Communities |

## Definitions and Terminology

| Term | Definition |
|---|---|
| **Commonwealth Heritage List** | The CHL is a list of heritage places owned or controlled by the Australian Government. Places in the list can have natural, Indigenous and/or built heritage values, or a combination of these. Places included in the list have been found to be significant for one or more of the nine criteria for the CHL. Places included in the list range from local through to world heritage levels of importance. |
| **Commonwealth Heritage Criteria** | These are the criteria of the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) Regulations 10.03A (Act s341D) prescribed for natural, Indigenous and historic heritage values of places owned or controlled by the Commonwealth. |
| **Commonwealth Heritage Values** | Commonwealth Heritage values are the values for which a place is included in the CHL. These can comprise one or more natural and cultural aspects such as aesthetics, history, scientific importance, importance to the community and spiritual significance. The nine criteria for the CHL assist with identifying and defining these heritage values.<br>'Identified' Commonwealth Heritage values are those that have been assessed and confirmed against the Commonwealth Heritage criteria but have not yet resulted in the place being nominated to the CHL. |
| ***Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act)** | The EPBC Act provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities, and heritage places—defined as *matters of national environmental significance* (MNES). The EPBC Act also protects Commonwealth land, including heritage values through the CHL, and controls actions taken by the Commonwealth that may have a significant impact on the environment, including heritage values. |
| **Heritage Assessment (HA)** | A HA is a report that includes the history and physical description of the property, along with analysis of environmental history and archaeological potential. Comparison with similar sites with identified heritage values is included. Historical themes using the Australian Historical Themes Framework are identified, where relevant. Assessment of this information against the criteria for the CHL is included, and a summary statement of heritage significance is provided.<br>Where a property is being sold out of Commonwealth control, assessment against the relevant jurisdiction's heritage register criteria is also undertaken.<br>The HA can be used to support a nomination to the CHL or the state/territory register or local planning scheme's heritage schedule/overlay, where applicable. Nominations are required when a place is assessed in the HA as meeting the threshold for inclusion in the CHL (if the property is to remain in Commonwealth ownership) or the state/territory register or local planning scheme (if the property is to leave Commonwealth ownership within the next two years). |

| Term | Definition |
|---|---|
| **Heritage Impact Assessment** | A HIA is a report that analyses the potential impacts of a proposal on the heritage values of a place. The HIA also identifies mitigation and management measures to reduce the severity of impacts, where possible. Mitigation measures can include retention and re-use of building fabric on site, interpretation of heritage values, archival recording, undertaking oral history interviews and preparing a publication on the history and heritage values of the site.<br>Key inputs to a HIA include the alternatives considered in the planning process for the proposal. A HIA can include a HA where this has not been prepared to date.<br>A HIA assists with deciding if a proposal needs to be referred under the EPBC Act. HIAs need to be prepared using the EPBC ACT Significant Impact Guidelines 1.1 and 1.2. For more information on these refer to the 'Useful Guides' section below. |
| **Heritage Management Plan** | HMPs need to be prepared for places included in the CHL or places with identified Commonwealth Heritage values established through a HA. They are intended to help managers to conserve and protect the Commonwealth Heritage values of a place by setting out the conservation policies to be followed.<br>HMPs need to be prepared in accordance with the requirements of the EPBC Regulations, including the Commonwealth Heritage Management Principles. HMPs include the HA (either integrated or as an appendix) and provide heritage compliance guidance, assess risks to heritage values, and provide detailed policies and guidelines to support the conservation management of the property's identified heritage values. A maintenance guide and action plan can also be included to assist with implementing the HMP. |
| **DHA Heritage Register** | This is a database of heritage places or assets managed by DHA and is a is a requirement of EPBC Act regulation: 'Description of how the Department's heritage places register will be maintained, updated and made accessible to the public' (7C3[a]). |

Throughout this HMP, the terms place, cultural significance, fabric, conservation, maintenance, preservation, restoration, reconstruction, adaptation, use, compatible use, setting, related place, related object, associations, meanings, and interpretation are used as defined in *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance, 2013* (the Burra Charter). Therefore, the meanings of these terms in this report may differ from their popular meanings.

| Term | Definition |
|---|---|
| **Place** | Site, area, land, landscape, building or other work, group of buildings or other works, and may include components, contents, spaces and views. |
| **Cultural significance** | Aesthetic, historic, scientific, social or spiritual value for past, present or future generations. Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects. Places may have a range of values for different individuals or groups. |
| **Fabric** | All the physical material of the place including components, fixtures, contents, and objects. |
| **Conservation** | All the processes of looking after a place so as to retain its cultural significance. |
| **Maintenance** | The continuous protective care of the fabric and setting of a place, and is to be distinguished from repair. Repair involves restoration or reconstruction. |
| **Preservation** | Maintaining the fabric of a place in its existing state and retarding deterioration. |
| **Restoration** | Returning the existing fabric of a place to a known earlier state by removing accretions or by reassembling existing components without the introduction of new material. |
| **Reconstruction** | Returning a place to a known earlier state and is distinguished from restoration by the introduction of new material into the fabric. |
| **Adaptation** | Modifying a place to suit the existing use or a proposed use. |
| **Use** | The functions of a place, as well as the activities and practices that may occur at the place. |

| Term | Definition |
|---|---|
| **Compatible use** | A use which respects the cultural significance of a place. Such a use involves no, or minimal, impact on cultural significance. |
| **Setting** | The area around a place, which may include the visual catchment. |
| **Related place** | A place that contributes to the cultural significance of another place. |
| **Related object** | An object that contributes to the cultural significance of a place but is not at the place. |
| **Associations** | The special connections that exist between people and a place. |
| **Meanings** | Denote what a place signifies, indicates, evokes or expresses. |
| **Interpretation** | All the ways of presenting the cultural significance of a place. |

In addition to the Burra Charter terms, the following have specific meanings within the context of this report:

| Term | Definition |
|---|---|
| **Attribute** | A feature that embodies the heritage values of a place. |
| **Element/Component** | A part of an attribute, or individual spaces within a place. |
| **Authenticity** | This is a measure of the place as an authentic product of its history and of historical processes. Cultural heritage places may meet the conditions of authenticity if their cultural values are faithfully and credibly expressed through a variety of attributes such as form and design, materials and substance, traditions, techniques and management systems, location and setting, language and other forms of intangible heritage, spirit and feeling. |
| **Integrity** | This is a measure of the wholeness and intactness of the place and its attributes. Examining the conditions of integrity requires assessing the extent to which the place:<br>• includes all attributes and elements necessary to express its value;<br>• is of adequate size to ensure the complete representation of the features and processes that convey the place's significance; and<br>• suffers from adverse effects of development and/or neglect. |
| **Policy (Conservation Policy)** | A statement or suite of statements framed to guide the ongoing use, care and management of the place and to retain, and if possible reinforce, its cultural significance. Once adopted or endorsed, they should be implemented or acted upon. |
| **Guideline** | A statement framed to clarify or guide the implementation of a broader conservation policy, setting a preferred direction for such implementation. |

# Executive Summary

Defence Housing Australia (DHA) engaged GML Heritage Pty Ltd (GML) to prepare an updated Heritage Management Plan (HMP) for the former Belconnen Naval Transmitting Station (BNTS) site located in the northern Canberra suburb of Lawson in the Australian Capital Territory (ACT). This HMP forms an update of the 2009 HMP, prepared by Godden Mackay Logan (now GML) and includes an integrated assessment of natural, historic (built) and natural heritage values and management guidelines.

The former BNTS site is a complex heritage place with natural and cultural values. The site is important for:

- its demonstration of Aboriginal traditional use and occupation through physical and archaeological evidence;
- having one of the largest remnants of endangered *Rytidosperma* grassland in the ACT;
- containing a population of the threatened Ginninderra peppercress (*Lepidium ginninderrense*);
- containing the habitat for several endangered species of flora and fauna, including the Golden Sun Moth (*Synemon plana*); and
- as the site of a former naval base and transmitting station, which played a vital role in the strategic development of Royal Australian Navy (RAN) communications capability particularly in the lead-up to and during World War II.

The BNTS site has been recognised as a place with natural and cultural value and has been included in the Commonwealth Heritage List (CHL) under two separate citations since 2004. Originally owned and operated by the Department of Defence (Defence), the BNTS site was decommissioned in 2005 and was purchased by DHA in 2017 with the intention of redeveloping the site for residential development.

This HMP has been prepared to respond to the site's recent change of ownership, update the condition of the site as a whole and its contributory attributes and elements, reassess the values against Commonwealth Heritage criteria and provide management guidelines to assist DHA with conserving and managing the heritage values of the place.

The HMP has been prepared to meet DHA's obligations under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) and the Environment Protection and Biodiversity Conservation Regulations 2000 (Cwlth) (EPBC Regulations). It also follows best heritage practice in accordance with *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance, 2013* (the Burra Charter).

# 1.0 Introduction

## 1.1 Background

GML Heritage Pty Ltd (GML) has been engaged by Defence Housing Australia (DHA) to prepare an updated Heritage Management Plan (HMP) for the former Belconnen Naval Transmitting Station (BNTS) site (the site) located in the northern Canberra suburb of Lawson in the Australian Capital Territory (ACT). The BNTS site is a highly significant and complex place with a combination of historic, natural and Indigenous heritage values.[1]

This HMP has been prepared to meet DHA's legislative obligations as a Commonwealth agency under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) and the Environment Protection and Biodiversity Conservation Regulations 2000 (Cwlth) (EPBC Regulations). It has also been prepared in accordance with best heritage practice as outlined in *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance, 2013*.

## 1.2 Site Location

The site is located in the northern Canberra suburb of Lawson in the ACT, approximately 10km northwest of the city centre (Figure 1.1). The site is positioned on a large irregular block spanning approximately 143 hectares. Currently classified as National land, the site is regulated under the provisions of the National Capital Plan (NCP) managed by the National Capital Authority (NCA). It occupies Block 2 Section 6 and Block 1 Section 16, Division of Lawson ACT. The site adjoins the suburb of South Lawson and is bound by William Slim Drive to the west and to the east and north by Baldwin Drive.


**Figure 1.1** Aerial image of the study area of the former BNTS site identified (red line). (Source: Google Earth with GML overlay, 2018)


**Figure 1.2** Aerial image of the former BNTS with surrounding suburbs. The treed naval village is at the east and transmitting building at the centre. (Source: Google Earth with GML overlay, 2018)

## 1.3 Heritage Status

Through its inclusion in the Commonwealth Heritage List (CHL) on two counts, the BNTS site is a protected place under the EPBC Act and its Regulations.

The BNTS site was first included in the Register of the National Estate (RNE) for its natural heritage values in 1995 ('Synemon Plana Moth Habitat'; Place ID: 18878). It was listed a second time for its historic values in 2002 ('Royal Australian Naval Transmitting Station', Place ID: 100639). Both listings referenced different values and attributes of significance to the site. Following the archiving of the RNE in 2004, the site was reassessed under the Commonwealth Heritage criteria and the listings transferred to the CHL.

### Commonwealth Heritage List

The CHL was created under the EPBC Act and is a statutory list that recognises places of Commonwealth Heritage value that are owned or controlled by the Commonwealth Government.

The site is subject to two CHL listings—one for its historic heritage values associated with the military use of the site, and the other for its natural values as a habitat for the rare and endangered golden sun moth (Table 1.1).

The 2009 HMP identified Indigenous heritage values of the site, which are not included under either listing. 'Identified' values mean that values have been tested and found to meet the threshold for inclusion in the CHL but have not yet been nominated for official listing. The identification of Indigenous heritage values should result in these values being managed as if they were heritage listed, in accordance with the environmental precautionary principle. Further, the identified heritage values

outside the listed Commonwealth Heritage values should be nominated for inclusion in the CHL as a priority.

**Table 1.1** Prevailing Commonwealth Heritage List Citations for the BNTS Site.

| Place | Location | Class | Status | Place ID |
|---|---|---|---|---|
| Royal Australian Naval Transmitting Station | Baldwin Drive, Lawson, ACT | Historic | Listed | 105519 |
| Synemon Plana Moth Habitat | Baldwin Drive, ACT | Natural | Listed | 105535 |

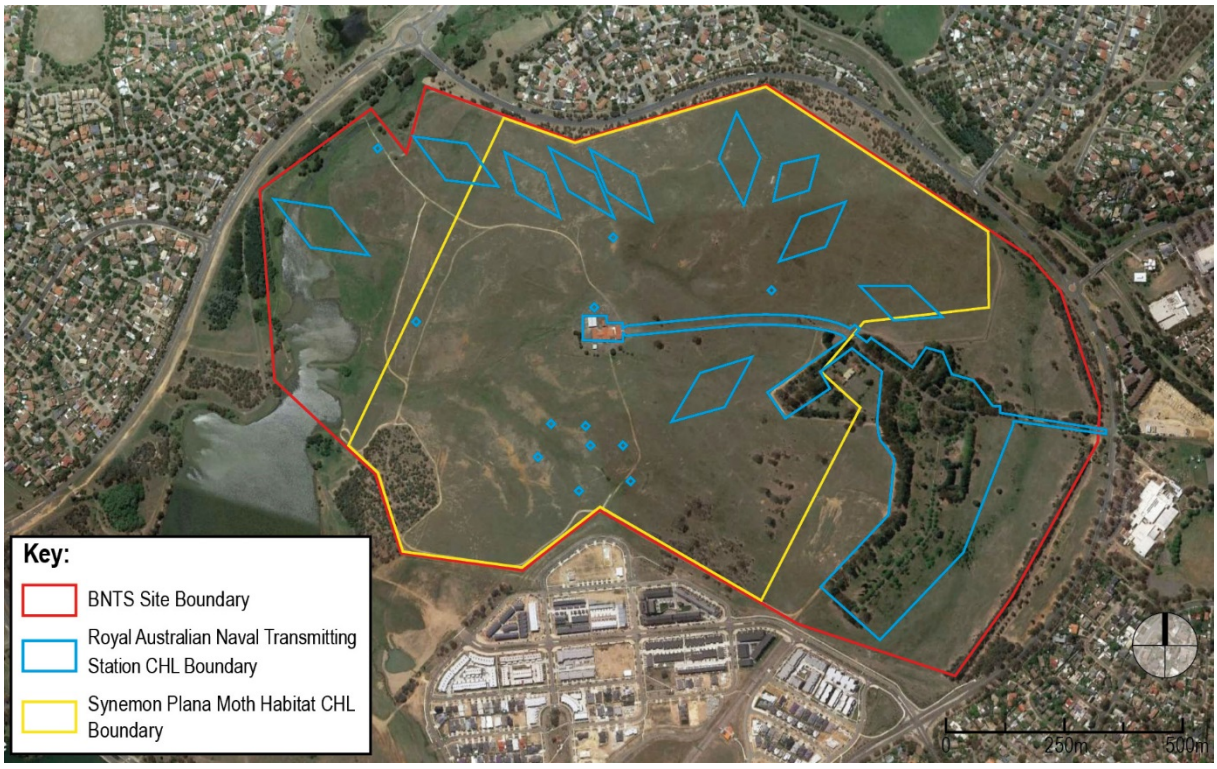


**Figure 1.3** Site boundary (red), the Commonwealth Heritage List boundaries for historic values (blue) and natural values (yellow). (Source: Google Earth with GML overlay, 2018)

### 1.3.1 National Heritage List

The National Heritage List (NHL) was also created under the EPBC Act. This statutory list recognises places of National Heritage value that are of outstanding importance to the nation.

BNTS was subject to an application for Emergency Listing under Section 324F of the EPBC Act. The application was made on 21 June 2005 by Dr Brian Egloff and lodged to the Minister for the Department of Environment and Water Resources. The application for Emergency Listing was refused and the site remains a NHL-nominated place. The nomination is now classified as 'ineligible for PPAL' meaning it has been considered but not included in two consecutive yearly work plans. A nominated place ruled ineligible in this way can be re-nominated, thereupon becoming eligible again for consideration.[2]

**Table 1.2** National Heritage List Nomination for the BNTS Site.

| Place | Location | Class | Status | Place ID |
|---|---|---|---|---|
| Royal Australian Naval Transmitting Station | Baldwin Drive, Lawson, ACT | Historic | Nominated Place | 105840 |

## 1.4 Protected Matters

### 1.4.1 National Environmental Significance

The EPBC Act recognises a range of protected matters of national environmental significance (NES) under the Act's assessment and approval provisions. A person must not take an action that has, will have, or is likely to have a significant impact on a NES matter without approval for the Minister responsible for the Environment. The NES matters are:[3]

- World Heritage Areas;
- National Heritage Places;
- wetlands of international importance (Ramsar wetlands);
- listed threatened species and endangered communities;
- the Great Barrier Reef Marine Park;
- listed migratory species;
- nuclear actions;
- Commonwealth marine environments; and
- a water resource, in relation to coal seam gas development and large coal mining development.

Other matters protected are:

- the environment, where actions proposed are on, or will affect Commonwealth land and the environment; and
- the environment, where Commonwealth agencies are proposing to take an action.

#### Threatened Ecological Communities

The assessment of ecological communities as threatened is the first step to promoting their recovery under Commonwealth law. Once an ecological community is listed as threatened under the EPBC Act, its recovery is promoted using conservation advice, recovery plans and the EPBC Act's assessment and approval provisions.[4]

The threatened ecological communities (TEC) under the EPBC Act identified at the BNTS are listed in Table 1.3.

**Table 1.3** Threatened Ecological Communities at the BNTS Site Under the EPBC Act.

| Name | Status | Type of Presence On Site |
|---|---|---|
| Natural temperate grasslands[1] of the South Eastern Highlands | Critically Endangered | Widespread |
| White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland | Critically Endangered | Recorded to the south |

[1] Formerly known as 'Wallaby grass—Spear grass open grassland'.

### Threatened Species

The assessment of individual species as threatened is the first step to promoting their recovery under Commonwealth law. Once a species is listed as threatened under the EPBC Act, its recovery is promoted using conservation advice, recovery plans, and the EPBC Act's assessment and approval provisions.[5]

**Table 1.4** Threatened Species at the BNTS Site Under the EPBC Act.

| Name | Status | Type of Presence On Site |
|---|---|---|
| **Fauna** | | |
| *Synemon plana* (Golden Sun Moth) | Critically Endangered | Recorded in high numbers within the natural temperate grassland areas. |
| *Delma impar* (Striped Legless Lizard) | Vulnerable | Recorded in high numbers in the Themeda grassland in the eastern section of the site. Low numbers also recorded at two locations within the central northern section of natural temperate grassland. |
| *Grey-headed Flying Fox* | Vulnerable | One individual recorded in the former Naval Village. Marginal foraging habitat including planted native and exotic trees. |
| **Flora** | | |
| *Lepidium ginninderrense* (Ginninderra peppercress) | Vulnerable | The Ginninderra peppercress population has been recorded in an area of approximately 2.8ha in the western portion of the grassland of the site. |

### Listed Migratory Species

Australia is a signatory to the China–Australia Migratory Birds Agreement (CAMBA), the Japan–Australia Migratory Birds Agreement (JAMBA) and the Republic of Korea–Australia Migratory Bird Agreement (ROKAMBA) for the protection of habitats for migratory birds. The habitat for the following species exists at the site.

**Table 1.5** Listed Migratory Species at the BNTS Site Under the EPBC Act.

| Name | Status | Type of Presence On Site |
|---|---|---|
| *Gallinago hardwickii* (Latham's snipe) | Species protection and habitat protection under international treaties. | Recorded within western section, adjacent to Lake Ginninderra. |

## 1.5 ACT Statutory Listings

### 1.5.1 ACT Heritage Register

The ACT Heritage Register legally recognises and protects significant heritage places within the territory. It includes places of natural and cultural significance, including historic and Indigenous places.

Six Aboriginal sites, comprising two isolated finds (Lawson 08, 09), three artefact scatters (L01, L02, L11), one possible scarred tree (L12), and one area of potential archaeological deposit (AAP), have been previously recorded within the study area and registered on the ACT Heritage Register.

Three of these sites (L01, L02 and L12) were located again in the 2008 Indigenous Cultural Heritage Assessment undertaken by Navin Officer Heritage Consultants (Navin Officer) (incorporated into the 2009 HMP), while the remainder could not be located. At the time, the cultural origin of the scarred tree was reviewed. It was concluded that the scar was natural in origin, and therefore L12 was revised as not being culturally modified tree.

Two additional isolated finds (L19 and L20) along with seven Potential Archaeological Deposits (PADs) were identified in the 2008 study.

### 1.5.2 Nature Conservation Act 2014

The *Nature Conservation Act 2014* (ACT) establishes a formal process for the identification and protection of threatened species and ecological communities within the ACT.

#### Threatened Ecological Communities

**Table 1.6** Threatened Ecological Communities at the BNTS Site Under the Nature Conservation Act.

| Name | Status |
|---|---|
| Natural Temperate Grassland | Endangered |
| Yellow Box-Red Gum Grassy Woodland | Endangered |

#### Threatened Species

**Table 1.7** Threatened Ecological Communities at the BNTS Site Under the Nature Conservation Act.

| Name | Status |
|---|---|
| **Fauna** | |
| *Synemon plana* (Golden Sun Moth) | Endangered |
| *Delma impar* (Striped Legless Lizard) | Vulnerable |
| *Perunga ochracea* (Perunga Grasshopper) | Vulnerable |
| **Flora** | |
| *Lepidium ginninderrense* (Ginninderra Peppercress) | Endangered |

## 1.6 Previous Reports

BNTS has been the subject of previous heritage reports and a management plan. Key studies referenced in this report are set out below.

| | | |
|---|---|---|
| **Heritage Management Plans** | | |
| 2009 | GML | Heritage Management Plan—Belconnen Naval Transmitting Station Site Lawson, report prepared for the Department of Defence. |
| **Heritage Studies** | | |
| 2006 | ERM | Belconnen Naval Transmitting Station, Archival Recording. |
| 2005 | ERM | Statement of Heritage Impact: Belconnen Naval Transmitting Station Decommissioning—Advisory. |

| | | |
|---|---|---|
| **Heritage Studies** | | |
| 2001 | Egloff, B et al, Cultural Heritage Research Centre, University of Canberra | Natural, Cultural and Military Heritage Assessment—Belconnen Naval Transmitter Station and ACT Government Land, Lawson, Report to the Defence Estate Organisation and ACT Government. |
| **Indigenous** | | |
| 2008 | Navin Officer Heritage Consultants | Belconnen Naval Transmitting Station, Lawson ACT Indigenous Cultural Heritage Assessment [DRAFT]. Report prepared for GML. |
| 2001 | Navin Officer Heritage Consultants | Opportunities and Constraints presented by Cultural Heritage Values Identified in the Proposed Suburb of Lawson, ACT. |
| **Natural** | | |
| 2018 | Canopy Tree Experts | Preliminary Arboricultural Report of the windbreak, prepared for DHA. |
| 2003 | Rowell, AM | Lawson Residential Estate Study Ecological Issues. Report to Maunsell McIntyre Pty Ltd. |
| 2001 | HLA | Review of Grassland Significance, Belconnen Naval Transmitting Station, Lawson, ACT. |

## 1.7 Objectives

The EPBC Act requires that places with Commonwealth Heritage values be managed according to the policies contained in the management plan prepared specifically for the place. This HMP addresses the requirements for a management plan as set out in Schedule 7A of the EPBC Regulations. A checklist against Schedule 7A has been included at Appendix A. A checklist against Schedule 7B of the EPBC Regulations, which sets out the Commonwealth Heritage management principles is also included at Appendix A.

The HMP has been prepared to assist DHA in complying with its obligations under the EPBC Act. As an update to the 2009 HMP, it will aid in the understanding of the Commonwealth Heritage values of the BNTS site, informing future management and conservation.

The HMP presents practical policies, implementation plans and guidelines for the future heritage management of the site, and the interpretation measures to present and transmit the site's heritage values. It is designed to facilitate the ongoing management and proposed future development of the site in a manner that assists DHA in avoiding adverse heritage impacts to the listed and identified Commonwealth Heritage values.

## 1.8 Methodology

In preparation for this HMP, GML undertook a background review of relevant documentation and reports, two site inspections and consultation with DHA identified stakeholders.

The report has been prepared in accordance with the EPBC Act, its Regulations, the Commonwealth Heritage management principles and *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance, 2013* (the Burra Charter). The Burra Charter outlines nationally recognised conservation principles and processes that are closely aligned with the Commonwealth Heritage management principles.

### 1.8.1 Site Inspections

GML undertook site inspections on 25 October 2018, 23 November 2018 and 14 January 2019, involving surveys of the transmitting station and its associated buildings and structures (the transmitting station complex), the former Naval Village, Sailors' Mess and Guardhouse.

All buildings at the site have been boarded up for security and safety reasons, and in some areas access is restricted. As such, internal inspection of the Sailors' Mess and the supporting buildings immediately surrounding the transmitting station was not undertaken.

Areas of PAD identified in 2008, were inspected in November 2018.

### 1.8.2 Consultation

GML consulted with DHA's Senior Development Manager for the BNTS site throughout the development of the HMP. A stakeholder consultation meeting to discuss DHA's approach to site and heritage management was undertaken with the Senior Development Manager on 17 December 2018.

### 1.8.3 Aboriginal Community Consultation

Consultation for the project was undertaken with the local Aboriginal community and was based on the Commonwealth's *Ask First Guidelines* (refer to Section 2.3.4).

Consultation with the ACT Representative Aboriginal Organisations (RAOs) included a telephone discussion of the project, followed by a written outline of the HMP project and an invitation to meet on site to discuss the project further.

Initial consultation included:

- Wally Bell, Buru Ngunawal Aboriginal Corporation;
- Carl Brown, King Browns Tribal Group;
- Paul House, Mirrabee;
- James Mundy, Ngarigo Currawong Clan.

On site meetings were held with Wally Bell on 13 December 2018 and Paul House on 4 January 2019. Neither Carl Brown nor James Mundy responded to the invitation for a site meeting. Site meetings included a vehicle and pedestrian inspection of the site with a view to outlining the HMP project and discussing the cultural heritage values of the area. A systematic survey for the purposes of identifying new archaeological sites was not undertaken.

Additional consultation was undertaken as part of an archaeological test excavation program, designed to investigate and clarify the identification of some of the previously recorded Aboriginal archaeological sites within the study area.

That consultation included the RAO representatives listed above, along with:

- Karen Denny, Buru Ngunawal Aboriginal Corporation,
- Tina Brown, Adrian Brown and Justin Williams, King Browns Tribal Group, and
- Judy Bell, Mirrabee.

The archaeological test excavation program was undertaken in two stages in March 2019 and November 2019.

A copy of the draft report will be forwarded to the participating Aboriginal community organisations for review and comment.

## 1.9 Management Roles and Responsibilities

The following explanation of management roles and responsibilities has been drawn from the DHA Heritage Strategy 2018–2021.

### 1.9.1 National Heritage Program Manager

The National Heritage Program Manager is the initial point of contact for heritage matters at DHA. The position provides coordination and advice regarding all heritage matters, including the conservation and management of heritage property maintenance—both preventative and reactive; compliance with the relevant EPBC Act requirements; and the engagement of external consultants. The National Heritage Program Manager also reviews external consultant reports.

### 1.9.2 Property Provisioning Group

#### General Manager

The General Manager has overall responsibility for development programs, acquisitions and delivery, and land and housing supply management. This includes general responsibility for heritage issues arising in the context of development programs and acquisitions, as well as major period maintenance and upgrades, and ensuring compliance with heritage matters.

#### Development Manager

Development Managers are responsible for overseeing the implementation of and compliance with the HMP. At the time of writing this HMP, the Senior Development Manager for the BNTS site is also responsible for day-to-day management of the site. This includes dealing with maintenance, repairs, engaging and directing contractors.

## 1.10 Terminology

This HMP uses the term ‘Aboriginal’ in reference to the Aboriginal community but maintains the term ‘Indigenous’ where it is defined by legislative requirements in regard to the assessment of heritage values.

## 1.11 Assumptions and Limitations

This HMP has been prepared using much of the information from the 2009 HMP to inform the site description, historical background and heritage assessment. Research was limited to relevant supplementary information to support the findings of this report.

Formal public consultation for the assessment of values, particularly under criterion (e) aesthetic and criterion (g) (social) was not undertaken as part of this project. Community consultation was undertaken as part of the 2009 HMP. The section that discusses the consultation process and findings has been extracted and included at Appendix G.

With the exception of the main transmitting building, the Guardhouse and the Chemical Store, access to the inside of the other buildings at the BNTS site was not obtainable. The 2009 HMP condition report

was reviewed and updated following a visual inspection of the buildings. The inspection did not constitute an assessment of the structural integrity of the buildings.

## 1.12 Acknowledgements

GML gratefully acknowledges the assistance of the following people in the preparation of this report:

- Mark Cerone, Senior Development Manager, DHA;
- Wally Bell, Buru Ngunnawal Aboriginal Corporation; and
- Paul House, Mirrabee.

## 1.13 Endnotes

1 Godden Mackay Logan (now GML Heritage) 2009, Belconnen Naval Transmitting Station Site Lawson—Heritage Management Plan, p i.

2 Department of the Agriculture, Water and the Environment, 'Legal status and heritage place lists', webpage, viewed 14 December 2018 <http://www.environment.gov.au/heritage/publications/australian-heritage-database/legal-status>.

3 Department of the Agriculture, Water and the Environment, 'What is protected under the EPBC Act?', webpage, viewed 14 December 2018 <http://www.environment.gov.au/epbc/what-is-protected>.

4 Department of the Agriculture, Water and the Environment, 'Threatened ecological communities', webpage, viewed 14 December 2018 <http://www.environment.gov.au/biodiversity/threatened/communities>.

5 Department of the Agriculture, Water and the Environment, 'Threatened species under the EPBC Act', web page, viewed 14 December 2018, <http://www.environment.gov.au/biodiversity/threatened/species>.

# 2.0 Legislative Context

## 2.1 Introduction

As a Commonwealth agency, DHA is required to operate in accordance with Commonwealth heritage and environmental legislation. The EPBC Act is the Commonwealth's primary piece of environmental legislation through which heritage places under Commonwealth ownership are managed.

Legislation relevant to the management of heritage values of the BNTS site is outlined below.

## 2.2 Commonwealth Legislation

### 2.2.1 Environment Protection and Biodiversity Conservation Act 1999 (Cwlth)

DHA is subject to the provisions of the EPBC Act and EPBC Regulations. The EPBC Act is the primary Commonwealth legal framework for the protection and management of nationally and internationally important flora, fauna, ecological communities and heritage places.[1] DHA's obligations under the EPBC Act apply to land, places or items it owns or controls (in the form of leases) in Australia and overseas.

The objective of the EPBC Act is to provide for the protection of the environment, which includes heritage places, and particularly applies to matters of National Environmental Significance (NES).

The key parts of the EPBC Act that are of direct relevance to the heritage management of BNTS are:

- Part 3, Division 1: Requirements relating to matters of National Environmental Significance;
- Section 26: Requirement for approval of activities involving Commonwealth land with the potential to have a significant impact on the environment;
- Section 28: Requirement for approval of activities undertaken by a Commonwealth agency with the potential to have a significant impact on the environment;
- Section 341S: Requirement that a Commonwealth agency must make a written plan to protect and manage the Commonwealth Heritage values of a Commonwealth Heritage place it owns or controls;
- Section 341V: Requirement that a Commonwealth agency must not contravene a plan made under Section 341S or authorise another person to contravene a plan;
- Section 341X: Requirement to review a management plan at least once in every five-year period, to provide notice of the management plan review and invite comment, and to consider comments received in accordance to the notice;
- Section 341ZC: Requirement to minimise adverse impacts on the heritage values of a place included in the National Heritage List (NHL) and/or CHL; and
- Section 341ZE: Requirement to provide ongoing protection of heritage values of a place included in the CHL in the event of sale or transfer.

### *Matters of National Environmental Significance (NES)*

Part 3, Division 1 of the EPBC Act requires that actions that have, will have or are likely to have a significant impact on NES matters require approval from the Minister responsible for the EPBC Act (the Minister) (currently the Minister for the Environment and Energy). The NES matters are:

- World Heritage Areas;
- National Heritage Places;
- wetlands of international importance (Ramsar wetlands);
- listed threatened species and endangered communities;
- the Great Barrier Reef Marine Park;
- listed migratory species;
- nuclear actions;
- Commonwealth marine environments; and
- a water resource, in relation to coal seam gas development and large coal mining development.

Other protected matters are:

- the environment, where actions proposed are on, or will affect Commonwealth land and the environment; and
- the environment, where Commonwealth agencies are proposing to take an action.

Under this section, any action that will or is likely to have a significant impact on an NES matter is to be referred to the Department of the Agriculture, Water and the Environment (the Department; DAWE) for consideration by the Minister of the Environment.

The Department administers an online search tool that allows a geographic search of all the species and ecological communities listed under the EPBC Act, and National and Commonwealth Heritage places that are expected/likely to be present within a given area. This tool does not preclude site verification.

The NES matters relevant to the BNTS site are listed threatened species, endangered communities and listed migratory species.

### *Sections 26 and 28*

Section 26 relates to any action on Commonwealth land that will, or is likely to have, a significant impact on the environment. Section 28 relates to actions undertaken by a Commonwealth agency (such as DHA) which will, or are likely to, have a significant impact on the environment. The term ‘environment’ has a broader coverage than NES matters and relates to environmental matters that are not necessarily formally listed.

The Act defines the environment as:

*a) ecosystems and their constituent parts, including people and communities; and*

*b) natural and physical resources; and*

*c) the qualities and characteristics of locations, places and areas; and*

*d) heritage values of places; and*

*e) the social, economic and cultural aspects of a thing mentioned in paragraph (a), (b), (c) or (d).*

Any actions which will, or are likely to have, a significant impact on the environment need to be assessed. If potentially significant impacts are identified, opportunities for their avoidance, reduction or management must be sought. A referral under the EPBC Act may also need to be considered.

*Section 341S*

Section 341S applies to Commonwealth agencies and requires that the agency prepare a written plan to protect and manage the Commonwealth Heritage values of a Commonwealth Heritage place it owns or controls. The matters to be addressed in the plan and the timeframe within which to prepare it is specified.

*Section 341V*

Section 341V stipulates that Commonwealth agencies must not breach a plan written under Section 341S. If no plan is in force for a particular Commonwealth Heritage place, then DHA (as the Commonwealth agency) must ensure that all reasonable steps are taken to ensure that actions relating to the place are not inconsistent with the Commonwealth Heritage management principles.

*Section 341X*

This section requires that after a plan is made under section 341S, DHA must arrange a review of the plan to be carried out at least once in every five-year period. The review is to confirm consistency with the Commonwealth Heritage management principles, assess the effectiveness of the plan in protecting and conserving the Commonwealth Heritage values of the place, and make recommendations for the improved protection of the Commonwealth Heritage values of the place. A notice inviting anyone to provide comments within 20 business days must be circulated and DHA must consider the comments received in accordance with the notice.

*Section 341ZC*

This section requires the minimisation of adverse impacts to the heritage values of a National or Commonwealth Heritage place. This might be direct impacts from physical disturbance and could also include secondary impacts in the event of activities that would affect the visual aspect, cultural importance, landscaping and curtilage of an adjacent listed property.

*Section 341ZE*

This section of the EPBC Act applies if DHA, as a Commonwealth agency, intends to sell or lease all or part of a Commonwealth area that is or includes part of a Commonwealth Heritage place. DHA must notify the Minister of such an intent at least 40 business days prior to the transfer or sale and include in the sale or lease contract a covenant to protect the Commonwealth Heritage values of the place during the sale process and after the property has left Commonwealth control.

*Commonwealth Heritage List Criteria*

A place can be included in the CHL if it is found to be significant at a local, state or national level under one or more of the following criteria:[2]

a) *the place has significant heritage value because of the place's importance in the course, or pattern, of Australia's natural or cultural history.*

b) *the place has significant heritage value because of the place's possession of uncommon, rare or endangered aspects of Australia's natural or cultural history.*

c) *the place has significant heritage value because of the place's potential to yield information that will contribute to an understanding of Australia's natural or cultural history.*

d) *the place has significant heritage value because of the place's importance in demonstrating the principal characteristics of:*

   i. *a class of Australia's natural or cultural places; or*

   ii. *a class of Australia's natural or cultural environments.*

e) *the place has significant heritage value because of the place's importance in exhibiting particular aesthetic characteristics valued by a community or cultural group.*

f) *the place has significant heritage value because of the place's importance in demonstrating a high degree of creative or technical achievement at a particular period.*

g) *the place has significant heritage value because of the place's strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.*

h) *the place has significant heritage value because of the place's special association with the life or works of a person, or group of persons, of importance in Australia's natural or cultural history.*

i) *the place has significant heritage value because of the place's importance as part of Indigenous tradition.*

*Thresholds*

The DAWE website provides some guidance on determining the level of heritage significance a place may have. The Department states that as well as assessing a place against criteria for its heritage value, the Australian Heritage Council (the Council; AHC) applies a 'significance threshold' test. This test helps the Council to determine the level of significance of a place's heritage value by asking 'just how important are these values?'

To reach the threshold for inclusion in the NHL, a place must have 'outstanding' heritage value to the nation against one or more criteria. To be entered in the CHL, a place must have 'significant' heritage value against one or more criteria.

It is noted that the Council's recent publication *Identifying Commonwealth Heritage Values and Establishing a Heritage Register: A Guideline for Commonwealth Agencies* states that the minimum threshold for inclusion in the CHL is local heritage significance.[3]

### 2.2.2 Public Governance, Performance and Accountability Act 2013 (Cwlth)

The *Public Governance, Performance and Accountability Act 2013* (Cwlth) (the PGPA Act) applies to the use and management of public resources (ie property) by the Commonwealth and applies to DHA. The Act is administered by the Department of Finance (Finance) and is designed to establish a coherent system of governance and accountability across corporate Commonwealth entities. It provides for the preparation of corporate plans, budget estimates, annual performance and finance statements, and annual reports.[4]

The Act has an emphasis on planning, performance and reporting and ensures that assets and public resources are appropriately used and managed by Commonwealth agencies.

Should DHA wish to dispose of its property, Section 341ZE of the EPBC Act—requirement to provide ongoing protection of heritage values of a place included in the CHL in the event of sale or transfer—applies.

The sale or lease of a Commonwealth Heritage place would trigger Section 341ZE of the EPBC Act. Essentially, this requires the Commonwealth owner to ensure adequate protection for the heritage values of the site following sale or lease, either in the form of a covenant on the contract of sale, a conservation agreement, or other protective measures. DHA must give the Minister at least 40 business days' notice before executing the contract for sale or lease. In this notice, DHA would advise the Minister that the contract for sale includes a covenant to protect the heritage values of the place.

### 2.2.3 Defence Housing Australia Act 1987 (Cwlth)

The *Defence Housing Australia Act 1987* (Cwlth) (DHA Act) outlines the functions, powers, corporate structure and delegations of DHA.[5] The first function of DHA is to provide adequate housing for Defence Force members and their families, officers, employees and contractors for the Department of Defence (Defence) and the Defence Force. As well as establishing the main functions, the Act also confirms the agency's secondary functions relating to suitable housing and services to officials of non-corporate Commonwealth entities and sets out a broad range of powers relevant to the function of DHA.[6]

### 2.2.4 Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cwlth)

This Act protects areas and/or objects that are significant to Aboriginal and Torres Strait Islander people and which are under threat of destruction. A significant area or object is defined as one that is of particular importance to Aboriginal people, according to Aboriginal tradition. The legislation must be invoked by or on behalf of an Aboriginal or Torres Strait Islander person or organisation.

### 2.2.5 Australian Capital Territory (Planning and Land Management) Act 1988 (Cwlth)

The *Australian Capital Territory (Planning and Land Management) Act 1988* (Cwlth) provides for the planning and development of the ACT and management of Territory land. It was established out of necessity after the Commonwealth's decision to introduce self-government to the ACT, provided for by the *Australian Capital Territory (Self Government) Act 1988* (Cwlth), which established the ACT Legislative Assembly to govern the Territory.

The Act was designed to ensure the interests of the people of the ACT are represented and protected in the planning of the ACT while continuing Commonwealth involvement in the development of the national capital.

The Act established the National Capital Authority (NCA) (previously the National Capital Planning Authority), whose functions include:

- preparing, administering, reviewing and (as necessary) amending the National Capital Plan (NCP);
- fostering awareness of Canberra as the national capital and recommending to the Minister any works it considers desirable to maintain or enhance the national capital's character;
- commissioning works in designated areas in accordance with the NCP where no other state or Commonwealth department or authority has the responsibility to do so; and

- performing, with the approval of the Minister, planning services for any person or body, whether within Australia or overseas, and managing National Land designated in writing by the Minister as land required for the special purposes of Canberra as the national capital.

### National Capital Plan

The NCP forms the strategic planning framework for Canberra and the ACT. In accordance with Section 10 of the *Australian Capital Territory (Planning and Land Management) Act 1988,* the NCP sets out detailed conditions for planning design and development for Designated Areas for which the NCA is responsible for planning and development approval.

The NCP is established under the *Australian Capital Territory (Planning and Land Management) Act 1988*. It is the strategic planning document for Canberra and the ACT and is administered by the NCA—a Commonwealth agency.

### Development Control Plan 09/12

A Development Control Plan (DCP) reflects the requirements set out by the NCP and Territory Plan, and identifies requirements considered by the NCA to be in the best interests of Canberra. The NCP forms the strategic planning framework for Canberra and the ACT. In accordance with Section 10 of the *Australian Capital Territory (Planning and Land Management) Act 1988*, the NCP sets out the broad planning principles and policies for Canberra and the ACT.[7]

Development proposals on National Land, including subdivisions, are required to be referred to the NCA and must be consistent with the NCP and the subject DCP.[8] The former BNTS site is considered National Land outside of the Designated Area of the NCP.[9] A DCP was prepared for the former BNTS site (DCP 09/12) and was approved on 12 February 2013. It divides the site into indicative development precincts determined by the natural and historical values of the area (Figure 2.1) and outlines 'desired planning outcomes' for each precinct.

In brief, the DCP contains design objectives and desired outcomes, which suggest that where possible:

- the natural and cultural heritage values of the site be maintained and integrated into future development of the site;
- development is undertaken in accordance with the HMP;
- the adaptive re-use of buildings, such as the Sailors' Mess and Guard House, and landscape features is facilitated;
- plantings of heritage interest are maintained and integrated with the development;
- the landscape character is maintained and reinforced;
- low-density residential development is accommodated within the original 1939 naval village; and
- the travelling stock route and historic pine windbreak are protected, and where possible the historic plantings and existing trees of high quality are integrated into the new landscape.[10]

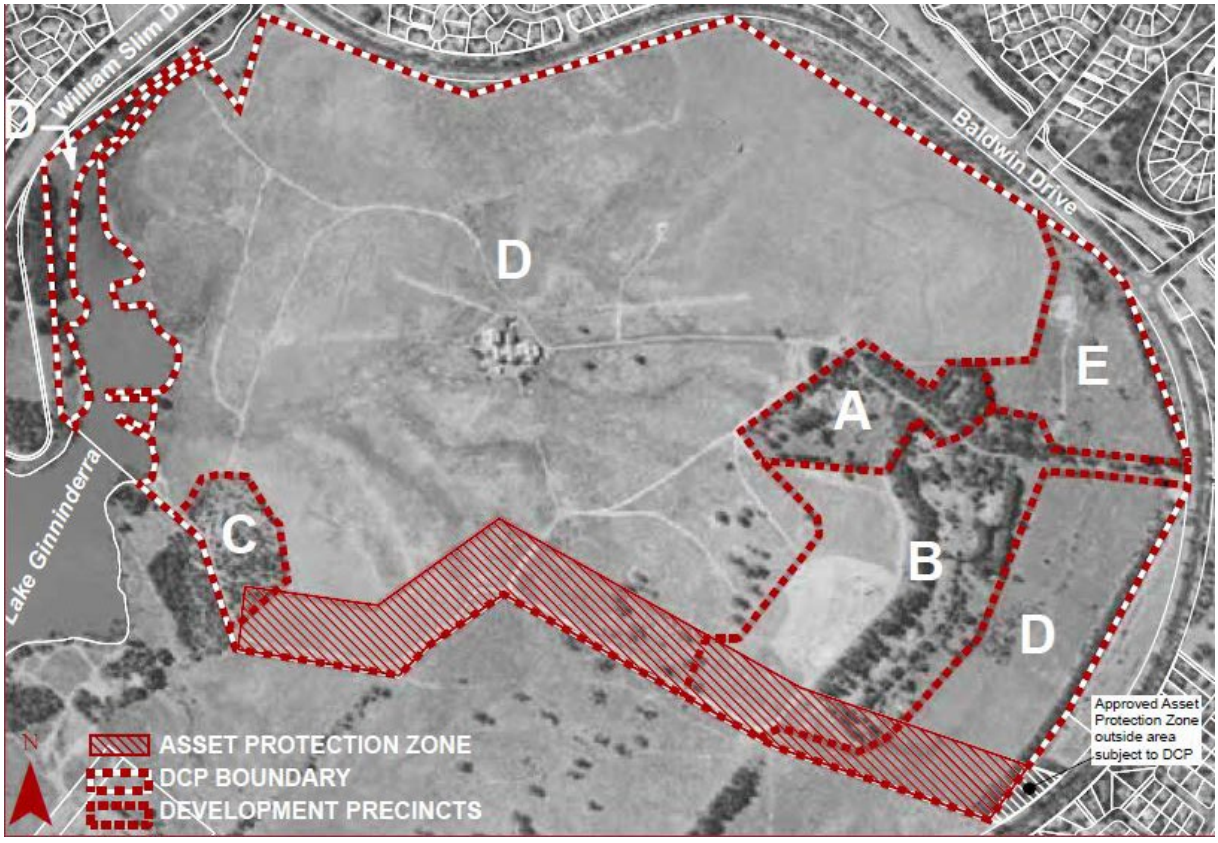


**Figure 2.1** Indicative Development Precincts as expressed in DCP 09/12, prepared by the NCA and approved in February 2013. Precinct A includes the Sailors' Mess and northern tennis court and Precinct B includes the Naval Village. (Source: DCP 09/12, 2013)

### 2.2.6 Territory Legislation

Commonwealth land is exempt from state, territory and local legislative requirements. However, it is best practice to check the legislation of the local area to understand what could apply to the site should it be divested from Commonwealth ownership. Key legislation has been outlined below.

Within the ACT, there are three major pieces of legislation that have relevance for planning, development and heritage assets: the *Planning and Development Act 2007*, the *Heritage Act 2004* and the *Nature Conservation Act 2014*.

#### Planning and Development Act 2007

The *Planning and Development Act 2007* provides a planning and land development framework for the ACT.[11] It stipulates and regulates the functions of the Planning and Land Authority.[1] The Act sets out the object and effect of the Territory Plan, provides guidance for the development of high-level planning strategies for the ACT, stipulates the processes for assessing development applications in the ACT and outlines the leasing and licensing regulations of ACT property and land. Should the land tenure status of the BNTS site change and be transferred to the ACT's leasehold system, this Act would apply.

#### Heritage Act 2004

The *Heritage Act 2004* (ACT Heritage Act) legally recognises and protects significant heritage places (historic, natural and Aboriginal) within the ACT.

[1] Now the Environment, Planning and Sustainable Development Directorate.

The relevant application of the ACT Heritage Act for DHA is to obtain registered Aboriginal site location details collected by the ACT Heritage Unit. The Act outlines procedures that must be followed in order to access data/information about Aboriginal sites and places in the general vicinity of a Commonwealth property in the ACT.

#### Nature Conservation Act 2014

The *Nature Conservation Act 2014* (ACT) (NC Act) establishes a formal process for the identification and protection of threatened species and ecological communities within the ACT and provides a management structure for nature conservation.[12]

## 2.3 Non-Statutory Considerations

### 2.3.1 Register of the National Estate

The RNE is a register of important natural, Indigenous and historic places throughout Australia. The register was a statutory list until February 2012. From February 2012, all references to the RNE were removed from the EPBC Act and the *Australian Heritage Commission Act 1975* (Cwlth). The RNE is now defunct and maintained only as a publicly available non-statutory archive.

### 2.3.2 The Burra Charter

*The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance, 2013* (the Burra Charter) sets a standard of practice for those who provide advice, make decisions about, or undertake works to places of cultural significance including owners, managers and custodians. The Burra Charter provides specific guidance for physical and procedural actions that should occur in relation to significant places. The Burra Charter can be accessed online at <http://icomos.org/australia>.

### 2.3.3 Natural Heritage Charter

The *Australian Natural Heritage Charter 2002* is a guideline for best practice conservation principles aimed at assisting in the identification, assessment and management of places with natural heritage values.[13] It can be applied to a wide range of places, whether terrestrial, marine or freshwater. The charter defines natural heritage as comprising:

> *…the natural living and non-living components, that is, the biodiversity and geodiversity, of the world that humans inherit. It incorporates a range of values, from existence value to socially-based values.*[14]

Places may have both natural and cultural heritage values—values that may be related and are sometimes difficult to separate. This is often the case with Aboriginal people who see the natural and cultural world as part of the same continuum. The concept of natural heritage used in this Charter recognises the role Indigenous people have played in using and shaping Australian landscapes for at least 50,000 years and possibly much longer. Conservation of a place should identify and take into consideration all aspects of natural and cultural heritage'.[15]

This Charter provides a framework for making sound decisions for managing natural heritage places based on the ecological processes which occur in natural systems. It also provides a process that can be used to support and implement local, state/territory, national and international policies, agreements, strategies and plans. It does not replace statutory obligations.

### 2.3.4 Ask First Guidelines

The *Ask First Guidelines*[16] are generally referenced as the best practice guidelines to undertaking Aboriginal community consultation. They were prepared by the Australian Heritage Commission in 2002 to provide guidance for Commonwealth agencies when engaging Aboriginal people about heritage places and values.

The *Ask First Guidelines* require that the relevant Aboriginal community is identified and consulted about the management of their heritage values. Aboriginal community is defined as 'traditional owners and any other Indigenous people with rights and interests in the area'.[17] Identifying the relevant Aboriginal community is a matter of contacting the Native Title Tribunal, land councils, local councils, government authorities and any other known group or authority that may provide relevant information. It is not a specifically prescriptive process.

The relevant Aboriginal community is expected to be actively involved in the process of identifying and assessing their heritage places and values and have meaningful input into the management of those places.

The *Ask First Guidelines* are premised on a set of principles described below.

> *In recognising the rights and interests of Indigenous peoples in their heritage, all parties concerned with identifying, conserving and managing this heritage should acknowledge, accept and act on the principles that Indigenous people:*
>
> - *are the primary source of information on the value of their heritage and how this is best conserved;*
> - *must have an active role in any Indigenous heritage planning process;*
> - *must have input into primary decision-making in relation to Indigenous heritage so they can continue to fulfil their obligations towards this heritage; and*
> - *must control intellectual property and other information relating specifically to their heritage, as this may be an integral aspect of its heritage value.*
>
> *In identifying and managing this heritage:*[18]
>
> - *uncertainty about Indigenous heritage values at a place should not be used to justify activities that might damage or desecrate this heritage;*
> - *all parties having relevant interests should be consulted on Indigenous heritage matters; and*
> - *the process and outcomes of Indigenous heritage planning must abide by customary law, relevant Commonwealth and State/Territory laws, relevant International treaties and covenants and any other legally binding agreements.*
>
> *Adhering to cultural restrictions on information about an Indigenous heritage place is essential to maintaining its heritage value.*

These guidelines are widely referenced by a number of states as a model for best practice consultation.

### 2.3.5 Engage Early Guidelines

The *Engage Early Guidelines* aim to improve engagement and consultation with Indigenous peoples during the environmental assessment process under the EPBC Act.[19] The guidelines were prepared by the then Department of the Environment in 2016. It defines good Indigenous engagement as:

> *any process that involves the Aboriginal and Torres Strait Islander peoples in problem solving or decision making and uses community input to make better decisions*[20]

The EPBC Act recognises that Indigenous people play a vital part in the conservation and sustainable use of Australia's heritage and the *Engage Early Guidelines* provide advice on when Indigenous communities should be consulted and explains the expectations set out by the Department of the Environment on Indigenous engagement. It provides advice on legislative processes such as land rights and native title, Indigenous land use agreements and environmental offsets.

The guidelines provide advice on identifying relevant Indigenous communities for engagement, the appropriate timeframes for engagement, cultural awareness and advice on building relationships and positive forms of communication as well as tips for dealing with disputes. The Guidelines are intended to be read and used in conjunction with the *Ask First Guidelines.*[21]

## 2.4 Endnotes

1 Department of Environment and Heritage 2000, *Environment Protection and Biodiversity Conservation Act*, Department of Environment and Heritage, Canberra.

2 *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth).

3 Australian Heritage Council, *Identifying Commonwealth Heritage Values and Establishing a Heritage Register: A Guideline for Commonwealth Agencies 2010*, Commonwealth of Australia, Canberra, 7.

4 Australian Government Department of Finance, PGPA Act 2013 website, November 2017 <https://www.finance.gov.au/resource-management/pgpa-act/>.

5 Australian Government Defence Housing Australia, 'Governance', web page, viewed 17 November 2018, <https://www.dha.gov.au/about-us/our-organisation/governance>.

6 Australian Government, Department of Finance, Government Business Enterprises website, viewed 17 November 2018, <https://www.finance.gov.au/gbe-directors-guide/gbe/dha/>.

7 National Capital Authority, 'National Capital Plan: Planning and Heritage', website, viewed 6 November 2018 <https://www.nca.gov.au/planning-heritage/national-capital-plan>.

8 National Capital Authority, 2013, DCP 09/12 Belconnen Naval Transmitting Station.

9 National Capital Authority, 2013, DCP 09/12 Belconnen Naval Transmitting Station, p 4.

10 National Capital Authority, 2013, DCP 09/12 Belconnen Naval Transmitting Station.

11 ACT Legislation Register, Planning and Development Act, viewed 1 May 2018 <http://www.legislation.act.gov.au/a/2007-24/current/pdf/2007-24.pdf>.

12 Environment, Planning and Sustainable Development Directorate—Environment, 'Threatened Species List', web page, viewed 14 December 2018, <https://www.environment.act.gov.au/cpr/conservation_and_ecological_communities/threatenedspecieslist>.

13 Australian Heritage Commission 2002, *Australian Natural Heritage Charter for the conservation of places of natural heritage significance*, second edition, Environment Australia, Canberra.

14 Australian Heritage Commission 2002, *Australian Natural Heritage Charter for the conservation of places of natural heritage significance*, second edition, Environment Australia, Canberra, p 4.

15 Australian Heritage Commission 2002, *Australian Natural Heritage Charter for the conservation of places of natural heritage significance*, second edition, Environment Australia, Canberra, p 4

16 Australian Heritage Commission, *Ask First: a guide to respecting Indigenous heritage places and values*, 2002.

17 Australian Heritage Commission, *Ask First: a guide to respecting Indigenous heritage places and values*, 2002, p 6.

18 Australian Heritage Commission, *Ask First: a guide to respecting Indigenous heritage places and values*, 2002, p 6.

19 Department of the Environment 2016, *Engage Early*, Australian Government, p 3.

20 Department of the Environment 2016, *Engage Early*, Australian Government, p 7.

21 Department of the Environment 2016, *Engage Early*, Australian Government, p 3.

# 3.0 Understanding the Place—Historical Context

## 3.1 Introduction

This section provides a summary of the history of the BNTS site. Much of the history has been drawn from the 2009 HMP and the 2001 Natural, Cultural and Military Heritage Assessment prepared by the University of Canberra Cultural Heritage Research Centre (2001 HA). The information has been supplemented with additional and updated material relating to the recent history of the site.

## 3.2 Aboriginal History

### 3.2.1 Tribal Boundaries and Ethnohistory

Tribal boundaries within Australia are based largely on linguistic evidence and it is probable that boundaries, clan estates and band ranges were fluid and varied over time. Consequently, 'tribal boundaries' as delineated today must be regarded as approximations only, and relative to the period of, or immediately before, European contact. Social interaction across these language boundaries appears to have been a common occurrence.

The area of the BNTS site is now surrounded by suburban development but was originally an open landscape of creeks and treed grasslands occupied by the Aboriginal groups who first lived there. Their use of the land prior to and in the early days of white settlement is documented in the landscape by various sites and artefacts. Numerous local accounts written by white settlers refer to the continuing importance of the Ginninderra area and Ginninderra Creek to the Aboriginal groups who coexisted with white settlers during the early pastoral phase of land use.[1]

A reconstruction of clan boundaries based on Tindale indicates that the northern Canberra area fell within the tribal boundaries of the Ngunnawal people.[2] There is some uncertainty as to what language was spoken by the Aboriginal people of northern Canberra. This area appears to have been close to the linguistic boundary between the Gundungurra and Ngunnawal languages. Eades notes that published grammars for these two languages are virtually identical.[3] However, according to Eades' boundaries, the Ngunnawal of northern Canberra probably spoke the Gundungurra language.

WP Bluett (1871–1968), an early European settler of the Brindabella Mountains near Canberra, states that the Aboriginal group that camped at Pialligo were referred to by early settlers as the 'Pialligo Blacks' and that the larger group that camped near Black Mountain were called the 'Canburry or Nganbra Blacks'.[4]

Jackson-Nakano notes that Aboriginal family groups within the Canberra/Queanbeyan district and surrounds were known by many names in the early nineteenth century but Europeans who knew them best referred to them as Kamberri—also spelled Kgamberry, Kamberra and even Nganbra (Ngambri).[5] Jackson-Nakano notes that it is the preference of the descendants of the area to use the term 'Kamberri' to refer to the people and 'Kamberra' to refer to the geographical heart of their Country, which was centred around the area now referred to as the Acton Peninsula.[6] She goes on to say that some Kamberri individuals intermarried with neighbouring Ngunnawal families from the 1880s and some descendants of such marriages re-identify in modern times as Ngunnawal. While maintaining their distinct association with the ACT and surrounds, members of Kamberri-Ngunnawal families might also identify personally as Ngambri, Ngunnawal, Walgalu or even Wiradjuri through their familial links to these other groups.[7]

References to the traditional Aboriginal inhabitants of the Canberra region are rare and often difficult to interpret.[8] However, the consistent impression is one of rapid depopulation and a desperate disintegration of a traditional way of life over little more than 50 years from initial white contact.[9] The disappearance of Aboriginal people from the tablelands was probably accelerated by the impact of European diseases, which may have included the smallpox epidemic in 1830, influenza and a severe measles epidemic by the 1860s.[10]

By the 1850s, the traditional Aboriginal economy had largely been replaced by an economy based on European commodities and supply points. Reduced population, isolation from the most productive grasslands and the destruction of traditional social networks meant that gradually the region's Indigenous culture and economy was centred on white settlements and properties.[11]

By 1856, the local 'Canberra Tribe', was reported to number around 70 individuals[12] and by 1872, recorded as comprising only five or six 'survivors'.[13] In 1873, one so-called 'pure blood' member was reported to remain, known to the white community as Nelly Hamilton or 'Queen Nellie'.

Frequently only 'pure blooded' individuals were considered 'Aboriginal' or 'tribal' by European observers, thus making possible the assertion of local tribal 'extinctions'. In reality, tribal identity remained integral to the descendants of the nineteenth-century Aboriginal people, many of whom continue to live in the Canberra/Queanbeyan/Yass region.

Early accounts of Aboriginal lifestyles in and comparable with the study locality describe aspects of a successful hunting and gathering economy and eventful social life and inter-group contacts. The material culture, which is partly reflected in the surviving archaeological record, included stone and wooden artefacts, skin clothing and bark-and bough-temporary dwellings, and scarred trees.[14]

## 3.3 Pastoral Land Use

Prior to the area being selected for a military base in the late 1930s, the land was used for pastoral activity. Grazing land from the properties of Fernhill, Hillside and Deasland (originally belonging to the Harcourt family, one of the earliest pastoral families in the area) was first acquired for the Federal Capital Territory from 1913. In 1938, the site was resumed for military purposes for the establishment of the transmitting station. The paddock names of the resumed areas reflect the land use from this pastoral era: 'Washpen' relates to sheep washing—possibly using the waters of Ginninderra Creek—and also perhaps sheep dipping. The 1915 maps of the area (Figure 3.1) show sheep yards, a shearing shed and shearers' quarters (to the northwest on the banks of the creek). The 'Receiving Paddock' may refer to a sheep mustering area, while the name 'Schoolhouse Paddock' records a growing population in the area and the provision of community facilities.[15] There were several schools established at various times and in a variety of locations in the Ginninderra region.[16] An interesting feature of the 1915 maps is the identification of a military beacon located on the summit of a hill just to the south of the area.

### 3.3.1 Travelling Stock Routes

Pastoral uses of the site include two travelling stock routes. Legislation for travelling stock routes was enacted under the *Stock Ordinance 1934* (Cwlth), which identified parcels of crown land that were made available for droving. Stock routes, still a part of modern droving, allow for the safe movement of animals between locations and provide alternative food and water. The original stock route from pre-1939 passed diagonally southwest to northeast across the site. With the conversion of the land function to a military base in 1939, the stock route was partly rerouted and fenced around the Naval Village to the east. This route continued in use until the 1960s (Figure 3.2). What remains of the stock routes can be seen in the layout of the western boundary near the Sailors' Mess. The extant security fence at the north east of the

site, around the former Naval Village aligns with a portion of the stock route from the pre-1939 pastoral era. Possible remnants include timber fence posts located along the route south of the Naval Village, and at the security fence near the ceremonial area.

Sheep continued to be grazed around the facility and in the aerial farm as a means of grass control. The wider landscape was either leased or share-farmed primarily for grazing, with some small portions cultivated with wheat or oats. In the years after 1945, the grasslands of the site were grazed under lease by local pastoralists, including members of the local Southwell family.[17]

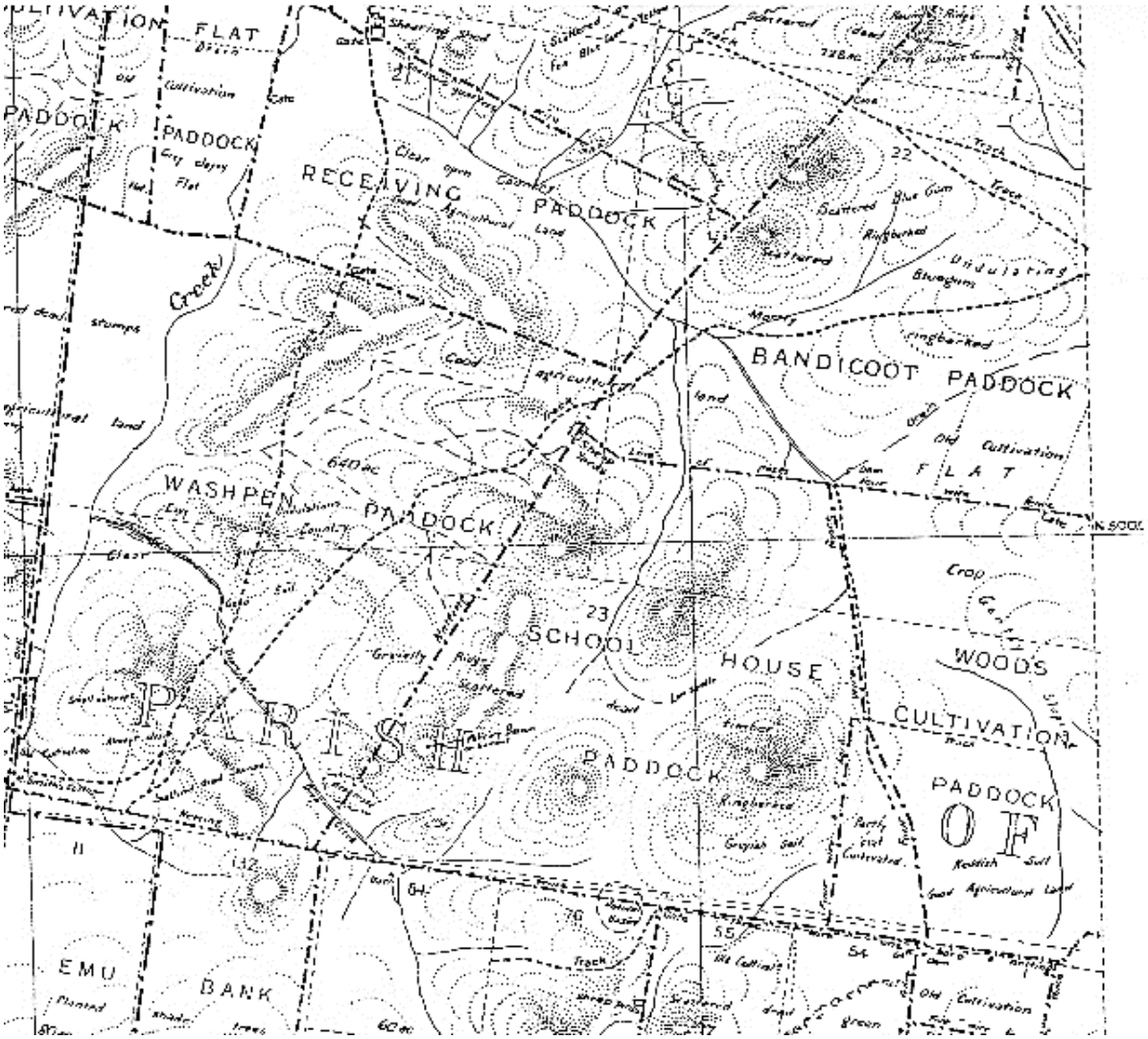


**Figure 3.1** 1915 Federal Territory feature map showing early place names of the site. (Source: National Library of Australia, sheet 3, G8981.G46)

The overwhelming pastoral characteristic of the land surrounding the newly created naval transmitting station was such that during the years of World War II, when the base was performing a vital role in the Allied war effort, it was disguised to look as much like an operational farm as possible. Small buildings were scattered through the landscape, including several brick observation stations/guard posts disguised variously as a haystack, rocks, a wood yard and a blacksmith shop. These were manned by members of the Volunteer Defence Corps (VDC) (also known as the Home Guard). There was also a small arms range for shooting practice north of the entrance road. These efforts indicate the pastoral

nature of the surrounding area and that the facility was an important wartime military base, the function of which required special defence strategies.[18]

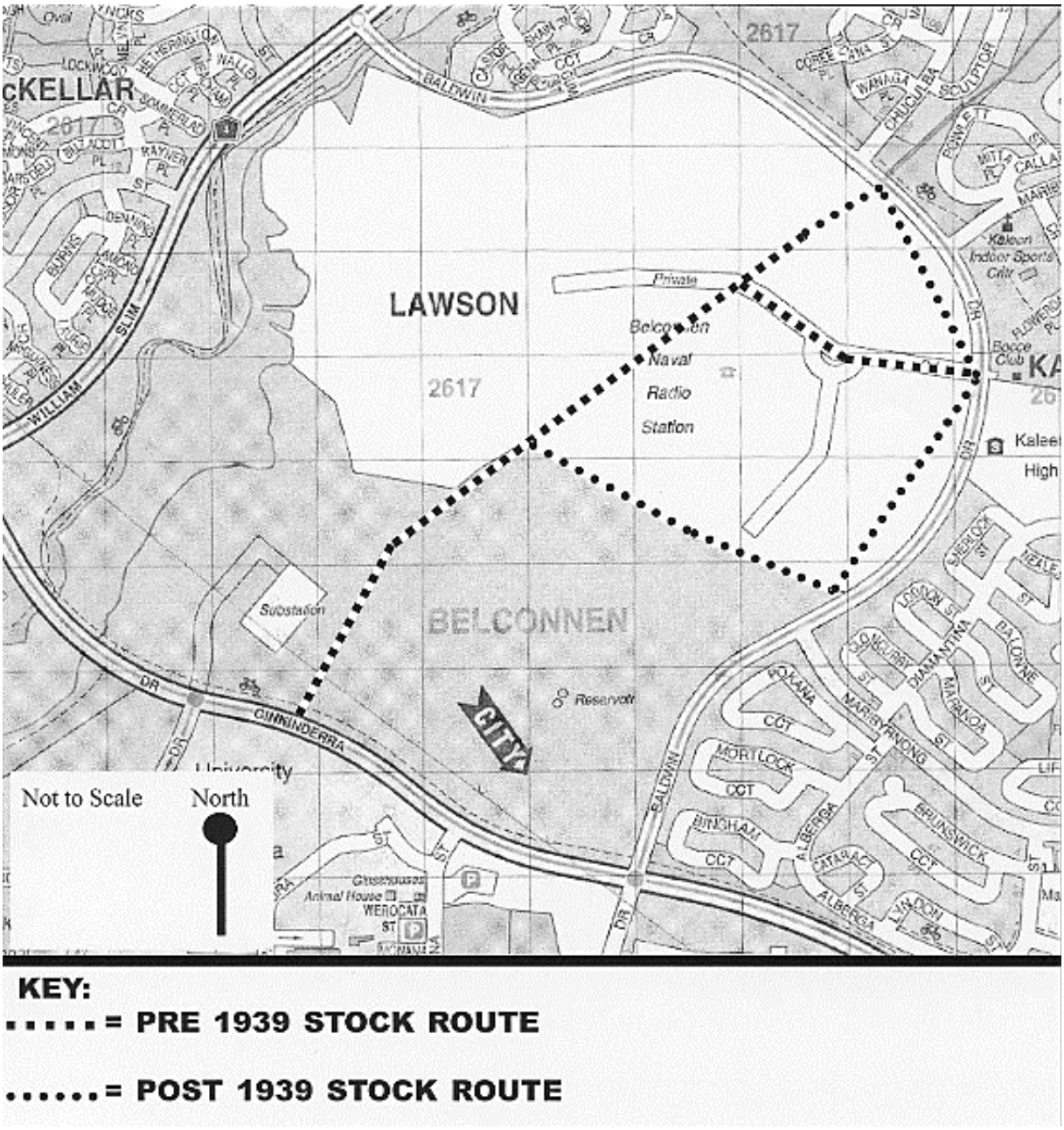


**Figure 3.2** Pre and post-1938 stock routes responding to the military takeover of the site in 1938. (Source: 2001 HA, Section 2.2, p 22)

## 3.4 Defence Land Use

### 3.4.1 Background

During the first half of the twentieth century, advances in wireless radio communication resulted in its increased importance for military use between shore bases and ships on active service. High-frequency transmissions were increasingly used for long-distance communication using the ionosphere to reflect the electromagnetic waves back to the earth's surface. However, this method could experience problems with fluctuations in the earth's magnetic field and regional and distance weather patterns. Low-frequency

radio transmissions, which essentially follow the curvature of the earth, were more reliable and were often able to travel farther if sufficient power was applied at the transmission source.

The Royal Australian Navy (RAN) originally established shore-based Australian radio facilities in Perth, Darwin and Townsville, and at Rabaul in Papua New Guinea. In 1925, the Australian Commonwealth Naval Board recommended that wireless stations be set up at Darwin and Canberra and in 1926 the RAN joined in planning by the British Admiralty for fleet commands for the then Imperial Navy. In 1937, amid the build-up to the World War II, the Commonwealth Government decided to establish transmitting and receiving stations in Canberra.[19] This would enable the RAN to provide a complementary facility to the British Royal Navy's communications station at Rugby in England, which was unable to transmit to ships in the Pacific or Indian oceans even using high-power low-frequency broadcasts.[20] The Australian Belconnen Naval Transmitting Station was set up specifically to join the United Kingdom in shared military objectives. Sites at Canberra, rather than Darwin, were chosen for the transmitting and receiving stations of the naval radio station, not only because it was the federal capital and seat of government, but also being 120 kilometres inland it was deemed safe from air, land and coastal attack—an important consideration for a key military communications centre. Indeed, Canberra was selected as the site for the federal capital because of its distance from the coast, making it relatively safe from enemy attack.

The Belconnen site was selected for the transmitting station and tested in 1937. The plans for the station were approved on 6 September 1938. In November of that year, work commenced at the transmitting station site by Standard Telephones and Cables Pty Ltd (STC) in conjunction with the Department of the Interior. It was decided that the station would be under the control of the Naval Board and that naval personnel would staff and operate the facility in times of both peace and military conflict.[21] The first naval ratings arrived in March 1939 to operate and guard the transmitting station where a 20-kilowatt high-frequency transmitter was being installed (the more powerful 200-kilowatt low-frequency transmitter was installed in 1942).

The plans for the Belconnen Naval Transmitting Station buildings were approved by Edwin Hubert Henderson (1885–1939) who was principal architect for the Department of Works and Railways.[22] The Belconnen Naval Transmitting Station building is a good utilitarian example of Henderson's Canberra work from this period which also included RMC Duntroon, West Block and Manuka Swimming Pool.[23]

The transmitting station was part of a paired naval communications facility, with a receiving station established in 1939 located near the Queanbeyan border. By necessity, the two facilities were located a sufficient distance from each other (18 kilometres) to avoid interference with each other's signals and also removed from the capital city to avoid interference with commercial radio transmissions. Working together, the British facility in Rugby and the Canberra facilities could communicate with British and Australian warships and merchant ships anywhere in the world.

The Belconnen Naval Transmitting Station was officially established on 20 April 1939. By 3 September, World War II was declared. The first operational transmission was made from Belconnen on 22 December 1939. The paired Canberra naval radio facilities were seen as an important milestone in the RAN's adoption of modern communications. The local newspaper the *Canberra Times* proudly reported that the Belconnen base was 'the most powerful short wave naval wireless station in the British Empire and the largest naval or commercial station in the southern hemisphere'.[24]

**Figure 3.3** Aerial image of the BNTS site showing the transmitting station and infrastructure, Naval Village, ceremonial area, windbreak and stock route, 1950. (Source: Geoscience Australia)

**Figure 3.4** Aerial view of the Naval Village, 1966. (Source: National Archives of Australia, A1500)

**Figure 3.5** View to low-frequency aerial towers with rhombic aerial in foreground, now dismantled and removed from site. (Source: 2001 HA)

**Figure 3.6** Omni vector aerial in 2000, now been dismantled. (Source: 2001 HA)

**Figure 3.7** Transmitting station complex and adjacent aerials in 2000. (Source: 2001 HA)

**Figure 3.8** Entry to the Sailors' Mess, 2000. (Source: 2001 HA)

### 3.4.2 Establishment of 'Bels 44'

Despite the new federal capital having been in existence for several decades at the outbreak of the World War II, the Canberra population was relatively small, numbering at around 12,000. Residential accommodation was primarily government houses supplemented by a small number of private cottages, hotels and guesthouses. Office accommodation was also limited and mainly of a temporary nature with demand outstripping supply as most Commonwealth Government departments transferred to Canberra. During the war years, the Defence Department administrative centre remained in Melbourne. Nevertheless, Canberra became an important defence base with about 2000 service personnel and their families based in the capital at the Royal Military College Duntroon, at the Naval Radio Station and a new Royal Australian Air Force (RAAF) base.[25]

Initially the transmitting station was run as a joint facility with the Number One Receiving Station at Harman (the RAN Wireless Telegraphy Station, Canberra). Lieutenant AD McLachlan was the overall Officer in Charge, A/Telegraphist, stationed at Harman and Warrant Telegraphist SJ Wilmetts was Officer in Charge at Belconnen. All personnel at Belconnen and Harman were part of Balmoral Naval Depot HMAS Kuttabul. It was only on 1 July 1943 that HMAS Harman was commissioned as an independent command with the site referred to as a 'subsidiary' to Harman.[26] Because of its relative isolation in the north of Canberra with poor local transport links, the transmitting station retained a degree of separation from the main Harman base despite receiving daily instruction from there for its communication function. The transmitting station's naval broadcast became known as 'Broadcast Bels' and the transmitter station became known as 'Bels 44' in reference to its location and to its use of a high-power, low-frequency (44 kHz) transmitter for omnidirectional transmission.

### 3.4.3 The Importance of Radio Signals Intelligence in World War Two

All wartime transmissions were encoded for security. Data was conveyed from Harman to Belconnen in Morse code or multi-channel broadcast with instruction on a pre-set frequency and destination direction. It was an irony that the Belconnen station, which was constantly communicating with the whole world through its radio transmissions, was locally isolated in its northern pastoral paddocks from the rest of Canberra.

From 1940, the transmitting station at Belconnen and the receiving station at Harman were in direct contact with Singapore, Cavite (in the Philippines) and Batavia (now Jakarta, Indonesia) until these bases were captured by the Japanese in early 1942. Continuous wireless transmission services were maintained with naval authorities in London, Colombo, Pearl Harbor, Guam, Wellington, Darwin, Perth and other centres in the Pacific. Communications were also facilitated between the naval authorities in each Australian state and the Naval Board in Melbourne.

In 1942, with the establishment of a low-frequency transmitter, the site became a critical part of the collection and dissemination of radio intelligence work on the Japanese Navy during the war in the Pacific.[27] The military information gathered by the radio signals at the Transmitting Station played an integral part of the Australian and Allied naval radio signals intelligence network.[28] Australian naval signals intelligence was involved in the monitoring of Japanese movements, and planning and transmitting the information gathered to the American command at Pearl Harbor. By monitoring Japanese communications in the Pacific, BNTS played an important role in the US code-breaking successes. Radio intelligence helped in the tracking of enemy submarines, both for offensive purposes and to secure the safety of shipping convoys. BNTS transmitted the successful outcome of the Battle of the River Plate in 1939, to Allied commands and its transmissions were of considerable value at Battle of Midway and Battle of the Coral Sea, both in 1942. The US military radio traffic that passed through

BNTS assisted with the identification of Midway as the centre of Japanese military missions. This battle, a defining naval battle and Allied victory, benefited from navy signals intelligence, as did the Solomon Islands campaign, 1942–1945.

**Figure 3.9** First stage of the transmitter building in early-1939. The original entry porch is visible, and the helix room is yet to be built. (Source: 2001 HA)

**Figure 3.10** Main entrance to the transmitting building, c1940/1941. The helix room has been added to north. (Source: Historical Collection from 2001 HA)

**Figure 3.11** The transmitter building with sheep grazing nearby, pre-1941. (Source: Tremlett Collection from 2001 HA)

**Figure 3.12** Construction of the 1941 extension at the front of the original entry and transmitter hall. (Source: Tremlett Collection from 2001 HA)

**Figure 3.13** Entry road to BNTS with cottages on the horizon, 1941. (Source: Tremlett Collection, 2001 HA)

### 3.4.4 Building the Naval Village and Forming its Landscape

The Naval Village was built to house naval personnel, including the electrical engineer in charge, maintenance engineers, riggers and other ratings, and their families. This was essential given that the

transmitting station needed to be operated 24 hours a day and due to its location in an isolated sheep paddock 18 kilometres from the city, which itself had limited facilities. The specifications for the transmitters decreed that they should be operational for 18 hours a day with six hours free for maintenance. For three weeks after the fall of Singapore in February 1942, the transmitters at the site were required to work 24 hours a day without a break.[29]

The layout of the station and village was influenced by existing landscape features such as the pastoral-era stock route, which was incorporated into the approach road of Baldwin Drive by an existing fenced lane (defining the boundary between the operational areas and the staff accommodation quarters) and by technical requirements that dictated that married quarters be sited behind a hill to reduce the absorption of radiation.[30] The planning included clear demarcation between functional and residential uses typical of navy establishments. The two areas were separated, also in accordance with navy tradition, by windbreaks. These living green screens provided visual amenity and much needed protection from the elements on the windswept pastures. The entry road from Baldwin Drive was marked by a Monterey pine (*Pinus radiata*) planted next to a (now removed) garage/transport building. The northern side of the roadway was lined with windbreak plantings of various native species, including bluegum (*Eucalyptus bicostata*), brittle gum (*Eucalyptus mannifera ssp. maculosa*) and sheoaks (*Casuarina sp.*). The physical separation between the functional zone and residential village was marked by a three-row windbreak made up of two rows of bluegums and one row of Monterey pines, planted at time of the transmitting station's establishment.[31] Another windbreak of pin oaks was planted before the 1950s to screen the village from the main entrance to the base.[32]

Water supply was one of the factors affecting the final selection of the site. In September 1938, a pair of concrete water reservoirs was located on the top of the hill (later known to as Reservoir Hill) south of the village to be fed from the Black Mountain reservoir.[33] A windbreak planting of Monterey pine was provided on the reservoir hill following the pastoral fence line. Aerial photography dates this planting between 1961 and 1972. Electricity was provided to the site from the Kingston Powerhouse in Canberra's south and a backup diesel generator was added when it was realised that operation of the site transmitters, especially on low frequency, drained the local power supplies.

Construction of the Guardhouse and Naval Village began in 1938. The entrance to the village was marked by a formal semicircular park with mixed plantings, which quickly became locally known as 'the D', marked by Tiller Crescent Street. The creation and designation of public parkland and private gardens is central to the Garden City movement[34] and can be seen in the inclusion of 'the D' at BNTS. A similar layout was included at Belconnen's sister site at Harman.

The Garden City movement was founded by British theorist and town planner Ebenezer Howard. He envisaged self-contained communities with both rural and urban facilities and greenbelts and established prototype cities in England in the early twentieth century. In practice, the ideals associated with the movement were tree lined avenues, public open space, playgrounds and a garden for each home.[35] The movement inspired suburban design in Australia, particularly in Canberra where the movement was reflected in Walter Burley Griffin's design of the Federal Capital with boulevards, parks and radiating avenues. Residential areas benefited from generous wide frontage, street plantings and private gardens and communal space.[36] At the BNTS site, these ideas were reflected in the planning of the Naval Village, which allowed for 26 timber cottages on generous garden blocks, communal recreational facilities and parkland. Formal plantings were established around public buildings and along main avenues with parks and residential areas having a more informal landscape treatment.

The cottages in the village were small and simple weatherboard homes with red tiled roofs built in the Federal Capital architectural style typical of Canberra in the 1920s and 1930s (Figure 3.14). The cottages were based on design types established for the site, such as Type V or Type Z.[37] While the cottages were of a degree of comfort and style in keeping with the time, they lacked efficient modern facilities such as proper heating and hot water. Cottages were allocated according to rank, with the Officer in Charge at the top of the street on Telegraphist Street and physically separated from the village proper by the open park space of the 'D'. In February 1939, approval was given for the erection of two Chief Petty Officers Quarters on Blocks 3 and 4 with seven married quarters for ratings to be built on Blocks 12 to 14 and 18 to 19 (Figure 3.20). As the houses were built and personnel began to arrive after March 1939, ornamental gardens were quickly established behind front hedges and fruit trees were planted at the rear as was the custom in Canberra at that time. In 1939, a Sydney Morning Herald article mentioned the considerable time navy rankings dedicated to the beautification of the village.[38] A large station vegetable patch was also established as a productive garden near one of the observation posts.

**Figure 3.14** No. 10 MacLeod Street in 1939. (Source: Fay Fox Collection from 2001 HA)

**Figure 3.15** Snow in MacLeod Street looking north, taken in the mid to late-1940s. (Source: Fay Fox Collection from 2001 HA)

**Figure 3.16** Cottages on MacLeod Street, 1951. (Source: Trove, NLA, 009209)

**Figure 3.17** Portion of overhead photograph of residential area in 1972. (Source: Historical Collection from 2001 HA)

**Figure 3.18** View of the village and recreation hall looking west, 1951. (Source: Trove, NLA)

**Figure 3.19** Children at the northern tennis court, c1949. (Source: Fay Fox Collection from 2001 HA)

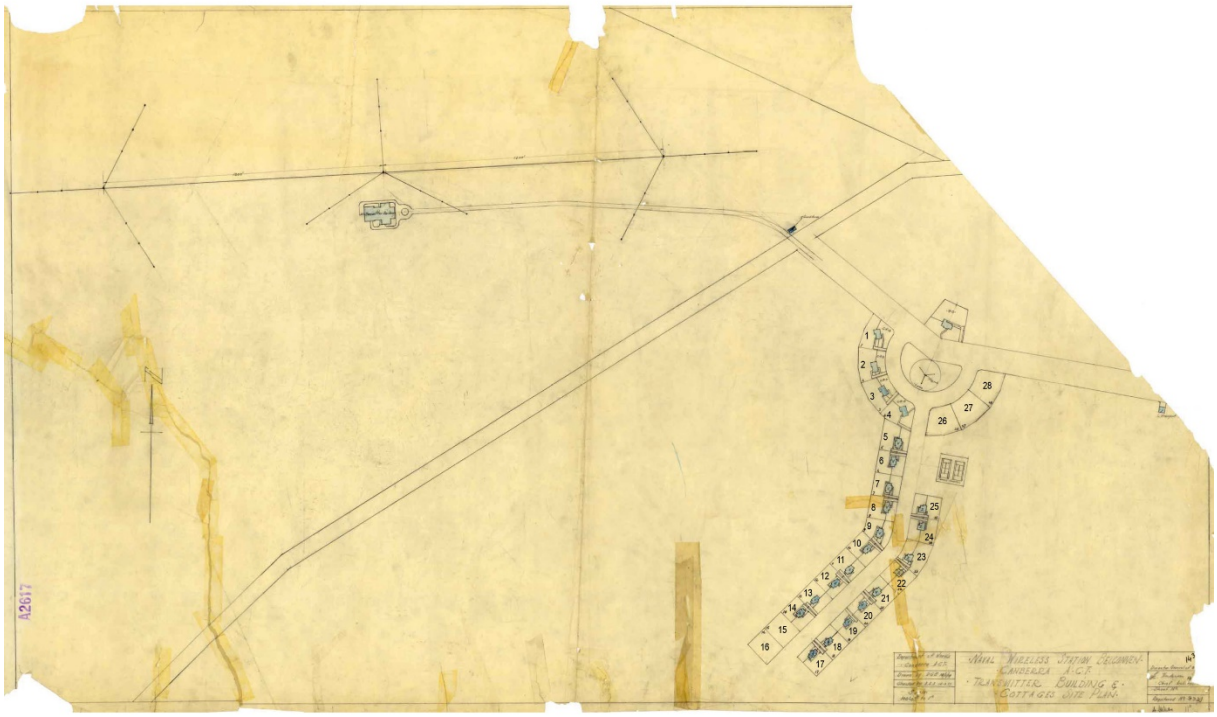


**Figure 3.20** 1939 'Naval Wireless Station Belconnen' transmitter, building and cottages site plan. (Source: National Archives of Australia, A2617, 7238860 with GML overlay)

In addition to the private accommodation, the village was equipped with community and sports facilities. This was again in accordance with prevalent navy village policy and in recognition of the site's isolation from the amenities that Canberra had to offer. A recreation hall became a shared facility for concerts, films, parties and other group activities (Figure 3.18). The village included two tennis courts established in February and April 1941, typical both of naval establishments and of this Garden City style of suburb development. The courts were initially lined with hessian to provide weather protection and at some point in the 1960s were sheltered by Arizona cypress (*Cupressus arizonica*), both to frame the facilities and to act as windbreaks.[39] Figure 3.20 marks two tennis courts at the south eastern location, however single courts were constructed at this location and at the northern end of the village, visible in Figure 3.3. A football field was established on the banks of Ginninderra Creek and by the early 1940s, a concrete cricket pitch was formed in the aerial farm to the north of the Guardhouse—the transmitters in that area had to be shut down before play.[40] Alongside the pitch is an aluminium shed that was removed from the

residential gardens in 1985 and used as a shelter in the open field. The location and material fabric of the tennis courts and cricket pitch are still visible in 2018.

During the war years, an air raid shelter was built near the southern tennis court,[41] although the exact location is now unknown and physical evidence is yet to be found.

The streets in the Naval Village were named for the two earliest residents who served at Belconnen and for the specialist function of the communications facility: Tiller Crescent, MacLeod Street and Telegraphist Street. Chief Petty Officer Telegraphist CG Tiller was one of the first to be posted to Belconnen (on 20 March 1939), returning later as Officer in Charge in 1956. Chief Petty Officer WR MacLeod worked and lived at Belconnen on three postings and was the last wireless shore operator in the RAN.

During the 1950s, a formal entry was established at the Baldwin Drive entrance to the site. It was constructed of white-painted red brick piers with flanking low curved walls. A military crest badge is reported to have been fitted to one of the piers. Additional formal plantings were made along the approach driveway.[42] The village was progressively landscaped with the settlement of married staff and an Officer in Charge.

### 3.4.5 Modern Transmitting Technology

Construction of the transmitting building complex and Guardhouse began in 1938, the same year as the village. Completed in 1939, the Guardhouse was the entry to the operational area of the transmitting facility and was manned by the Volunteer Defence Corps. It provided security for the technical equipment and its important wartime role. This protective function of the Guardhouse is exemplified by its enclosure within a protective low brick wall facing the entrance road. As was common in navy establishments, the Guardhouse was known as the 'Gangway'.[43] A ceremonial area and flagpole (the quarterdeck) were established adjacent to the Guardhouse. A screening of cypress trees was planted to border the area and has been allowed to grow to hide the view of the transmitter buildings from the quarterdeck.[44]

Plans for the transmitter building were approved in September 1938 by the Federal Capital Department of Works Chief Architect, E Henderson, and construction started in November. The brick transmitter hall was constructed in the Federal Capital architecture style (common to development of Canberra from the 1920s). The rendered and lime-washed brick building with red terracotta roof and restrained Art Deco style finishings set the tone for the further developments at the complex where the colour scheme and some distinctive design elements were retained and adapted sympathetically in modern additions.

The transmitting station was furnished with the leading technical equipment of its day. All the transmitting equipment was designed, commissioned, manufactured and installed by the Australian company Standard Telephones and Cables (STC Australasia) with the exception of the valves and insulators, which were imported from England.[45] Mellor has documented the history of the Belconnen Naval Transmitting Station in his volume of *Australia in the War of 1939–1945 The Role of Science and Industry*, the official history of the war of 1939–1945[46].

The transmitter and aerial systems established at the site included a series of smaller high-frequency directional aerials for specific communication to individual naval establishments and defence areas around the world. These high-frequency rhombic aerials were supplied and erected by STC mainly on guyed timber poles and were established throughout 1939.

These high-frequency transmitters were supplemented by a more powerful 200-kilowatt low-frequency (44kHz) omnidirectional transmitter, which was designed by STC in 1939 and constructed by STC and

John and Waygood in 1941. For its operation, an addition known as the helix room was built onto the transmission hall in 1940 and 1941 as a purpose-built room housing for the aerial loading coil and aerial tuning variometer (Figure 3.21 and Figure 3.22).[47] Particular adaptations were used for this specialist communications equipment building. Metal nails were replaced with timber dowels to fix the timber ceiling panels after the metal fittings conducted the high electrical current of the facility and burned the ceiling panels. The building foundations also attracted special treatment with alternating layers of concrete and cork to achieve stability and cushioning for the transmitting equipment.[48] Other technologically significant construction details to the helix room included embedded copper wires in the walls and ceiling to act as a protective Faraday cage and a fibreglass laminate window with corona rings at the point where the cable exited.[49]

The masts for the low-frequency transmitter aerials were designed and installed by the Melbourne firm Johns and Waygood in January 1941. They consisted of three guyed steel aerial towers, 600 feet (183m) high and set approximately a quarter of a mile (approximately 400m) apart sited in an east–west orientation to maximise transmission into the Pacific and Indian Oceans. They each had an internal steel ladder in a safety cage to facilitate aerial maintenance. Insulation and other electrical safety materials were also installed. The low-frequency aerial array became fully operational in February 1942 and the final installation of the low-frequency equipment in the transmitter hall was completed by 1943.[50]

In 1941, a small addition was constructed to a design by the Department of the Interior Senior Architect Orwin. It provided extended space for two new transmitters, a separate store for the mast gear, valuables store, valve room, instruction and change room, office and a verandah.

The Belconnen transmitter was designed to cope with the static noise problems associated with very long-distance transmissions and its low-frequency transmission was used to communicate with submarines because of the better penetration of radio waves under water.

An extensive earth mat of 144 thick radial copper wires was installed 23 centimetres (9 inches) below the ground along the line of the low-frequency aerial in an ellipse shape, 975.36 meters in length and 609.6 meters in width (3200 feet by 2000 feet radiating out from the central mast site. At the centre of the earth mat another 1.5-meter diameter (5-foot) ring of copper was installed.

Other lightning protection, insulators and radiation safeguards were installed.[51] Another safety measure was the installation of bomb-blast proofing built around the aerial feeder in the early 1940s.

Further information about radio transmitting technology and design is included at Appendix E along with a detailed description of the transmitters at the BNTS site and a discussion of their significance.

**Figure 3.21** Aerial loading coil located in the helix room at the transmitting station, 1961. (Source: National Archives of Australia, A1200, 11139796)

**Figure 3.22** Connecting links of the loading coil between a transmitter and its aerial. The stainless-steel globes prevent corona discharge. (Source: National Archives of Australia, A1200, 11139799)

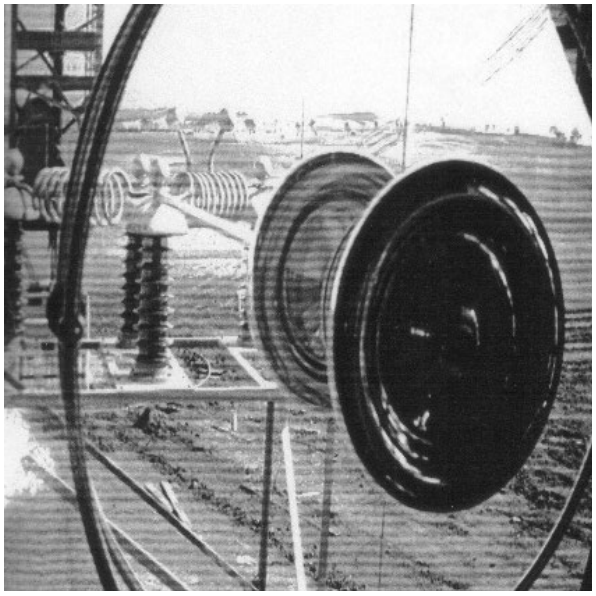

**Figure 3.23** View north through the aerial feeder panel as seen from the interior of the helix room, 1941. (Source: Tremlett Collection from 2001 HA)

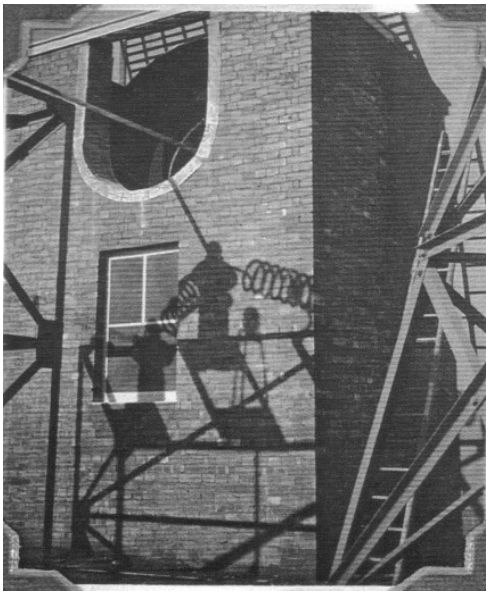

**Figure 3.24** Bomb-blast proofing situated around the aerial feeder, at the northern wall of the Helix Room, before render 1942. (Source: Tremlett Collection from 2001 HA)

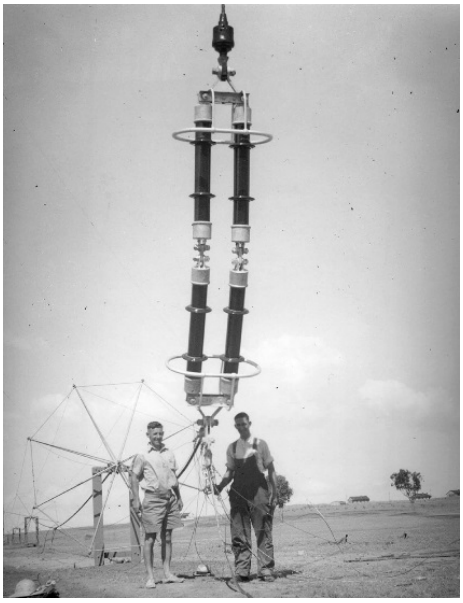

**Figure 3.25** The original aerials were installed from 1939–1943. This photo shows installation of the insulators and vertical array in the early period. (Source: Historical Collection from 2001 HA)

**Figure 3.26** Maintenance on the aerials outside the helix room, 1961. (Source: National Archives of Australia A1200/L40032.)

### 3.4.6 Postwar Expansion and Consolidation of Transmitting Facility

While the acute urgency of naval wireless communications diminished with the end of hostilities in 1945, the transmitting station's functions were still an integral part of RAN communications.

Developments at the site consolidated the settlement and updated the transmitting power. The station subsequently provided essential naval communications to the Australian fleet, particularly during the Australian naval involvement in the Korean War (1950–1953) and the Vietnam War (1962–1972).

In 1951, the transmitter building was extended with a two-part addition of brick including a new transmitter hall, aerial switch room and additional office rooms enlarging the original building significantly. During the 1950s, an evaporative cooling system was installed on the northern side of the area adjacent to the 1951 extension. The additions were in two parts, both brick but with different roof profiles and with corrugated asbestos-cement roofs rather than tiles. The red and cream colour scheme, feature brickwork and strong horizontal lines of the original wartime building windows were repeated to tie in the 1951 additions to the complex.[52]

In 1956, the station played a key role in passing the results of the 1956 Olympic Games in Melbourne to the world, relaying the transmission, which Bonshaw (a new receiving station erected next to Harman) received from Victoria.[53] With advances in technology many additions were made to the transmitting capacity at the site. Two bi-conical monopole high-frequency aerials were installed in 1958. In the 1960s, the rhombic aerials located in the aerial farm were overhauled and their timber poles were replaced with metal structures, the new support structures often utilising the original bases to maintain original aerial configuration and orientation. AWA (Amalgamated Wireless Australasia), Australia's largest and most prominent electronics organisation in the twentieth century designed and manufactured the low-frequency transmitter that was installed in the 1950s. A range of seven omni vector aerials was also erected between the late 1960s and 1970s and another 17 omnidirectional aerials in 1972 and 1973. Three remote-controlled rotating directional log periodic high-frequency aerials were constructed between 1978 and 1990. From 1959 to 1961, the low-frequency transmitter was overhauled and underwent a major redesign with water-cooled valves changed to air-cooled types, and with the power

output increased to 250 kilowatts to provide better operational communications with the RAN fleet. STC engineers again oversaw the project. Various towers, antennae and security fences were also erected.[54]

In 1972, a building for emergency generator equipment was added a short distance to the northern side of the transmitter complex. The design of this functional building was integrated with the complex by use of the same colour scheme of red and cream, but this time with the walls red and the roof a light colour.[55]

In 1983, the original timber-masted rhombic aerials were replaced with 14 rhombic high-frequency directional aerials formed in a diamond shape.[56] In 1986, five high-frequency transmitters were installed and the low-frequency transmitter was boxed in to reduce radiation risks. In the late 1980s, the original glass panel around the corona rings at the aerial feeder of the helix room was replaced with fibreglass as a precaution against radiation exposure. Further safety measures were implemented, such as lead sheeting to the floor at the base of the transmitter and an enclosure at the top reaching to the ceiling.[57]

### 3.4.7 Sailors' Mess and Domestic Decline of the Naval Village

While the transmitting facility was being upgraded, a substantial double brick building combining the sailors' accommodation and messing facility was built in April 1961 between the residential area and the Guardhouse, with separate messes for junior and senior sailors (referred to hereafter as the Sailors' Mess). It was typical of 1960s military accommodation/messing facilities and the standard of comfort was substantially increased from the accommodation offered in the early cottages of the village. The mess rooms were heated by piped hot water running under the built-in beds and laundry facilities had built-in ironing and sleeve boards.[58] The Sailors' Mess provided a social centre for staff at the site and enabled social interaction with the civilian community, especially members of the police force.

With the development of suburbs adjacent to the site in the 1970s and 1980s, there was a movement of naval personnel from the naval village to live 'ashore' in the more comfortable and modern accommodation this development offered. By 1980, only six of the cottages in the naval village were still occupied and the rest fell into disrepair. Some cottages were transferred to uses other than residential, an example being cottage 17, which became Training Ship (TS) Canberra for naval cadets.[59] By 1972, the front hedges along the residential streets had been removed as had the hedge surrounding the Guardhouse, perhaps to reduce maintenance with a falling population. The cottages, recreation hall and a garage/transport building at the entrance of the base were removed in 1989.[60]

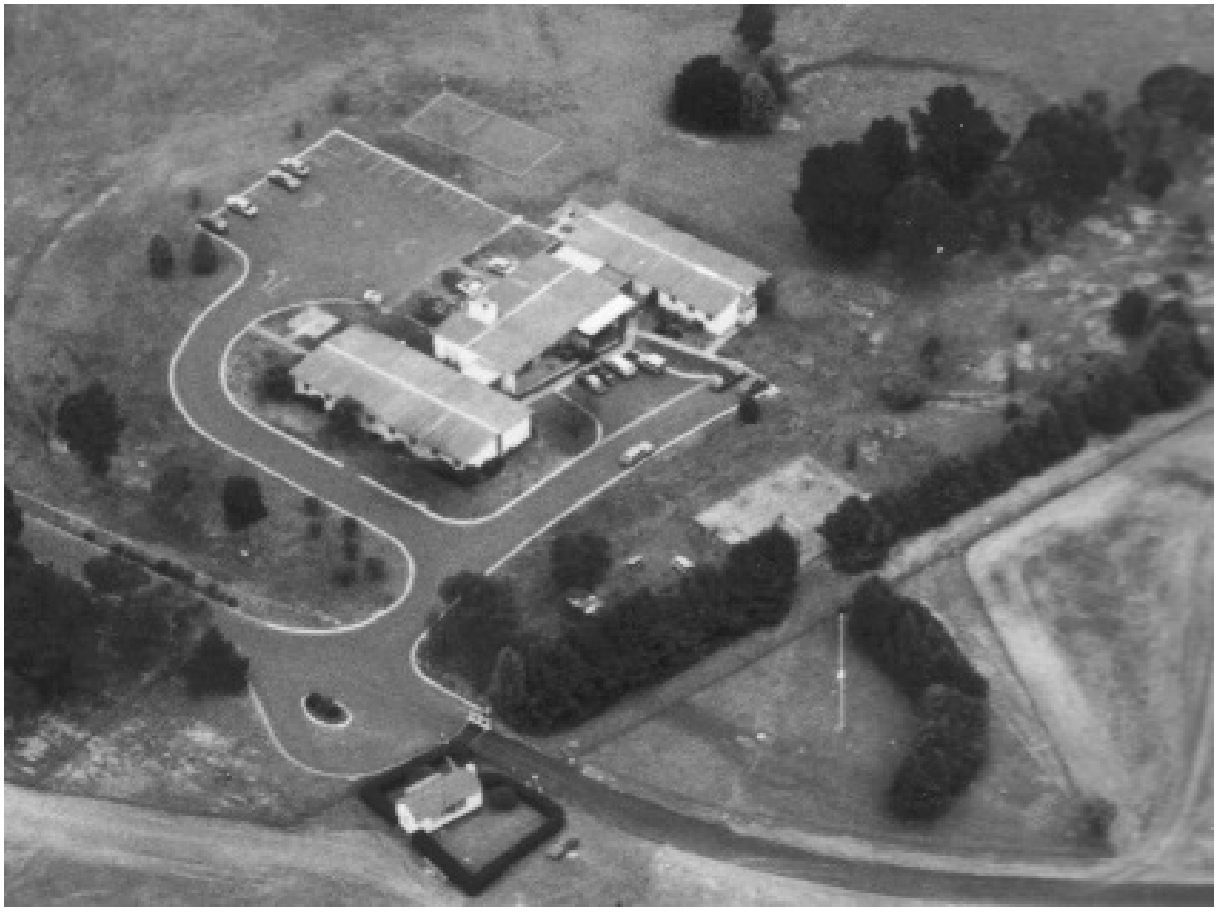

**Figure 3.27** Aerial view of the Sailors' Mess, ceremonial precinct and Guardhouse in 1972. (Source: 2001 HA)

By the 1990s, with the movement of personnel into alternative suburban accommodation and with the tightening of local drink-driving laws, the mess facilities experienced a fall in custom amongst the sailors. Economic necessity resulted in the two messes being combined into the first multi-ranked mess on a navy site. The RAN finally vacated the mess in 1996, removing the original built-in bedroom fittings.[61] The Sailors' Mess and accommodation block was leased to the Hope Christian Church.

In 1996, the RAN vacated the site and the management of the site was taken over by civilian contractors Rockwell Australia (later Boeing Australia). The number of employees decreased to 25 and finally 13 people. No-one lived on site any longer.[62] The horizontal and vertical aerial array was lowered from the steel towers, which remained in location.[63] Most of the original transmitting and related equipment was left on site.

In March 1998, the housing area of the former station was fully cleared of structures, with the exception of the Sailors' Mess opposite the Guardhouse and the tennis courts.

### 3.4.8 Decommissioning and Demolition

Technological advances in long-distance communications finally resulted in the station's transmitting capacity being superseded. The RAN decommissioned the station in June 2005, its function being taken over by the base at North West Cape in Western Australia. The last message was sent from Belconnen on 17 June 2005. On 30 June, Belconnen was decommissioned after 66 years of service to the RAN. Some equipment was relocated but much was seen to be obsolete and was left in the transmitter hall complex. In December 1997, the Australian Defence Force entered into an agreement with Boeing

Australia known as the High Frequency Modernisation Project and Boeing became the primary contractor for decommissioning the site.[64] On 20 December 2006, the 183m landmark towers that had supported the low-frequency aerial were demolished in a controlled fall because of concerns about safety, maintenance and security requirements, and they were removed for scrap metal (Figure 3.28). The remainder of the aerial farm was cleared of aerials, leaving only the footings and two aerials in place. By 2007, the Sailors' Mess unused and boarded up.

**Figure 3.28** Western aerial tower at Belconnen Naval Transmitting Station being felled on 22 December 2006. (Source: Peter Ellis from Wikipedia)

## 3.5 Purchase by Defence Housing Australia

In 2017, following decommissioning, the BNTS site was purchased by DHA for residential development. The site has not changed since Defence moved from the site as there is no current use, and residential development options are being explored by DHA. Until development takes place, only security and basic maintenance of the site is provided by DHA.

The exterior of the Sailors' Mess and ceremonial precinct remain intact as does the Guardhouse, and the mature plantings and treed windbreaks in the residential area are extant (in varying degrees of health). While the aerials have been removed, the transmitter hall complex is extant as is one small outbuilding to the north of the complex.

## 3.6 Lawson South Development

In 2018, the Suburban Land Agency (SLA) announced the sale release of a single 43-hectare site for Stage 2 of the Lawson South suburb.[65] The site is to the west of Lawson South and to the south west of

BNTS, on the banks of Lake Ginninderra. The site is zoned for high and medium residential, commercial and mixed-use development and could have up to 940 dwellings with a height restriction of six storeys. The appointment of a successful tenderer is planned for April 2019.[66]

In 2012, construction began on Stage 1 of the Lawson South suburb, the Territory owned land adjoining the southern boundary of the BNTS. The first blocks were planned to be released in 2010/2011. This was delayed because of the identified native grassland and the Golden Sun Moth habitat.[67] Eventually, the first land packages were sold in December 2013.

During the construction of the suburb, the *Pinus radiata* windbreak that originally ran from the residential area of the BNTS to the southern portion of the site was removed (Figure 3.30). In the Referral of Proposed Action for Lawson South Residential Development report prepared by the SLA,[68] the trees were highlighted as a 'historic windbreak' and marked for retention and incorporation into the open space network of Lawson South. New trees have been planted as a reinterpretation of the windbreak.

**Figure 3.29** 2004 aerial photo of BNTS showing the extended windbreak in what is now the Lawson South development. (Source: ACTmapi)

**Figure 3.30** 2018 aerial photo of the residential area with the Lawson South development at the bottom. The windbreak has been removed in Lawson South. (Source: ACTmapi)


**Figure 3.31** Lawson South to the right and Stage 2 Lawson to the left on Lake Ginninderra. (Source: SLA)

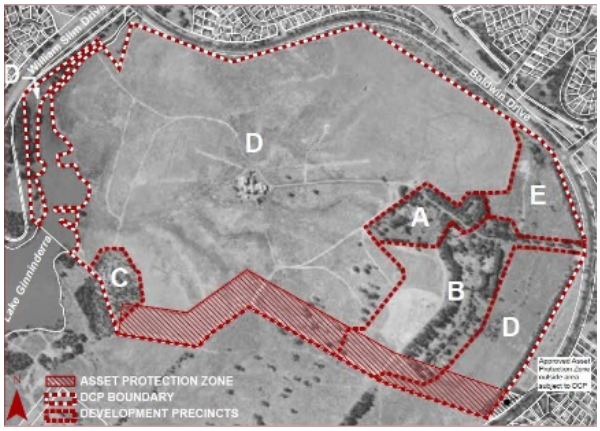


**Figure 3.32** Indicative Development Precincts, DCP 09/12 prepared by the NCA. (Source: DCP 09/12, NCA)

A Development Control Plan was prepared for the BNTS Site (DCP 09/12) by the NCA and approved on 12 February 2013.[69] It divides the site into five designated precincts in accordance with the natural and historical values of the area. The outcomes provide restrictions on land use to prevent environmental impacts on the identified heritage values. Precinct A includes the Sailors' Mess and the Guardhouse, which are both identified for adaptive re-use programs. Precinct B was deemed suitable for low and

medium residential development and the remaining landscape, including Precincts C, D and E, have been identified for conservation.

## 3.7 Summary Timeline

| Year | Key Event/Phase |
|---|---|
| ~ 443 million years ago | The Silurian Period begins, during which the ACT region starts to form. |
| ~ 25,000 years ago | Earliest evidence of Aboriginal occupation in the ACT region. |
| 1820 | The first Europeans visit the ACT region in search of the Murrumbidgee River. |
| 1823 | Joshua John Moore is the first European to settle in the Canberra, establishing a station at Acton on the Molonglo River. |
| 1850s | The traditional Aboriginal economy is largely replaced by an economy based on European commodities and supply points. |
| 1896 | Italian physicist Guglielmo Marconi, the 'Father of Radio', invents the wireless telegraph. |
| 1905 | The *Wireless Telegraphy Act 1905* is introduced in Australia. |
| 1911 | Proclamation of the ACT border. |
| 1913 | Site acquired by the Commonwealth Government.<br>Canberra is announced the new Federal Capital.<br>The Harcourt family use the site of the future Belconnen transmitting station for pastoral purposes. |
| 1925 | Imperial Defence Committee meetings reviewing naval wireless communications in Australia.<br>Australian Commonwealth Naval Board recommends that wireless stations be set up in Darwin and Canberra. |
| 1935 | Defence meeting minute detailing support for the locations of Darwin and Canberra in the interests of supporting communications in a global context for the British Empire. |
| 1937 | Surveying of sites in Canberra for communications stations. The Belconnen site is selected and tested. |
| 1938 | In September, government approval is given for the construction of a transmitting station at Belconnen and a receiving station, Harman, near the Canberra–Queanbeyan border.<br>In November, Standard Telephones and Cables Pty Ltd, in conjunction with the Department of the Interior, begins construction at Belconnen.<br>Construction of the naval village and Guardhouse to the east of the transmitting station begins. |
| 1939 | Construction on Belconnen's sister site, the Harman receiving station, begins.<br>In March, the first houses in the naval village are built and the first naval ratings arrive to operate and guard the transmitting station.<br>The Belconnen Naval Transmitting Station is officially established on 20 April.<br>In September, World War II is declared.<br>In December, the first operational transmission is made from Belconnen. |
| 1941 | Mast for the low-frequency transmitter aerials are installed by Melbourne firm Johns and Waygood.<br>A small addition is constructed to the transmitting station, providing space for two new transmitters, a separate store for mast gear, valuables store, valve room, instruction and change room, office and verandah.<br>Tennis courts are established at the naval village. |
| 1942 | In May, the Battle of the Coral Sea takes place.<br>In June, the Battle of Midway takes place.<br>A more powerful 200-kilowatt low-frequency transmitter is installed at Belconnen. |
| 1945 | World War II ends. |

| Year | Key Event/Phase |
|---|---|
| 1950s | The Korean War begins in 1950 and ends in 1953.<br>A formal entry to the Belconnen site is established at the Baldwin Drive entrance. |
| 1951 | The transmitting building is extended with a new transmitter hall, aerial switch room and additional office rooms. |
| 1956 | The transmitting station plays a key role in transmitting the results of the 1956 Olympic Games on Melbourne to the world. |
| 1958 | Two bi-conical monopole high-frequency aerials are installed. |
| 1960s | The Vietnam War begins in 1962 and ends in 1972.<br>The rhombic aerials in the aerial farm at Belconnen are overhauled and their timber poles replaced with metal structures. |
| 1961 | A combined brick sailors' accommodation and messing facility is built between the Guardhouse and naval village. |
| 1972 | A building for emergency generator equipment is added near the transmitter complex.<br>Residents of the Naval Village begin to leave, moving to houses in the developing surrounding suburbs.<br>The front hedges along the residential streets of the naval village are removed. |
| 1980 | Only six of the cottages in the naval village remain occupied. |
| 1983 | The original timber-masted rhombic aerials are replaced with 14 rhombic high-frequency directional aerials formed in a diamond shape. |
| 1985 | Five high-frequency transmitters are installed and the low-frequency transmitter is boxed to reduce risks from radiation. |
| 1989 | The cottage, recreation hall and garage/transport building at the entrance to the base are removed. |
| 1995 | The Golden Sun Moth habitat is included in the Register of the National Estate. |
| 1996 | The Navy vacates the site and management is taken over by civilian contractors Rockwell Australia (later Boeing Australia).<br>The Navy vacates the Sailors' Mess due to a decline in patronage. Hope Christian Church becomes the tenant of the building. |
| 1998 | By March, the naval village is cleared of structures with the exception of the Sailors' Mess, Guardhouse and tennis courts. |
| 2000 | The Wildlife Research and Monitoring Division of Environment ACT sets up permanent sample plots and monitoring stations for the Striped Legless Lizard, Eastern Lined Earless Dragon and the Golden Sun Moth, and makes a detailed study on the *Themeda* grasslands to the east of the naval village of the BNTS site. |
| 2001 | University of Canberra prepares the first report on the BNTS site that incorporates the natural and cultural values of the site.<br>NH Scarlett introduces the taxonomic name *Lepidium ginninderrense* and the common name Ginninderra peppercress as a reference to the species type locality. |
| 2002 | The BNTS site is included in the Register of the National Estate as the 'Royal Australian Naval Transmitting Station' (Place ID: 100639). |
| 2004 | Transfer of Register of the National Estate entries for the Golden Sun Moth and the 'Royal Australian Naval Transmitting Station' to the Commonwealth Heritage List. |
| 2005 | In June, the BNTS site is decommissioned as part of Defence's High Frequency Modernisation project. |

| Year | Key Event/Phase |
|---|---|
| 2006 | In December, mast and aerials at the site are removed.<br>The 'White Box—Yellow Box—Blakely's Red Gum Grassy Woodland and Derived Native Grasslands' is listed under the EPBC Act as a nationally threatened ecological community. |
| 2007 | The Sailors' Mess is boarded up.<br>In November, an Aboriginal archaeological survey of the site is undertaken by Navin Officer Heritage Consultants. |
| 2012 | Construction of residences begins on Stage 1 of the Lawson South development. |
| 2013 | The National Capital Authority approves Development Control Plan 09/12 for the site at Belconnen. |
| 2017 | Defence Housing Australia purchases the Belconnen site from the Department of Defence. |
| 2018 | The ACT's Suburban Land Agency announces the release of land for Stage 2 of the Lawson South development. |

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# 4.0 Understanding the Place—Physical and Other Context

## 4.1 Introduction

This section provides a summary of the physical context of the BNTS site. It is informed by the 2009 HMP with updated and revised information, where relevant.

## 4.2 Site Description

### 4.2.1 Setting

The BNTS site is located in the northern Canberra suburb of Lawson. The site is surrounded to the north and east by the residential suburbs of Giralang and Kaleen and to the south by the new residential development of Lawson South. The site comprises the buildings associated with the transmitting station, the Naval Village and adjacent open lands.

The BNTS site is one of few relatively undeveloped landscapes in the Belconnen area since the rapid development of new residential suburbs from the 1970s. The development that occurred at the site in the 1930s and 1940s responded to its isolation in a rural setting and its function as a secure military facility. This context is evident in the setting of the site today and contrasts sharply with the surrounding high-density housing and extensive road network.

#### Views and Sight Lines

During the site inspections, GML identified important views to and from the site that emphasise the site's attributes, provide a sense of arrival and best reflect the isolated setting of the site despite the surrounding contemporary suburban infill.

*Main Entrance*

The main entrance to the BNTS site is located off Baldwin Drive, which is runs parallel to a windbreak of eucalypts. The windbreak begins at roughly the same point as the Naval Village windbreak to the south and continues to the intersection with Maribyrnong Avenue. A single road leads from the entrance gate on a slight incline to the formal entrance defined by white-painted brick piers with flanking low curved walls.


**Figure 4.1** Gated entrance to main drive, located off Baldwin Drive.

**Figure 4.2** Formal entrance to the BNTS site.

### *Naval Village*

The Naval Village is easily recognisable with its established windbreak to the west, the semicircular 'D' park at the entrance and the main tree lined avenue.

**Figure 4.3** Main avenue of the Naval Village.

**Figure 4.4** View to the windbreak. The Naval Village is located behind.

### *Guardhouse to Transmitting Station Complex*

A single road leads from the Guardhouse to the transmitting station complex, which remains in its isolated setting.

**Figure 4.5** Drive leading to the transmitting station from the Guardhouse.

### *Reservoir Hill*

Before its partial removal for the Lawson South development, the windbreak extended from the top of Reservoir Hill and continued along the length of the Naval Village. The hill affords excellent views to the transmitting station complex within its grassland setting and to the windbreak adjacent to the Naval Village.

**Figure 4.6** Looking northwest to the transmitting station from Reservoir Hill.

**Figure 4.7** View to the windbreak from Reservoir Hill in Lawson South.

Prior to their removal, the 600-foot aerial towers located in the aerial farm around the transmitting station were an important and easily recognisable landmark in the Belconnen area, visible from many angles around the northern Belconnen suburbs.

### 4.2.2 Topography

The BNTS site is characterised by undulating landscape comprising valley floor and basal slope topographies (Figure 4.8 and Figure 4.9). The westernmost portion of the site adjacent to the eastern arm of Lake Ginninderra consists of floodplain bounded by spurlines running north–south (Figure 4.10 and Figure 4.11). The underlying bedrock is visible as outcrops over these spurlines.

A small hill representing the highest point within the site is situated in the southeastern portion (Figure 4.12 and Figure 4.13). The hill is associated with minor spur and drainage lines to the south. This area contains a number of exotic and native tree species associated with the former village gardens. A gentle gully runs through an area of dry *Themeda* grassland to the southeast of the hill.

Two creeklines traverse the site. The first is situated in the western and central portions existing as an extension off the eastern arm of Lake Ginninderra. The creek runs in a general northeast–southwest alignment and the surrounding landscape is characterised by gentle slopes and open grassland. The second creekline is situated in the eastern side of the study area running parallel to Baldwin Drive. The land adjacent to the creek consists of moderately sloping gullies and grassland.

**Figure 4.8** View looking northeast to the site entrance road in the eastern portion of the site by the former Naval Village.

**Figure 4.9** View from the eastern portion of the site by the former Naval Village looking directly east to Baldwin Drive, obscured by the treed windbreak.

**Figure 4.10** View from the outcrop in the western portion of the site looking northwest towards the eastern arm of Lake Ginninderra.

**Figure 4.11** View from the outcrop in the western portion of site looking west towards the eastern arm of Lake Ginninderra.

**Figure 4.12** View looking southwest to South Lawson from the windbreak to the west of the former Naval Village.

**Figure 4.13** View looking north to the Sailors' Mess (obscured by trees) from the windbreak.

### 4.2.3 Geology

Bedrock varies across the study area and can be grouped according to the following geological units:

- the hill (highest point) and associated northern and southwestern ridgelines consist of Ordovician Pittman formation and the Acton shale member comprises shale, siltstone and sandstone;
- the western portion of the study area is characterised by Black Mountain sandstone and State Circle Shale formations comprising younger sandstones, siltstones, mudstones and shales than those present in the east;
- gossan outcrops associated with minor granitoids are present on the north–south spurline in the west and on a small knoll in the southwestern corner of the study area;[1]
- tertiary and quaternary sediments are found with the very western portion close to the upper reaches of the lake;[2] and
- alluvial deposits are found adjacent to the lake.

The soils of the study area are generally very shallow, deriving from the underlying, predominantly shale-and-sandstone bedrock. Soils become deeper closer to drainage lines and within gullies.

### 4.2.4 Land Use Disturbance

Prior to 1930, the site was characterised by partially cleared grazing paddocks with some portions given to various crops.[3] European land use since then has resulted in a variety of impacts and widespread disturbance and modification to the ground surface. These include:

- clearing of native vegetation and forest cover associated with bush grazing and pastoral fencing;
- full clearance of forest vegetation to create agricultural grasslands;
- establishment of introduced grass species for improved pastures;
- ripping for afforestation;
- an indeterminate degree of soil erosion and gullying resulting from European land use practices;
- strip-clearing for fire breaks;
- clearance along stock routes and under overhead powerlines;
- the formation and construction of tracks for vehicles and bicycles, including quarrying for road material;
- dumping of fill in low-lying areas;
- installation of aerials and underground antenna networks for naval communication;
- installation of above ground and underground services in association with the Naval Village including water and sewerage pipelines, transmission lines, and telecommunication cabling;
- excavation of landfill area;
- construction of reservoirs; and
- terracing along the western margins adjacent to William Slim Drive and grooming of Lake Ginninderra foreshore.

## 4.3 Vegetation and Landscape Characteristics

### 4.3.1 Background

According to modelling in Pryor (1938)[4] and GML (2007)[5], mapping in the ACT Native Grasslands Conservation Strategy[6] and observations in Crawford and Rowell,[7] the area was part natural temperate grassland and part grassy woodland in its pre-European state. The majority of the woodland, long since cleared, has reverted to natural grassland. The site has been documented as an important focus for nature conservation in the ACT. The ACT Native Grasslands Strategy categorises the area as having 'high conservation significance'.[8] Sites in this category represent the largest remaining areas of natural temperate grasslands, key habitat for threatened grassland species.

Within the site are a number of grassland associations making up a large natural temperate grassland community. The central area of 112 hectares is predominantly natural grassland and is characterised by large areas dominated by *Austrodanthonia* grasses (Wallaby Grass) and forbs. This provides a primary habitat for the endangered Golden Sun Moth (Figure 4.14). Additionally, populations of Striped Legless Lizards (Figure 4.15) and Perunga grasshoppers (Figure 4.16) have been recorded.. However, there are no published recordings of this species within the site. The central natural temperate grassland also

provides habitat opportunities for other significant species. The site is the type location[9] for the Ginninderra peppercress, which is restricted to a small area in the west of the site.

**Figure 4.14** Golden Sun Moth. (Source: WSP 2018)

**Figure 4.15** Striped Legless Lizard recorded under a roof tile at BNTS. (Source: WSP, 2018)

**Figure 4.16** Perunga Grasshopper. (Source: WSP, 2018)

**Figure 4.17** Canberra Raspy Cricket. (Source: WSP, 2018)

The western section of the site is enclosed by a kangaroo-proof fence. In its natural state, the grasslands and grassy woodlands of the site would have supported a population of eastern grey kangaroos, which would have ranged over this and large adjoining grassland areas as food and water resources fluctuated. Grazing by kangaroos was one of the regulating factors of biomass control in the extended grassland system of the region, which helped maintain conditions for forb, reptile and insect populations. The fencing of the property as a security measure and location and urbanisation of surrounding lands has changed this ecosystem balance. Because of the captive and increasing population of kangaroos on the site, high grazing pressure is now the dominant factor affecting the natural temperate grassland community. However, population control including culls and fertility control programs have been implemented in the site since 2008 to help control this, as recommended by an expert panel of scientists in 2007. [10] Defence undertook a cull in 2009 with 400 kangaroos killed onsite. The program attracted international media attention and was subject to local protests.[11] The ACT Government has carried out yearly kangaroo culls since this time in order to manage the population and protect threatened ecological communities.[12]

A speargrass (*Austrostipa*) grassland of about 1.7 hectares is located in the northeastern corner of the site, bordering Baldwin Drive. The remaining area of grassland, of about 8.3 hectares, is found in the eastern part of the site between the former Naval Village site and Baldwin Drive. It is a secondary *Themeda* (kangaroo grass) community that was found not to possess natural values in the late 1990s literature due to agricultural grazing. However, it has been reappraised in recent literature due to its

recovery and as a habitat value for Striped Legless Lizards and Perunga grasshoppers. Targeted surveys undertaken from September to December in 2018 by WSP have confirmed the presence of a current population of Striped Legless Lizard in this community. Reporting on these results and subsequent management plans are being drafted and will be published in the future.

Wetland vegetation associated with the upper reaches of Ginninderra Lake and the mouth of Ginninderra Creek comprises cumbungi reed stands fringing the water and a herbfield of rushes on the terrestrial sides. The wetland provides potential habitat for Latham's Snipe, which is known to occasionally use the site and nearby wetland areas.

In the southeastern corner of the central area, to the south and west of the Naval Village, is a woodland stand of yellow box and Blakely's red gum.

### 4.3.2 Endangered Ecological Communities

The natural heritage values of the part of natural temperate grassland dominated by *Austrodanthonia* and the habitat it provides for the Golden Sun Moth and Perunga grasshopper within the central area of the site has been well documented in the literature. There has been a tendency in the literature to present the Golden Sun Moth habitat as the primary value for the natural temperate grassland and to concentrate on management issues and practicalities within the context of the urban development planned for the site and setting the reserve boundaries (for example, HLA-Envirosciences[13] and Rowell[14]). However, in addition to providing habitat for the endangered moth, the natural temperate grassland community has important value as an endangered ecological community individually and it occurs in a number of forms across the site. The largest is the *Rytidosperma* association. In addition to the *Austrodanthonia* association, there are areas of *Austrostipa*-dominated grassland and a dry *Themeda* grassland. All three types are part of the natural temperate grassland community and all are covered by the listing as an endangered ecological community under the ACT *Nature Conservation Act 2014* (NC Act) and the EPBC Act. The inclusion under the EPBC Act makes the protection and recovery of the endangered community a matter of National Environmental Significance (NES) under the provisions of that Act.

The site has been documented as a significant representative example of the natural temperate grassland and as an important focus for nature conservation in the ACT. The remnant natural temperate grassland in the place is representative of once-widespread vegetation characteristic of the limestone plains of the Canberra region.

Similarly, the merits of the yellow box/Blakely's red gum stand on site have been discussed in the literature. Its exclusion in the ACT Action Plan No. 10[15] and history of agricultural grazing which, until recently, has prevented eucalypt regrowth, has resulted in this woodland area being given low value.

In May 2006, 'White Box—Yellow Box—Blakely's Red Gum Grassy Woodland and Derived Native Grasslands' was listed under the EPBC Act as a nationally threatened ecological community. The criteria for inclusion in this community provided by the former Department of Environment and Heritage (now Department of the Agriculture, Water and the Environment)[16] include floristic characteristics and patch size but not community structure. On the basis of these criteria, the woodland at the site qualifies as a threatened ecological community under the EPBC Act and should be treated as a NES matter under the provisions of the Act.

### 4.3.3 Threatened Flora Species (Listings)

The 2001 Natural, Cultural and Military Heritage Assessment report contained a list of 321 plant species recorded during the study or noted from the literature. Using criteria of significance adapted from Williams et al,[17] site survey data and observations of species' rarity or uncommon occurrences in

Crawford and Rowell,[18] the report identified one species of national significance, six species of state significance, 15 species of regional significance and nine species of local significance. Further vegetation mapping and condition assessments are currently underway and will be published in a series of ecological reports and management plans.

The outstanding single floristic value on site is the Ginninderra peppercress (*Lepidium ginninderrense*). The site is the type location for the species, which is restricted to a small area of impeded drainage on the Ginninderra Creek floodplain in the west of the site. The area is listed as critical habitat for the species under the EPBC Act and the species has been listed as a threatened species under both the ACT NC Act and the EPBC Act. The species and its habitat are NES matters under the provisions of the EPBC Act and recovery plans for the species have been prepared and published by the then Commonwealth Department of Environment, Water, Heritage and the Arts[19] (now DAWE) and the ACT Government.[20] The total known distribution of this species was once only a small area of the site, which may indicate a particular habitat/landscape characteristic of the grassland/floodplain ecotone in this area.[21] However, the species has since been recorded at North Mitchell Grassland, Franklin, Giralang, Harrison and McKellar.[22]

The Ginninderra peppercress habitat within the site is enclosed by two fenced areas that exclude kangaroos and other grazers. This area had dense cover of vegetation dominated by weed species. This species was not recorded in the site in surveys in 2018 and has not been recorded as occurring within the site in available published material since 2001.

Ginninderra peppercress is known from only a few sites and additional research is required to understand its habitat preference and ecology for conservation management.[23] The site also represents an opportunity for further research on the threatened natural temperate grassland community that was originally widespread and the ecology of the threatened grassland species.

### 4.3.4 Threatened Fauna Species (Listings)

The grassland within the site provides a primary habitat for a range of rare and threatened grassland fauna (Table 4.1).

The Golden Sun Moth (*Synemon plana)* is included as an endangered species under the NC Act and listed as critically endangered on the EPBC Act. The CHL citation for the site notes the Gondwanan origins of the family of *Synemon* moths.

The Striped Legless Lizard (*Delma impar)* is included as vulnerable on the NC Act and as vulnerable on the EPBC Act. The ACT Action Plan No. 7 (Golden Sun Moth)[24] and No. 2 (Striped Legless Lizard)[25] were prepared in the late-1990s and have since been updated.[26] Additionally, they are both NES matters under the provisions of the EPBC Act.

The Perunga grasshopper (*Perunga ochracea*) is listed as a vulnerable species under the ACT NC Act only. The ACT Government prepared the 1999 ACT Action Plan No. 21 (Perunga Grasshopper) which was updated in 2017.[27]

The potential habitat for Latham's snipe has previously been indicated by six recordings within 2km of the site wetlands.[28] A survey released in April 2008 included four new sightings on the site itself.[29] A 2016–2017 survey by Davey and Gould[30] recorded Latham's snipe at 14 sites across Canberra. Again, sittings were recorded at locations within 2km of the site, including at Ginninderra Creek on the site's western boundary. This data was included in the Action Plan for Listed Migratory Species prepared by the ACT Government in 2018.[31] As it is a migratory bird covered by the JAMBA[32] and CAMBA[33] conventions, the EPBC Act is clear on the obligation to protect this species and its habitat.

**Table 4.1** Threatened and Significant Fauna Species.

| Scientific Name | Common Name | Nature Conservation Act | EPBC Act | Occurrence Within Site |
|---|---|---|---|---|
| *Perunga ochracea* | Perunga Grasshopper | Vulnerable | – | Recorded within natural temperate grassland areas of the site. |
| *Synemon plana* | Golden Sun Moth | Endangered | Critically endangered | Recorded in high numbers within the natural temperate grassland areas. |
| *Delma impar* | Striped Legless Lizard | Vulnerable | Vulnerable | Recorded in high numbers in the Themeda grassland in the eastern section of the site. Low numbers also recorded at two locations within the central northern section of natural temperate grassland. |
| *Cooraboorama canberrae* | Canberra Raspy Cricket | – | – | Recorded within natural temperate grassland areas of the site. |
| *Gallinago hardwickii* | Latham's Snipe | – | Migratory | Potential habitat for Latham's Snipe has previously been indicated by 10 recordings within 2km of the site.[34] As it is a migratory bird covered by the JAMBA[35] and CAMBA[36] conventions, the EPBC Act is clear on the obligation to protect this species and its habitat. |

## 4.4 Aboriginal Heritage

### 4.4.1 Introduction

The Aboriginal heritage values of the BNTS site have been investigated on a number of occasions including:

- an initial assessment by University of Canberra in 2000;
- an updated assessment in 2008 by Navin Officer Heritage Consultants for GML Heritage for the preparation of an HMP (2009) for the site; and,
- a reassessment of the archaeological values through a test excavation program conducted by GML Heritage in 2019.

The outline below, reviews the previous reports along with the updated test excavation analysis. Both the 2009 HMP and the recent reassessment included consultation with the local Aboriginal community. Their views on both the tangible and intangible cultural values of the site and its surrounds are included in the discussion below.

### 4.4.2 Archaeological Context

Archaeological surveys conducted in the Belconnen, central and northern Canberra area have resulted in the identification and recording of numerous archaeological sites. Stone artefact scatters are the most frequently occurring of these sites, providing insights into the broad land use patterning of Aboriginal occupation of the landscape in the past. Other less common site types that have also been identified in the region are scarred trees, grinding grooves, a possible ochre source, and stone raw material sources.

Early records of archaeological evidence in the Canberra area are largely the observations made by a limited number of interested local individuals and artefact collectors.[37] Based on these records a large number of sites were recorded in association with sand bodies situated within, and adjacent to, the fluvial

corridor of the Molonglo River. There were almost certainly smaller sites situated along the small tributaries that drained into the Molonglo. However, no accurate information remains, and subsequent development has precluded later and more systematic investigations.

Flood comments that the Pialligo area appears to have been the largest local Canberra site, followed by Black Mountain Peninsula.[38] She notes that:

> *… in the cold months the Aborigines would have moved out of the frost plains either onto slightly higher ground, such as the camps at Mt Ainslie, Black Mountain or Mt Stromlo.*[39]

Aboriginal camps and corroborees were noted as occurring at the foot of Black Mountain, some close to Sullivans Creek and the present lake peninsula, by WP Bluett and also by Sarah Rolfe in 1849.[40] These sites are now presumably inundated by Lake Burley Griffin, and the peninsula site has been extensively impacted by artefact collection and recreational development.

While much of these early observations were focussed around the central Canberra area, little attention was paid to the areas now occupied by the suburbs.

The Canberra Archaeological Society (CAS) conducted the first archaeological survey in the northern Canberra area in 1975–1976. The survey identified seven sites and a larger number of 'less significant finds'.[41] From the 1980s, archaeological recording and survey in the ACT became more systematic and comprehensive and the majority of work since then has been conducted in the context of development impact assessment.

However, in relatively close proximity to the BNTS study area, the Belconnen town centre and surrounding urban areas were all constructed prior to the instigation of systematic archaeological survey in the ACT. Kabaila undertook a suburb-wide assessment of the Belconnen area in 1997, and while noting a wide spread of Aboriginal cultural sites, he observed that the pattern of archaeological site location and occupation provided by his survey results was biased toward ridgeline contexts due to the relatively high level of development that had already occurred on the lower slopes and valley-floor contexts in Belconnen.[42]

In the early 1990s, to the north of the study area, several large-scale systematic archaeological surveys were undertaken to define the archaeological resources of the Gungahlin area as it was opened up for suburban development.[43] Numerous other archaeological assessments have been carried out in Gungahlin for smaller land areas, which were likely to be affected by specific proposed developments such as roads, golf courses, water storage facilities and pipelines. Similar assessments were carried out in new suburban releases at Throsby, Forde and Bonner. All of these assessments have found artefact sites across a wide range of landforms including archaeological evidence of stone tool manufacturing areas and occupation zones with many thousands of artefacts. Quarries, as resource locations for stone artefacts have been recorded at Girrawah Park and Gossan Hill, both within a few kilometres of the BNTS study area.

### 4.4.3 Heritage Assessments in the Vicinity of the Study Area

The likely Aboriginal archaeological resources of the local area are best demonstrated by patterns of site occurrence north, south and east of the study area where extensive archaeological investigation have been undertaken prior to development.[44] The overall pattern is one of activity concentrated along major permanent creek lines with a clear reduction in site numbers and artefact densities around less permanent water sources. Sites have been found throughout topographic and vegetational zones, but there is a tendency for more of the larger sites to be located in proximity to creeks, wetlands and well-

drained parts of the valley floors. Based on geology, topography and vegetation, a similar site location model could be postulated for the Lawson area.

Evidence for Aboriginal occupation of landscapes within the vicinity of the study area—in the form of open scatters of stone artefacts—has been recorded during several previous cultural resources surveys.[45] All of these previously recorded sites have been situated on mid to upper slopes and spurs.

In addition, a number of cultural heritage assessments[46] have previously been conducted in relation to proposals for the disposal of the site by Defence, prior to the purchase by DHA. These studies have included areas under investigation in the 2008 study.

In 1992, Behr conducted the first cultural heritage assessment in the vicinity of the study area, surveying a 28ha area of open grassland located southeast of the study area on the corner of Ginninderra Drive and Hayden Drive in Bruce.[47] Behr recorded five sites comprising one artefact scatter (Bruce Site 4) and four isolated finds (Bruce Site 2, 3, 5 and 6) during the course of the survey.

All the artefacts located by Behr were located on the tops of spurs or on the upper slopes of ridgelines. Based on the low numbers, limited types of artefacts and the degree of disturbance in the area, the sites and area, were not considered to be archaeologically significant.

In August 1994, Navin and Officer conducted a cultural heritage assessment of the proposed development of Block 9, Section 35, Bruce, immediately west of Behr's study area.[48] Two sites consisting of one scatter of six artefacts (Bruce Site 1) and one isolated find (Bruce Site 7) were located during the course of the survey. The scatter was located in an area of remnant eucalypt forest, partially ripped, while the isolated find was identified on the northwestern slope of hilltop knoll.

During March 2000, further archaeological investigations of the Bruce Precinct were undertaken examining Block 9, Sections 5 and 32, Block 10, Section 3 and part Block 1, Section 85.[49] The development area covered lands situated between the Australian Institute of Sport and Fern Hill Technology Park, southeast of the study area. One site (Bruce Site 8), comprising a scatter of six artefacts, was identified on the mid slope of a low spur in an exposure along a stock track. Sites previously recorded during the 1994 survey were not located during the 2000 survey and were presumed to have been concealed by grass cover.

Salvage of Aboriginal archaeological material identified during previous investigations within the Bruce development precinct was undertaken the following year.[50] Of the previously recorded eight artefact locations, flaked material was recovered from only three recordings (Bruce Sites 1, 4 and 8). In addition, a single isolated find (Bruce Find 9) was identified within a previously identified site.

Inspection of the ACT Heritage Unit's Cultural Heritage database indicates that an artefact scatter (Belconnen 19) was identified within the vicinity of the study area and recorded by CAS. The site is listed as comprising two artefacts and described as occurring within Section 3, Block 1. The ACT 1:10,000 grid references place the site south of Ginninderra Drive within the University of Canberra grounds, on a northerly facing slope of a low knoll, approximately 900m south of the study area.

Research by Kabaila[51] under an ACT Heritage Grant examining Aboriginal cultural heritage within the Belconnen region identified a large artefact scatter (Lawson 18). The site comprised 19 artefacts situated over an area measuring 40m by 20m on an animal track.[52] The scatter occurs on a gently sloping creek bank within the wetland associated with Ginninderra plain, approximately 700m south of the study area.[53]

### 4.4.4 Heritage Assessments Within the Study Area

During 2000, the Defence Estate Organisation, Department of Defence and the ACT Government commissioned the University of Canberra, Cultural Heritage Resource Centre (UC CHRC) to undertake a preliminary multi-disciplinary study of the site and the ACT Government Land of Lawson[54]. The purpose of the study was to propose future management and use options in order to retain identified environmental, heritage and cultural values within the broader area of the proposed Lawson residential development.[55]

The study area comprised the current study area and the area to the south, bound by Ginninderra Drive and identified as ACT Government land and ACTEW Substation. Twelve sites (Lawson Sites 01–12) were identified with six of these recordings (Lawson Sites 01, 02, 08, 09, 11 and 12) located within the current study area.[56] The six sites included three artefact scatters, two isolated finds and one (possible) scarred tree. In addition, an area of potential archaeological deposit (called AAP) was identified on the eastern boundary of the study area.

Using the UC CHRC results, Navin Officer[57] presented a report outlining opportunities and constraints associated with the cultural heritage values previously identified in the proposed suburb of Lawson. The previously compiled data and assessments were tabled, providing management options for the archaeological resources within the study area. In addition, sites and features not adequately assessed or accurately located during the UC CHRC study were listed for future consideration regarding heritage archival recording and management within the site.[58]

### 4.4.5 Previously Recorded Aboriginal Sites and Areas of Potential Archaeological Deposit

Six Aboriginal sites were recorded in 2001 HA.[59] These were:

- two isolated finds (L08 and L09);
- three artefact scatters (L01, L02 and L11);
- one possible scarred tree (L12); and
- one area of Potential Archaeological Deposit (PAD).

Two additional Aboriginal sites (isolated finds—Lawson Site 19 and 20) and seven areas of potential archaeological deposit (L01 PAD, L02 PAD, L011 PAD, L20 PAD, LPAD 1, LPAD 2 and LPAD 3) were identified during the 2009 study by Navin Officer. Site and PAD locations are shown on Figure 4.18.

The possible scarred tree was investigated as part of the Navin Officer Indigenous Cultural Heritage Assessment in 2008. It was concluded that it was not a culturally modified tree.[60]

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**Figure 4.18** Identification of Indigenous sites and PAD areas within the BNTS site. (Source: Google Earth with GML overlay, 2018)

## Previously Recorded Aboriginal Sites and PADs

**Table 4.2** Aboriginal Sites Located in the BNTS Area.

| Site ID | Type | Location and Description | Significance (as per Navin 2008) |
|---|---|---|---|
| Lawson Site 1 (L01) | Artefact Scatter | Located on disturbed soil adjacent to the perimeter stock fence, east of Baldwin Drive.<br>The dimensions of the site are approximately 50m x 50m.<br>In 2001, the site was recorded as having eight artefacts (quartz, chert) in an area of severe disturbance.<br>In 2008, Navin Officer relocated the site, and increased the site dimensions to include additional artefacts (12 tuff, silcrete and quartz artefacts) found to the west, north and south of the original recording.<br>This site has the potential be very extensive. | Moderate |
| Lawson Site 2 (L02) | Artefact Scatter | Stone artefact scatter situated on a slope on the northern side of the stock fence gate adjacent to the entry road off Baldwin Drive.<br>The dimensions of the site are redefined as 30m x 20 m.<br>In 2001, the site was recorded as having two artefacts (chert) in a disturbed area surrounded by grass.<br>The artefacts were exposed in a highly disturbed clay soil area associated with stock and vehicle movement through and adjacent to the gate.<br>In 2008, Navin Officer relocated, assessed and re-defined the site, locating three artefacts (silcrete, tuff and rhyolite). These are commonly occurring raw materials. | Low |
| Lawson Site 8 (L08) | Isolated Find | Located adjacent to a fence surrounding the former married staff quarters in the eastern half of the study area. | Low |

| Site ID | Type | Location and Description | Significance (as per Navin 2008) |
|---|---|---|---|
| | | The artefact was a grey green chert core/implement. It was not located in the 2008 survey by Navin Officer. The site is presumed to be covered over by grass or lost during extensive disturbance from construction of a fence. | |
| Lawson Site 11 (L11) | Artefact Scatter | Two artefacts located on a southwest-facing spur on the near western portions of the BNTS site. Site is approximately 10m in circumference.<br>Artefacts include a chert and a quartz flake. It was not located in the 2008 survey by Navin Officer.<br>Soils along the spurline are very shallow and it is presumed that the artefacts have moved downslope (west) during periods of heavy rainfall. | Low |
| Lawson Site 12 (L12) | Scarred Tree | Located on the southern edge of the BNTS site. The tree is at the base of a gentle slope, on shallow gravelly soils and situated approximately 3m north of a graded dirt track.<br>The tree was recorded as a smooth-barked eucalyptus (*Eucalyptus blakelyi*) of an approximate age of 40 years. The tree measured an approximate height of 20m and had a canopy with a diameter of 8m to 10m. The scar was recorded as 2.7m above the ground and estimated to be 1.2m x 0.8m. The loss of one major canopy limb and some hollows was evident.<br>The scar had an irregular and asymmetrical shape and displayed differing degrees of regrowth. The scar on this tree was considered by the Navin Office archaeologists to have a natural origin— most probably as a consequence of a falling tree branch. | In 2008 assessment, but determined not to be an Aboriginal site.<br>It remains listed on the ACT Heritage Register |
| Area of Archaeological Potential (AAP) | PAD | An area of PAD was previously identified to the west of Baldwin Drive in the eastern part of the study area. The PAD incorporates easterly facing gentle slopes and creek line corridor.<br>Due to the relatively undisturbed nature of the site, as well as the creek line corridor and gentle slope, this area was described as having archaeological potential. | – |
| Lawson Site 19 (L19) | Isolated Find | Find located on a westerly facing basal slope of a general northeast–southwest aligned spurline. The site lies immediately west of the fence line surrounding the sailors' mess and accommodation station, 50m south of the main road.<br>The artefact was a single quartz flaked piece, located in a heavily exposed area associated with fence construction and disturbance by vehicles. | Low |
| Lawson Site 20 (L20) | Isolated Find | This recording consisted of a single isolated find located mid-slope, on a westerly facing slope of a spurline extending from a small hill.<br>The artefact was a quartzite flake. | Low |
| Lawson Site 1 PAD (L01 PAD) | PAD | The PAD encompasses the area bound by the main access road, eastern boundary fence and the unnamed creek line on the eastern edge of the BNTS site. | – |

| Site ID | Type | Location and Description | Significance (as per Navin 2008) |
|---|---|---|---|
| | | L01 PAD was identified in association with site L01.<br>The PAD extends approximately 300m on a north–south alignment to include the spur crest above the creek, northwest of L01. The PAD extends 125m west of the Baldwin Drive fencing, forming a triangular shaped area. | |
| Lawson Site 2 PAD (L02 PAD) | PAD | An area of PAD (L02 PAD) was identified in association with site L02. The PAD comprises the gully and low ridgeline to the west of the unnamed creek line in the eastern section of the BNTS site. The PAD extends approximately 200m on a north–south alignment, crossing the main access road and 120m on an east–west alignment incorporating the area of exposure 100m north of the gate. | – |
| Lawson Site 20 PAD (L20 PAD) | PAD | An area of potential archaeological deposit (L20 PAD) was identified in association with site L20. The PAD comprises a linear area extending from the low hill in the eastern half of the BNTS site on a northwesterly alignment along a major spurline. This area is recognised as having potential for subsurface deposits due to the presence of artefactual material at this location and elevation above the creek line. The PAD measures an approximate area of 650m x 150m and incorporates the area previously recorded as site L08. | – |
| Lawson PAD 1 (LPAD 1) | PAD | An area of potential archaeological deposit was identified in the northwestern portion of the BNTS site along the spurline, north of L11 PAD. The PAD incorporates moderate slopes on the western side of the spurline above the drainage channels associated with Lake Ginninderra and sub-spurs to the east. Soils appear deeper in this location. The PAD covers an area approximately 200m x 160m, extending to the fenceline along Baldwin Drive. | – |
| LPAD 2 | PAD | An area of PAD was identified in the southern portion of the study area following a minor spurline, south of L20 PAD. The PAD extends 450m along the narrow spurline on a general northwest–southeast alignment and measures approximately 50m wide. | – |
| LPAD 3 | PAD | An area of PAD was identified adjacent to the southern boundary of the BNTS site. The PAD extends 350m on a general northwest–southeast alignment incorporating a minor spurline, approximately 50m south of LPAD 2. The PAD measures approximately 50m wide and includes the tree previously recorded as site L12. | – |

### 4.4.6 Archaeological Investigation Results

As part of a Heritage Impact Assessment for a potential new subdivision within the study area, a test excavation program was undertaken by GML Heritage in 2019. The investigation focussed on the known sites and PADs in the central and eastern part of the study area. Investigation included Lawson Site 1 PAD (L01 PAD), Lawson Site 2 PAD (L02 PAD), Lawson PAD 2 (L PAD 2), Lawson PAD 3 (L PAD 3), New PAD, Area of Archaeological Potential PAD (AAP PAD) and Lawson Site 20 PAD (L20 PAD).

During Stage 1 of works, GML hand-excavated 79 test pits across three potential archaeological deposits (PADs) at the site (L01 PAD, L02 PAD, and the eastern portion of L20 PAD). Following an adjustment

of the proposed development footprint, GML hand-excavated 176 test pits across five PADs (L PAD 2, L PAD 3, AAP PAD, New PAD and the western portion of L20 PAD) as part of Stage 2 works.

The surface artefact collection and test excavation of PADs resulted in the identification of clearly definable sites, along with a background scatter of artefacts. The PADs and sites are outlined below and shown in Figure 0.1:

**L01 PAD—**The entire 32,500m$^2$ L01PAD area previously identified in the north east of project area was confirmed to be a site. The site is described below.

- **L01 Site** (Lawson Site 1) Egloff (2001) identified the site as consisting of eight artefacts over a 20m x 30m area. In 2008, Navin Officer extended the site across an area 50m x 50m and identified 14 artefacts. After GML's 2019 investigation the site, the site boundary has now been extended to cover all of the L01 PAD. A total of 38 subsurface and 37 surface artefacts were recovered from across L01 PAD during the Stage 1 archaeological testing, and this PAD is considered to have further potential to contain Aboriginal cultural heritage.

**L02 PAD—**Archaeological testing across this PAD area yielded no subsurface artefacts. Dial Before You Dig (DBYD) results and investigations of the disturbed context L02 have shown that subsurface works in the vicinity would have removed a lot of the archaeological potential of these deposits. This site and PAD area have been demonstrated not to have further archaeological potential outside L02 site (described below).

- **L02 Site** (Lawson Site 2): Two artefacts were originally registered by Egloff in 2001. In 2008, three surface artefacts were identified in the area by Navin Officer**.** Investigations in 2019 found only a single surface find, and it was not one of the previously recorded artefacts. This site is considered to be part of the general background scatter of artefacts.

**L20 PAD—**Investigation of this PAD found that it does not have any archaeological potential outside of the three sites described below.

- **L08 Site** (Lawson Site 8): This site was originally registered as an isolated find by Egloff in 2001. It could not be relocated by either Navin Officer in 2008, or GML in 2019. It is regarded as separate to the artefacts found as part of the L20 investigations, as it is located in a highly disturbed context (previous naval village complex). The direct vicinity around L08 is considered to have no further archaeological potential.

- **L20 Site:** Investigation revealed five subsurface and one surface artefacts over an area of c 150m x 250m towards the lower end of the slopes to the west of the site. The single surface artefact was believed to not be the isolated find registered in 2008 by Navin Officer. These artefacts were considered to be demonstrative of the low-density background scatter of artefacts on the landscape and do not form a cohesive, single site.

- **L21 Site:** This new site was revealed as part of the investigation of L20 PAD. It comprises ten artefacts (five surface scatter and five subsurface artefacts) from the eastern end of L20 PAD towards the crest of the site. This site has covered an area of approximately 70m x 70m. While it is of slightly higher density than the surrounding area, it is still a relatively low-density scatter, and is part of the general background scatter of artefacts on the landscape.

**L PAD 2**—An area of potential archaeological deposit was identified by Navin Officer in the southern portion of the study area following a minor spurline. No surface or subsurface artefacts were identified

in this PAD and it is not considered to form an archaeological site or have the potential for archaeological deposits.

**L PAD 3—**This PAD was identified by Navin Officer covering a minor spurline, approximately 50m south of LPAD 2. One subsurface isolated find was recovered during test excavations. This isolated find is not considered a site, rather it is considered to represent part of a wider background scatter of stone artefacts. The L PAD 3 area is not considered to have further archaeological potential.

**AAP PAD—**Five surface stone artefacts were identified across the wide area of AAP PAD in 2019, which are considered to be representative of a low-density background scatter rather than specific sites. With the exception of AAP PAD Site (discussed below), the remainder of AAP PAD is not considered to have further archaeological potential.

- **AAP PAD Site:** A total of 26 stone artefacts were found within test excavation units S2-TU99A and 99B, and this location is considered to represent a high-density archaeological site, now identified as AAP PAD Site. However, there may be additional artefacts which form part of this site located within close proximity to these investigation areas.

**New PAD—**One surface and three subsurface stone artefacts were found in New PAD during Stage 2 archaeological investigations. These artefacts are considered to represent part of a broader background scatters of stone artefacts. The New PAD area is not considered to have further archaeological potential.

Therefore, two sites—L01 and AAP PAD Site—were confirmed as definable sites with higher artefact densities and the potential to contain further subsurface archaeological deposits. A background scatter of artefacts was revealed in several low-density expressions across the landscape including L02, LPAD20, L21, AAP PAD and new PAD, although investigation confirmed that none of these areas contain any further archaeological potential.

Sites previously identified on the western side of the study area, including Site L11 and two PADs—L PAD 1 and L11 PAD—were not investigated. These areas remain as identified sites and PADs as per their 2008 descriptions.

Both sites L01 (including the entirety of its PAD area) and AAP PAD site (with a nominal 20m radius boundary) were assessed as being of moderate scintfic significance with the potential to yield information that would contribute to an understanding of the prior Aboriginal occupation of the area.


**Figure 4.19** Locations of sites in the study area (outlined in red). (Source: GML 2019 with SIX Maps imagery) NB this mapping does not include Site L11, L PAD 1 or L11 PAD which were outside of the test excavation program study area.

### 4.4.7 Results of Aboriginal Community Consultation

Consultation to understand the Aboriginal cultural values was undertaken on site as part of the separate onsite meetings with RAOs Wally Bell and Paul House in December 2018 and January 2019. Both Wally and Paul separately noted that the site area was acknowledged among the community as being a place likely to have been occupied by Aboriginal people in the past due to its position on high ground within very close proximity to Ginninderra Creek.

Ginninderra Creek itself is a significant feature as it was one of the major waterways in the area providing a consistent resource zone for Aboriginal people in the past. High levels of Aboriginal occupation evidence have been recorded from other sites along Ginninderra Creek and its flanking ridges from Belconnen through to Mulligans Flat.

The study area sits on part of a ridge extending towards Gungaderra Grasslands reserve and on towards Mulligans Flat Nature Reserve. This ridge system provided strategically high ground, opportunities for leeside shelter occupation and a range of resource zones. The study area is part of a wider significant landscape that Aboriginal people intensively occupied in the past.

## 4.5 Built Elements

### 4.5.1 Introduction

The 2009 HMP included a brief summary of the historical elements on the site and a description and analysis of the significance of the transmitting equipment for the first time. This section provides an update with reference to changes and condition of elements since 2009. Figure 4.19 identifies the locations of the built elements at the site.

Overall, the site is a complex of buildings utilised for transmitting signals, built over the 50-year period. the former Naval Village area sits in the eastern part of the property. It comprises the extant Sailors' Mess and is extensively landscaped with predominantly exotic plantings. At the centre of the site is the former Transmitting Station.


**Figure 4.20** BNTS site with marked built elements. (Source: Google Earth with GML overlays, 2018)

### 4.5.2 Transmitting Station Complex

#### Description

The purpose of the transmitting building was to house the high and low-frequency transmitters along with their associated plant and offices. The transmitting station is a complex of buildings and additions built between 1939 and 1951 with the adjacent emergency generator building added in 1972 (Figure 4.20 and Figure 4.21).

The building and equipment provide a record of the history of its use from World War II until its decommissioning in 2005. The first part of the building was the original transmitter hall and workshop area completed in 1939, as shown in Figure 4.22. The helix room, shown in Figure 4.24, was added in 1940/1941. Figure 4.22 also shows the original entrance which was quickly obscured by further additions, including a further large transmitting hall and two-storey entry, including the first-floor aerial

switching room, was added to the east of the complex in 1951 (Figure 4.23). During the 1950s, a large evaporative cooling system was installed to cool the transmitter halls, and this remains intact, although non-operational.

All photographs in this section are from GML 2008 or 2018 unless stated otherwise.

**Figure 4.21** The transmitting station buildings. The large white roof is the 1972 generator building while the smaller white roof is an associated electricity substation. (Source: ACTMapi 2018)

**Figure 4.22** The transmitter building complex viewed looking south.

**Figure 4.23** The original entrance to Belconnen Naval Transmitting Station in 1939/40. (Source: Egloff, B et al September 200161)

**Figure 4.24** The main entrance to the building in 2000, showing the Harman crests on the entrance which have since been removed. (Source: Egloff, September 2001)

**Figure 4.25** 2008 photo showing the exterior of the helix room and the contrasting horizontal and vertical features of the window details. The window has now been boarded up for security measures.

**Figure 4.26** The subfloor service ducts (2018).

The earliest parts of the transmitting buildings are single storey with decorative gables, red brick external walls with white painted rendered finish above the damp course level, painted internal brick walls,

terracotta tiled roofs supported on steel roof trusses, flat-roofed sections sheeted with rolled rib galvanised iron and concrete slab floors with some small sections that are timber-framed and clad.

An extension to the transmitting building on the eastern side was completed in 1950.This extension reflects to some extent the architecture of the older buildings and is of mainly brick construction. The external walls to this section are painted face brickwork. The front section of the building is two-storey with a concrete bean and slab first floor.

The later additions have painted brick walls and corrugated asbestos cement roofs supported on timber roof trusses. The front entry building is a flat-roofed, two-storey building with a concrete frame, painted brick infill walls and a flat asbestos cement roof behind parapet walls. Most of the later additions to the building have respected the original design and, as it has been well maintained, it is a fine example of a utilitarian Defence building in use from the World War II to the end of the twentieth century. Many original fixtures and features remain in place, including doors, handles and built-in furniture.

The floors vary throughout the building with some areas having raised timber floors while others are concrete slabs. A complex maze of service ducts extend throughout most areas of the building (Figure 4.25). Most floors are lined with sheet vinyl, vinyl tiles, timber boards or painted concrete.

Windows in the first two stages of construction are steel-framed and, in later stages, timber-framed. Some windows are fitted with grilles. Door types include flush-panelled, framed ledged and braced, framed and glazed. All windows and doors are painted. A large number of windows, door glazing, and glazed highlights have now been boarded up with plywood to prevent further damage.

Ceiling finishes vary throughout the building and include fibrous plaster, caneite, asbestos-cement sheet, mineral fibre tiles and concrete.

The earliest parts of the building demonstrate the characteristics of the Federal Capital Architecture style, which typically included brick construction, lightly rendered and lime-washed in muted tones, red terracotta-tiled roofs and sometimes feature corbel detailing.[62] Other features of the transmitting building link it to the Art Deco style, including its contrasting horizontal and vertical motifs (particularly exemplified in the windows, see Figure 4.24), horizontal banded brickwork and decorative, stepped terracotta corbels.

The helix room features specialised building techniques such as timber dowels used to fix the ceiling panels and foundations using alternating layers of concrete and cork and the use of metal wire in walls and ceilings for shielding from radio waves.[63] The windows and the large arched opening doors have been filled in with ply and are now not visible.

The interior of the transmitting building features in situ high-frequency and low-frequency transmitting equipment, which is discussed in greater detail in Section 4.7.4. This equipment is found in the helix room (room 25), the low-frequency room (24), the original transmitter hall (22 and 17) and transmitter hall No. 1 (9 and 10). Further radio equipment is found in the control room (18). Other facilities in the building include storeroom (32 and 33), training room (previously a workshop [31]), garage (34) and offices (2, 3, 4, 5 and 7). The main aerial switching room is located on the first floor above the offices (8). The helix room houses the Aerial Loading Coil and aerial tuning variometer, which linked directly to the low-frequency aerial through a purpose-built aperture.

### Condition

Generally, the built elements at BNTS, including the transmitting building, are in good condition and have performed well given their age and the fact that they have experienced some very wet and then dry

periods over their lifetime. Internal spaces are typically in a fair to good condition with minor maintenance and repairs required to improve their state. The main condition issues involve water ingress from broken windows and vandalism.

The floor substrates appear to be sound. The floor finishes are in a good to fair condition, with some cracking in sheet vinyl or missing/lifting tiles. The carpet found in some rooms though (2, 3, 5 in Figure 4.30) is in poor condition. Water ingress is visible in some areas, particularly in room 16, below the large skylight. Water damage and evidence of rising damp can be seen on the timber skirting and walls in some areas, particularly in room 13 (Figure 4.28).

The condition of the ceiling recorded in 2018/2019 varies with some mineral fibre tiles missing or broken and requiring replacement. Evidence of water ingress and peeling/cracking is visible on some plaster and sheet ceilings, which require attention. All surfaces, including ceilings, walls and floors, are dirty and greasy and require a thorough clean. The ceiling in the helix room is sagging in some sections but the timber dowels and panels largely appear to be in good condition.

Throughout the building there is evidence of vandalism, particularly broken windows. Original glass on windows and internal doors have been broken. The exterior of the building is weathered and is due to be repainted but appears sound. Downpipes, gutters and other roof plumbing appear solid from the 2018/2019 ground level inspection.

**Figure 4.27** First floor Aerial Switching Room with water damage to the floor (2018).

**Figure 4.28** Looking west in room 15 (2018).

**Figure 4.29** Water damaged skirting in room 13 (2018).

**Figure 4.30** Smashed glazed panels in doors to room 32 (2018).

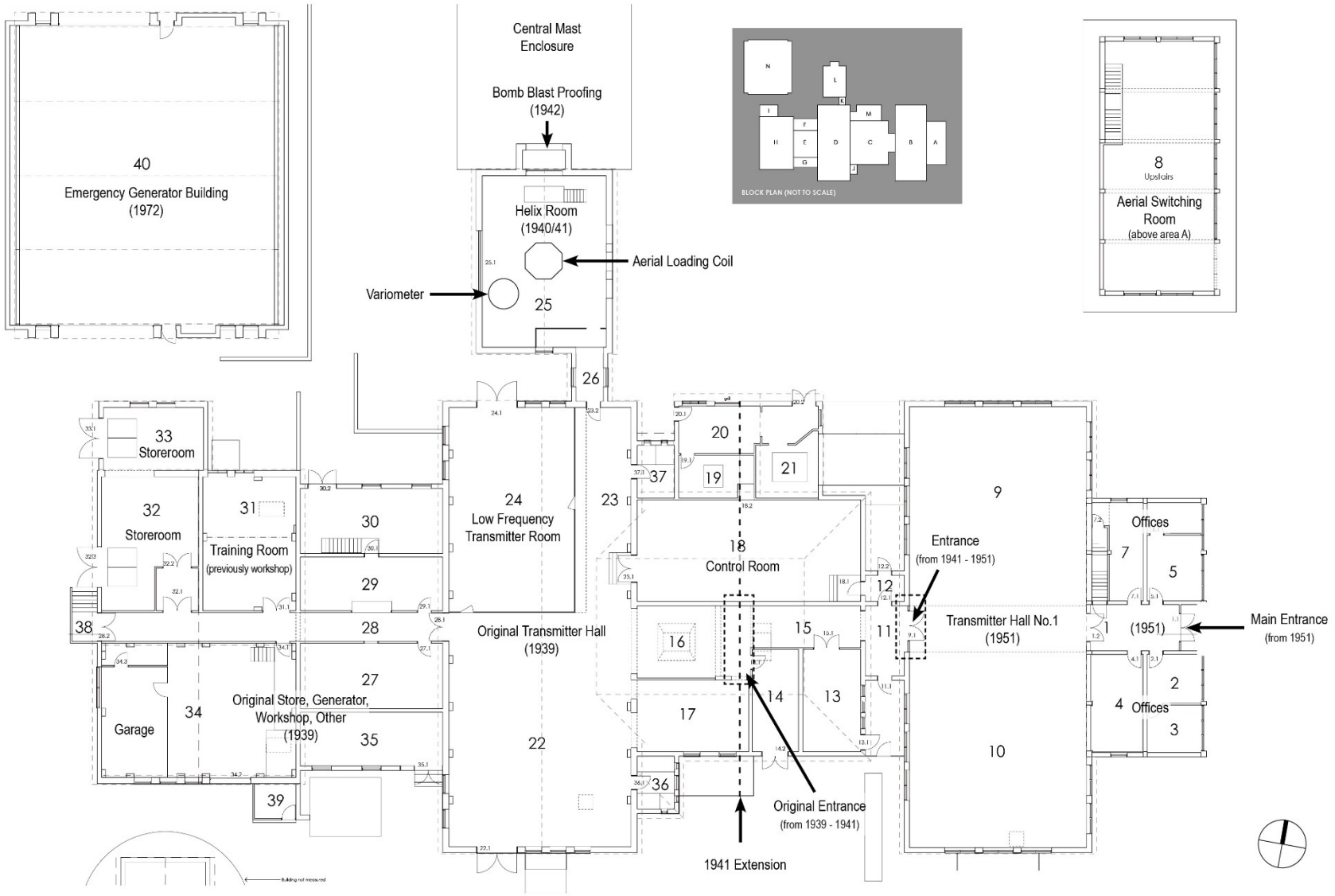


**Figure 4.31** Transmitter Building with construction dates, room numbers and labels. (Source: Philip Leeson Architects base plan 2009, with GML overlay 2019)

### 4.5.3 The Aerial Array and Copper Earth Mat

The history and development of the aerial array at the site has been well documented in the Egloff et al report of 2001.[64] On 20 December 2006, the 183-metre landmark towers that had supported the low-frequency aerial were demolished. A section of mast has been retained on site, lying on its side outside the helix room.

The remainder of the aerial farm was cleared of aerials, leaving only some footings and two aerials in place. However, the extensive copper earth mat associated with the low-frequency aerial and masts remains in situ (as shown in Figure 4.31). The earth mat consists of 144 thick radial copper wires installed 23cm (9 inches) below the ground along the line of the low-frequency aerial in an ellipse shape 975.36m in length and 609.6m in width (3200 feet by 2000 feet) radiating out from the central mast site. At the centre of the earth mat another 1.5m (5-foot) diameter ring of copper was installed.[65] Also present on site are the remains and footings of early aerials (Figure 4.34), two high-frequency aerials (Figure 4.35) and two sections of one of the low-frequency masts.

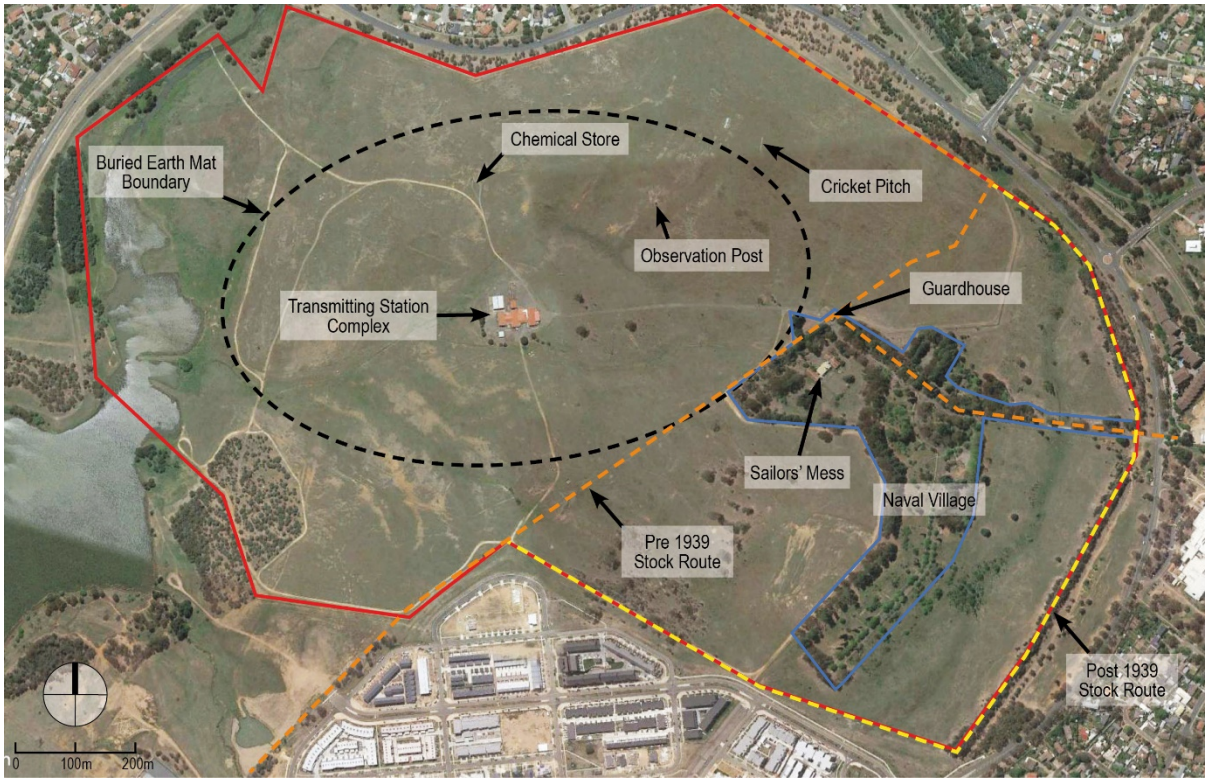


**Figure 4.32** Locations of the historical site elements of the Belconnen Naval Transmitting Station Site with the location of the buried earth mat. (Source: Google Earth with GML overlay, 2018, informed by 2009 HMP).

**Figure 4.33** A portion of the 183m landmark towers that supported the aerial, dismantled and lying near the Helix Room, 2018.

**Figure 4.34** An example of the remaining aerials on the site, 20.

**Figure 4.35** Example of the remains of original rhombic aerial base which would have supported timber poles, 2018.

**Figure 4.36** One of the remaining aerials on the site which connects to the first-floor aerial switching room, 2018.

### 4.5.4 Radio Transmitting Technology

The following description of the transmitting technology at the transmitting station has been extracted from the 2009 HMP. The information was based on the Egloff et al report from 2001.[66] While the physical condition of the Transmitting Building was assessed for this 2018 HMP update, the equipment and technology were not assessed for condition or completeness.

The following description is focused on the transmitters located at BNTS, as the aerials have been removed from the site. It also includes comments on the helix room, a part of the low-frequency transmitter, since the room has technologically significant features. Additional information regarding transmitter technology and design is included at Appendix E.

### 4.5.5 Brief Description

#### Inventory of Transmitters

All the transmitters found on the site are listed below in Table 4.3. The transmitters are currently located in the two transmitting halls in the main transmitting building.

**Table 4.2** Inventory of Extant Transmitters.

| Transmitter Model and Power | Number | Engineer | Manufacturer | Year Installed |
|---|---|---|---|---|
| LF transmitter 200kW (I)<br>LF transmitter 250kW (II) | 1<br>1 | HB Wood, STC | STC, Sydney | 1942[67]<br>1961 |
| HF transmitter CLH-40AA, 40kW | 8 | Unknown | AWA, North Ryde, Sydney | 1950s[68] |

| Transmitter Model and Power | Number | Engineer | Manufacturer | Year Installed |
|---|---|---|---|---|
| HF linear amplifier ATS-10, 10kW | 11 | Unknown | AWA, North Ryde, Sydney | 1970s |
| HF transmitter model 1241, 40kW | 4 | Unknown | Marconi, UK | 1990s |

The oldest transmitter, a high-power low-frequency transmitter dating from 1942, was designed and manufactured by STC, Sydney.[69] The transmitter assembly is visually overpowering given its large floor area and height (about 4m or two storeys) and is located in the original transmitter hall (Figure 4.37). The interior is accessible through two doors in the grey metal section, giving access to the rear of the front panels, the transmitting valves, helixes and other high voltage components. HB Wood was the senior STC engineer who headed the engineering design team. This transmitter went through an upgrade in 1959–1961, which included a major redesign and an increase in the power to 250 kilowatts.[70] Both versions of the transmitter were designed by STC engineers. The physical condition in 2018 appears to be fair. Some gauges and glass elements have been broken, but generally the equipment appears intact but in a mothballed state. In 1939, STC also supplied three high-frequency transmitters for the site, but none of these were found at the BNTS site.

The output of the low-frequency transmitter proceeds to the aerial through the helix room (Room 25 in Figure 4.30). The aerial loading coil found in the helix room is physically overwhelming by its height and area (Figure 4.38). The exterior of the helix room at the point where the cable exits is technologically significant, having a 'fibreglass laminate window with corona rings'.[71] The helix room walls and ceiling have embedded wires to provide electrical shielding (Faraday cage).[72]

Chronologically, the next transmitter is the AWA HF Transmitter CLH-40AA. These transmitters are physically much smaller, with cases providing front and rear access to the internal circuitry. They are found in rows in another transmitter hall. AWA has consistently maintained in-house design capability by the employment of radio engineers and has undertaken research and development in radio technology through employment of research scientists and engineers.[73] It is likely that these transmitters were designed by AWA engineers as well as being manufactured by AWA.

Chronologically, the next transmitter is the AWA HF Linear Amplifier ATS-10. These transmitters are physically smaller again and examples are found in both transmitter halls. It is likely that these transmitters were designed by AWA engineers as well as being manufactured by AWA. The most recent transmitter is the Marconi HF Transmitter Model 1241. This transmitter was designed and manufactured by Marconi, UK

**Figure 4.37** 2018 photograph of the transmitting hall, constructed in 1939.

**Figure 4.38** The exterior of the low-frequency transmitter, 2018.

**Figure 4.39** The aerial loading coil in the helix room, 2018.

**Figure 4.40** Equipment in the low-frequency transmitter room, 2018.

### 4.5.6 Outbuildings

Egloff et al cites a 1944 site plan that shows four observation posts surrounding the main transmitter building, which were camouflaged and manned by the Volunteer Defence Corps during the war. A chemical store and the remnants of three observation posts survive on the site today, dating from the World War II period. They are constructed of red brick on a concrete pad, with a metal and timber roof frame. The Chemical Store has a terracotta-tiled roof and is metal-lined with exposed brick interior walls.

#### Condition

The condition of the observation posts is poor, with sheet metal missing, damage to brick walls and exposed timber roof frame. The Chemical Store is in a fair condition.

**Figure 4.41** Observation post, part of the Second World War defences of the site, 2018.

**Figure 4.42** The Chemical Store, 2018.

### 4.5.7 The Guardhouse

The Guardhouse was built in 1939 in the same architectural style as the transmitting building. It is a small rendered and painted, brick and tiled building consisting of two rooms on either side of a WC and basin recess, with a later World War II period bomb-blast wall constructed to enclose a verandah. It has

raised timber floors, fibrous plaster ceilings with cover strips, timber double-hung windows, a fireplace and chimney, and remnant fittings and fixtures. The verandah has a flat roof with asbestos-cement soffit linings, a concrete floor slab and painted brick blast walls. The Guardhouse was a twin to that constructed at the receiving facility HMAS Harman. Adjacent to the Guardhouse at the site is the flagpole and ceremonial area, bordered by cypress screen-planting.

### Condition

The building is in fair to good condition, with some glazing broken and minor cracks in the walls. The paint on the concrete floor slab is flaking.

**Figure 4.43** The guardhouse looking east. Note the partially ply infill windows, 2018.

**Figure 4.44** Decorative terracotta corbels on the guardhouse which are also featured on the earliest section of the transmitting building, 2018.

**Figure 4.45** Main room within the Guardhouse. Note the boarded windows and broken glass, 2019.

**Figure 4.46** Eastern wall of second room in Guardhouse, 2019.

## 4.5.8 The Sailors' Mess

The mess and accommodation building was completed in April 1961 and was vacated by the Navy in 1996. Most evidence of naval use of the place has been removed. The original built-in bedroom fittings have gone, and the large mess kitchen has also been altered.

The building consists of a central wing connected to flanking bedroom wings via low, flat-roofed links. It is single storey with rendered and painted cavity brick walls, raised timber and concrete floors, low pitched metal deck roofs with flat and raking plasterboard ceilings below. Windows are aluminium-framed with 'shopfront' window walls to the main elevation of the central wing and sliding sash aluminium

windows elsewhere. A concrete paved terrace extends the length of the central wing and a sandstone wall acts as a feature wall at the entry area of the complex.

### Condition

The exterior of the building is in fair to good condition, although all windows and access doors have been boarded up with ply infill. There is damage to the roof and the ceiling in the mess has collapsed in two places. The surrounding plantings are overgrown, including grasses, trees and shrubs.

**Figure 4.47** The Senior Sailors' Mess and accommodation building looking southeast, 2018.

**Figure 4.48** The rear of the Senior Sailors' Mess looking southwest, 2018.

## 4.5.9 Site of the Naval Village

The remains of the Naval Village consist of the roads, plantings, paths, driveways and gutters. The entry gates to the site from Baldwin Drive remain, as does the well-established pin oak (*Quercus palustris*) screen-planting around them. The gates are a pair of low, curved red-brick walls and piers painted white (Figure 4.50) and dating from the 1950s.[74] The cottages, recreation hall and a garage/transport building at the entrance of the base were all removed in 1989.[75] Various demolition rubble from the removal of the houses remains in some parts of the site.

The most significant remnant evidence of the former village site is the vegetation that lines its streets including large mature trees (*Prunus cerasifera, Celtis australis*) and windbreak plantings of *Cupressus arizonica*. In the former domestic house sites, the surviving evidence is in the garden plants and fruit trees, *Arbutus unedo* (Irish Strawberry) and *Viburnum x burkwoodii* (Burkwood & Skipwith). The Garden City style of planning, important to Canberra's development, is evidenced through the remnant street layout, recreational park and associated recreation facilities (tennis courts). The streets of the village remain, as well as the half-circle park known as the 'D'. Two of the tennis courts remain surrounded by windbreak plantings (Figure 4.51).

### Condition

The former village site is in fair to good condition. The roadways and gutters survive in good condition and act as an effective maker of the layout and use of the village. The cultural plantings are overgrown and require maintenance; they demarcate former house sites and evoke the Garden City traditions.

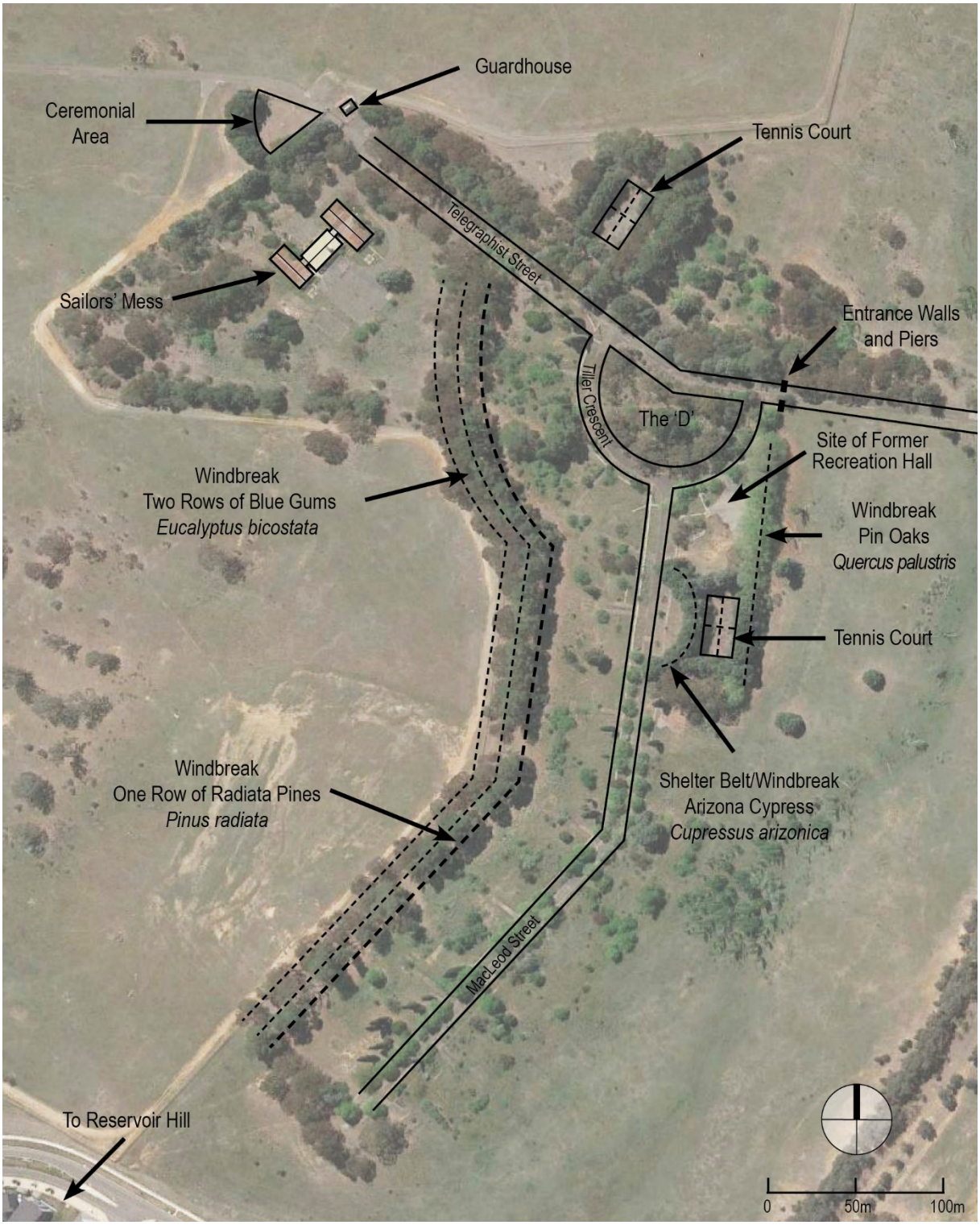


**Figure 4.49** Detail of the former Naval Village. (Source: Google Maps with GML overlay)

**Figure 4.50** The Crescent, the 'D' in the Naval Village, 2018.

**Figure 4.51** The painted brick entrance gates, 2018).

**Figure 4.52** The southern tennis court, surrounded by windbreak plantings, 2018.

**Figure 4.53** The northern tennis court, surrounded by windbreak plantings, 2018.

**Figure 4.54** Location of the former Recreation Hall, to the north of the southern tennis court, 2018.

**Figure 4.55** Remaining example of a residential driveway and overgrown plantings, 2018.

### 4.5.10 Travelling Stock Route

The travelling stock route at the BNTS site ceased to be used in the 1960s at the time the surrounding suburbs were being planned (Figure 3.2 in Section 3). The boundary of the former Naval Village marks a portion of the stock route, particularly the northern boundary of the village and the western fence line, leading from the Guardhouse. Timber fence posts have been located at the site, which are possible remnants of the original fence line of the pre-1939 route. Today, the location of the route is interpretable and identifiable through the outline shape and security fences of the village.

### 4.5.11 Historical Archaeology

The development history of the BNTS site is largely confined to the World War II period. Prior to that time, the land was used for grazing. Therefore, any historical archaeological remnants on the site will predominantly derive from the mid-twentieth century Defence use of the site, with little remaining from the earlier historical period.

The presence of a stock route across the site, does not appear to have left any tangible remaining evidence although, as noted above, the presence of a number of old timber posts may relate to this feature or may simply be remnants of other paddock fencing.

The Naval Village buildings on the site were predominantly domestic houses with a number of larger administrative structures. All village structures have since been demolished although the footpaths, driveways, roads, tennis courts and some house support stumps remain in places along the main avenue. Historical archaeological remnants may remain from the occupation of these houses, including buried structural footings and artefacts from the day-to-day lives of the people occupying them. While this evidence of occupation may remain, its significance is unlikely to be high because of the well documented nature of the layout of the site, the nature of the housing and the familiarity of the mid-twentieth century material culture.

Archaeological remains may exist from the World War II air raid shelter which is recorded (refer to Section 3.4.4, page 32) to have existed on the site near the southern tennis court. Currently there is no clear evidence of the nature, extent and of location of this feature beyond this historical reference. Given that the site has not been subject to substantial disturbance since construction, the bunker would appear to have been deliberately decommissioned and backfilled or covered over after the cessation of the war. Any historical archaeological remains of this feature may shed light on the nature of this feature and would demonstrate aspects of Defence's duty of care to its personnel and their families. Physical remains of the shelter or any archaeological remnants of its configuration and location would be of significance and should be considered when considering any disturbance to the land around the southern tennis court.

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# 5.0 Assessment of Heritage Significance

## 5.1 Introduction

The BNTS site has been included in the CHL under two listings since 2004. One listing covers historic heritage values ('Royal Australian Naval Transmitting Station', Place ID: 105519) and the other covers the natural heritage values of the place as habitat for the rare and endangered Golden Sun Moth ('Synemon Plana Moth Habitat', Place ID: 105535). While identified in the 2009 HMP, the Indigenous heritage values of the site have not yet been nominated for inclusion in the CHL.

This section reviews the heritage values included in the 2009 HMP. It provides an updated review of the historic, natural and Indigenous heritage values of the site.

For this HMP, three separate assessments of heritage value have been undertaken. These are in tables for each category of values: historic, natural and Indigenous. Where applicable, each table contains the official Commonwealth Heritage values and the revised assessment. The revised assessment has taken into consideration the reassessment of heritage values undertaken for the 2009 HMP.

## 5.2 Methodology

The previous HMP for the BNTS site reviewed and revised the two official CHL citations to ensure the full scope of heritage values were included, particularly in light of the changes to the site since 2005. This section of the HMP reviews the 2009 reassessment and provides updates, where relevant.

Assessments of heritage value identify whether a place has heritage significance, establish what the heritage values are and why the place (or an element of the place) is considered important and valuable to the community. Heritage values are embodied in the attributes such as the location, function, form and fabric of a place. Intangible values and associations may also be significant, including the setting of an element and its relationship to other items, the records associated with the place as well as the response that the place evokes in the community and its social values. All attributes need to be considered when assessing a place.

*The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013* (the Burra Charter) and its *Guidelines for Assessment of Cultural Significance* recommend that significance be assessed in categories such as aesthetic, historic, technical, scientific and social significance.

Identifying multiple heritage values—sites, places, landscape, buildings, elements—provides the knowledge base needed for the framing and implementation of heritage management and conservation policies discussed in Section 8.0.

## 5.3 Commonwealth Heritage Values

As part of the 2009 HMP, GML provided a critical analysis of the official Commonwealth Heritage values of the BNTS site and recommended the following issues be resolved as they are out of date, incorrect or excluded from the Commonwealth Heritage listings:

- the removal of the aerial array and masts;
- the technological significance and rarity of the extant transmitting equipment; and
- the ability of the place to yield information through scientific research.

Further, the claimed association of the Women's Royal Australian Naval Service (WRANS) with the BNTS site was identified as an issue. The personnel at the site were electrical technicians who received instructions from HMAS Harman, near Queanbeyan, as to what transmission and frequency to use, put that into operation by connecting the transmitters with the aerials, and then Harman sent through the message that went directly to 'air'. The WRANS were telegraphists working at the 'Molonglo Auxiliary Depot' (next to the Molonglo Internment Camp at Fyshwick) and at Harman. While the links between Harman and Belconnen are very important, it is misleading to attribute significant social value to BNTS on this basis, unless it can be demonstrated that the WRANS were in fact stationed at or visited Belconnen.

Section 5.4 confirms the Commonwealth Heritage values of the BNTS site for historic, natural and Indigenous values.

## 5.4 Heritage Assessment

### 5.4.1 Assessment of Historic Heritage Values

| Commonwealth Heritage Criteria | Assessment Against the Criteria |
|---|---|
| **Criterion A** | **The place's importance in the course, or pattern, of Australia's natural or cultural history.** |
| Official Assessment | *The Royal Australian Naval Transmitting Station at Belconnen, comprising the three main aerial masts, elements of the rhombic and omni vector aerial arrays, transmitting hall, guardpost and guardhouse, the cricket pitch and the village site, including the tree plantings, shelter-belt radiata plantations, subdivision and tennis courts and road system, is important for its association with the development of Australian naval communications in Australia from 1938 in the lead-up to the Second World War 1939–45. Completed in 1939, the transmitting station was the most powerful naval wireless station in the British Empire and the largest naval or commercial station in the southern hemisphere.*<br>*The extant fabric of the transmitting station and the relict village site are important in illustrating the significant role the base played in naval communication both during and after the Second World War. The area developed for the village is important in demonstrating the functioning of the station in its relatively remote setting.*<br>***Attributes***<br>*The whole of the transmitting station including the various elements articulated above.* |
| 2019 Reassessment | As a former pastoral property, the BNTS site retains reference to a pre-1939 travelling stock route that was used until the 1960s. This route formed part of the valuable stock route network connecting to New South Wales, which played a vital role in the safe movement of stock and provided alternative food and water sources in times of drought.<br>The Belconnen Naval Transmitting Station site has important historical associations with the strategic development of the Royal Australian Navy's communications capability in the lead-up to and during World War II, and developments during the Korean and Vietnam wars in the 1950s and 1960s.<br>The establishment of the station and its supporting receiving station at Harman, ensured that Allied forces had the coverage to communicate with vessels in the Pacific and Indian oceans during World War II and contributed to several Allied military successes in the Pacific at a time when radio intelligence was critical. In particular, the transmissions from Belconnen were of considerable value during the defining Battle of Midway and Battle of the Coral Sea. It also communicated the outcome of the Battle of the River Plate to Allied commands, the first major naval battle of the war. During World War II, the Belconnen transmitter was Australia's primary wireless transmitting station and was considered one of the most powerful in the world.<br>The Belconnen Naval Transmitting Station was also involved in transmitting the results of US military activities in monitoring Japanese communications in the Pacific, especially in their code-breaking exercises. For example, US military radio traffic passing through Belconnen in May 1942 assisted in the identification of Midway as the focus of Japanese military objectives. The Belconnen Naval Transmitting Station site is evidence of the historical links, joint communications developments and allied strategic military and defence goals of Australia, the UK and USA. |

| Commonwealth Heritage Criteria | Assessment Against the Criteria |
|---|---|
| | The general intactness of the site's associated infrastructure including the Guardhouse with bomb-blast wall, Chemical Store and observation posts are important remaining evidence of security concerns for the site during the World War II period when the site was camouflaged against possible enemy attack from the air.<br>The Naval Village, developed concurrently with the transmitting station and informed by 'Garden City' planning principles, formed an important and valuable component of the site, providing the accommodation and recreational facilities for naval personnel—responsible for the 24-hour operation of the transmitting station—and their families. The isolated location of the site in Canberra's undeveloped far north reflected the need to house naval personnel on site for efficiency, safety and security. |
| Attributes | • Alignment and remaining evidence of the pre-1939 pastoral-era stock route passing diagonally southwest to northeast across the site.<br>• The BNTS site as a whole, including the transmitting buildings, transmitting equipment, the copper earth mat, surviving remnants of the aerial array, the Guardhouse, the Chemical Store and observation posts.<br>• The former Naval Village including the Sailors' Mess, road layout, street names, street and windbreak plantings and tennis courts.<br>• Documentation, such as plans and manuals, that detail the operation and maintenance of equipment at the BNTS site. |
| **Criterion B** | **The place's possession of uncommon, rare or endangered aspects of Australia's natural or cultural history.** |
| Official Assessment | *The Transmitting Station is important as a rare example of the technical development of Australian Naval Communication during the inter-War years. This is illustrated by the design and technical achievement expressed in the three 600-foot aerial masts, assembled on site and aligned east-west to maximise transmissions to the Pacific and Indian Oceans and the intact 44,000hz, purpose built, low frequency transmitter complex, which, in conjunction with Rugby in England, made it possible to communicate with British Merchant or Fleet shipping anywhere in the world.*<br>***Attributes***<br>*The three 600-foot aerial masts and their east west alignment, plus the low frequency transmitter complex.* |
| 2019 Reassessment | The Belconnen Naval Transmitting Station, with its collection of transmitters, is rare in the international setting and represents a remarkable history of the development of communications transmitters (of mainly Australian origin) from 1941 to the 1990s. The station is one of only two in the world known to have any transmitters remaining.<br>That the transmitters can be operational contributes to their rarity value. Of the international heritage transmitter sites surveyed, Belconnen Naval Transmitting Station is one of only two in the world known to have any transmitters remaining.<br>The low-frequency transmitter, the helix room and the low-frequency aerial (copper earth mat) are unique in the Australian context. The HF CLH-40AA transmitters made by the iconic Australian radio manufacturer Amalgamated Wireless (Australasia) are rare examples of Australian electronics from the postwar period. The later AWA HF ATS-10 transmitter is also of interest and rare because of its unusual mod number. |
| Attributes | • The BNTS site as a whole, including transmitting buildings, low-frequency transmitter, copper earth mat and aerial remnants, HF Transmitter CLH-40AA and the HF Linear Amplifier ATS-10.<br>• Documentation, such as plans and manuals, that detail the operation and maintenance of equipment at the BNTS site. |
| **Criterion C** | **The place's potential to yield information that will contribute to an understanding of Australia's natural or cultural history.** |
| Official Assessment | Not applicable. |
| 2019 Reassessment | The Belconnen Naval Transmitting Station provides excellent opportunities for research encompassing the operation and evolution of radio engineering and high-voltage technology in Australia in the twentieth century; and the operation of a highly secure military base in times of war. |

| Commonwealth Heritage Criteria | Assessment Against the Criteria |
|---|---|
| Attributes | • The BNTS site as a whole, including the transmitting buildings, transmitting equipment, the copper earth mat, surviving remnants of the aerial array, the Guardhouse, the Chemical Store and observation posts.<br>• Documentation, such as plans and manuals, that detail the operation and maintenance of equipment at the BNTS site. |
| **Criterion D** | **The place's importance in demonstrating the principal characteristics of:<br>– a class of Australia's natural or cultural places; or<br>– a class of Australia's natural or cultural environments.** |
| Official Assessment | *The Transmitter Building, 600ft aerial masts, Guard House and guardpost and the access road and associated village site, including the subdivision and landscape elements, are important in demonstrating the design, layout and functioning of high powered, low frequency, transmitting stations developed by the Commonwealth for long distance radio communication prior to and during World War Two.*<br>***Attributes***<br>*The Transmitter Building, 600ft aerial masts, Guard House and guardpost and the access road and associated village site, including the subdivision and landscape elements.* |
| 2019 Reassessment | The Belconnen Naval Transmitting Station site is important in demonstrating the design, layout and functioning of high powered, low frequency, transmitting stations developed by the Commonwealth for long distance radio communication prior to and during World War II.<br>The site also reflects the characteristics of early Australian naval bases with clear delineation of operational and living/recreational areas, hierarchy of facilities and residences and ceremonial area complete with flagmast. The Sailors' Mess and Naval Village also demonstrate characteristic aspects of the design, layout and use of onshore naval residential facilities in the postwar period, which have now largely disappeared due to changing policies of the Defence forces.<br>The Naval Village reflects the planning principles of the 'Garden City' movement with the generous allocation of parkland, formal plantings and recreational facilities. The adoption of this planning style was consistent with planning of the new National Capital at the time.<br>The architecture of the Belconnen Naval Transmitting Station main transmitter building and Guardhouse is typical of the Federal Capital Architecture style and ties the building to a particular period and location, setting the tone for further development at the site. |
| Attributes | • The BNTS site as a whole, including transmitting buildings, transmitting equipment, the copper earth mat, surviving remnants of the aerial array, the Guardhouse, the Chemical Store and observation posts.<br>• The Sailors' Mess and Naval Village, including road layout, subdivision, landscape elements (formal plantings and windbreaks), and tennis courts.<br>• Documentation, such as plans and manuals, that detail the operation of equipment at the site. |
| **Criterion E** | **The place's importance in exhibiting particular aesthetic characteristics valued by a community or cultural group.** |
| Official Assessment | Not applicable. |
| 2019 Reassessment | While the Naval Village at the site incorporates 'Garden City' principles, the aesthetic values would need to be formally tested and confirmed to determine their value by a community or cultural group. |
| **Criterion F** | **The place's importance in demonstrating a high degree of creative or technical achievement at a particular period.** |
| Official Assessment | *The design and technical achievement of the transmitting station is expressed in the three 600-foot aerial masts, assembled on site and aligned east-west to maximise transmissions to the Pacific and Indian Oceans and the intact 44,000hz, purpose built, low frequency transmitter complex, which, in conjunction with Rugby in England, made it possible to communicate with British Merchant or Fleet shipping anywhere in the world.*<br>***Attributes*** |

| Commonwealth Heritage Criteria | Assessment Against the Criteria |
|---|---|
| | *The three 600-foot aerial masts and their east west alignment, plus the low frequency transmitter complex.* |
| 2019 Reassessment | The Belconnen Naval Transmitting Station site possesses significant technical values as a purpose-built, Australian-designed and manufactured 'state of the art' communications facility that continued to be upgraded with improved technologies into the 1990s.<br>At the time of its establishment, the station demonstrated the ability of Australian companies to manufacture the specialised materials and command the engineering expertise necessary to set up such a facility.<br>The main transmitting building and helix room are specifically significant in showing this in their surviving technology. The loss of parts of the aerial farm with the tall aerial masts diminishes the heritage significance of the site as a whole but the historical associations and significance of the purpose-built transmitting building (especially with the banks of transmitters and the impressive coils in the helix room) and the associated copper earth mat and aerial remnants remain. The area of the mat and former aerials remains crucial to the interpretation of the function of the place.<br>The transmitter building in itself is significant for the way it documents the progress of radio communication technology after the 1940s, with new equipment being housed in adjoining wings knitted into the overall structure by judicious use of particular architectural design elements. The early architecture of Belconnen Naval Transmitting Station is typical of the Federal Capital Architecture style and ties the first building to a particular period, setting the tone for further development. The architecture also responds specifically to the function of the place. |
| Attributes | • The transmitting buildings, transmitting equipment, the copper earth mat, surviving remnants of the aerial array, the Guardhouse, the Chemical Store and observation posts.<br>• Documentation, such as plans and manuals, that detail the operation and maintenance of equipment at the BNTS site. |
| **Criterion G** | **The place's strong or special associations with a particular community or cultural group for social, cultural or spiritual reasons.** |
| Official Assessment | *The place is highly valued for its social and symbolic associations by members of the local community including former Naval personnel in particular the WRAN, for whom the establishment of the transmitting and receiving stations in Canberra resulted in the training of women as telegraphists under Mrs Florence McKenzie, founder of the WRAN service, and in the development of Canberra.*<br>***Attributes***<br>*The whole facility including the three main aerial masts, elements of the Rhombic and Omni Vector aerial arrays, transmitting hall, guardpost and guard house, the cricket pitch and the village site, including the tree plantings, shelter belt radiata plantations, subdivision and tennis courts and road system.* |
| 2019 Reassessment | As demonstrated by the results of consultation with stakeholders for previous studies, the site has significance for special interest groups, including current and former naval staff, naval veterans of the World War II, staff and their families who lived at the site, radio enthusiasts and specialists interested in the development of Australian low-frequency and high-frequency technology.<br>Further research and formal consultation would be required to definitively assess the social value of the site. |
| Attributes | • The BNTS site as a whole, including the transmitting buildings, transmitting equipment, the copper earth mat, surviving remnants of the aerial array, the Guardhouse, the Chemical Store, observation posts, Sailors' Mess and Naval Village. |
| **Criterion H** | **The place's special association with the life or works of a person, or group of persons, of importance in Australia's natural or cultural history.** |
| Official Assessment | Not applicable. |
| 2019 Reassessment | Not applicable. |
| **Criterion I** | **The place's importance as part of Indigenous tradition.** |
| Official Assessment | Not applicable. |

| Commonwealth Heritage Criteria | Assessment Against the Criteria |
|---|---|
| 2019 Reassessment | Refer to Section 5.4.4 for separate assessment of Indigenous heritage values. |

## 5.4.2 Summary Statement of Historic Values

### Official Statement

The following summary statement of significance comes from the CHL citation.

> *The Royal Australian Naval Transmitting Station at Belconnen, comprising the three main aerial masts, elements of the Rhombic and Omni Vector aerial arrays, transmitting hall, guardpost and guard house, the cricket pitch and the village site, including the tree plantings, shelter belt radiata plantations, subdivision and tennis courts and road system, is important for its association with the development of Australian Naval Communications in Australia from 1938 in the lead up to the Second World War 1939-45. Completed in 1939 the Transmitting Station was the most powerful naval wireless station in the British Empire and the largest naval or commercial station in the southern hemisphere.*
> *The extant fabric of the transmitting station and the relict village site are important in illustrating the significant role the base played in naval communication both during and after World War Two. The area developed for the village is important in demonstrating the functioning of the station in its relatively remote setting. (Criterion A.4)*
> *The Transmitting Station is important as a rare example of the technical development of Australian Naval Communication during the inter-War years. This is illustrated by the design and technical achievement expressed in the three 600 foot aerial masts, assembled on site and aligned east-west to maximise transmissions to the Pacific and Indian Oceans and the intact 44,000hz, purpose built, low frequency transmitter complex, which, in conjunction with Rugby in England, made it possible to communicate with British Merchant or Fleet shipping anywhere in the world (Criterion B.2 and Criterion F.1).*
> *The Transmitter Building, 600ft aerial masts, Guard House and guardpost and the access road and associated village site, including the subdivision and landscape elements, are important in demonstrating the design, layout and functioning of high powered, low frequency, transmitting stations developed by the Commonwealth for long distance radio communication prior to and during World War Two (Criterion D.2).*
> *The place is highly valued for its social and symbolic associations by members of the local community including former Naval personnel in particular the WRAN, for whom the establishment of the transmitting and receiving stations in Canberra resulted in the training of women as telegraphists under Mrs Florence McKenzie, founder of the WRAN service, and in the development of Canberra. (Criterion G.1)*
> *(Historic Themes: 7.7 Defending Australia).*[1]

### Revised Summary Statement

The BNTS site is significant for its historical associations with the pastoral stock route network and the strategic development of RAN communications capability in the lead-up to World War II and subsequent international conflict. During World War II, the transmitting station was vital to the Allied war effort at sea and contributed to several Allied military successes in the Pacific at a time when radio intelligence was vital. During World War II, the Belconnen transmitter was Australia's primary wireless transmitting station and was considered one of the most powerful in the world.

The Guardhouse with its bomb-blast wall, the Chemical Store and observation posts are important remaining evidence of security concerns for the site in the lead-up to and during World War II when the site was camouflaged against possible enemy attack.

The extant collection of transmitters at the BNTS is rare in the international setting and represents a remarkable history of the development of communications transmitters (of mainly Australian origin). The low-frequency transmitter, the helix room and the low-frequency aerial (copper mat) are unique in the

Australian context. The site presents excellent opportunities for research encompassing the operation and evolution of radio engineering and high-voltage technology in Australia in the twentieth century; and the operation of a highly secure military base in times of war.

The residential area of the site, comprising the former Naval Village and Sailors' Mess, reflect a model naval village with the characteristics of 'Garden City' planning principles and Federal Capital architecture exemplified in the built and landscape form. The naval village also illustrates the then relatively isolated nature of this place before the development of the surrounding suburbs in what was considered a remote location—reflecting the need to house naval personnel on site for efficiency, safety and security.

The site has significance for various groups including current and former naval staff; naval veterans of the Second World War; staff and their families who lived at the site; radio enthusiasts and specialists interested in the development of Australian low-frequency and high-frequency technology.

### 5.4.3 Assessment of Natural Heritage Values

| Commonwealth Heritage Criteria | Assessment against the Criteria |
|---|---|
| **Criterion A** | **The place's importance in the course, or pattern, of Australia's natural or cultural history.** |
| Official Assessment | *The remnant Danthonia sp. grassland in the place is representative of once widespread vegetation characteristic of the Limestone plains of the Canberra area (Edwards 1990).*<br>*The golden sun moth, Synemon plana occurs in the grassland habitat in the place. Castniidae, the family of Synemon moths, has species occurring in Central and South America and South East Asia as well as Australia. Indications are that it is a family that has Gondwanan origins.*<br>*The native grassland ecological community at Belconnen Naval Station has high conservation value. Danthonia sp. grassland is essential habitat for the day-flying, golden sun moth, Synemon plana. This place is considered to be one of the best for the conservation of S. plana because the Danthonia sp. grassland is in good condition and it is a relatively large area of approximately 100ha. The site is one of the largest of 16 sites where the species is known to occur in the ACT (Edwards 1990, S. Sharp pers. comm., Environment ACT 1998).* |
| 2019 HMP Reassessment | The remnant *Rytidosperma* sp. grassland at the Belconnen Naval Transmitting Station site is significant as representative of a once widespread vegetation characteristic of the limestone plains of the Canberra area. The community is in good condition and is of high conservation value.<br>The Golden Sun Moth (*Synemon plana)* occurs in the grassland habitat within the site. Castniidae, the family of Synemon moths, has species occurring in Central and South America and Southeast Asia as well as Australia and it is considered to be a family that has Gondwanan origins.<br>*Rytidosperma* sp. grassland is essential habitat for the day-flying Golden Sun Moth, *Synemon plana*. This place is considered to be one of the best for the conservation of *S. plana* because the *Rytidosperma* sp. grassland is in good condition and covers a relatively large area of approximately 100ha. The site is one of the largest sites where the species is known to occur in the ACT.<br>**The BNTS site meets this criterion.** |
| Attributes | • The whole of the natural temperate grassland area of the site.<br>• Habitat of the Golden Sun Moth (*Synemon plana).* |
| **Criterion B** | **The place's possession of uncommon, rare or endangered aspects of Australia's natural or cultural history.** |
| Official Assessment | *Natural Temperate Grassland of the Southern Tablelands of NSW and the Australian Capital Territory is listed as a nationally endangered ecological community under the Environment Protection and Biodiversity Conservation Act 1999 and is endangered in the ACT.*<br>*Synemon plana is endangered in the ACT. The golden sun moth has a limited distribution, and currently it is only known from 32 sites, five in Victoria, 11 in NSW immediately north of the ACT, and 16 in the ACT, with an extensive population occurring at this place (Environment ACT 1998).* |

| Commonwealth Heritage Criteria | Assessment against the Criteria |
|---|---|
| 2019 Reassessment | The Belconnen Naval Transmitting Station site contains threatened and rare aspects of Australia's natural history.<br><br>The whole of the natural temperate grassland area of the site comprises the endangered ecological community as well as the habitat for threatened Golden Sun Moth, Striped Legless Lizard and Perunga Grasshopper. Being greater than 100ha in size, the site represents one of the largest remnants of natural temperate grassland and habitat areas for these species. It is recognised as being of highest conservation significance (category 1) in the ACT native grassland and conservation strategy.<br><br>In addition to being one of the largest known habitat areas for the critically endangered Golden Sun Moth, the species occurs in high density.<br><br>The wetland area with fringing reed and herbfields along the banks of Ginninderra Creek, which runs along the western boundary of the site provides potential habitat for Latham's snipe as well as other wetland species.<br><br>The Ginninderra peppercress population has been recorded in an area of approximately 2.8ha in the western portion of the grassland of the site. One of the few known populations of the species has previously been recorded here. Although this species was not detected during the site surveys in 2018, it is likely that it remains within the seed bank and would germinate given suitable conditions.<br><br>It contains two threatened ecological communities:<br><br>• Box Gum Woodland—listed as critically endangered under the Commonwealth EPBC Act and endangered under the ACT's NC Act; and<br>• Natural Temperate Grassland/Natural Temperate Grassland of the Southern Tablelands of NSW and the Australian Capital Territory—listed as a nationally endangered ecological community under the EPBC Act and listed as endangered in the ACT under the NC Act.<br><br>It contains threatened and rare flora and fauna:<br><br>• Golden Sun Moth (*Synemon plana*)—listed as critically endangered under the EPBC Act and endangered in the ACT under the NC Act. The Golden Sun Moth has a limited distribution nationally and the site provides a significant area of habitat that supports a large population;<br>• Striped Legless Lizard (*Delma impar*)—listed as vulnerable under the EPBC Act and the NC Act;<br>• Perunga Grasshopper (*Perunga ochracea*)—listed as vulnerable in the ACT;<br>• Ginninderra Peppercress (*Lepidium ginninderrense*)—listed as vulnerable under the EPBC Act and endangered under the NC Act. The site is listed as critical habitat for this species under the EPBC Act based on this being the only known occurrence of the species at the time of listing;<br>• Canberra Raspy Cricket (*Cooraboorama canberrae*), a rare species that also inhabits the site; and<br>• habitat for wetland birds including protected migratory bird, Latham's snipe (*Gallinago hardwickii*).<br><br>**The BNTS site meets this criterion.** |
| Attributes | • The whole of the natural temperate grassland area of the site.<br>• Habitat of the Golden Sun Moth (*Synemon plana);* Striped Legless Lizard (*Delma impar*); and Perunga Grasshopper (*Perunga ochracea*).<br>• The Box Gum Grassy Woodland in the site's southwest.<br>• The wetland area with fringing reed and herbfields along the banks of the Ginninderra Creek.<br>• Ginninderra peppercress population in the western portion of the grassland of the site. |
| **Criterion C** | **The place's potential to yield information that will contribute to an understanding of Australia's natural or cultural history.** |
| Official Assessment | *The site represents an opportunity for further research on an endangered ecological community that was originally widespread. The lifecycle of the golden sun moth is yet to be elucidated, as are the lifecycles of other invertebrate species known to occur in the grasslands (Edwards pers. comm.).* |
| 2019 Reassessment | The Belconnen Naval Transmitting Station site has the potential to provide valuable information regarding Australia's natural history. It contains remnant threatened ecological communities and hosts the presence of significant native flora and fauna species, particularly threatened and rare species that |

| Commonwealth Heritage Criteria | Assessment against the Criteria |
|---|---|
| | are poorly understood. The site could provide the opportunity for further studies on these species, their ecology and lifecycles.<br>The site represents an opportunity for further research on the endangered natural temperate grassland community that was originally widespread.<br>The site has potential as a research site for native grassland and its species. Numerous studies have been undertaken within the site, providing opportunities for long-term monitoring and comparison. This includes long-term monitoring of grassland vegetation (permanent plots) and population studies and ecological research including Golden Sun Moth (*Synemon plana)* studies.<br>Ginninderra peppercress (*Lepidium ginninderrense*) was first described based on its discovery in the site (type location). This provides an important reference for taxonomic research and provides opportunity for further research on its habitat preference and ecology for conservation management. The type location and total known distribution of the peppercress at the site may also indicate a particular habitat/landscape characteristic of the grassland-floodplain ecotone in this area, which needs further study.<br>**The BNTS site meets this criterion.** |
| Attributes | • The whole of the natural temperate grassland area of the site.<br>• Habitat of the Golden Sun Moth (*Synemon plana);* Striped Legless Lizard (*Delma impar*); and Perunga Grasshopper (*Perunga ochracea*).<br>• The Ginninderra peppercress population (and type location) in the western portion of the grassland of the site. |
| **Criterion D** | **The place's importance in demonstrating the principal characteristics of:<br>– a class of Australia's natural or cultural places; or<br>– a class of Australia's natural or cultural environments.** |
| Official Assessment | Not applicable. |
| 2019 Reassessment | The Belconnen Naval Transmitting Station site has been documented as a significant example of the natural temperate grassland and grassy woodland communities and as an important focus for nature conservation in the ACT. The ACT grasslands strategy ranks the area as a 'core' management area (highest value) for this endangered ecological community. It is the only core site in the strategy that is not contiguous with a larger reserve or natural area.<br>**The BNTS site meets this criterion.** |
| Attributes | • The whole of the natural temperate grassland area of the site west of Ginninderra Creek and including the grassland areas between the naval village and Baldwin Drive. |
| **Criterion E** | **The place's importance in exhibiting particular aesthetic characteristics valued by a community or cultural group.** |
| Official Assessment | Not applicable. |
| 2019 Reassessment | The Belconnen Naval Transmitting Station site is currently not open to use by the public. However, it is likely to hold aesthetic value as a large native grassland, which locals have the potential to enjoy in the future. Additionally, the site is bounded by residential development and roads in, which nearby residents and passers-by may value the aesthetic characterises of the natural site within an urban development.<br>The aesthetic values would need to be formally tested and confirmed.<br>**The BNTS site does not meet this criterion.** |
| **Criterion F** | **The place's importance in demonstrating a high degree of creative or technical achievement at a particular period.** |
| Official Assessment | Not applicable. |
| 2019 Reassessment | **The BNTS site does not meet this criterion.** |
| **Criterion G** | **The place's strong or special associations with a particular community or cultural group for social, cultural or spiritual reasons.** |

| Commonwealth Heritage Criteria | Assessment against the Criteria |
|---|---|
| Official Assessment | Not applicable. |
| 2019 Reassessment | **The BNTS site does not meet this criterion.** |
| **Criterion H** | **The place's special association with the life or works of a person, or group of persons, of importance in Australia's natural or cultural history.** |
| Official Assessment | Not applicable. |
| 2019 Reassessment | **The BNTS site does not meet this criterion.** |
| **Criterion I** | **The place's importance as part of Indigenous tradition.** |
| Official Assessment | Not applicable. |
| 2019 Reassessment | **The BNTS site does not meet this criterion.** |

### 5.4.4 Summary Statement of Natural Values

The BNTS site has one of the largest remnants in the ACT of *Rytidosperma* grassland in good condition and is recognised as having high conservation value. The grassland is listed as a threatened ecological community and is representative of original vegetation that was characteristic of the limestone plains of the Canberra area.

*Rytidosperma* grassland is essential habitat for the endangered day-flying Golden Sun Moth (*Synemon plana*). The Golden Sun Moth has a restricted distribution and this site has one of the most extensive populations. Because of its relatively large size and good condition, this place is important for the long-term conservation of the Golden Sun Moth.

The site also contains the threatened Ginninderra peppercress (*Lepidium ginninderrense*). The site is listed as a critical habitat for this species based on the site being the only known occurrence of the species at the time of listing. The species was first described based on its discovery in the site (type location). This type location provides an important reference for taxonomic research and provides opportunity for further research on the habitat preference and ecology for conservation management of the species.

The place is important as a research site for the endangered grassland community and for research on the Golden Sun Moth and other significant species that inhabit the grassland.

### 5.4.5 Assessment of Indigenous Heritage Values

The Indigenous heritage values of BNTS are based on the values ascribed to the area by the Aboriginal community and are also embodied by the presence of cultural artefacts on the surface and as archaeological evidence previously recorded as a number of sites including L01, L02, L08, L09, L11, L20 and L21, and a number of zones of PADs including L01 PAD, L02 PAD, L20 PAD, L PAD 1, L PAD 2, L PAD 3, L11 PAD, New PAD and AAP PAD.

A statement of significance has been outlined below from the Aboriginal community (Section 5.4.6) and the archaeological investigation has resulted in a revision to the definition of the attributes of scientific significance.

Based on the archaeological investigations two key areas of significance were identified (Sites L01 and its PAD, and AAPPAD Site), with two areas of unknown significance remaining to the west of the study area (L PAD 1, with Site L11 and L11 PAD:


**Figure 5.1** Aerial image of the BNTS site identifying areas of Aboriginal cultural heritage significance. (Source: ESRI Maps imagery with GML overlay, 2020)

## Assessment against the CHL criteria

| Commonwealth Heritage Criteria | Assessment against the Criteria |
|---|---|
| **Criterion A** | **The place's importance in the course, or pattern, of Australia's natural or cultural history.** |
| Assessment | Cultural and archaeological evidence suggests that Aboriginal people occupied the BNTS landscape prior to the arrival of colonial settlers in the mid-nineteenth century.<br>The archaeological sites of BNTS indicate that while some occupation evidence remains on the crest around site L20 and in the lower slopes at TU99A and B in AAP PAD, the key distribution of archaeological remains suggest more focused occupation near sites L01 and AAP PAD Site.<br>The relative complexity of sites L01 and AAP PAD Site has the capacity to demonstrate some aspects of the pattern of Australia's cultural history, although further contextual and comparative research would be required to demonstrate the ability of this site to meet the threshold for Commonwealth Heritage values.<br>At present, none of the archaeological sites investigated at BNTS (individually or collectively) meet the threshold for this criterion.<br>**The BNTS site does not meet this criterion.** |
| Attributes | Not applicable. |

| Commonwealth Heritage Criteria | Assessment against the Criteria |
|---|---|
| **Criterion B** | **The place's possession of uncommon, rare or endangered aspects of Australia's natural or cultural history.** |
| Assessment | Many Aboriginal archaeological sites have been found along the Ginninderra Creek catchment. Therefore, the archaeological sites within the study area are not considered rare or uncommon.<br>**The BNTS site does not meet this criterion** |
| Attributes | Not applicable. |
| **Criterion C** | **The place's potential to yield information that will contribute to an understanding of Australia's natural or cultural history.** |
| Assessment | The remaining PADs within the BNTS sitehave the potential to yield further evidence and information about the traditional use and occupation of the landscape by Aboriginal people—information that is likely to contribute to further understanding of aspects of the course and pattern of Australia's cultural history.<br>**The BNTS site meets this criterion.** |
| Attributes | • The identified artefact scatter sites L01 and AAP PAD Site, along with their associated PADs and the yet-to-be investigated PAD locations LPAD 1 and L11 PAD. |
| **Criterion D** | **The place's importance in demonstrating the principal characteristics of:**<br>**– a class of Australia's natural or cultural places; or**<br>**– a class of Australia's natural or cultural environments.** |
| Assessment | The range of Aboriginal archaeological sites at BNTS demonstrates only a limited scope of the principal characteristics of Aboriginal occupation of the area. Further research at sites L01 and AAP PAD Site may yield information that indicates its ability to demonstrate the principal characteristics of a cultural place.<br>These sites do not meet the threshold for Commonwealth Heritage values. With further research, sites L01 and AAP PAD Site may have the potential to reach the threshold for Commonwealth Heritage values. **The BNTS site does not meet this criterion.** |
| Attributes | Not applicable. |
| **Criterion E** | **The place's importance in exhibiting particular aesthetic characteristics valued by a community or cultural group.** |
| Assessment | Consultation with the Aboriginal community did not attribute any aesthetic values to the BNTS site.<br>**The BNTS site does not meet this criterion.** |
| Attributes | Not applicable. |
| **Criterion F** | **The place's importance in demonstrating a high degree of creative or technical achievement at a particular period.** |
| Assessment | These recorded sites and artefacts do not express any specific degree of creative or technical achievement.<br>**The BNTS site does not meet this criterion.** |
| Attributes | Not applicable. |
| **Criterion G** | **The place's strong or special associations with a particular community or cultural group for social, cultural or spiritual reasons.** |
| Assessment | Representatives of the ACT Aboriginal community have in the past expressed their view that all archaeological sites are significant as they are an important demonstration of Aboriginal peoples' connection to the land and are tangible evidence of their past use of the landscape. In that respect the archaeological sites of BNTS have a special association for the local Aboriginal community for cultural reasons.<br>**The BNTS site meets this criterion.** |

| Commonwealth Heritage Criteria | Assessment against the Criteria |
|---|---|
| Attributes | The identified artefact scatter sites L01 and AAP PAD Site, along with their associated PADs and the yet-to-be investigated PAD locations LPAD 1 and L11 PAD, along with the entirety of the BNTS landscape, and all its prior cultural associations. |
| **Criterion H** | **The place's special association with the life or works of a person, or group of persons, of importance in Australia's natural or cultural history.** |
| Assessment | Consultation with the Aboriginal community did not attribute any special associations for important Aboriginal community figures with the BNTS site.<br>**The BNTS site does not meet this criterion.** |
| Attributes | Not applicable. |
| **Criterion I** | **The place's importance as part of Indigenous tradition.** |
| Assessment | Consultation with the Aboriginal community did not nominate any aspects of the place that relate to its ongoing traditional use.<br>Representatives of the ACT Aboriginal community have in the past expressed their view that all archaeological sites are significant as they are an important demonstration of Aboriginal peoples' connection to the land and are tangible evidence of their past use of the landscape.<br>However, the Indigenous heritage values of BNTS do not meet criterion (i) because of the way the meaning of 'importance as part of Indigenous tradition' is interpreted by the Department of the Environment (DoE) and also the Federal Court of Australia. This interpretation applied to the concept of Indigenous tradition is one of knowledge handed down from generation to generation and holds that the tradition must apply to a specific place, usually one that is sacred.[2]<br>The alienation of the land by the Commonwealth, the subsequent development on the site and its use by Defence will have impacted any traditional use of the site by the local Aboriginal people of Canberra.<br>The key expression of Indigenous heritage value is captured under criteria A and C.<br>**The BNTS site does not meet this criterion.** |
| Attributes | Not applicable. |

### 5.4.6 Aboriginal Community Assessment of Significance

At times throughout the process of investigating the archaeological sites across BNTS, the representatives of the RAOs have expressed their views about the significance of the site and its landscape and context.

A key part of this discussion is to understand that the system of assessing significance under the EPBC Act is a substantially meaningless process for the Aboriginal community because the criteria and systems are set up in a way that do not respect or reflect the views of the Aboriginal community.

There are a number of issues involved:

1. The concept of dividing parts of the landscape up into smaller portions ('sites') representing focussed occupation activity is at odds with the more holistic view held by the Aboriginal community that the whole of the landscape was used in different ways for different activities. The notion of defining 'sites' is an archaeological construct designed to try to understand the use of the landscape based on tangible material remains, and it glosses over the idea of a broad-based use of the landscape that was not restricted to specific activity focal points.

2. The expansive and holistic view of Aboriginal cultural heritage, including stone objects, modified trees, other physical manifestations of the past activities of ancestors, plus the landforms, stories, and other aspects of intangible culture, is inadequately represented by the processes of assessing

sites in relative isolation of the rest of the landscape, due to the 'site-focused' approach to assessment.

3. The concept of ranking places based on their relative significance to other places is also at odds with the views held by the Aboriginal community, who have consistently noted that all parts of the landscape, and all Aboriginal cultural heritage is of equal significance.

On the basis of these points, the representatives of the RAOs involved with this project have noted that the whole of the BNTS landscape, and all cultural associations with it, is of significance to them, as is the wider landscape around it.

### 5.4.7 Summary Statement of Indigenous Values

The Indigenous heritage values for the site are manifest in the presence of a range of identified Aboriginal archaeological sites, expressed as artefact scatters and a number of locations identified as having the potential to contain archaeological remains.

Site L01 and AAP PAD Site, along with their associated PAD areas have the potential to contain evidence of the Aboriginal traditional use and occupation of the landscape, and therefore may also reflect aspects of the course and pattern of Australia's cultural history (criterion c). The Aboriginal community values both the physical archaeological evidence on the site, and its potential to demonstrate the history and pattern of the Aboriginal use of the landscape. These values meet the threshold under criterion g. They recognise that the BNTS site lies within a wider landscape that they value for its demonstration of the traditional use and occupation by Aboriginal people in the past.

## 5.5 Endnotes

1 Australian Heritage Database, 2004, 'Royal Australian Naval Transmitting Station, Baldwin Drive, Lawson, ACT, Australia', Commonwealth Heritage List citation.

2 Chapman v Luminus Ltd (No 5) [2001] FCA 1106 as cited by Alternberg, K 2011, 'Comments on Indigenous study for ANU Heritage Assessment', pers comm, 6 May.

# 6.0 Constraints and Opportunities

## 6.1 Introduction

This section discusses the issues, in the form of the constraints and opportunities, affecting the future conservation, management and interpretation of the listed and identified heritage values of the BNTS site. It leads to, contextualises and provides the explanation for conservation guidelines, policies and actions set out in Section 7.0 and Section 8.0.

The heritage values of the BNTS site give rise to a range of constraints and opportunities. It is important to ensure that the heritage values of the place are conserved and managed for present and future generations. Opportunities to retain, reinstate (where necessary), adaptively re-use and interpret the heritage values should be investigated, implemented and integrated into the ongoing management of the site.

The key issues for the conservation and management of the BNTS site include:

- the complex heritage values of the site, where the appropriate management of some values may conflict with the appropriate management of other values;
- long-term lack of maintenance and conservation of the site's heritage values;
- planned future development in the eastern portion of the site encompassing the former naval village;
- the responsibilities and requirements of DHA, including operational considerations;
- legislation that governs the management of the heritage values, principally the EPBC Act and its Regulations; and
- opportunities for interpretation initiatives.

It is important to note that there has been very little change at the site since the completion of the 2009 HMP, DHA, as the new owners, intend to redevelop an appropriate portion of the site, subject to approval, to provide housing for members of the Defence Force and their families per its mission as an organisation. As such, this HMP has been prepared with the knowledge that substantial change is proposed to occur for residential development at the site in the near future.

## 6.2 Commonwealth Legislation

As a place owned by a Commonwealth agency and located on Commonwealth land, the BNTS site is subject to Commonwealth legislation. Should DHA subdivide the site and transfer some or part of the land to the ACT's leasehold system, ACT legislation would apply.

Territory heritage legislation would apply should DHA divest the site, or parts of the site from its ownership. Should this occur, DHA would need to ensure that the sale contract includes a covenant to protect the heritage values of the place and follow the requirements of Section 341ZE.

### 6.2.1 EPBC Act

The BNTS site is a Commonwealth-owned place included in the CHL. Therefore, it is subject to the provisions of the EPBC Act and its Regulations. In addition to the information included below, Section 2.2.1 of this HMP provides further constraints posed by the EPBC Act.

### 6.2.2 Commonwealth Heritage List

The CHL comprises a list of natural, historic and Indigenous heritage places owned or controlled by the Australian Government. The BNTS site is protected under two citations included in the CHL for its historic and natural heritage values. These listings mean that the site:

- is of Commonwealth heritage significance and reflects Australia's development as a nation;
- is legally protected under the provisions of the EPBC Act and its Regulations; and
- must not have its heritage values significantly impacted unless there is no feasible or prudent alternative, and all reasonable measures to mitigate or avoid the impact are taken.

### 6.2.3 Heritage Management Plans

The EPBC Act requires that places with Commonwealth Heritage values be managed according to established conservation principles. Schedule 7B of the EPBC Regulations sets out seven Commonwealth Heritage management principles, which encourage the identification of a place's heritage values and their conservation and presentation through the application of the best available skills and knowledge. The principles also require community involvement (including with members of the Indigenous community) and cooperation through various levels of government.

This HMP has been prepared in accordance with the Commonwealth Heritage management principles and in compliance with Schedule 7A of the EPBC Regulations, which sets out the requirements for management plans under the EPBC Act. The Schedule 7A and Schedule 7B compliance tables are included at Appendix A.

### 6.2.4 Undertaking an Action

Section 26 and 28 of the EPBC Act require that:

- a person must not take an action on Commonwealth land that has, will have, or is likely to have a significant impact on the environment;[1]
- a person must not take outside Commonwealth land an action that has, will have, or is likely to have a significant impact on the environment; and
- the Commonwealth (or a Commonwealth agency) must not take, inside or outside the Australian jurisdiction, an action that has, will have, or is likely to have a significant impact on the environment.

Where an action has the potential to have a significant impact on the environment, the action must be referred to the Minister for the Environment and Energy (the Minister) for consideration. The Minister may determine that the action is not acceptable and may not proceed. Otherwise, three outcomes of such a referral are possible:

[1] The EPBC Act definition of 'environment' includes heritage places.

1. the action is determined not to have a significant impact and can proceed (this is known as a 'not controlled action');

2. the action can proceed subject to conditions (this is known as a 'not controlled action—particular manner'); or

3. further assessment is required before a decision can be made on whether it can proceed (this is known as a 'controlled action').

In the event of a controlled action, the Minister determines the level of further assessment required. This may range from the provision of preliminary information by the 'proponent' (the person or entity proposing the action), the preparation and provision of an Environmental Impact Statement (EIS) or Public Environment Report (PER), or assessment by public enquiry.[1] The Minister may refuse an action at the end of this process if the environmental impacts cannot be appropriately managed.

### 6.2.5 Self-Assessment Process

The EPBC Act requires that DHA undertakes a 'self-assessment' to determine whether or not a proposal is likely to have a significant impact on the heritage values of the BNTS site.

Generally, DHA manages this obligation through seeking heritage impact assessments (HIAs) from external heritage consultants with the appropriate expertise in the application of the EPBC Act with regard to Commonwealth Heritage values. DHA's Senior Development Manager for the BNTS site, in consultation with the DHA National Heritage Manager, is responsible for recognising when an assessment on a proposed action is required.

### 6.2.6 Matters of National Environmental Significance

The EPBC Act recognises a range of protected NES matters under the Act's assessment and approval provisions. A person must not take an action that has, will have, or is likely to have, a significant impact on a protected NES matter without approval from the Minister.

The NES matters that apply to the BNTS site are identified in the tables below.

**Table 6.1** Commonwealth Heritage List.

| Place | Location | Class | Status | Place ID |
|---|---|---|---|---|
| Royal Australian Naval Transmitting Station | Baldwin Drive, Lawson, ACT | Historic | Listed | 105519 |
| *Synemon Plana* Moth Habitat | Baldwin Drive, ACT | Natural | Listed | 105535 |

**Table 6.2** Threatened Ecological Communities.

| Name | Status |
|---|---|
| Natural temperate grasslands of the South Eastern Highlands | Critically Endangered |
| White Box–Yellow Box–Blakely's Red Gum Grassy Woodland and Derived Native Grassland | Critically Endangered |

**Table 6.3 Threatened Species.**

| Name | Status |
|---|---|
| **Fauna** | |
| *Synemon plana* (Golden Sun Moth) | Critically Endangered |
| *Delma impar* (Striped Legless Lizard) | Vulnerable |
| *Grey-headed Flying Fox* | Vulnerable |
| **Flora** | |
| *Lepidium ginninderrense* (Ginninderra peppercress) | Vulnerable |

**Table 6.4** Listed Migratory Species.

| Name | Status |
|---|---|
| *Gallinago hardwickii* (Latham's snipe) | Species protection and habitat protection under international treaties. |

## 6.3 ACT Legislation

### 6.3.1 ACT Heritage Register

The ACT Heritage Register legally recognises and protects significant heritage places within the ACT. It includes places of natural, historic and Indigenous significance.

Currently, there are seven Aboriginal sites (comprising two isolated finds, three artefact scatters, one possible scarred tree and one area of archaeological potential) included in the ACT Heritage Register. These sites have been included in Table 6.5.

**Table 6.5** Registered Aboriginal Sites.

| Recording Type | Recording Code |
|---|---|
| Artefact Scatter | L01 |
| Artefact Scatter | L02 |
| Isolated Find | L08 |
| Isolated Find | L09 |
| Artefact Scatter | L11 |
| Scarred Tree[2] | L12 |
| Area of Archaeological Potential | AAP |

Should the land tenure status of the BNTS site transfer to the Territory, the BNTS site should be included in the ACT Heritage Register. The listing status of these sites should be updated with ACT Heritage based on the results of the archaeological investigation, as outlined in Section 4.4 of this HMP.

[2] The scarred tree has been confirmed as not being of cultural origin but has not yet been removed from the ACT Heritage Register.

## 6.4 Heritage Values

### 6.4.1 Multiple Values

The BNTS site is a complex place with multiple heritage values associated with the natural, historic and Indigenous environment. These values co-exist but are not interdependent—their historical contexts are generally unrelated to each other, and their appropriate management varies considerably. As such, DHA needs to consider the associated as well as immediate effects of every management decision and action on other values in its operation of the site. The appropriate management of the heritage values of the site as a whole will need to be carefully balanced to ensure that management measures do not conflict with each other. This may require seeking advice from experts with different backgrounds (eg architects and ecologists).

### 6.4.2 Commonwealth Heritage List Boundaries

#### Historic Values

The CHL boundary for historic heritage values of the site are based on a 1976 site plan identifying the aerial farm infrastructure (Figure 6.1 and Figure 6.2). This mapping for the CHL does not consider or identify the links between attributes and elements and does not recognise that they all contribute to the setting and significance of the site as a whole. Further, the CHL boundary map does not identify the copper earth mat nor encompass the Naval Village and its setting—both are key attributes of the historic heritage values of the BNTS site. Identifying individual components in a setting that has heritage significance as a whole makes appropriate management a challenge and may result in poor decision-making for future works.

The CHL historic heritage boundary should be formally updated by the Department of the Agriculture, Water and the Environment to encompass the site and its attributes in one boundary comprising the site boundary.

#### Natural Values

The natural heritage values of the BNTS have been reassessed and mapped by WS**P (Figure 6.3). The current CHL place name, boundary and citation for natural is inadequate and does not** address the full complement of values.

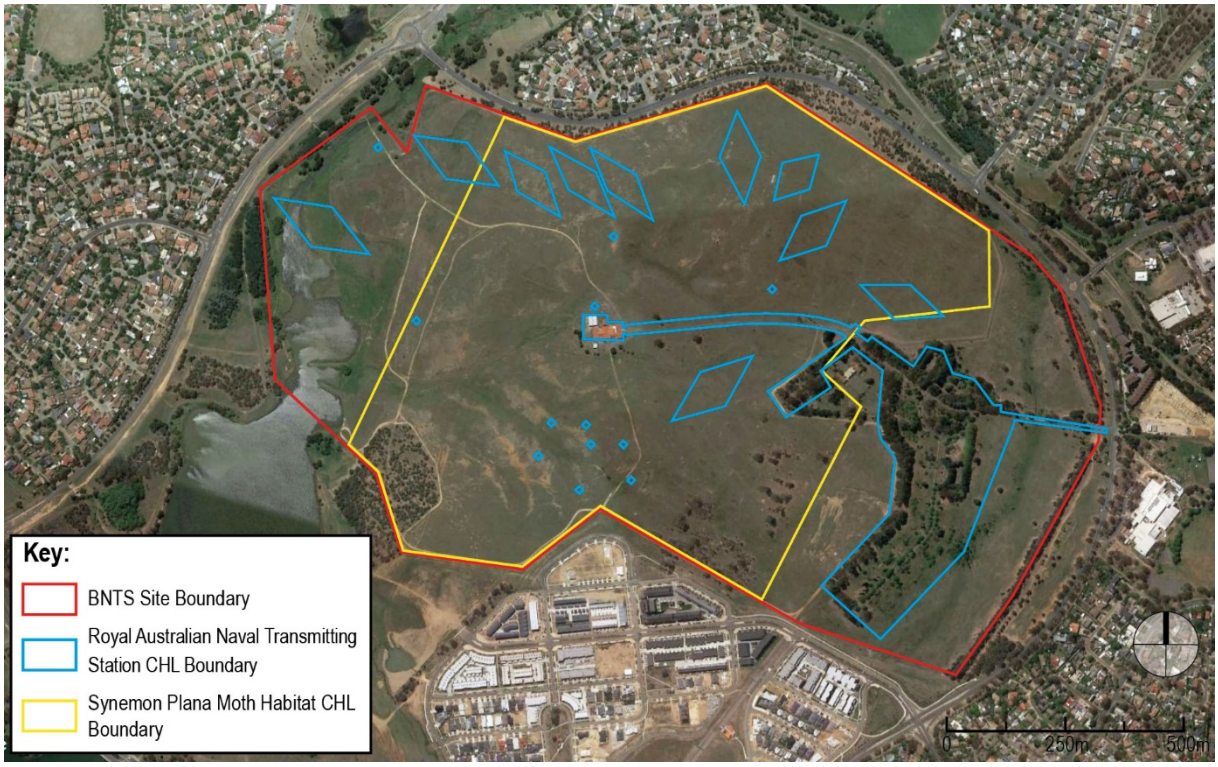


**Figure 6.1** Site boundary (red), the Commonwealth Heritage List boundaries for historic values (blue) and natural values (yellow). (Source: Google Earth with GML overlay, 2018)

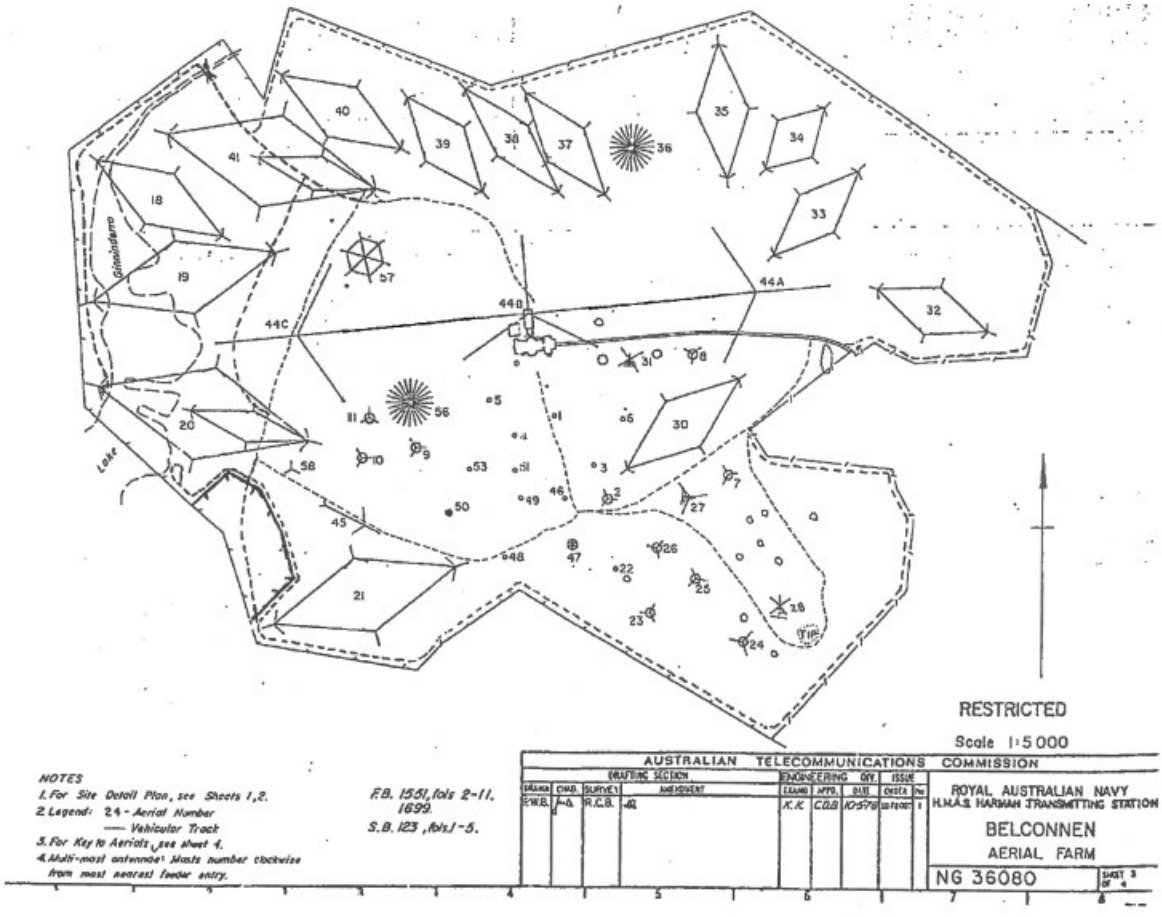


**Figure 6.2** Site plan of the Belconnen Naval Transmitting Station aerial farm. (Source: Egloff et al, 2001, p 29)

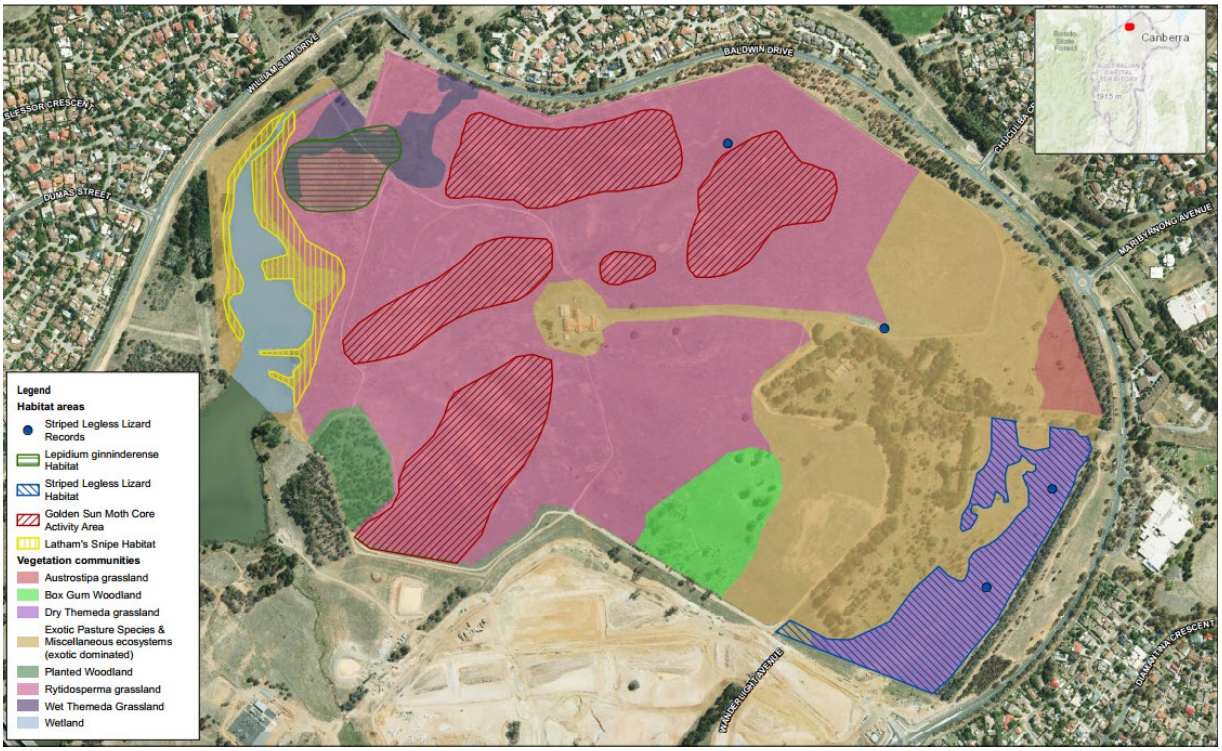


**Figure 6.3** Aerial image of the BNTS site with natural heritage values mapped. (Source: WSP, 2018)

### 6.4.3 Conservation of Values

#### Aboriginal Sites

The BNTS is located within a landscape that contains several registered and identified Aboriginal sites. While the identification and confirmation of some of those sites has now been reviewed, there are still a number of areas of Aboriginal cultural and archaeological sensitivity that warrant consideration as part of the ongoing management of the site. Specifically, areas of sensitivity noted in Figure XXX below should be avoided by future works and disturbances.

While the sites do not require active management in their present state, any change or excavation within the site has the potential to impact on those sites and PADs.

There are a number of management and impact mitigation options that can be considered for Aboriginal sites and PADs in general, such as site avoidance and conservation, artefact collection, archival recording and subsurface testing and salvage.

For the sensitive areas noted in Figure 6.4, the Aboriginal community considers that site avoidance and conservation are the primary management requirements. In order to mitigate against potential impacts on these sites, further consultation with the Aboriginal community is required.

A series of preliminary management options are provided in Section 8.0.

Confidential Information
Removed

**Figure 6.4** Sites and areas of sensitivity. (Source: ESRI Maps imagery with GML overlay, 2020)

## Natural Sites

*Core Grassland Area*

The majority of the natural heritage values of the BNTS site depend upon the continued existence and ecological health of the core natural temperate grassland ecological community. This area comprises the central *Rytidosperma/Austrostipa* grassland complex stretching from Ginninderra Creek in the west to the Naval Village in the east. This natural temperate grassland is a threatened ecological community with Commonwealth Heritage values. Additionally, it provides known habitat for the:

- Golden Sun Moth population;
- Ginninderra peppercress distribution;
- Striped Legless Lizard population; and
- Perunga Grasshopper population.

The opportunity therefore exists to create a very high-value natural heritage area, with many significant elements, on this single land parcel. Opportunities and constraints on this area following on from this are (i) that it needs to be reserved from development and (ii) it needs to be actively managed in order to protect the range of natural values.

The difficulties of managing for the range of natural values (floristic, insects, reptiles) and the types of heritage values represented on this site (processes, rarity, research and characteristic values) have previously been encountered at the Yarramundi grasslands on Lake Burley Griffin,[2] where past management for the retention of one natural value (the Striped Legless Lizard habitat) has been incompatible with the conservation of the other values.

Management of the core *Rytidosperma/Austrostipa* grassland complex requires the development and implementation of a management plan which has, as its central policy, the management of the whole grassland habitat ecosystem. Management directed towards the maintenance and enhancement of community structure and diversity will be more sustainable than management for particular elements.

To ensure that particular elements are also benefited by the ecosystem management, the management of the core natural temperate grassland area should apply an adaptive management approach where management activities would be monitored to ensure:

- the long-term sustainability of the natural temperate grassland community and the quality of the habitats it provides for Golden Sun Moth, Striped Legless Lizard and Perunga Grasshopper; and
- the development of best-practice management activities.

Special attention areas, such as hotspots for Golden Sun Moth activity[3] and the habitat of the Ginninderra peppercress, are exceptions to this approach. Due to their localised distribution and small areas, their management as special cases can be undertaken without constraining or limiting the ecosystem-based management of the grassland complex in which they occur.

Insufficient detail is currently known about the habitat requirements of the Ginninderra peppercress population or about the grassland/floodplain ecotone in which it presently occurs.[4] Further research work is needed in order to provide a knowledge base upon which management prescriptions can be developed. With the stabilisation of the kangaroo population and reservation of the grassland area secured, additional monitoring of moth distribution and hotspots will need to develop appropriate management strategies for Golden Sun Moth hotspots.

### *Kangaroo Population*

The population of Eastern Grey Kangaroos confined within the site has been discussed in the literature (Crawford and Rowell,[5] Rowell[6] and HLA-Envirosciences[7]). There are indications that the kangaroo population has increased significantly in recent years. In 2003, Rowell noted the existence of an ideal population of '70 resident kangaroos within an area surrounded by the high fence'. In 2004 the population was recorded by HLA Envirosciences[8] at 202 individuals. In early 2007, an informal count by BNTS caretaker staff[9] totalled 455 individuals, and in November 2007 during a site survey by the GML team, a count omitting the kangaroos sheltering in the eucalypt plantation in the southwest of the site, totalled 405 individuals. These counts indicate that the upper level of potential population growth rate of 30 per cent per annum, noted by HLA Envirosciences, has been achieved. Kangaroo controls have been implemented within the site, including culls and fertility control, and the population has been estimated in November 2018 at approximately 110 kangaroos. The grazing kangaroo population needs to be maintained at a sustainable level as a prerequisite of the grasslands' management.

### *Outlying Grassland Areas*

For outlying areas of natural grassland (the *Austrostipa* grassland in the northeast of the site and the dry *Themeda* grassland on the southeast of the site), the opportunities and constraints are slightly different. Studies have pointed out the lower value of the habitat they may provide for the Golden Sun Moth and

their physical separation from the main grassland area,[10] although the areas continue to provide habitat for the Striped Legless Lizard and the Perunga Grasshopper[11] and represent different types of natural temperate grassland from the large, central *Rytidosperma/Austrostipa* complex.[12] Previous studies have identified opportunities for management of these areas for natural values within the context of urban open-space use.[13]

Recent reappraisal of the dry *Themeda* grassland, including the 2008 Environmental Management Plan[14] and current biodiversity surveys being undertaken by WSP, have assigned significant conservation value to this area. As such, its management focus should be on the protection of natural heritage values through reservation. Management policy should focus on weed control and appropriate restrictions on recreational usage of grassland areas within the context of any future change in land use.

*Ginninderra Peppercress*

The Ginninderra peppercress area has been discussed above as a special case in the management of the core grassland ecosystem. The management of the type location and total known distribution of a newly described species is an opportunity rarely encountered by landholders and land managers. The limited distribution of this species indicates a particular habitat/landscape characteristic of the grassland/floodplain ecotone in this area that requires further research.[15] Due to the small size and number of populations, all populations should be conserved and actively managed. This includes managing vegetation, weeds and grazing pressure and avoiding development, recreation activities or construction of access tracks near the sites. The long-term viability of the population should be further enhanced through management of the adjacent grassland to increase habitat area for the species. A detailed adaptive management plan for the population within the site is needed that is consistent with the National recovery plan and ACT action plan for the species.

In addition to the management approach described for ecosystem management, its special status as the type location of a very rare and little-studied species also needs to be recognised in a management policy, which provides for access and possibly intensive study without compromising the population's health and survival.

*Non-Grassland Areas*

Two non-grassland elements have been identified in the assessment of natural heritage values, each with different opportunities and constraints.

- The remnant stand of Yellow box and Blakely's red gum is a grassy woodland type on the edge of the natural grassland. Although this patch is relatively small, this vegetation is consistent with the EPBC Act definition of the critically endangered woodland community and contains mature trees with hollows as well as natural regeneration. With proper management its presence will provide a representation of the habitat juxtaposition of woodland and grassland that was characteristic of the Canberra area before settlement and the interrelationship of habitats. Develop a management plan for the site that includes specific management measures for the Yellow box and Blakely's red gum that are consistent with the national recovery plan and ACT action plan.

- The natural heritage values also include the habitat provided by the upper reaches of Lake Ginninderra for the migratory bird species Latham's snipe (covered by the JAMBA[16] and CAMBA[17] conventions). As with the case of the grassy woodland, the conservation management of the foreshore areas provides opportunities to develop a representation of the habitat juxtaposition of wetland, floodplain and grassland and their interrelationship of habitats, which has particular relevance to the mixture of avian fauna on site[18] and the habitat requirements of the Ginninderra

peppercress. Constraints arising from its conservation management will mainly relate to the control of access and intensity of use of terrestrial lands adjoining the wetlands and water activity restrictions, in order to optimise the habitat values of shallows and fringing aquatic vegetation.

## Historic Sites

### *Transmitting Station*

The transmitting station complex is generally solidly built and has performed extremely well given its age and, in more recent years, neglect and lack of use. It has also withstood periods of very wet and very dry periods well. There is some structural cracking to internal and external walls. However, these do not affect the integrity and are of aesthetic concern only.

The building is structurally sound throughout. Rendered and painted brick walls are in good condition although graffiti is evident in some areas. The internal paint is generally in a good condition but is flaking in some areas and has been affected by water ingress in spots. Water ingress may be due to broken windows or roof tiles.

The roofs are generally sound although the gutters, flashing and some flat roofs need maintenance and/or replacement. The terracotta tiles appear to be in good condition and do not require more than a detailed inspection for cracked tiles.

The glazing to several windows has been broken, removed or the windows have been boarded over. Should access and use be reinstated, the glazing would need to be replaced and the windows painted and serviced to ensure they are in good working order. The doors also require maintenance and painting.

The floors are generally sound, with minor defects/damage to some vinyl surfaces and evidence of water ingress. Some painted floors are worn and flaking, and repainting is recommended. The ceilings vary from poor to good condition with some recommended for replacement, particularly fibrous plaster ceilings that are located below metal roofs.

Given the robust nature of the construction of the buildings and their sound condition, they can be re-used in the future.

### *Sailors' Mess*

The Sailors' Mess is a single-storey cavity brick construction with metal clad flat roofs built in 1961. This building has been boarded up and left to deteriorate. It does exhibit some foundation movement, particularly in the northern accommodation wing and the ceiling has collapsed in two places in the mess area, likely due to vandalism. Otherwise, the building is in reasonable structural condition.

The building has been comprehensively stripped of fixtures and fittings and subsequently vandalised, resulting in damage throughout. Measures taken to protect the building in the past have resulted in further damage to windows and door frames. The building would need substantial refurbishment to restore it to a functional use.

### *Guardhouse*

The Guardhouse is a small, single-storey painted brick and rendered building with decorative gables, a terracotta tiled roof and blast-proof boundary wall. As with the other buildings at the site, the Guardhouse has been boarded up but also shows evidence of vandalism—broken window and door glazing.

The building has minor settlement cracking, notably in the wall to the northwest and southwest sides. The roof and floor are generally sound. The external and internal painting is in good condition. Minor works would be needed to make the building habitable.

*Pre-1939 Stock Route*

While little remains of the pre-1939 stock route, it is worthy of interpretation within the context of future uses of the BNTS site. The alignment of the route can be maintained and could act as a natural divider between the former operational area and the residential/recreational area. Investigations should be undertaken to determine if the remnant fence posts identified could be the only remaining physical evidence of the stock route.

*Landscape Elements*

Most of the plantings that comprise the former Naval Village and the Sailors' Mess are in relatively good condition, given that this portion of the site has been vacant for over 10 years. Most of the exotic plantings around the Naval Village are structurally sound and healthy and would require minimal maintenance and upkeep. It is possible that if future development of the Naval Village is planned, not all of the plantings would need to be retained. A representative sample would be suitable in addition to a commitment to making exotic plantings a principal feature of any new development. Collective plantings such as the pines bordering the tennis courts and lining the main avenues should be retained as a group. Where plants or trees within groups are dying, these could be replaced like for like.

The windbreak plantings are relatively sound and in a healthy condition with the exception of some that have died, and others that are in a state of senescence. There is also overgrowth that interferes with the legibility of the windbreak. While it is essential that the windbreak is retained as an attribute of the site's heritage values, there is potential to trim back and thin the trees and overgrowth. Any work would need to be undertaken in accordance with the Preliminary Arboricultural Report prepared by Canopy Tree Experts in 2018 and in accordance with the advice of a qualified arborist who understands the significance of the windbreak.

The tennis courts and cricket pitch remain important attributes of the heritage values of the BNTS site and should be retained and maintained. However, they can withstand a reasonable degree of change to ensure continued use and compliance requirements.

### 6.4.4 Condition of Heritage Values

Section 341S of the EPBC Act and Regulation 10.03B, Schedule 7A, of the EPBC Regulations require that a management plan for a Commonwealth Heritage place 'assess and monitor the condition of heritage values'. The EPBC Regulations are based on protecting, conserving and managing 'values', which include but also extend beyond the physical fabric of a place. This HMP is overarching, ensuring the heritage values of the BNTS site—whether they are embodied in the physical fabric or otherwise—are conserved and managed accordingly.

Measuring the condition of the heritage values includes consideration of:

- authenticity—the cultural values are truthfully and credibly expressed through attributes of form, design, materials, techniques, location and setting (an authentic place is the honest product of its history and of historical processes); and
- integrity—includes all elements necessary to express the heritage values, and ensure the complete representation of the features and processes that convey the significance and have not

been developed inappropriately with adverse effect to heritage values. Integrity is a measure of the wholeness and intactness of the place and its attributes.

The heritage values of BNTS are embodied in the attributes of the place, which include its physical fabric and setting—that is the buildings, infrastructure and its natural environment. It also includes the non-physical setting—the historical associations, records, and social connections to the place.

The conservation of the values that extend beyond the physical fabric of a place is as important as caring for the fabric. For example, the condition of the heritage values at the site could be diminished by changes that obscure the site's layout and planning arrangement, because heritage values are embodied in the ability to understand the site's original landscape design intent.

### 6.4.5 Condition of the Heritage Values at the Site

BNTS was included in the CHL in 2004 and assessed in the most recent HMP in 2009. When Defence decommissioned the site, an important part of the historical significance of the site was removed due to the loss of function. Now that DHA has purchased the site, it is unlikely that this military function will ever be revived.

In 2006, the large aerial array and associated masts were removed. Since the site has been unused, the built and landscaped elements of the BNTS have degraded due to neglect, lack of use and vandalism. For example, the Naval Village plantings and windbreaks are overgrown, the roads and tennis courts have not been maintained and are cracked and uneven, and buildings have been left to deteriorate. Much of the pre-existing damage can be easily rectified with increased cyclical maintenance, repair and cosmetic works. Without immediate action and long-term planning, the heritage values of the BNTS could be further diminished.

There is an urgent need to conserve the integrity of the site as a cohesive landscape that incorporates all listed and identified values. The identification and conservation of all attributes, including a consistent site-wide approach and implementation of building, element and landscape maintenance and management, would assist with the protection of the heritage values.

### 6.4.6 Security

Regular and ongoing security for the site is essential for the protection of the site's heritage values. While the BNTS site is vacant there is a high risk of damage by vandals, which is already identified as an issue affecting the site, particularly the buildings. Permanent occupation is the preferred solution to deter vandals.

### 6.4.7 Hazardous Materials

Previous condition reporting of the site has highlighted the presence of hazardous material, such as asbestos. Should further hazards be identified, the implications of the hazard for the conservation/retention of affected elements of heritage value will need to be determined. Risks related to the retention and conservation of affected items and potential strategies to reduce the identified risks will need to be investigated to determine whether or not the conservation/retention of affected heritage elements is feasible and in the best interests of the broader community.

Hazardous materials are a common feature of heritage buildings and options can be explored that are sensitive to the heritage values of the place but that also meet compliance requirements and community expectations.

## 6.5 Proposed Development

### 6.5.1 Staged Development

DHA is seeking to develop the BNTS site in a two-stage project (Figure 6.4). Stage 1 includes the residential development of the Naval Village to the east of the site and would include low to medium density housing. At the time of preparing this HMP, only conceptual options have been drafted for Stage 1 with detailed planning designs to be developed later after further analysis of the site is conducted. Stage 2 of the project comprises the remaining portion of the site. DHA will be investigating potential future uses to this stage subject to negotiations with the relevant legislation and regulatory bodies.

In lieu of a site masterplan, this HMP should be used to assist DHA in decision-making regarding future development at the site. DHA should also act in accordance with the EPBC Act and its Regulations and the objectives and desired outcomes of DCP 09/12.


**Figure 6.5** Aerial image of the BNTS with Stage 1 (yellow outline) and Stage 2 (orange broken outline) identified. (Source: Google Earth with GML overlay, 2018)

Prior to undertaking any development, DHA should undertake a heritage impact assessment (HIA) to determine if its proposed action is likely to result in a significant adverse impact to the heritage values of the site. If the proposed action is likely to have a significant impact on the Commonwealth Heritage values of the site or a protected NES matter, a referral under the EPBC Act would need to be undertaken.

Any actions proposed by DHA should first consider the best-case scenario for the Commonwealth Heritage values, which is to retain, maintain, protect, conserve, present and transmit all values, per its obligations under the EPBC Act and EPBC Regulations.

The constraints of the site are such that sensitive redevelopment of the BNTS site is currently only possible in the eastern portion of the site around the Naval Village and Sailors' Mess. Any redevelopment would need to ensure appropriate protection of the heritage values and attributes and only consider

compatible uses and options in line with this HMP and any heritage advice. Figure 6.5 indicates a zone within the BNTS that is suitable for sensitive redevelopment.


**Figure 6.6** Aerial image of the BNTS site identifying a potential redevelopment zone. (Source: Google Earth with GML overlay, 2018)

### 6.5.2 Subdivision and Rezoning

The parcel of land that makes up the BNTS site has been managed by Defence from the late 1930s to the early 2000s and has had a significant role in creating and sustaining the heritage values of the place. Therefore, it is critical that any future subdivision of the place does not impede the opportunities for integrated management of the natural and cultural heritage values of the site in the future. Subdivision of the former Naval Village and the Sailors' Mess is appropriate, provided that adequate heritage protection measures are in place to ensure the protection and management of the heritage values of those sites, and to protect the surrounding areas of natural, historic and Indigenous heritage values from any adverse impact resulting from redevelopment or activities on those sites. Any subdivision should respect the urban form and layout of the area, where possible, including existing street and significant street and windbreak plantings.

Any future change in zoning should reflect the heritage conservation requirements of the different areas of the BNTS site, as outlined in this report. A zoning that allows for some development may be appropriate (as identified in Figure 6.5). However, the potential for adverse impacts of development on the surrounding natural and cultural values would need to be assessed as part of any rezoning assessment.

### 6.5.3 Compatible Uses

Uses that interpret and present the heritage values of the BNTS site are appropriate and could include:

- a new residential village that follows the original planning principles, and conserves the significant landscape and historical features of the former Naval Village;

- re-use of the Sailors' Mess as a recreational or community facility with a degree of seclusion from the former Naval Village;
- adapting the transmitting station complex for use as a museum, or educational or research facility; and
- leasing sections of the transmitting station complex that do not contain significant equipment for use as office space, workshops or studios.

## 6.6 Community Interests

In previous reporting for the BNTS site, community consultation was undertaken to understand any interest in the place, its history and heritage values. The results were that specialist and community groups and individuals have an interest in the BNTS site and care about its future management.

As such, DHA should:

- ensure that interested parties are kept informed about how the heritage values of the site are being managed;
- seek knowledge and information from those community stakeholders who are knowledgeable about the site and may hold material important to understanding its history and heritage;
- seek community stakeholder input and comment on any major changes affecting the conservation and management of the heritage values; and
- involve stakeholders in planning for the future conservation and management of the site.

## 6.7 Interpretation

Interpretation is an essential part of the conservation process. The Burra Charter defines interpretation as 'all the ways of presenting the cultural significance of a place', which may include the treatment of heritage fabric through maintenance, reconstruction or restoration; the use of and activities at a place, the introduction of explanatory material, events and activities.[19] It can also be an engaging educational tool, inspiring or deepening connections between people and places.[20] Successful interpretation encourages the personal appreciation and enjoyment of the experience of a place.[21]

The active interpretation of a heritage place supports community recognition, enjoyment and understanding of a site's heritage values.

Following the Burra Charter for good interpretation practice, the EPBC Act includes a requirement that management plans for Commonwealth Heritage places should include policies on how heritage values should be interpreted and promoted. Further, presenting and transmitting the heritage values of a Commonwealth Heritage place forms the first of the Commonwealth Heritage management principles.

Little interpretation is available at the BNTS site. This is due to the site historically not being open to the public—a state it retains. However, access is further limited for safety reasons as the site has been left vacant and generally unmaintained. What interpretation is available mostly refers to the history of the site as a transmitting station.

### 6.7.1 Existing Interpretation

*Canberra Tracks* is an initiative funded by the ACT Government that comprises a network of heritage signage along eight self-drive routes throughout Canberra.[22] As part of this initiative, an interpretation sign was installed immediately outside the BNTS site fence, off Dawn Crescent in South Lawson. Information about the site is available on the Canberra Tracks website available here: <https://www.canberratracks.act.gov.au/heritage-trails/track-6-belconnen/naval-transmitting-station>.


**Figure 6.7** View looking northwest to the Transmitting Station with the Canberra Tracks interpretive sign in the foreground. The sign is located outside of the BNTS site boundary fence on a green strip by Dawn Crescent in South Lawson. (Source: GML, 2018)

### Objectives for Future Interpretation

Implementing interpretation initiatives is an essential component of heritage management and would increase public awareness of the heritage values of the BNTS site.

The aims and theory of interpretation are summarised in the Virtuous Circle in Figure 6.7.

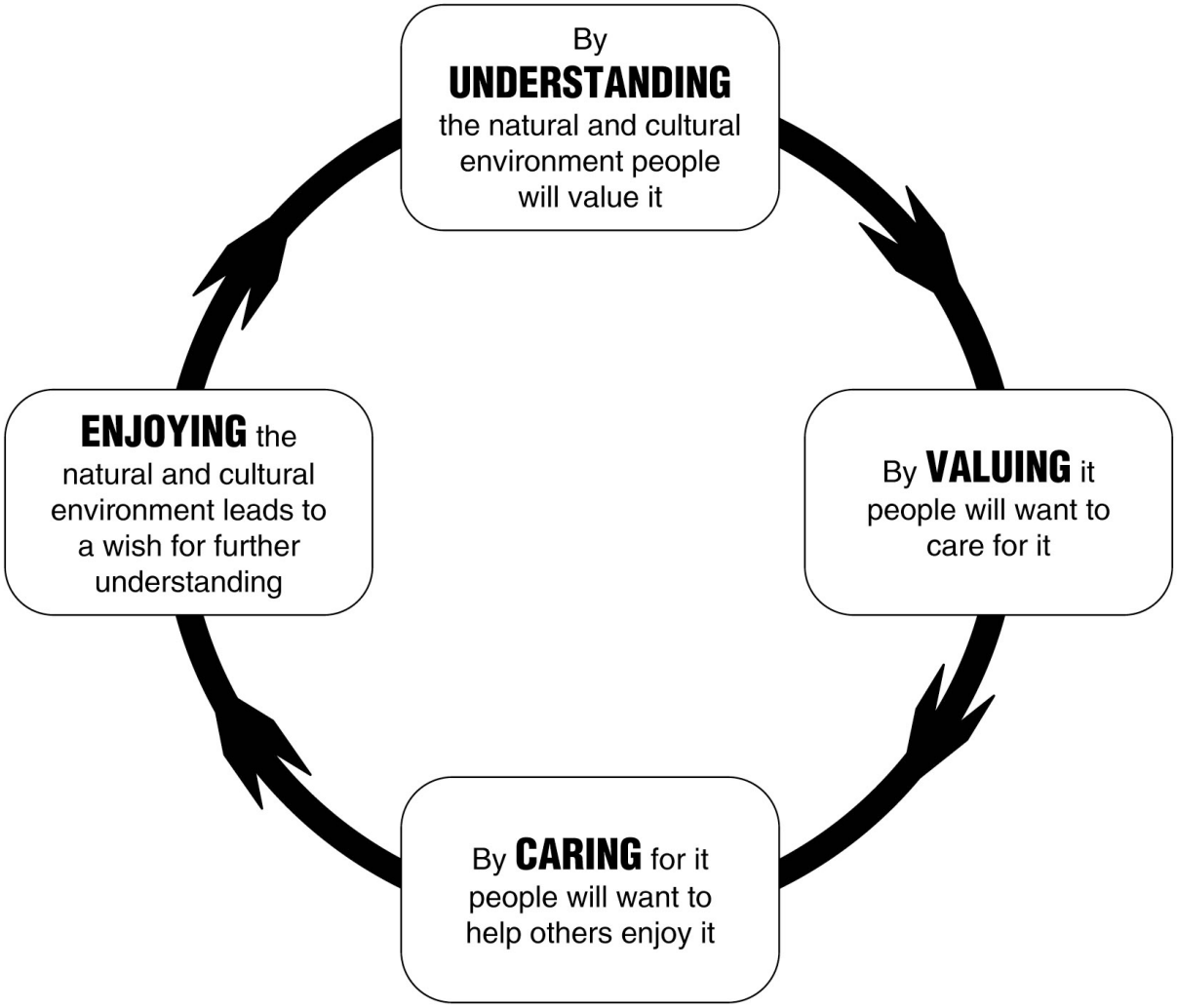


**Figure 6.8** The Virtuous Circle, adapted from marketing theory by English Heritage and Godden Mackay Logan (now GML).

### Interpretation Principles

In planning future interpretation measures, ensure that the principles listed below are observed.

- Involve people associated with the heritage values of the BNTS as well as interested people from the wider community, such as former and serving Defence personnel, members of the Aboriginal community and special interest groups.
- Engage with people familiar with the site and its operation who could inform heritage interpretation, such as former workers of the transmitting station who understand the equipment.
- Involve people with technical skills and experience in heritage interpretation to provide advice on and/or undertake interpretation work.
- Ensure all research is thorough and that accumulated materials are publicly available at the completion of the project.
- Focus interpretation on and develop themes and key messages from the heritage values of the BNTS site.

- Understand the site users and investigate potential audiences to customise interpretation measures.
- Ensure that recommendations and devices are integrated with conservation and planning.
- Ensure that potentially sensitive Defence information is not included in the proposals for interpretive works by liaising with Defence stakeholders.
- Ensure that recommendations and devices are designed to engage and stimulate audience interest.
- Evaluate the success/effectiveness of the interpretation measures over time.

Interpretation devices should:

- be accessible, reversible and compatible with the character of the areas in which they are located;
- be integrated with ongoing conservation and planning processes;
- be sustainable into the future by providing for their maintenance, evaluation and review;
- use site-specific and authentic themes and stories that are clear, accurate and concise;
- allow for alternative audiences by providing a variety of experiences;
- be flexible;
- be succinct;
- avoid technical jargon;
- be of high-quality design, including consistent and appealing branding;
- include unambiguous contact details for further information;
- be as accessible as possible given the steep terrain, access restrictions both to places and within particular areas of both places and heritage values;
- be resilient to damage; and
- allow for secure conservation of in situ fabric and archaeological remains, where applicable.

*Interpretation Strategy*

The development of an Interpretation Strategy would provide a clear approach to the interpretation initiatives appropriate for the site. An Interpretation Strategy could include:

- the identification of key interpretation themes and messages for the site, which portray the heritage values and stories of the place;
- determination and tailoring of interpretation to the potential audiences appropriate to the site;
- exploration of options for a variety of interpretive media not limited to signage, such as oral histories, interactive media, guided tours and workshops, and off-site possibilities such as website and digital applications; and

- exploration of partnerships with educational institutions (eg University of Canberra) and professional organisations (eg Sea Power Australia).

The key audiences for interpretation at the BNTS site are site users, former staff and families who worked and lived at the site, the Defence Force community, the Belconnen and Canberra community, and special interest groups such as the National Trust (ACT) and Engineers Australia.

## 6.8 Endnotes

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19 Australia ICOMOS Inc, *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013*, Australia ICOMOS Inc, Burwood, VIC, 2000, Article 1.17.

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# 7.0 Managing Heritage Values

## 7.1 Introduction

The following management and maintenance guidelines for the conservation of the historic heritage values of the BNTS site are provided in the context of a range of management requirements and issues for the site.

## 7.2 Ranking of Significance

To assist in the management of heritage attributes and elements that make up the historic heritage values of the BNTS site, they have each been ranked by significance.

Understanding the significance and contribution of the various places enables a flexible approach to heritage conservation and management. The following rankings have been used to assist with assessing the contribution that individual attributes/elements make to the historic Commonwealth Heritage values of the site as a whole. An explanation of significance rankings is provided in Table 7.1.

**Table 7.1** Explanation of Heritage Significance Ranking.

| Ranking | Explanation of Heritage Significance Ranking |
|---|---|
| **High** | The attribute/element makes an irreplaceable contribution to the significance of the place as a whole. Without this attribute/element, the significance of the place is diminished. Loss or unsympathetic alteration would diminish the heritage values of the place.<br>Generally, these elements include a high degree of original fabric or attributes with heritage values and may include intangible components such as views and functional relationships, which directly contribute to their values. |
| **Moderate** | The attribute/element makes an important contribution to the significance of the place as a whole. Without this element the significance of the place may be diminished. Loss or unsympathetic alteration is likely to diminish the heritage values of the place. |
| **Low** | The attribute/element makes an important contribution to the significance of the place as a whole. Without this element the significance of the place as a whole may not be diminished, provided mitigation measures are implemented. |
| **Intrusive** | The attribute/element detracts, or has the potential to distract, from the significance of the place. |
| **None** | The attribute/element has no importance to the significance of the place. |

**Table 7.2** Heritage Significance Rankings for Historical Heritage Attributes at the BNTS Site.

| Attribute | Level of Significance |
|---|---|
| **Transmitting Station Complex** | High |
| **Radio Transmitting Equipment** | High |
| **Aerial Farm Infrastructure** | High |
| **Outbuildings and Cricket Pitch** | Moderate |
| **Guardhouse** | Moderate |
| **Sailors' Mess** | Low |
| **Naval Village** | High |
| **Travelling Stock Route** | Low |

## 7.3 Tolerance for Change

### 7.3.1 Explanation of Tolerance for Change

'Tolerance for change' identifies the extent to which key elements and attributes are able to tolerate change without adversely affecting the nature of degree of their significance to the BNTS site overall. Generally, the more significant an element or attribute, the lower the tolerance for change. However, this can vary depending on condition or integrity.

This approach assists in guiding development and in minimising any adverse impacts to the heritage values of the BNTS site.

**Table 7.3** Explanation of Tolerance for Change Categories.

| Tolerance for Change | Application to Elements/Attributes at the BNTS Site |
|---|---|
| **Low** | The element/attribute should be retained and conserved through maintenance and restoration. |
| **Some** | The element/attribute should generally be retained and conserved. However, it may be altered to some degree without adverse impact to the heritage values. |
| **Moderate** | The element/attribute should generally be retained and conserved, and adaptive re-use is possible. There is greater opportunity to change with less adverse impact. |
| **Reasonable** | Alterations detract from the significance or the original element/attribute is difficult to interpret, and the alteration or accretion should be removed or replaced, possibly through adaptive re-use. |
| **Substantial** | The element should be removed, replaced or altered for adaptive re-use. |

#### Historic Heritage Values

The tolerance for change has been mapped for the Transmitting Station Complex, the Guardhouse and Sailors' Mess in the figures below.

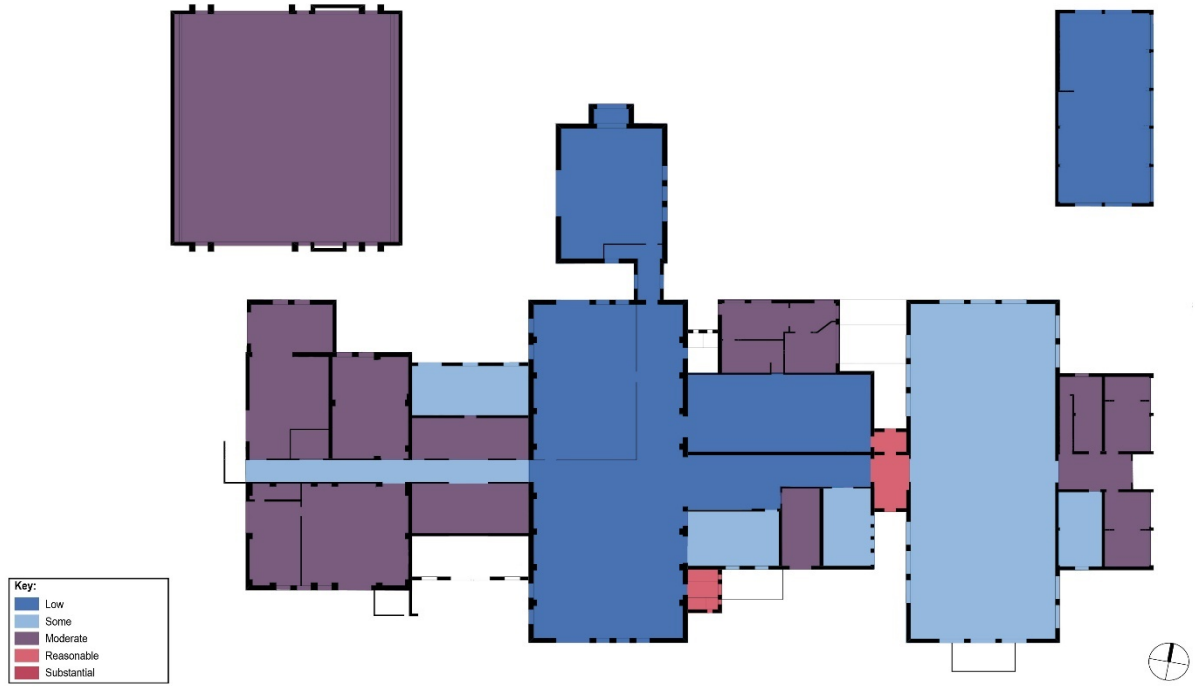


**Figure 7.1** Tolerance for change for the Transmitting Station Complex. (Source: GML, 2018)

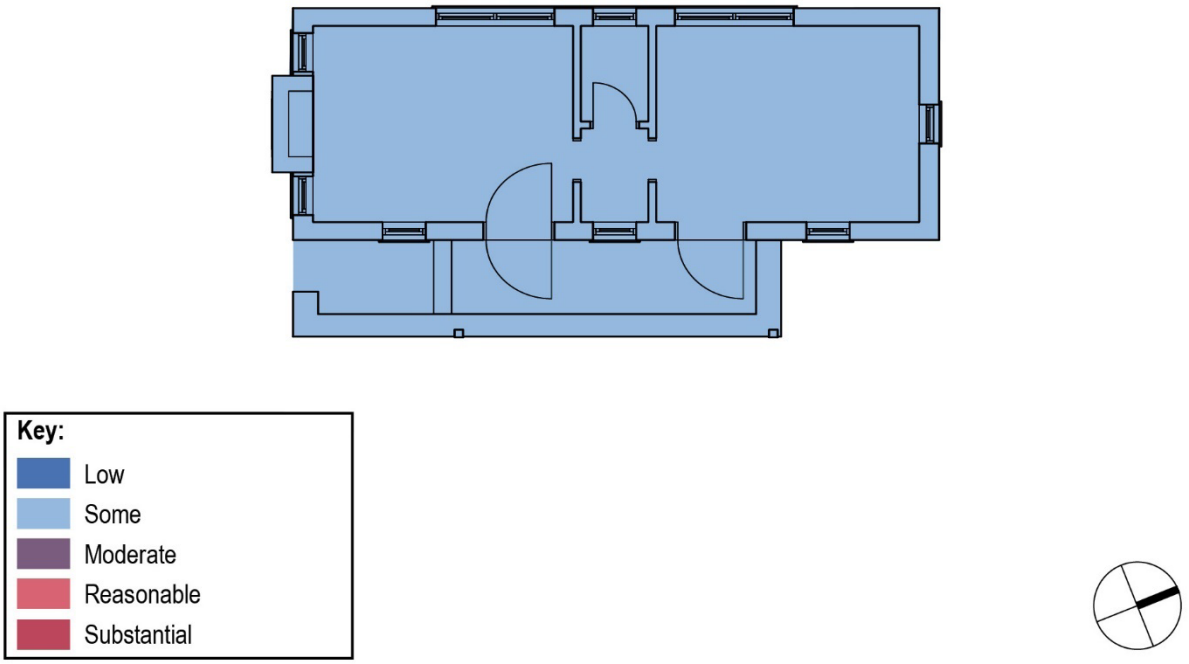


**Figure 7.2** Tolerance for change for the Guardhouse. (Source: GML, 2018)

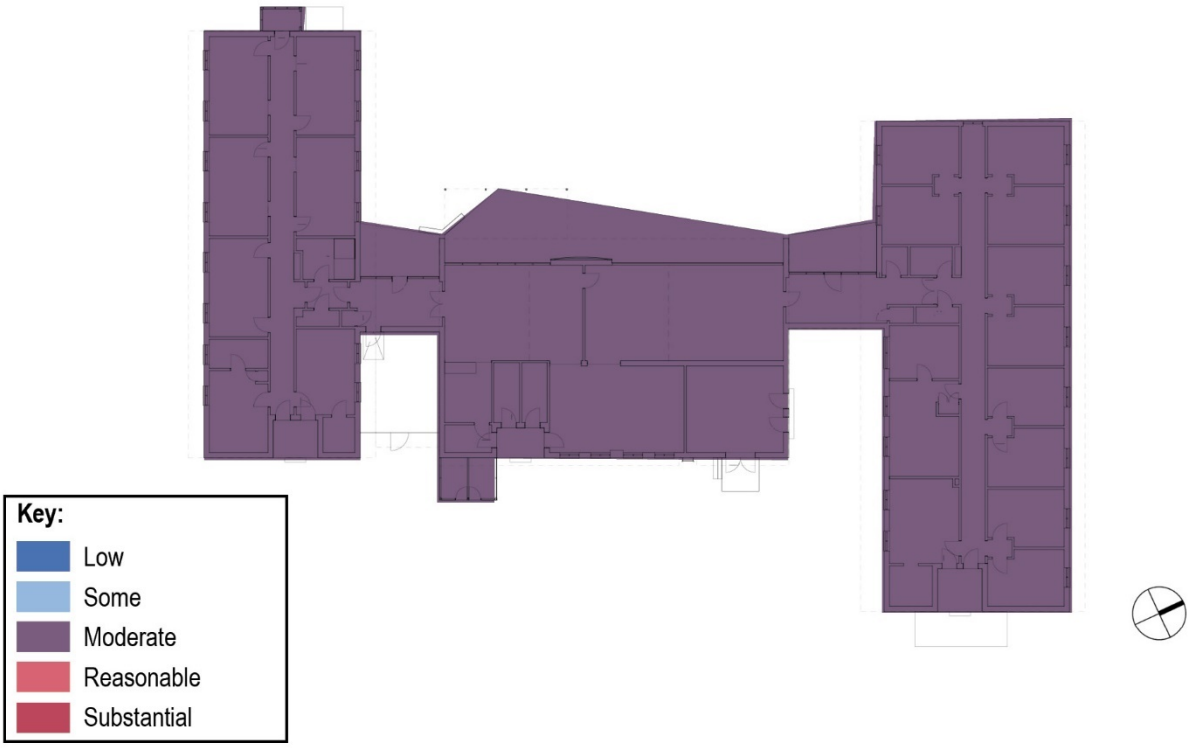


**Figure 7.3** Tolerance for change for the Sailors' Mess. (Source: GML, 2018)

### Indigenous Heritage Values

All of the confirmed archaeological sites identified in Section 4.4 (L01 site, L01 PAD, AAP PAD site) and those on the western side of the study area (L11 site, L11 PAD and LPAD1) have low tolerance for change. The should not be impacted without further assessment and consultation with the Aboriginal community.

## 7.4 Significant Impact Assessment Process

DHA does not have an organisation-wide impact assessment process. GML has developed a flowchart to be utilised by the Senior Development Manager when initially assessing planned development works regarding the likelihood of an action to result in a significant impact on the listed and identified values of the BNTS site. The process is described in Figure 7.4 Process for considering Commonwealth Heritage values in capital works and development projects. (Source: GML, 2018)

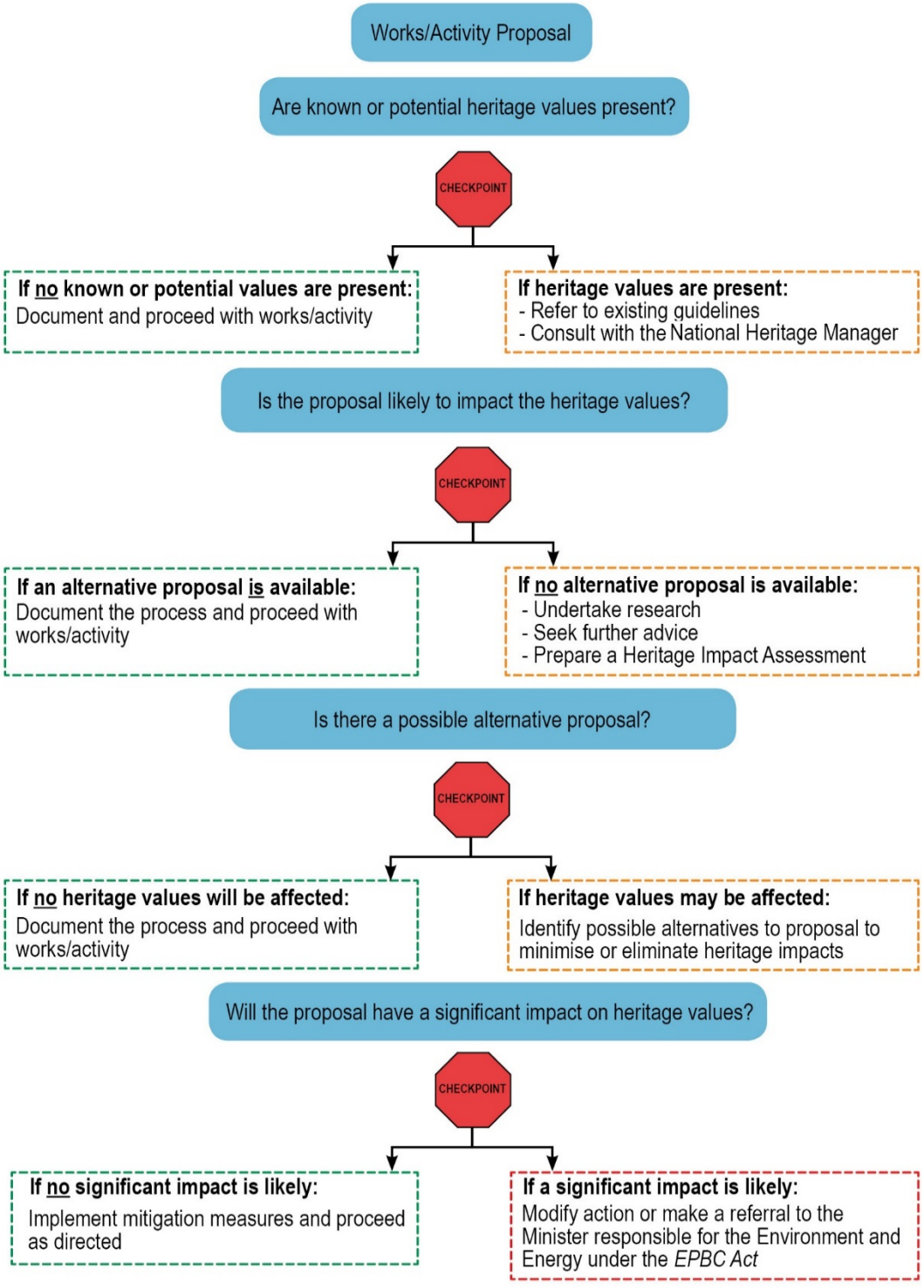


**Figure 7.4** Process for considering Commonwealth Heritage values in capital works and development projects. (Source: GML, 2018)

## 7.5 Maintenance

### 7.5.1 Introduction

Routine maintenance is critical for the ongoing care and use of any building or structure, ensuring a place is kept viable for the benefit of users, visitors and for future generations. The maintenance requirements identified in this section are based on best practice principles applied in response to observations made and maintenance issues identified during site inspections, which were undertaken as part of the preparation of this HMP.

The following guidelines aim to assist DHA personnel, contractors and other site users to manage cleaning, maintenance and repair in such a way as to avoid, minimise or mitigate potential adverse impacts on the heritage values of the BNTS site. Guidelines contained in this section include:

- guidelines on the general approach to maintenance;
- schedule of catch-up maintenance tasks according to priority;
- schedule of cyclic inspection and maintenance; and
- guidelines for maintenance works for elements of built fabric.

### 7.5.2 General Approach

Cleaning, maintenance and repair should be based on the philosophy of ‘doing as much as necessary but as little as possible’. This includes retaining significant fabric, where possible, rather than replacing the elements. New work should take particular care to retain, through restoration of significant fabric and detailing, evidence of change and features of particular interest. When replacement of significant elements is required, then documentation of the fabric, appearance and method of construction should be undertaken both before and during the works.

When considering options for cleaning, maintenance and repair:

- avoid or minimise impacts to heritage values;
- if negative impacts are unavoidable, mitigative actions will need to be identified; and
- examine, measure and record existing condition prior to commencement.

#### Specialist Expertise

Cleaning, maintenance and repair should be carried out by site personnel or contractors trained in working with heritage fabric that is often fragile and easily damaged by the use of inappropriate techniques or unnecessary intervention.

#### Documenting and Recording

All cleaning, maintenance and repair works should be documented in the DHA Heritage Register. Text records, photographs, drawings and plans should be included in the documentation and should be appropriately annotated.

### 7.5.3 Schedule of Cyclical Inspection and Maintenance

Regular inspections are essential for effective preventative maintenance and play an important role in extending the life of a building or ensuring the good condition of a site or element. Inspection records

help to build up a picture of the asset and how it is performing. Planned inspections and maintenance need to be carried out in an ordered way and require dedicated time that is scheduled well in advance. For places with natural values, time of day and season can be an important factor to take into consideration.

### 7.5.4 Guidelines for Maintenance: Built Elements

| **Brickwork** | |
|---|---|
| **Clean** | Remove dust, dirt, grime and mould with water and a soft brush. Minimise use of high-pressure water jets and do not saturate bricks or other elements.<br>Removal of stubborn dirt, grime, mould and graffiti with detergents or other methods should only be undertaken with the assistance of specialist cleaners and only once at least three cleaning methods have been tested—the method that results in the least damage to the brickwork or change in colour or appearance should be selected. |
| **Repair** | Repair only where extensive weathering, exfoliation and blistering have occurred or for patching where fastenings have been removed or damage has occurred.<br>Patch using a cement and sand mixture with a colour similar to the remaining brickwork and applied as a series of layers to reconstruct the surface. Pigments to achieve a colour match will need to be tested.<br>**Note:**<br>Bulges in brickwork may represent structural failure and a significant safety hazard. Rectification should be undertaken in consultation with a structural engineer. |
| **Replace** | Where cracking is more than superficial, seek structural advice.<br>Replace only when extensive splitting, cracking and/or spalling have occurred. The replacement brickwork should be of matching type, colour size, shape, density and surface texture to match existing. |
| **Repoint** | Repoint only where existing mortar joints are excessively soft, crumbling, cracked, badly stained, missing or have been inappropriately pointed with cement-rich mortar.<br>The replacement mortar should match the composition and colour of the existing mortar. The joint profile should also match the existing. |
| **Repaint** | Brickwork should not be painted unless there is evidence that it was originally painted.<br>Test existing paint for lead content prior to undertaking any paint removal. If lead is present, seek further advice on safe removal methods.<br>If paint is lead-free, remove loose paint and efflorescence by hand scraping, chipping or with a stiff natural bristle brush—do not use wire brushes. Use a softer brush if the mortar or bricks are soft. Proprietary chemical paint removers may be used for large surface areas and only if an alternative is not possible.<br>Use an acrylic primer or undercoat appropriate for brickwork. Apply finishing paint that is both compatible with primer and appropriate to prevailing conditions. Repaint using a paint of the same colour and finish (such as 'gloss' or 'matt') as original. |

| **Metal Flashing/Capping** | |
|---|---|
| **Clean** | Remove dust, dirt, grime and mould with water and a soft brush. Minimise use of high-pressure water jets and do not saturate other elements. |
| **Repair** | Re-fix with fasteners of a compatible material—do not mix metals.<br>Where flashing or capping is substantially damaged, cut out affected section and replace with flashing of matching material, dimension and thickness, lapping and sealing the joints. Use silicone resin products for repairs of small holes only. |
| **Replace** | New flashings should be of a suitable width and thickness that are compatible with the remaining flashing on the roof, gutters and downpipes—do not mix metals. |

| Tiled Roofing | |
|---|---|
| **Clean** | Remove dust, dirt, grime and mould with water and a soft brush. Minimise use of high-pressure water jets and do not saturate tiles or other elements. |
| **Repair** | Re-fix slipped tiles as needed using non-ferrous nails. |
| **Replace** | Replace tiles only where they have broken, cracked, are missing or are no longer waterproof. Use replacement tiles that match the size, shape, texture and colour of existing. Where possible, use tiles salvaged from the site. |
| **Repoint** | Repoint only where existing mortar/beds are excessively soft, crumbling, cracked, badly stained, missing or have been pointed with cement-rich mortar.<br>The replacement mortar/bedding should have a finished colour to match surviving examples of original mortar/bedding. |

| Chimneys/Vent Pipes | |
|---|---|
| **Clean** | Remove dust, dirt, grime and mould with water and a soft brush. Minimise use of high-pressure water jets and do not saturate roof tiles, brickwork or other elements. |
| **Repair** | Re-fix with fasteners of a compatible material—do not mix metals.<br>Where flashing is cracked, buckled or corroded, cut out the affected section and replace with flashing of matching material, dimension and thickness, lapping and sealing the joints. Use silicone resin products for repairs of small holes only.<br>Repoint deteriorated or open mortar joints using compatible mortar with a finished colour to match surviving examples of original mortar elsewhere. |
| **Replace** | Replace/reconstruct only if chimney structure has failed or vent pipes are significantly damaged. All detailing should be replicated.<br>New flashings/elements should be of a suitable width and thickness that is compatible with the remaining flashing on the roof, gutters and downpipes—do not mix metals. |
| **Repoint** | Vent pipes and other roof penetrations should only be (re)painted if they were originally painted.<br>Test existing paint for lead content prior to undertaking any paint removal, sanding or scraping. If lead is present, seek further advice on safe removal methods. |

| Rainwater Goods | |
|---|---|
| **Clean** | Clean out and wash guttering on a regular basis (at least twice a year) to remove corrosive elements, particularly areas that are not effectively washed by rainfall.<br>Consider installation of discrete gutter guards if regular cleaning is problematic. |
| **Repair** | Re-fix with fasteners of a compatible material—do not mix metals.<br>Patch thinned areas of copper rainwater goods with materials that are compatible with copper and re-solder open joints. |
| **Replace** | Replace only where deterioration is substantial. Partial replacement of gutters and downpipes must match the material, profile and appearance of the existing elements. Complete replacement should match the original elements as closely as possible in material, profile and appearance. |
| **Rectify** | If required, introduce additional downpipes in discreet locations to match others. |
| **Repaint** | Paint rainwater goods only if originally painted.<br>Test existing paint for lead content prior to undertaking any paint removal, sanding or scraping. If lead is present, seek further advice on safe removal methods. |

| Eaves | |
|---|---|
| **Clean** | Remove dust, dirt, grime and mould with water and a soft brush. Minimise use of high pressure water jets and do not saturate eaves or other elements. |
| **Repair** | In the case of water stains, check for leaks and rectify.<br>Re-fix loose eaves linings and battens using non-ferrous nails. |
| **Replace** | Replace only where deterioration/damage is substantial. The replacement eaves should match the material, finish and detail of existing eaves.<br>If existing eaves are asbestos fibre cement sheeting then replace with non-asbestos fibre cement sheet. |
| **Repaint** | Test existing paint for lead content prior to undertaking any paint removal, sanding or scraping. If lead is present, seek further advice on safe removal methods.<br>If paint problem is localised then only remove affected areas using heat gun, manual sanding or chemical removers.<br>Prior to repainting ensure that all joints are sealed to prevent water penetration. Prime and apply finishing paint that is both compatible with primer and appropriate to prevailing conditions. Repaint using a paint of the same colour and finish (such as 'gloss' or 'matt') as existing. |

| Timber Weatherboard/Fibre Cement Cladding | |
|---|---|
| **Clean** | Remove dust, dirt, grime and mould with water and a soft brush. Minimise use of a high-pressure water jet and do not saturate cladding or other elements. |
| **Repair** | Fibre cement cladding should be checked for possible asbestos content prior to any repairs, replacement or cleaning.<br>Repair by splicing and patching. Re-fix cladding using original methods and to original detail. |
| **Replace** | Replacement of elements is acceptable where the existing fabric is too badly deteriorated to repair. The use of fibre cement 'weatherboard look' products is acceptable provided that it is of a similar profile and appearance as the existing. |
| **Repaint** | Test existing paint for lead content prior to undertaking any paint removal, sanding or scraping. If lead is present, seek further advice on safe removal methods. |

| Timber Doors and Windows—Exterior | |
|---|---|
| **Clean** | Remove dust, dirt, grime and mould with a soft brush or damp cloth. Do not use a high-pressure water jet. |
| **Repair** | Patch cracks, splits and small defects using suitable timber epoxy paste fillers.<br>Repair all timber joinery using traditional timber repair techniques such as patching, splicing or otherwise reinforcing. Repairs may include replacement in kind of those parts that are either extensively deteriorated or missing.<br>Establish source of any differential settlement and address accordingly if sashes or doors are sticking. Strip back excessive paint build-up. |
| **Replace** | Replace only when existing windows and doors are too badly deteriorated to be repaired. Replacement windows and doors should match the material, size, colour and configuration of the original elements. New putty for windows should be compatible with adjacent materials. Complete replacement of an original window or door should only be considered in cases of extreme deterioration or where restoration is not feasible. |
| **Repaint** | Test existing paint for lead content prior to undertaking any paint removal, sanding or scraping. If lead is present, seek further advice on safe removal methods. |

| Painted Masonry or Rendered Surfaces | |
|---|---|
| **Clean** | Remove dust, dirt, grime and mould with water and a soft brush. Minimise use of high-pressure water jets and do not saturate masonry or other elements. |
| **Repair** | Remove areas of loos or drummy cement render. Investigate any source of moisture or other that is lausing the render to lose its integrity, and rectify. Apply new render, matching the texture and composition of the existing render, and repaint. |
| **Replace** | Only replace elements of the substrate (eg bricks) if damaged beyond repair. |
| **Repaint** | Repaint if originally painted. |

| Cast Concrete Walls | |
|---|---|
| **Clean** | Remove dust, dirt, grime and mould with water and a soft brush. Minimise use of high-pressure water jets and do not saturate concrete or other elements.<br>Removal of stubborn dirt, grime, mould and graffiti with detergents or other methods should only be undertaken with the assistance of specialist cleaners and only once at least three cleaning methods have been tested—the method that results in the least damage to the concrete or change in colour or appearance should be selected. |
| **Repair** | **Note:** leaning may represent structural failure and a significant safety hazard. Rectification should be undertaken in consultation with a structural engineer. |
| **Replace** | Only if concrete is substantially damaged. If the wall makes a significant contribution to the heritage values of the place then the replacement wall should match the material, colour and detail of existing. Design of the replacement wall and footings should be undertaken in consultation with a structural engineer. |
| **Repaint** | Repaint wall if originally painted. Test existing paint for lead content prior to undertaking any paint removal, sanding or scraping. If lead is present, seek further advice on safe removal methods. |

### 7.5.5 Building Inspection Checklist

| Item | Tasks | Check |
|---|---|---|
| **Weatherproofing** | First undertake an inspection of the building in dry weather.<br>Undertake a second inspection during wet weather (heavy rain) to identify possible water ingress/leaks. | • Is water running down the walls and into places that it shouldn't be?<br>• Are the gutters, downpipes and/or grates blocked?<br>• Are the gutters, downpipes and/or grates correctly aligned and connected to stormwater drains?<br>• Are the drains overflowing? |
| **Difficult spaces** | Access difficult-to-reach spaces, such as within roofs and under floors to check for leaks, damp and rot. | • Are there adequate crawl spaces for inspections beneath floors and verandahs?<br>• Is water pooling in flashing, valleys and lapped joints?<br>• Are there water stains to the flashing, valleys and lapped joints?<br>• Are there signs of subsidence or fungal rot to the timber flooring?<br>• Can musty smells and excessive dampness be identified in underfloor spaces? |

| Item | Tasks | Check |
|---|---|---|
| **Pest activity/damage** | Check difficult-to-reach spaces, such as roofs, under floors, chimneys and eaves) for pest ingress/activity. | • Are there signs of termites (mud tubes) or borer damage (flight holes) in timber?<br>• Are ant caps (termite shields) missing on floor stumps?<br>• Are there animal droppings within the spaces, in gutters or around the base of the building?<br>• Can a strong ammonia smell (like rotting fruit) be identified?<br>• Can sounds of roof running be heard at night? |
| **Masonry walls/chimneys** | Check base and tops of walls for salt stains, dark zones and high tide lines that may indicate rising damp. | • Are there open mortar joints or bricks that may be loose at the top of the chimneys?<br>• Are there cracks or open mortar joints in the parapet cappings?<br>• Are the walls solid or do they have a cavity between two leaves of masonry?<br>• Is there cracking in the walls or stepping around bricks?<br>• Is there mortar missing from the lower parts of the walls?<br>• Has missing mortar been patched with cement (often grey-coloured)?<br>• Have the walls been cement-rendered, painted or sealed to prevent moisture penetration?<br>• Are old renders cracked or loose (drummy)?<br>• Are the underfloor vent grilles blocked with dust and cobwebs, or clogged with paint?<br>• Are the vents hidden by verandahs, plants or other obstructions such as paving or garden beds?<br>• Do ground levels slope towards the base of the walls?<br>• Are there any signs of dampness in the walls (dark stains with a high tide line)?<br>• Are there any signs of white salts on the surface (often near the high tide line)?<br>• Is there a damp proof course (DPC) (often a thin layer of bitumen below floor level)?<br>• Is the surrounding ground level higher than the DPC or the internal floor?<br>• Is there impermeable paving or a concrete slab (eg verandah floor) against the external walls?<br>• Is there moss growing on external walls?<br>• Has the inner face of external walls been dry lined?<br>• Is there a band or patches of peeling paint and fretting plaster on inner face of external walls?<br>• Are tree roots disturbing walls? |

| Item | Tasks | Check |
|---|---|---|
| **Timber** | Check timber components for dark zones, salt stains and sponginess that may indicate water ingress. | • Is any timber in contact with the ground (apart from stumps)?<br>• Are there stumps missing ant caps (termite shields)?<br>• Do timber verandah posts sit directly on a concrete verandah floor?<br>• Are there any stored timbers, off-cuts or tree stumps that could attract termites?<br>• Has the cross ventilation under a timber-frame building been obstructed?<br>• Are there signs of termites (mud tubes) or borer damage (flight holes) in timber?<br>• Are there signs of fungal rot (soft spongy timber) where water may be trapped?<br>• Are painted surfaces buckling or mouldy?<br>• Is the paintwork cracked or peeling?<br>• Do timber floors bounce when you walk on them?<br>• Are there soft spongy patched beneath floor coverings?<br>• Are timber joinery elements (verandahs, doors, windows) in poor condition?<br>• Are windows painted shut? |
| **Metals** | Check metal cladding components for signs of rusts and reactions between incompatible metals. | • Are downpipes split, cracked or rusting?<br>• Do metal elements (like cast or corrugated iron) have rusted surfaces)?<br>• Are paint coatings peeling and exposing bare metal?<br>• Are metal roof claddings, cappings or flashings rusted?<br>• Are roof penetrations or flashings damaged?<br>• Are flashing and cappings on the roof incompatible with the roof cladding?<br>• Is there metal (rods, pins, lintels) embedded in masonry, which is rusting and expanding? |
| **Ventilation** | Check ventilation quality, particularly underfloor spaces, to minimise the risk of fungal rot and insect attack on timbers. | • Is there adequate cross ventilation under timber floors?<br>• Is the roof space adequately ventilated?<br>• Are bathrooms and kitchens well ventilated and are exhaust fans ducted to the exterior of the building (not the roof space)?<br>• Are chimneys blocked off? |

| Item | Tasks | Check |
|---|---|---|
| **Water** | Check watering systems and observe if they impact buildings. Review construction plans to identify the location of pipes. | • Does the garden watering system spray water against the base of the walls?<br>• Are there plumbing leaks in kitchens, bathrooms, laundries or sewerage pipes?<br>• Are there brown water stains on the ceilings (from roof leaks)?<br>• Are all windows and doors properly flashed?<br>• Are all doors and windows adequately weatherproof?<br>• Do gutters, especially box gutters, had a safe overflow point for extreme weather event or in case of blockages (ie tennis ball)? |

## 7.6 Work Health and Safety

In some situations, Work Health and Safety (WHS) issues may be prioritised over heritage considerations if there is a high level of risk involved. However, where it is possible to meet WHS requirements and also protect the heritage values then both requirements must be met.

Heritage advice may be necessary to find a heritage solution to a WHS requirement. The recommendations below provide general guidance in relation to WHS and heritage issues.

***WHS is not an excuse for removing heritage from the site without following the DHA heritage approvals process.***

For example:

**Issue: Asbestos**

| | |
|---|---|
| **Generally you may ...** | remove individual pieces of asbestos sheeting or roofing that pose a threat to health and safety. |
| **You must ...** | **seek heritage advice from the National Heritage Manager and/or an external heritage professional** |
| | replace with similar material (eg fibrous cement for asbestos sheeting, corrugated metal roof for corrugated asbestos roof). |
| **You must not ...** | demolish a structure of high, moderate or low heritage value that is made predominantly of asbestos sheeting without seeking advice and approval from the National Heritage Manager, as demolition may require a referral to the Minister for the Environment and Energy using the appropriate referral process. |

**Issue: Fire sprinkler and alarm systems**

| | |
|---|---|
| **Generally you may ...** | install as required following guidance in relation to levels of heritage significance and general principles (as outlined in the Heritage Management Plan). |
| **You must ...** | minimise new penetrations and use existing conduits as much as possible/feasible. |
| **You must not ...** | significantly damage exceptional or high significance elements (eg original fittings, pressed-metal or decorative plaster ceilings, timber joinery). |

**Issue: Lead paint**

| | |
|---|---|
| **Generally you may ...** | remove the paint as required. |
| **You must ...** | retain a patch of the original paint under the new paint where possible (for future reference). |
| | use recommended colour schemes (based on research and paint scrapes) which reinstate correct heritage colours. |

| | |
|---|---|
| **You must not …** | use paint stripper or sander that will damage the underlying and original fabric. |
| | make a radical departure from the original paint colour scheme. |

**Issue: Disabled access**

| | |
|---|---|
| **Generally you may …** | install as required but prior consultation with a heritage professional is usually required. |
| **You must …** | use complementary fabric and form. |
| **You must not …** | detract from the setting of heritage elements. |

**Issue: Security grilles**

| | |
|---|---|
| **Generally you may …** | install as required. |
| **You must …** | prefer an alarm system where grilles would cause extensive irreversible damage to existing fabric or detract from the structure's aesthetic appeal. |
| | ensure that where non-original security grilles are used they are sympathetic to the colour scheme and appearance of the building and, wherever possible, are recessed and use existing penetration points or are fitted internally. |
| | fit security screening in a way which allows for continued maintenance of window/door frames. |
| **You must not …** | detract from the aesthetic appeal of significant buildings. |
| | cause excessive damage to original masonry, timberwork, corrugated metal or window frames on structures of exceptional, high and moderate significance when installing the grilles. |

**Issue: Pest Control**

| | |
|---|---|
| **Generally you may …** | use standard preventative treatments. |
| **You must …** | ensure regular pest inspections. |
| | seek specialist heritage advice where infestation is identified. |
| | use standard treatments/pesticides wherever possible. |

# 8.0 Conservation Policy

## 8.1 Introduction

This section provides management and conservation policies and action for the BNTS site. The effective implementation of these policies and actions will conserve the heritage values of the place and ensure that DHA meets its obligations under the EPBC Act.

## 8.2 Context for Developing Conservation Policy

Conservation policy is based on the principles embodied in the Burra Charter. It is a set of principles, processes and guidelines for practice in heritage conservation developed by Australia ICOMOS (International Council on Monuments and Sites) and based on international standards.

The policies define how the conservation of the site's Commonwealth Heritage values should be achieved. Defining the roles for management and maintenance of its significant attributes and heritage values, and methods for enhancing the understanding of its significance through documentation and interpretation, are set out in this section.

The development of conservation policies is underpinned by the heritage values of the place and consideration of the constraints and opportunities affecting future conservation, management and interpretation of the place.

Section 5.0 confirms that the BNTS site is of Commonwealth Heritage value and is important as a place with natural and cultural values related to its history, rarity, characteristic values and technical achievements.

## 8.3 Objectives of Conservation Policy

Schedule 7A of the EPBC Regulations requires that Commonwealth agencies 'establish objectives for the identification, protection, conservation, presentation and transmission of the Commonwealth Heritage values of the place'.

The HMP reflects this objective and reference to the conservation policies should be made by DHA when:

- proposing changes to the site, including built elements, or new development within the site;
- undertaking and implementing interpretation initiatives;
- undertaking general conservation management and proposing conservation works; and
- upgrading services to the site or other site infrastructure.

## 8.4 Implementation of Conservation Policies and Actions

### 8.4.1 Priorities

The priorities for action are listed in three categories, each responding to a different level of risk to the heritage values:

- **High**—actions that should be taken immediately (within 12 months) to mitigate key risks to the heritage values. These actions are an essential component of the HMP and, without them, heritage values may suffer adverse impacts.
- **Medium**—actions that should be planned for in order to conserve the heritage values. Resources should be organised in advance to enable their implementation and to ensure the conservation of heritage values.
- **Low**—actions that are important to the future conservation of the heritage values but that respond to less immediate risks. Resources should be allocated in advance to enable them to be undertaken.

### 8.4.2 Timing

Timing parameters have been established for the implementation of policies and actions in line with their priority. Implementation should be completed:

- immediately upon adoption of the HMP (within three months);
- annually;
- as required (when an action demands it);
- ongoing;
- short term (within 12 months);
- medium term (2–3 years); or
- long-term (5–10 years).

### 8.4.3 Responsibilities

The key responsibility for implementation, review and monitoring the HMP lies with DHA's Senior Development Manager for the BNTS site and the DHA National Heritage Manager. The Senior Development Manager is also responsible for implementing conservation works and maintenance recommendations.

## 8.5 Policies and Guidelines

The following policies and guidelines have been prepared considering the objectives, opportunities and risks for the conservation of heritage values and attributes at the BNTS site.

### 8.5.1 Key Policies

The following key policies meet the main objectives for managing the BNTS site—to provide direction for the identification, protection, conservation, presentation and interpretation of its heritage values. Some of these policies are repeated for emphasis under general conservation and management policies.

## Policy 1: Conserving and Managing the Heritage Values

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| 1.1 | **Recognise the Commonwealth Heritage values.** | Recognise and retain the heritage values of the BNTS site as a whole identified in this HMP. | High | Ongoing |
| 1.2 | **Manage the identified Commonwealth Heritage values.** | Manage the identified (not currently listed) Commonwealth Heritage values of the BNTS site as though they have been officially included in the CHL in line with the environmental precautionary principle. | High | Ongoing |
| 1.3 | **Nominate new heritage values to the CHL.** | Nominate the Indigenous heritage values of the BNTS site to the CHL.<br>Submit the revised heritage assessment for BNTS to the Australian Heritage Council for updating the existing CHL citations. | High | Short term |
| 1.4 | **Revise the CHL boundary for historic heritage values.** | Ensure the boundary for the historic heritage values of the site are updated in the revised CHL citation (Policy 1.3). | High | Immediately |
| 1.5 | **Include the site in the DHA Heritage Register.** | Include the BNTS site as a whole and its individual elements in the DHA Heritage Register using the information in the HMP and any other important information identified by DHA. | High | Immediately |
| 1.6 | **Advise the Minister of the completion of the HMP.** | Advise DAWE of the completion of the HMP. | High | Immediately |
| 1.7 | **Provide the HMP to DHA staff and contractors.** | Ensure all DHA staff and contractors working on the site have access to the HMP. | High | Short term |
| | | Provide heritage induction sessions to ensure staff and contractors working on site understand and protect the heritage values. | High | As required |
| 1.8 | **Ensure management of the BNTS site is consistent with the heritage values.** | Ensure decision-making about undertaking actions or change at the site is consistent with its heritage values as a Commonwealth Heritage place. | High | Ongoing |
| 1.9 | **Ensure site planning documents include reference to the HMP, where relevant.** | Modify relevant site planning documents to include specific references to the HMP where relevant and ensure alignment and mutually supportive aims, procedures and outcomes. | Medium | As required |
| 1.10 | **Manage all values equally.** | Afford equal consideration and appropriate management of all values (natural, historic and Indigenous). | High | Ongoing |

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| 1.11 | **Ensure adequate funding for heritage management.** | Ensure adequate funding arrangements, resources, technical expertise and processes are in place to support the effective managing of heritage values and implementation of the HMP, including its future monitoring and review in accordance with the EPBC Act. | High | Ongoing |
| 1.12 | **Ensure adequate site protection.** | Maintain appropriate site security for the protection of heritage values and attributes. | High | Ongoing |
| 1.13 | **Assess all actions for potential impacts on the heritage values of the BNTS site.** | Assess any proposal or action for its potential to have a significant impact on the heritage values of the BNTS through the preparation of a Heritage Impact Assessment (HIA). | High | As required |
| 1.14 | **Engage appropriately qualified personnel, consultants and contractors to provide advice and undertake works to the BNTS site.** | Engage a specialised heritage consultant who can assist with specific heritage advice, management and interpretation of the BNTS site. | High | As required |
| | | Engage specialist expertise to advise and undertake conservation works and any specialist maintenance tasks. | High | As required |
| | | Identify and consult with individuals familiar with the operation of the transmitting station (eg former operators, radio technology experts) to understand the operation of the equipment and the site at large. | Medium | Medium term |
| 1.15 | **Monitor the condition of the heritage values.** | Monitor the condition of the heritage values and include the re-evaluation as part of the five-yearly review of the HMP.<br>Ensure all conservation works and maintenance tasks are identified, reported and monitored annually. | High | Annually |
| 1.16 | **Maintain records of conservation and maintenance works.** | As a minimum, record the nature and outcomes of works, interventions and maintenance at the BNTS site in the DHA Heritage Register. | Medium | As required |
| | | Attributes and their setting should be recorded to an appropriate archival standard prior to any development. | High | As required |
| 1.17 | **Collate and conserve documents pertaining to the design, development, construction and operation of the BNTS site.** | Collate and copy original and early archival material and drawings to be stored by DHA in a central location in a consistent filing system. This would include operating manuals for equipment in the main transmitting building. | Medium | Short term |
| | | Continue to update the DHA Heritage Register with records/archives of relevance to the heritage values of the BNTS site. | Medium | As required |

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| | | Make records available for research, especially relating to conservation works and the ongoing heritage management of the BNTS site. | Medium | As required |
| **1.18** | **Undertake cyclical maintenance.** | Prepare a program and budget for cyclical maintenance of the heritage values (historic and natural) as part of the site's maintenance and heritage management. | High | Annually |
| | | Implement cyclical maintenance, including preventative actions. | Medium | Ongoing |
| **1.19** | **Manage the BNTS site in accordance with accepted best practice principles and processes.** | The heritage values of the BNTS site should be managed in accordance with the HMP and accepted conservation principles and processes, including:<br>• the Burra Charter and its Practice Notes;<br>• the Natural Heritage Charter;<br>• the Commonwealth Heritage management principles; and<br>• the Ask First and Engage Early Guidelines. | High | Ongoing |
| **1.20** | **Avoid adverse impacts to the heritage values of the BNTS site.** | Ensure that adverse impacts to the heritage values are avoided or mitigated as far as possible. | High | As required |
| **1.21** | **Adopt a 'good neighbour' policy with the ACT.** | Aim to be consistent with the intent of local controls where these do not conflict with Commonwealth legislation or impact on capability.<br>Check ACT legislation, and government websites and databases for a more comprehensive understanding of the site. | Medium | Medium term, as required |
| **1.22** | **Undertake works to weatherproof buildings.** | Undertake an audit of all buildings to identify and rectify issues affecting weathertightness. | High | Immediately |
| **1.23** | **Control pests and weeds.** | Take measures to prevent pests, such as nesting birds and mice) from inhabiting or damaging buildings. | Medium | Ongoing |
| | | Manage the kangaroo population onsite to ensure appropriate biomass control of the grasslands. | High | As required |
| | | Undertake regular weed monitoring and spraying. | Medium | Ongoing |
| **1.24** | **Collections, records and movable heritage items are an important attribute of the BNTS site, which should be retained, conserved and actively managed.** | A comprehensive set of records relating to the chronological development of the site should be kept.<br>Alternatively, index references to archival collections relating to the site should be obtained and maintained in an accessible form. | High | Ongoing |

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| | | Archival material and collections of artefacts should be catalogued and curated to a high professional standard. | High | Ongoing |
| | | Archival material should be exhibited to the public as part of any future site interpretation. | High | Ongoing |
| | | Appropriate security measures should be put in place to provide for protection of collections. | High | Ongoing |

## Policy 2: Adopting, Compliance and Review of the HMP

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| **2.1** | **Adopt this HMP.** | This HMP should be formally adopted by DHA and all of its personnel, contractors and other site users as the principal guiding document for managing the heritage values of the BNTS site. | High | Immediately |
| | | The DHA Senior Development Manager and National Heritage Manager should ensure that appropriate funding is made available to implement the HMP. | High | Ongoing |
| | | The DHA Senior Development Manager and National Heritage Manager should ensure that appropriate heritage and environmental experts are engaged to ensure that the heritage values of the site are not adversely impacted. | High | As required |
| **2.2** | **Notify the Commonwealth about the HMP.** | Notify the DAWE that an updated HMP has been prepared for the BNTS site. | High | Immediately |
| **2.3** | **Refer to the HMP as the primary heritage management document for the BNTS site.** | Refer to this HMP for all matters relating to the heritage values, conservation and management of the BNTS site. | High | As required |
| **2.4** | **Follow the HMP for all conservation, planning and management.** | Continue to undertake and foster best practice in the conservation of the BNTS site. Refer to the heritage values of the site (Section 5.0 of this HMP) as they provide the basis for all conservation processes, management and development actions. | High | As required |
| | | Refer to the HMP in the first instance when undertaking conservation or new works at the site. | High | As required |
| | | Undertake all conservation and new works in accordance with this HMP and follow the Burra Charter methodology. | High | As required |

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| 2.5 | **Monitor, review and update the HMP.** | Review and update the HMP every five years or following any major change in circumstance, including conservation or development, in accordance with s341X of the EPBC Act. | High | Long term |
| | | Use annual reporting on the implementation of the HMP to review the guidelines set out in this HMP for the priority and timing of actions. Priorities should be reassessed in any review following the definitions set out in this HMP—that is, highest priority should be attributed to actions that alleviate or mitigate key risks to the heritage values. | High | Ongoing |
| | | The Senior Development Manager will oversee and report on the implementation of HMP policies. | High | Ongoing |
| 2.6 | **Monitor the efficiency and effectiveness of the HMP on an ongoing basis.** | The HMP should be reviewed to respond to changing circumstances affecting the BNTS site such as change in ownership, change in land tenure status, management or use. | High | Ongoing |
| | | Revise/update the HMP where review of application of the document indicates gaps, issues, superseded content or where new information has been uncovered since the HMP was prepared. | High | As required |
| | | Where appropriate, obtain specialist heritage advice when reviewing and/or making amendments to the HMP. | High | As required |
| 2.7 | **Monitor and report on the condition of the heritage values of the BNTS site.** | The condition of the heritage values of the site should be monitored and reported on an annual basis. | High | Annually |
| | | The findings of future condition assessments should be incorporated into future amendments to this HMP. | High | As required |

### Policy 3: Legislative Compliance

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| 3.1 | **Manage the BNTS site in accordance with the Commonwealth Heritage management principles.** | Ensure that management of the BNTS site is undertaken in accordance with the Commonwealth Heritage management principles. | High | Ongoing |

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| 3.2 | **Ensure the heritage values of the BNTS site are protected in the event that management of the site is transferred, the land tenure status changes or the site is sold.** | If future management of the site is transferred, the land tenure status changes or the site is sold that results in ACT legislation applying, ensure that the heritage values of the site are reassessed under ACT heritage criteria and the HMP is updated to reflect Territory requirements. | High | As required |
| | | DHA should ensure that if the site passes from Commonwealth control, it will require incorporation into the ACT Territory Plan and will require appropriate rezoning in line with the need to provide ongoing protection for its heritage values. | High | As required |

## Policy 4: Future Use and Development

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| 4.1 | **Refer to the HMP for guidance when planning for new work or development.** | Follow these management policies and conservation guidelines for the heritage values of the site, and its attributes, when proposing new development | High | As required |
| 4.2 | **Minimise adverse impacts caused by change.** | Adopt a cautious approach to change.<br>Review all proposed changes with reference to the HMP, assessing all proposed change against the significance of the whole site and attributes. | High | Ongoing |
| | | Ensure, where possible, that changes are reversible. | High | As required |
| 4.3 | **Assess new development for adverse heritage impacts.** | Assess new development, including demolition, to identify potential adverse impacts to the heritage values of the site. | High | As required |
| | | When making decisions about a proposed action, do not assess individual spaces, elements or attributes in isolation. Always remember that these parts comprise part of the 'whole' that makes up the site. | High | Ongoing |
| 4.4 | **Seek professional heritage advice about opportunities as constraints for areas of proposed development.** | Engage qualified heritage specialists (natural, historic and Indigenous) during project planning to facilitate early identification of adverse impacts to heritage values in areas where development can occur. | High | As required |
| 4.5 | **Consult with the Aboriginal community.** | Undertake consultation with Representative Aboriginal Organisations (RAOs) early in the planning process for proposed development on the site. | High | As required |

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| 4.6 | **Salvage original and early fabric.** | Where new works involve the demolition/removal of significant, original and/or early fabric, salvage and store onsite for potential re-use or interpretation. | Medium | As required |
| 4.7 | **Take a cautious approach to activities that would result in removal of elements that embody heritage values.** | Adopt a cautious approach to the removal of elements that contribute to the heritage values of the site to ensure that they are retained in situ, where possible. | High | Ongoing |
| | | Retain buildings, historic plantings, elements in situ commensurate with their heritage values, unless precluded by legislative requirements or overwhelming health considerations. | High | Ongoing |
| | | Where proposed removal of elements adversely impact heritage values, it should only be permitted where:<br>• it makes possible the recovery, conservation or interpretation of aspects of greater significance;<br>• there is no prudent or feasible alternative (eg to meet safety or other requirements);<br>• the significant element or other aspect of significance is adequately recorded and, where appropriate, interpreted; and<br>• alternative options have been considered to minimise adverse impacts | High | Ongoing |
| | | When a defective element needs to be replaced, replace it with a substitute of the same fabric (eg a tile roof with a tile roof, glass with glass). | High | As required |
| | | Always consider using the opportunity to reinstate original/early fabric, using traditional techniques. This will need to be determined on a case by case basis. | High | As required |
| | | Where the development history of the site has resulted in gradual replacement of original elements with later elements of a different type, it may be appropriate to continue to use the different non-original fabric or in rare cases, even introduce entirely new fabric. | High | As required |
| | | Elements demonstrating traditional construction techniques should be replaced by appropriately skilled tradespeople experienced in using those techniques. | High | As required |

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| 4.8 | **Investigate sympathetic adaptive re-use options for unused buildings.** | Retain extant buildings at the BNTS site and investigate adaptive re-use options that do not adversely impact the heritage values and enhance the building's key features and importance. | High | Medium term |
| | | When assessing proposed activities, including a change in use, development or subdivision, use the HMP to identify how the heritage values are embodied (eg in form, fabric, function and/or location, or in some intangible way).<br>This will assist with the identification of any potential adverse impacts to the heritage values. | High | As required |
| 4.9 | **Management of the BNTS site will be undertaken through a planned, coordinated and documented approach.** | Ensure ongoing liaison between management and key stakeholders to ensure consistency of aims and approach. | High | Ongoing |
| | | Ensure that assessment of proposed change is informed by a consideration of alternative courses of action that may have fewer, less severe or ideally no adverse heritage impacts | High | Ongoing |
| | | Coordinate maintenance programs with the conservation needs of the site.<br>Prioritise maintenance work with reference to the significance and vulnerability to deterioration of significant elements and available funding. | High | As required |
| 4.10 | **If the BNTS site is used by other parties, the principles and policies of the HMP will apply insofar as they embody heritage values.** | Incorporate appropriate clauses in any agreements with future users to ensure that they abide by the principles and policies of the HMP. | High | As required |
| | | Ensure that users manage the site in a manner that is consistent with the EPBC Act by:<br>• providing a copy of the HMP to all users;<br>• undertaking regular inspections;<br>• identifying and rectifying improper actions; and<br>• identifying mutually acceptable mechanisms for conservation of the heritage values of the site through consultation with users. | High | Ongoing |
| 4.11 | **Any activity that damages the heritage values of the BNTS must cease.** | Any activity, including a change of use, development or subdivision, which will or is likely to damage the heritage values of the site must not be undertaken or work ceased.<br>Appropriate management measures should be put in place to avoid impacts of an action that is causing or will cause damage to the heritage values of the site. | High | As required |

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| 4.12 | **Put in place measures to prevent deterioration and damage.** | Put in place measures, such as maintaining a presence and appropriate uses on the site, to ensure that vandalism and unwanted damage of the heritage values are prevented. | High | Immediately, ongoing |
| 4.13 | **Archival recording of significant spaces and elements should be undertaken prior to and during any works.** | Undertake archival recording of proposed actions or changes to the site in accordance with best practice guidelines.<br>A copy of the archival recording should be accessible to the managers of the site, included in the DHA Heritage Register and copies provided to an appropriate repository, such as the National Library of Australia or the National Archives of Australia. | High | As required |

## Policy 5: Interpretation and Access

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| 5.1 | **Recognise and promote the heritage values of the BNTS site.** | Recognise and promote the listed and identified heritage values of the BNTS site through interpretive devises and methods to encourage appropriate use and understanding of the site's importance. | Medium | Medium term |
| | | Assess all proposed activities at the site against the important objective to 'tell the story' of the history and heritage of the site.<br>Ensure that any proposed changes would not impact the ability to 'tell the story' of the BNTS site. | High | Ongoing |
| 5.2 | **Investigate options for an ongoing program of community engagement in relation to the heritage values of the BNTS site.** | Options for engagement with the local and wider community should be developed as a means of transmitting the heritage values of the BNTS. | Medium | Medium term |
| 5.3 | **Consider options for general public access, and Aboriginal community access, to the BNTS site.** | Identify and investigate options to allow regular or occasional public access to the site to understand and appreciate its history and heritage values, such as open days or other events. | Low | Long term |
| | | Identify and investigate options to allow the Aboriginal community, through the RAOs, regular or occasional access to the site to understand and appreciate its history and heritage values, such as open days or other events. | Low | Long term |
| 5.4 | **Collate and conserve documents pertaining to the design, development, construction and operation of the BNTS site.** | Salvage material relating to the design, development, construction and operation of the BNTS site and store in a secure place. Use for interpretation, as appropriate. | High | Short term, ongoing |

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| | | Where possible, digitise material and provide to local and national institutions. | Medium | Medium term |
| 5.5 | **Ensure upgrades for safety, accessibility and building compliance do not impact the heritage values of the BNTS site.** | Avoid impacting the heritage values when planning security and accessibility upgrades. | High | As required |
| | | Explore sympathetic design solutions to address security requirements. | High | As required |
| | | Where compliance would cause significant adverse impacts, liaise with representatives of the Australian Building Codes Board, DAWE and other relevant authorities to achieve a mutually acceptable outcome. | High | As required |
| 5.6 | **Prepare an Interpretation Plan.** | Prepare an Interpretation Plan to identify and guide the implementation of interpretation opportunities specific to the site. Interpretation provides a means of showcasing the history, evolution and heritage values of the site. | Medium | Medium term |
| | | Ensure the key heritage messages arising from the heritage values are conveyed in the interpretation of the site. Key themes, linking with the Australian Historic Themes, should be established as part of interpretation. | Medium | Medium term |
| | | Consult with former BNTS staff and residents, and interested members of the community in the development of the Interpretation Plan and develop specific interpretation initiatives. | Medium | Medium term |
| | | Ensure that the Aboriginal community, through consultation with the RAOs, is a main contributor to the interpretation of the Aboriginal heritage values of BNTS | Medium | Medium term |
| 5.7 | **Implement a variety of targeted interpretation initiatives to transmit the heritage values of the BNTS site.** | Explore opportunities for interpretation initiatives that transmit the heritage values of the BNTS site for primary users and secondary users (eg the local community and former Defence personnel), such as signage and tours. | Medium | Medium term |
| 5.8 | **Preservation, restoration and reconstruction are preferred methods of interpreting the historic heritage values of the BNTS site.** | Use the HMP to identify spaces and elements that can and cannot be preserved, restored or reconstructed. | High | Ongoing |
| | | Where adaptation is part of the conservation work, incorporate measures to show the location, character and/or role of removed or altered spaces and elements, where appropriate. | High | Ongoing |

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| | | Where possible, reveal previously hidden or obscured elements that embody the historic heritage values as part of any reconstruction and adaptation works. | High | Ongoing |
| | | Where possible, define new elements and fabric (including elements of landscape setting) as part of any reconstruction and adaptation works (eg date stamp new timbers). | High | Ongoing |
| 5.9 | **The management of the heritage values of the BNTS site will be guided by the overarching principle that its ability to demonstrate early and original site layouts must be conserved and enhanced.** | Maintain/interpret the significant visual and physical links between significant built elements and surrounding land forms, open spaces and plantings. | High | Ongoing |
| | | Maintain the sense of the significant former functional relationships between the significant built elements such as the transmitting buildings and its transmitting equipment, the copper earth mat, aerial remnants and the open space around the transmitter complex. | High | Ongoing |
| | | Maintain the sense of open space around the site of the former Naval Village with its windbreak plantings and recreation facilities. | High | Ongoing |
| | | Conserve the significant individual components that 'tell the story' of the former uses and layout of the BNTS site. | High | Ongoing |
| | | Retain archaeological artefacts in situ to reflect the development of the BNTS site. | High | Ongoing |

## Policy 6: Research

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| 6.1 | **The management of the BNTS site will be informed by an ongoing program of research.** | Undertake specific and directed research towards the conservation needs of individual attributes and elements of the site where unanticipated conservation issues occur. | High | As required |
| | | Facilitate access to records on the construction, development and operation of the BNTS site for interested parties, researchers and students, where possible and allowable.<br>In particular, provide assistance to people researching and preparing histories of the site. | High | As required |

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| | | Undertake a focused oral history program, collecting histories and transcribing interviews.<br>This project could be undertaken by volunteers in association with former BNTS personnel | Medium | Long term |
| | | Regularly monitor and document any investigations and exposure of the archaeological resource within the subject area. Assess the conservation needs for exposed relics on an ongoing basis. | High | Ongoing |

## Policy 7: Stakeholder Consultation

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| 7.1 | **Involve stakeholders when making major decisions.** | Develop formal and informal links and understandings with relevant stakeholders for effective partnership and support in decision-making. | Medium | Ongoing |
| | | Undertake targeted consultation with government and community stakeholders when considering major changes that could impact the heritage values, or the legibility of the heritage values, of the BNTS site prior to undertaking major changes or major decisions. | High | As required |
| 7.2 | **Engage with RAOs when planning new development.** | Consultation with the RAOs should be undertaken early in the planning processes for any proposed new development at the BNTS site.<br>Adhere to the principles and practices outlined in the *Ask First* and *Engage Early* guidelines when undertaking consultation with Indigenous stakeholders. | High | As required |
| 7.3 | **Engage with RAOs when planning interpretation for the site** | Consultation with the RAOs should be undertaken early in the processes for planning the interpretation of the Indigenous heritage value at BNTS.<br>Adhere to the principles and practices outlined in the *Ask First* and *Engage Early* guidelines when undertaking consultation with Indigenous stakeholders | High | As required |
| 7.4 | **Engage with DAWE regarding heritage management of the BNTS site.** | Maintain links with the Department as needed with regard to heritage matters. | Medium | Ongoing |

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| | | Seek informal comment from the Department as part of the decision-making process to assess activities that have the potential to adversely impact the heritage values of the BNTS site. | Medium | As required |

## Policy 8: Reporting Protocols

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| 8.1 | **Stop work when coming across unanticipated finds.** | In the event of an unforeseen discovery, the find is to be reported immediately to the National Heritage Manager and any works must cease.<br>Depending on the nature of the find, other authorities may need to be involved/consulted, including the Aboriginal community, archaeologists or the ACT coroner (in the event of human remains being discovered). | High | As required |
| | | Implement an Unanticipated Finds Protocol for site works. | High | As required |
| 8.2 | **Maintain detailed records on the implementation of actions and works.** | Maintain a works register with records linking HMP policies to a works program to enable monitoring and review of management actions to ensure the retention of heritage values. | High | Ongoing, as required |
| 8.3 | **Review all actions for effects on the condition of heritage values.** | Use records to review all completed actions and works for effects on the condition of the heritage values. | Medium | Ongoing, as required |
| | | Review actions to detect and act upon incremental changes that affect the condition of the heritage values. | Medium | Ongoing, as required |
| 8.4 | **Review and regularly maintain records in the DHA Heritage Register.** | Ensure that records relating to the heritage values of the BNTS site and works (eg capital, conservation) are recorded in the DHA Heritage Register. | Medium | Ongoing, as required |
| | | Regularly review the Heritage Register data to ensure information is up to date and relevant. Include photographs to maintain a visual record and to assist with comparison over time. | Medium | Annually |

## Policy 9: Training and Technical Expertise

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| 9.1 | **Develop training opportunities for DHA personnel and contractors to manage the heritage values.** | Provide training opportunities for DHA site manager/s and contractors to build capacity in heritage management and conservation. | Medium | Short-term, as required |
| | | Develop heritage training objectives for staff or volunteers when heritage conservation works are undertaken. | Medium | Short-term |
| 9.2 | **Seek technical advice when undertaking work to significant attributes/fabrics/artefacts.** | Seek and engage professional conservation advice or guidance when undertaking work to significant attributes, fabric and/or artefacts. | High | As required |
| 9.3 | **Seek advice from heritage specialists when undertaking a potential adverse action.** | Seek the advice of heritage consultants and regulatory authorities (Commonwealth and ACT) when planning an action that may result in an adverse impact to the heritage of the BNTS site. | High | As required |
| 9.4 | **Provide training and inductions for existing and new site users, including contractors.** | Provide training and inductions for existing and new site users, including contractors, regarding the heritage values of the BNTS site and their management in accordance with this HMP. | High | As required |
| | | Ensure that contractors are aware of the possible remains of the World War II air raid shelter near the southern tennis before undertaking ground disturbing works. | High | As required |

## Policy 10: Actions and Approvals

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| 10.1 | **Refer to the HMP to guide proposals and works.** | Assess major works, new development, demolition, planning for development and building works such as alterations and additions, to ensure that they are consistent with the principles of the HMP and do not adversely impact the heritage values of the BNTS site. | High | As required |
| 10.2 | **Identify and appropriately manage potential threats or risks to heritage values.** | Ensure heritage values are managed in accordance with the HMP to minimise the risk of adversely impacting the heritage values of the BNTS site through neglect and ignorance or by accident. | High | Ongoing |

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| 10.3 | **Engage heritage specialists to assess potential impacts to heritage values.** | Engage suitably qualified and independent heritage consultants to undertake HIAs for activities that may adversely impact the heritage values of the BNTS site. | High | As required |
| 10.4 | **Consult with the DAWE on significant impacts.** | Where an assessment has determined that an activity has, will have, or is likely to have a significant adverse impact on the heritage values of the site, consult early with the DAWE to seek its advice and discuss mitigation measures and alternatives to the proposed activity. | High | As required |
| 10.5 | **Refer significant impacts to the Minister.** | Where an assessment has determined that the action should be referred to the Minister responsible for the Environment (currently, the Minister for the Environment), do so. | High | As required |
| 10.6 | **Follow the conditions in the Development Control Plan.** | Any actions to develop the site should be planned in accordance with DCP 09/12 and in consultation with the NCA. | High | As required |
| 10.7 | **Submit development proposals to the NCA.** | Submit development proposals and seek approvals from the NCA. | High | As required |

## Policy 11: Physical Change including Maintenance, Repair and Adaptation

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| 11.1 | **Minor works may be carried out at BNTS site without the need for a referral.** | When in doubt, consult with a heritage or environmental specialist. | High | Ongoing |
| 11.2 | **Use the HMP to guide any maintenance and repairs.** | The HMP should guide maintenance and repair for the various built and landscape elements of the BNTS site. | High | Ongoing |
| 11.3 | **All works to remove hazardous materials from significant structures will be preceded by appropriate research, documentation and assessment.** | Assess the proposed hazardous materials removal methodology for heritage impacts and prefer a methodology that minimises heritage impacts.<br>Obtain specialist heritage conservation advice as part of the assessment process and to provide input in relation to heritage conservation generally, where hazardous materials removal requires significant physical intervention. | High | As required |
| 11.4 | **Adopt a cautious approach to adaption works.** | Assess all proposed adaptation works against the heritage values identified in the HMP. Undertake adaptation works in a manner that is consistent with the HMP. | High | Ongoing |
| | | Locate adaptation works in places that are of lower significance. | High | Ongoing |

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| | | Seek to permit adaptation works only in circumstances where it will:<br>• be limited in extent and impact;<br>• support retention, re-use, restoration/repair and/or reconstruction measures;<br>• enhance overall significance;<br>• ensure that all adaptation is readable and/or reversible without significant adverse impacts; and/or<br>• limit more extensive adaptation (such as the removal of fabric) to elements with greater tolerance for change, spaces and fabric, subject to the general policies of this HMP. | High | Ongoing |
| **11.5** | **Distinguish between original/early and new fabric and identify early significant elements, retaining them where possible.** | Precede all works with identification of original and early elements of the subject site. | High | Ongoing |
| | | Assess all proposed changes against the general requirement to retain and conserve original and early elements where possible. | High | Ongoing |
| | | Assess the best methods of distinguishing original/early elements and fabric from new elements and fabric on a case by case basis.<br>Measures to distinguish between new and existing elements and fabric should be appropriate to the element and its context.<br>In some areas, new elements and fabric may be clearly distinguished as new and/or be of modern design. In other situations, more subtle differentiation should be used where this is an equally effective and more appropriate treatment (eg to retain aesthetic significance). | High | Ongoing |
| | | Date stamp new timbers where appropriate. | High | As required |
| | | Maintain records of all new work, which identify and distinguish between new and original/early elements and fabric. | High | As required |
| **11.6** | **Changes to significant structures will aim to conserve and/or enhance heritage values.** | Adopt a cautious approach to change on the site (proposed or future), which may include a change in use, new works, development, adaptation and/or subdivision. | High | Ongoing |
| | | Review all proposed change with reference to the HMP, assessing all proposed change against the significance of affected elements and their tolerance for change. | High | Ongoing |
| | | Locate proposed changes, where possible, in areas identified as having the lowest significance and highest tolerance for change. | High | Ongoing |
| | | Obtain specialist heritage advice, as appropriate and the develop possible alternative courses of action. | High | As required |

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| | | Ensure, where possible, that changes are reversible. | High | Ongoing |
| 11.7 | **Where significant elements are removed, retain evidence of their location and character in situ where appropriate.** | Record the former location of removed elements. | High | Ongoing |
| | | Catalogue and store removed elements, where possible and justified by their level of significance, for future reinstatement or interpretation if required. | High | As required |
| 11.8 | **The retention of significant fabric in situ will be the preferred management approach.** | Retain significant building fabric in situ commensurate with its heritage values and tolerance for change, unless precluded by legislative requirements, overwhelming health and safety considerations, threat of vandalism or theft, and/or severely deteriorated condition. | High | Ongoing |
| 11.9 | **The site will be provided with services and utilities consistent with its management needs and the heritage values of the site.** | Initiate steps to introduce services and utilities such as water supply, drainage, power and phone in areas that embody the least Commonwealth heritage values. | Medium | Ongoing |

## Policy 12: Landscape and Setting

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| 12.1 | **The historic plantings within the landscape setting should be managed in accordance with the recommended actions contained within this HMP.** | Ensure that significant trees and shrubs at the site are only managed by personnel experienced in working historic trees and plantings. | High | Ongoing |
| | | Where new vegetation is proposed, consider the re-introduction of native species.<br>However, plantings in the Naval Village should match like for like. If this is not possible, a similar native equivalent could be considered. | High | Ongoing |
| | | Base decisions on whether to retain or remove particular trees on safety considerations, their relative significance, contribution to the landscape as a whole, and amenity value. | High | Ongoing |
| | | Minimise plantings that will impede significant views or the settings of built elements. | High | Ongoing |
| | | Do not introduce plantings near structures that may damage services, foundations etc through root action, dropping branches etc. | High | Ongoing |
| | | Design any new plantings/gardens so that they are in keeping with existing significant landscapes and landscape elements, and using design and materials consistent with, or at least not in conflict with, that particular part of the place. | High | Ongoing |
| | | Enforce the relevant Australian standards (eg AS 4373 Formative Pruning) and current best practice in arboriculture as recommended by relevant industry representative groups. | High | Ongoing |

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| | | Control and/or remove weeds and problem species (such as lantana and privet) as part of an ongoing maintenance program, and in collaboration with adjoining landowners.<br>For heritage attributes that have been identified as weed species (eg *Celtis australis* and *Pinus radiata*), these should be retained and maintained. On reaching the end of their safe and useful life (as determined by a qualified arborist), the plantings can be removed, and options should be investigated to replace with a non-weed species similar to the existing (eg form, scale and colour) and of a similar maturity. Removal of a cultural planting needs a cautious approach and to be carefully considered in its context. | High | Ongoing |
| | | Monitor the site for the presence of any feral or native animals that might have an adverse impact on landscape elements (eg rabbits, possum damage to significant trees etc). | High | Ongoing |
| 12.2 | **Should ground remediation be required at the site, co-ordinate with the identification and investigation of the archaeological resource** | Unless prevented by essential operational or safety considerations, ground disturbance within the subject site should address potential Aboriginal and non-Aboriginal archaeology by undertaking the works in accordance with the following:<br>• Excavation should be avoided in areas identified as having archaeological potential for Aboriginal sites or for non-Aboriginal relics.<br>• If excavation is proposed in areas of archaeological potential, these areas should be subject to detailed assessment including test excavation, where appropriate, to establish the nature, extent and significance of the heritage values of the PAD areas and determine a course of action to address impacts to those values.<br>• Further assessment of values or impacts, including through test excavation, should be undertaken in consultation with the Aboriginal community<br>• Where significant archaeological remains are discovered, consideration should be given to their retention in situ | High | Ongoing |

## Policy 13: Archaeology

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| 13.1 | **Manage the archaeological resource within the subject area in accordance with the recommended actions contained within this HMP.** | Unless prevented by essential operational or safety considerations, ground disturbance within the subject site should address potential Aboriginal and non-Aboriginal archaeology by undertaking the works in accordance with the following: | High | Ongoing |

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| | | • Excavation should be avoided in areas identified as having archaeological potential for Aboriginal sites or for non- Aboriginal relics.<br>• If excavation is proposed in areas of archaeological potential the proposed impacts should be assessed through the preparation of an HIA. Where that archaeological potential related to Aboriginal archaeology, the RAOs should be consulted in regard to the assessment.<br>• Where excavation is proposed in areas not identified as having archaeological potential, the contractors and staff undertaking the work should be provided with a heritage awareness induction and should follow an Unanticipated Finds Protocol (Appendix I)<br>Where significant archaeological remains are discovered, consideration should be given to their retention in situ. | | |
| **13.2** | **Minor ground disturbance may be carried out without the need for a referral or consultation with an archaeologist.** | Ensure appropriately qualified people make the determination as to whether the proposed works constitute 'minor works', and area located in areas of low-nil archaeological potential. | High | Ongoing |
| **13.3** | **Manage unexpected Aboriginal archaeological sites in accordance with relevant Commonwealth legislation.** | In the event that any Aboriginal sites are unexpectedly uncovered during unsupervised excavation within the subject site, all work must cease immediately. Contact the RAOs and seek advice from the relevant statutory authority (eg ACT Heritage Council or DEWHA).<br>Ensure an archaeologist is engaged to provide the advice required by the relevant authority. The consultant should ideally be familiar with the site and with working with the appropriate Aboriginal organisations.<br>While the site is in Commonwealth ownership, a referral to the Minister may also be necessary. As a minimum, the provisions of the following Commonwealth legislation should be consulted:<br>• *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act); and<br>• *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*.<br>Refer to the Unanticipated Finds Protocol, in Appendix I) | High | As required |
| **13.4** | **Manage the non-Aboriginal archaeological relics within the subject site (known and potential) as part of the general management of its heritage values.** | Locate new development in areas where there is low potential for archaeological relics to exist. | High | Ongoing |
| | | Always consider alternative locations for ground disturbance if it may adversely impact the non-Aboriginal archaeological resource. | High | Ongoing |
| | | Ensure that all significant ground disturbance in areas identified in the HMP as having non-Aboriginal archaeological potential is preceded by | High | Ongoing |

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| | | an archaeological assessment of the potential impacts. | | |
| | | Where ground disturbance will or may disturb or destroy known or potential non-Aboriginal archaeological relics, those relics must be appropriately investigated or documented.<br>This will be achieved by prior research excavation or monitoring of the proposed works at the time of the ground disturbance, depending on the nature, extent and significance of the relics. This must be determined on a case-by-case basis. | High | As required |
| 13.5 | **Manage any unexpected non-Aboriginal archaeological relics within the subject area by balancing the heritage values of the archaeology, the timing imperatives of the project, and the financial costs of delay.** | If unexpected or unrecorded non-Aboriginal archaeological relics are encountered during works, follow the Unanticipated Finds Protocol in Appendix I—cease works immediately and consult the relevant statutory authority and/ or an archaeologist to establish the nature and significance of the relics and to advise on appropriate excavation methodology.<br>A referral to the Minister may be necessary. | High | As required |
| | | Include an allowance in all relevant contracts for delays due to exposure of unexpected non-Aboriginal archaeological relics. | High | As required |
| 13.6 | **Adopt a proactive approach to archaeological investigation.** | Undertake non-invasive investigation of archaeologically sensitive areas in preference to excavation (for example, surface survey, Ground Penetrating Radar, Magnetometer) where feasible. | Medium | Planned |
| | | Always consider alternative locations for new development before carrying out works in archaeologically sensitive areas. | High | Ongoing |
| | | Consider development of a 'Research Framework' for future archaeological work within the subject site that would include research questions, methodologies and excavation techniques; repository issues; public outreach and interpretation. | Low | Planned |
| 13.7 | **Manage any sensitive Aboriginal material uncovered within the subject area in accordance with relevant Commonwealth and/or ACT legislation.** | Should any Aboriginal sites be uncovered within the subject area, consultation with local Aboriginal community organisations (RAOs) with rights and interests in the area should be undertaken to determine the appropriate management of any sensitive material associated with the site(s). | High | As required |
| 13.8 | **Identify the location of the air raid shelter and investigate possible remains before disturbing ground around the southern tennis court.** | Undertake targeted research to identify the exact location of the air raid shelter and investigate and assess possible remains before disturbing the ground around the southern tennis court. | High | As required |

### 8.5.2 Specific Policies

The following specific policies provide for the management and conservation of specific heritage values and attributes at the BNTS site.

## Policy 14: Natural Heritage Values

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| 14.1 | **Develop and implement a management plan for the *Rytidosperma/Austrostipa* grassland.** | Management of the core *Rytidosperma/Austrostipa* grassland complex requires the development and implementation of a management plan that has the management of the whole grassland habitat ecosystem as its central policy.<br>Management directed towards the maintenance and enhancement of community structure and diversity will be more sustainable than management for particular elements. | High | Short term |
| 14.2 | **Investigate opportunities to create a high value natural heritage precinct at the BNTS site.** | Investigate opportunities to create a high value natural heritage precinct in the central and western portion of the BNTS site. | High | Medium term |
| 14.3 | **Restrict recreational use of grassland areas.** | Reserve the precinct from new development. | High | Ongoing |
| 14.4 | **Natural heritage values will be managed in accordance with the recommended actions contained within this HMP.** | Conserve and manage the large central core *Austrodanthonia/Austrostipa* grassland area (west of the naval village), Ginninderra peppercress habitat area, the remnant grassy woodland area and the wetland habitat along Ginninderra Creek, as an integrated natural heritage area. | High | Ongoing |
| | | Manage the integrated natural heritage area as an ecosystem complex, under a comprehensive ecosystem management plan. Management directed towards the maintenance and enhancement of community structure and diversity will be more sustainable than management for particular elements. | High | Ongoing |
| | | Apply an adaptive management approach to the management of the core natural temperate grassland area where management activities are monitored to ensure:<br>• the long-term sustainability of the natural temperate grassland community;<br>• the quality of the habitats provided by the natural temperate grassland; and<br>• the development of best-practice management activities. | High | Ongoing |
| | | Ensure that significant trees and shrubs at the site are only managed by personnel experienced in working in heritage landscapes and heritage trees/plantings. | High | Ongoing |
| | | Manage the remnant stand of yellow box and Blakely's red gum to restore it as a grassy woodland type on the edge of the natural temperate grassland. This will require exclusion from mowing or other disturbance which might interfere with the regeneration of eucalypt | High | Ongoing |

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| | | seedlings and the development of other woodland understorey species. | | |
| | | The conservation management of the foreshore areas for Latham's snipe habitats should focus primarily on the control of access and intensity of use of terrestrial lands adjoining the wetlands, along with water activity restrictions. With these in place, attention can turn to limited wetlands habitat restoration and extension works, undertaken in small, non-continuous areas, so as not to disturb existing habitats. | High | Ongoing |
| | | Protect and manage the dry *Themeda* grassland on the southeast of the site, bordering Baldwin Drive, as a remnant temperate grassland and habitat area. Management should focus on the control of weeds and restriction of access. | High | Ongoing |
| | | Protect and manage the isolated *Austrostipa* grassland in the northeast corner of the site for its natural values as an open-space area for neighbouring urban development. Future management should focus on the control of active recreational use within the context of existing, surrounding urban development.<br>Ensure management of the grassland is compatible with the protection and management of the Indigenous heritage values of the area. | High | Ongoing |
| | | Where new vegetation is proposed, consider the re-introduction of native species. | High | Ongoing |
| | | Base decisions on whether to retain or remove particular trees on safety considerations, their relative significance, contribution to the landscape as a whole, and amenity value. | High | Ongoing |
| | | Minimise plantings that will impede significant views or the settings of built elements. | High | Ongoing |
| | | Do not introduce plantings near structures that may damage services, foundations etc through root action, dropping branches etc. | High | Ongoing |
| | | Design any new plantings/gardens so that they are in keeping with existing significant landscapes and landscape elements, and using design and materials consistent with, or at least not in conflict with, that particular part of the place. w | High | Ongoing |
| | | Enforce the application relevant Australian standards (eg AS 4373 Formative Pruning) and current best practice in arboriculture as recommended by relevant industry representative groups. | High | Ongoing |
| | | Control and/or remove weeds and problem species (such as lantana, privet etc) as part of an | High | Ongoing |

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| | | ongoing maintenance program, and in collaboration with adjoining landowners.<br>Refer to Policy 12.1 for management of weeds species that are also cultural plantings/heritage attributes. | | |
| | | Monitor the site for the presence of any feral or native animals that might have an adverse impact on landscape elements (eg rabbits, possum damage to significant trees etc). | High | Ongoing |

## Policy 15: Historic Heritage Values

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| 15.1 | **Retain operational equipment and associated documentation in the main transmitting building.** | Retain the operational equipment in the main transmitting building and associated documentation as a key attribute of the site's significance. | High | Ongoing |
| | | Maintain to a standard that is safe and arrests deterioration and damage. | High | As required |
| 15.2 | **Retain associated aerial infrastructure in situ.** | Retain associated aerial infrastructure in situ until an appropriate use or approach can be developed to better manage the attributes in a way that avoids or mitigates impacts to the heritage values. | High | Ongoing |
| 15.3 | **Retain and maintain the former Naval Village.** | Retain and maintain the former Naval Village comprising the road layout, individual plantings, windbreaks and tennis courts as a core part of the site's heritage significance. | High | Ongoing |
| | | Any new development in the former Naval Village should be sympathetic to the attributes and enhance them, where possible. | High | Medium term |
| 15.4 | **Adopt 'Garden City' principles for future development at the former Naval Village.** | Residential redevelopment at the former Naval Village should be informed by an understanding of the intrinsic heritage values of the site. The 'Garden City' principles provide an important foundation for informing new design characteristics and interpretation of the heritage values. | High | As required |
| 15.5 | **Retain or reinterpret the cricket pitch.** | Retain the cricket pitch in the aerial farm or reinterpret it as a means of reflecting the social aspect of the site's history. | Medium | Medium term |
| 15.6 | **Conserve, manage, maintain, interpret and provide a related and compatible use for the Transmitting building in reference to the attribute's Tolerance for Change.** | Compatible uses for the building may include museum, heritage centre, educational or research facility uses. Develop links between new uses and related institutions such as the Sea Power Centre.<br>Provide adequate security for the place to ensure conservation of its values. | | |
| | | **Areas with Low Tolerance for Change**<br>Conserve, manage and interpret all building fabric, plant, fixtures, fittings and radio transmitting equipment in situ. | | |

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| | | Areas of the building in this zone have a low tolerance for change because of their heritage significance, intactness and integrity, so only minimal change is acceptable in this zone. | | |
| | | **Areas with Some Tolerance for Change**<br>Conserve, manage and interpret all building fabric, plant, fixtures, fittings and radio transmitting equipment in situ.<br>Adaptive re-use of areas in this zone, which involves only minor changes to the fabric of the place and which assists in supporting the ongoing conservation and interpretation of the building, is acceptable. | | |
| | | **Areas with Moderate Tolerance for Change**<br>Conserve, manage and interpret the original building fabric fixtures and fittings in these areas, within the context of adaptive re-use of spaces to support the ongoing conservation of the place as a whole.<br>Conserve original building features in this zone (gantry cranes, original doors, windows, and other original building fabric and features).<br>Areas of the building in this zone can tolerate changes for adaptive re-use. | | |
| **15.7** | **Conserve, manage, maintain and interpret Radio Transmitting equipment.** | Develop a specific management plan for conservation and maintenance of the transmitting equipment. Seek expert input to this plan from appropriately experienced individuals with materials conservation and radio transmission expertise.<br>Radio transmission equipment should only be removed from the site if a HIA can show that this would not cause a significant adverse impact to the collection as a whole and if the removal would make a positive contribution or benefit to the conservation of the place in the long term.<br>Provide adequate security for the place to ensure conservation of its values. | High | Short term |
| **15.8** | **Conserve, manage, maintain and interpret copper earth mat and site of former aerial array.** | Conserve, manage, maintain and interpret all aerials, remnants of aerials and the copper earth mat in situ.<br>No new building development should occur within the area of the earth mat to conserve both the fabric of the mat and the open area associated with the function of the mat and the low frequency aerials.<br>Ensure the management of the natural values of the grassland is complementary to the conservation objectives for the copper earth mat and former aerial array. | High | Ongoing |
| **15.9** | **Conserve, manage, maintain and interpret the outbuildings.** | Conserve, manage, maintain and interpret the heritage values of the outbuildings in situ. | High | Ongoing |
| **15.10** | **Conserve, manage, maintain and interpret the heritage values of the Guardhouse.** | Ensure the link between the transmitting station and Guardhouse is conserved and interpreted.<br>Adaptive re-use of the interior spaces is acceptable as long as historical fabric is retained and the historical function of the place is demonstrated and interpreted. | High | As required; ongoing |

| Number | Policy | Action | Priority | Timing |
|---|---|---|---|---|
| | | Provide adequate security for the place to ensure conservation of its values | | |
| 15.11 | **Conserve, adaptively re-use, manage and interpret the heritage values of the Sailor's Mess.** | Conserve the exterior form of the building but the interior may be altered for adaptive re-use. Ensure adaptive re-use is sympathetic to the architectural character and heritage values of the place.<br>Compatible uses for the building may include use as a 'pub', restaurant, motel or community facility.<br>Interpret the heritage values in any new use scheme.<br>Retain the name of the mess. | High | Ongoing |
| 15.12 | **Conserve, manage and interpret the former Naval Village.** | Conserve the road layout including street names, the 'D', the site of the tennis courts, the block size and the significant healthy street and windbreak plantings.<br>Adaptive re-use of the site for compatible new uses is appropriate. Compatible new uses may include residential-scale development, medium-density housing, aged-care facility or live-in accommodation for university students.<br>Development of the site will require the development of detailed urban design guidelines to ensure conservation of the heritage values. | High | As required; ongoing |
| 15.13 | **Manage and interpret the stock route.** | Reinterpret the stock route as part of the significant grasslands and other habitats on the site.<br>Interpret the heritage value of the travelling stock routes with signage or other interpretive material produced for the place as a whole. | High | As required; ongoing |
| 15.14 | **Retain Naval Village street names and follow naming convention for future roads.** | Retain the Naval Village street names as evidence of the site's history and naval personnel who played important roles in the operation of the transmitting station (Tiller Crescent, MacLeod Street and Telegraphist Street.<br>Where new roads are planned for the Naval Village, continue with the convention of names relating to the site's history and key figures. | High | Ongoing |

## Policy 16: Aboriginal Cultural Heritage

| Number | Policy | Action |
|---|---|---|
| 16.1 | **Lawson Site 1 (L01)**<br>**AAP PAD Site**<br>**L01 PAD area** | Avoid impact<br>Establish an appropriate buffer zone and restrict activities in this area.<br>Consult with the local Aboriginal community through the RAOs if proposing impacts. |

| Number | Policy | Action |
|---|---|---|
| 16.2 | **Lawson Site 11**<br>**LPAD1**<br>**L11 PAD** | Avoid impact<br>or<br>Consult with the local Aboriginal community through the RAOs and conduct additional investigation of cultural and archaeological values prior to any proposed impacts. |

# 9.0 Appendices

## Appendix A

EPBC Act Compliance Tables

## Appendix B

Commonwealth Heritage List Citations

## Appendix C

Belconnen Naval Transmitting Station, Lawson ACT—Indigenous Cultural Heritage Assessment, Navin Officer Heritage Consultants, 2008

## Appendix D

Literature Review

## Appendix E

Transmitting Station Technology and Design

## Appendix F

Comparative Analysis

## Appendix G

Community Consultation

## Appendix H

Condition Reports

## Appendix I

Unanticipated Finds Protocol

# Appendix A

EPBC Act Compliance Tables

# Appendix A—EPBC Act Compliance Tables

## Schedule 7A

Schedule 7A of the Environment Protection and Biodiversity Conservation Regulations 2000 (EPBC Regulations) sets out the matters to be addressed in management plans for Commonwealth Heritage places.

The following table demonstrates how the HMP addresses these requirements.

**Table 1** HMP Compliance Against 7A of the EPBC Regulations.

| Schedule 7A EPBC Regulations—Management Plans for Commonwealth Heritage Places | HMP Compliance |
|---|---|
| Establish objectives for the identification, protection, conservation, presentation and transmission of the Commonwealth Heritage values of the place | Section 1.0 |
| Provide a management framework that includes reference to any statutory requirements and agency mechanisms for the protection of the Commonwealth Heritage values of the place | Section 1.3, 1.4, 1.5<br>Section 2.0<br>Section 6.2<br>Section 8.0 |
| Provide a comprehensive description of the place, including information about its location, physical features, condition, historical context and current uses | Section 3.0<br>Section 4.0<br>Appendix H |
| Provide a description of the Commonwealth Heritage values and any other heritage values of the place | Section 5.0 |
| Describe the condition of the Commonwealth Heritage values of the place | Section 6.4 |
| Describe the method used to assess the Commonwealth Heritage values of the place | Abbreviations and Definitions<br>Section 2.2.1<br>Section 5.0 |
| Describe the current management requirements and goals, including proposals for change and any potential pressures on the Commonwealth Heritage values of the place | Section 6.0<br>Section 7.0<br>Section 8.0 |
| Have policies to manage the Commonwealth Heritage values of a place, and include in those policies guidance in relation to the following management and conservation processes to be used:<br>• the access and security arrangements, including access to the area for Indigenous people to maintain cultural traditions;<br>• the stakeholder and community consultation and liaison arrangements;<br>• the policies and protocols to ensure that Indigenous people participate in the management process;<br>• the protocols for the management of sensitive information;<br>• the planning and management of works, development, adaptive re-use and property divestment proposals;<br>• how unforeseen discoveries or disturbance of heritage are to be managed;<br>• how, and under what circumstances, heritage advice is to be obtained;<br>• how the condition of Commonwealth Heritage values is to be monitored and reported;<br>• how records of intervention and maintenance of a heritage places register are kept;<br>• the research, training and resources needed to improve management; and<br>• how heritage values are to be interpreted and promoted. | Section 7.0<br>Section 8.0 |

| Schedule 7A EPBC Regulations—Management Plans for Commonwealth Heritage Places | HMP Compliance |
|---|---|
| Include an implementation plan | Section 8.0 |
| Show how the implementation of policies will be monitored | Section 8.4<br>Policy 1<br>Policy 2<br>Policy 8.2 |
| Show how the management plan will be reviewed | Section 8.4.3<br>Policy 1.15<br>Policy 2 |

## Schedule 7B

Schedule 7B of the EPBC Regulations sets out the Commonwealth Heritage management principles.

The following table demonstrates how the 2018 HMP addresses these requirements.

| Schedule 7B EPBC Regulations—Commonwealth Heritage Management Principles | HMP Compliance |
|---|---|
| The objective in managing Commonwealth Heritage places is to identify, protect, conserve, present and transmit, to all generations, their Commonwealth Heritage values | Section 1.0<br>Section 5.0<br>Section 6.7<br>Section 7.0<br>Section 8.0 |
| The management of Commonwealth Heritage places should use the best available knowledge, skills and standards for those places, and include ongoing technical and community input to decisions and actions that may have a significant impact on their Commonwealth Heritage values | Section 7.0<br>Section 8.0 |
| The management of Commonwealth Heritage places should respect all heritage values of the place and seek to integrate, where appropriate, any Commonwealth, State, Territory and local government responsibilities for those places | Section 2.0<br>Section 8.0, Policy 1.21 |
| The management of Commonwealth Heritage places should ensure that their use and presentation is consistent with the conservation of their Commonwealth Heritage values | Section 6.0<br>Section 7.0<br>Section 8.0 |
| The management of Commonwealth Heritage places should make timely and appropriate provision for community involvement, especially by people who:<br>a) have a particular interest in, or associations with, the place; and<br>b) may be affected by the management of the place | Section 6.6<br>Section 8.0 |
| Indigenous people are the primary source of information on the value of their heritage and that the active participation of Indigenous people in identification, assessment and management is integral to the effective protection of Indigenous heritage values | Section 1.0<br>Section 2.0<br>Section 3.2<br>Section 4.4<br>Section 5.4.5<br>Section 5.4.6<br>Section 8.0 |
| The management of Commonwealth Heritage places should provide for regular monitoring, review and reporting on the conservation of Commonwealth Heritage values | Section 8.0. Policy 2 |

# Appendix B

Commonwealth Heritage List Citations

# Royal Australian Naval Transmitting Station, Baldwin Dr, Lawson, ACT, Australia

| | |
|---|---|
| **Photographs** |        |
| **List** | Commonwealth Heritage List |
| **Class** | Historic |
| **Legal Status** | Listed place (22/06/2004) |
| **Place ID** | 105519 |
| **Place File No** | 8/01/000/0490 |

**Summary Statement of Significance**

The Royal Australian Naval Transmitting Station at Belconnen, comprising the three main aerial masts, elements of the Rhombic and Omni Vector aerial arrays, transmitting hall, guardpost and guard house, the cricket pitch and the village site, including the tree plantings, shelter belt radiata plantations, subdivision and tennis courts and road system, is important for its association with the development of Australian Naval Communications in Australia from 1938 in the lead up to the Second World War 1939-45. Completed in 1939 the Transmitting Station was the most powerful naval wireless station in the British Empire and the largest naval or commercial station in the southern hemisphere.

The extant fabric of the transmitting station and the relict village site are important in illustrating the significant role the base played in naval communication both during and after World War Two. The area developed for the village is important in demonstrating the functioning of the station in its relatively remote setting. (Criterion A.4)

The Transmitting Station is important as a rare example of the technical development of Australian Naval Communication during the inter-War years. This is illustrated by the design and

technical achievement expressed in the three 600 foot aerial masts, assembled on site and aligned east-west to maximise transmissions to the Pacific and Indian Oceans and the intact 44,000hz, purpose built, low frequency transmitter complex, which, in conjunction with Rugby in England, made it possible to communicate with British Merchant or Fleet shipping anywhere in the world (Criterion B.2 and Criterion F.1).
The Transmitter Building, 600ft aerial masts, Guard House and guardpost and the access road and associated village site, including the subdivision and landscape elements, are important in demonstrating the design, layout and functioning of high powered, low frequency, transmitting stations developed by the Commonwealth for long distance radio communication prior to and during World War Two (Criterion D.2).
The place is highly valued for its social and symbolic associations by members of the local community including former Naval personnel in particular the WRAN, for whom the establishment of the transmitting and receiving stations in Canberra resulted in the training of women as telegraphists under Mrs Florence McKenzie, founder of the WRAN service, and in the development of Canberra. (Criterion G.1)
(Historic Themes: 7.7 Defending Australia).

**Official Values**

**Criterion A Processes**

The Royal Australian Naval Transmitting Station at Belconnen, comprising the three main aerial masts, elements of the Rhombic and Omni Vector aerial arrays, transmitting hall, guardpost and guard house, the cricket pitch and the village site, including the tree plantings, shelter belt radiata plantations, subdivision and tennis courts and road system, is important for its association with the development of Australian Naval Communications in Australia from 1938 in the lead up to the Second World War 1939-45. Completed in 1939 the Transmitting Station was the most powerful naval wireless station in the British Empire and the largest naval or commercial station in the southern hemisphere.
The extant fabric of the transmitting station and the relict village site are important in illustrating the significant role the base played in naval communication both during and after World War Two. The area developed for the village is important in demonstrating the functioning of the station in its relatively remote setting.

Attributes
The whole of the transmitting station including the various elements articulated above.

**Criterion B Rarity**

The Transmitting Station is important as a rare example of the technical development of Australian Naval Communication during the inter-War years. This is illustrated by the design and technical achievement expressed in the three 600 foot aerial masts, assembled on site and aligned east-west to maximise transmissions to the Pacific and Indian Oceans and the intact 44,000hz, purpose built, low frequency transmitter complex, which, in conjunction with Rugby in England, made it possible to communicate with British Merchant or Fleet shipping anywhere in the world.

Attributes

The three 600 foot aerial masts and their east west alignment, plus the low frequency transmitter complex.

**Criterion D Characteristic values**

The Transmitter Building, 600ft aerial masts, Guard House and guardpost and the access road and associated village site, including the subdivision and landscape elements, are important in demonstrating the design, layout and functioning of high powered, low frequency, transmitting stations developed by the Commonwealth for long distance radio communication prior to and during World War Two.

Attributes
The Transmitter Building, 600ft aerial masts, Guard House and guardpost and the access road and associated village site, including the subdivision and landscape elements.

**Criterion F Technical achievement**

The design and technical achievement of the transmitting station is expressed in the three 600 foot aerial masts, assembled on site and aligned east-west to maximise transmissions to the Pacific and Indian Oceans and the intact 44,000hz, purpose built, low frequency transmitter complex, which, in conjunction with Rugby in England, made it possible to communicate with British Merchant or Fleet shipping anywhere in the world.

Attributes
The three 600 foot aerial masts and their east west alignment, plus the low frequency transmitter complex.

**Criterion G Social value**

The place is highly valued for its social and symbolic associations by members of the local community including former Naval personnel in particular the WRAN, for whom the establishment of the transmitting and receiving stations in Canberra resulted in the training of women as telegraphists under Mrs Florence McKenzie, founder of the WRAN service, and in the development of Canberra.

Attributes
The whole facility including the three main aerial masts, elements of the Rhombic and Omni Vector aerial arrays, transmitting hall, guardpost and guard house, the cricket pitch and the village site, including the tree plantings, shelter belt radiata plantations, subdivision and tennis courts and road system.

**Description**

HISTORY:
With the development of wireless radio communications at the beginning of the twentieth century, it became possible for naval ships to exchange operational, logistic and administrative information with shore authorities. The Royal Australian Navy (RAN) initially established shore based radio facilities at the Flinders Naval Depot near Melbourne, later transferring to sites in Canberra and

Darwin. An extended communications facility was considered necessary in the 1930s, prior to the perceived onset of World War Two, in order to cover certain areas in low frequency ( long wavelength) transmissions, missed at the time by the Royal Naval Communications station at Rugby in the United Kingdom. In 1925 the Australian Commonwealth Naval Board had recommended the construction of strategic wireless stations at Canberra and Darwin. These stations marked the advent of modern RAN communications. The stations were expected to make possible communication with British Merchant Navy or fleet shipping in any part of the world. In 1935 the Commonwealth Government decided to erect radio receiving and transmitting stations in Canberra. Canberra was located 75 miles inland and so was considered safe from sea attack and thought to be less vulnerable to invasion by the Japanese than other British Empire wireless stations in the Pacific region. In 1937 the Commonwealth Government decided to commence the erection of receiving and transmitting stations in Canberra; these were to be located on the territory border near Queanbeyan and at Belconnen respectively. The separation was necessary to reduce interference between the receiving and transmitting facilities. Plans were approved in September 1938, following early site planning in April 1938. November 1938 saw the commencement of work at Belconnen by Standard Telephones Ltd, with the aid of the Department of the Interior, on the transmitting station. Technical construction of the HMAS Harman receiving facility near Queanbeyan was begun in early 1939, with the transmitter room at Belconnen required by 15 January 1939. Due to the lack of facilities on the selected sites accommodation was to be provided for naval personnel. The layout of the base was influenced by technical requirements, wih the married quarters sited behind a hill to reduce absoption (of radiation), and by existing features including a stock route and fenced lane. A fenced lane defined the boundary between the operational areas of the transmitter and the site designated for staff quarters, behind a low ridge. Site planning drawings of April 1938 indicate that the present access road, in part a stock route, linked the new base to Canberra. Provision was made for both a cricket pitch and football field near Ginninderra Creek.

Approval was given in February 1939 for the erection of 2 Chief Petty Officers Quarters on blocks 3 and 4, with 7 married quarters for Ratings to be erected on blocks 12-14 and 18-20, in an area dedicated to accommodation at the entrance to the site. The entrance road was run from the then Queanbeyan-Yass Road across an existing stock route before entering the site. The layout of the housing blocks at Harman and Belconnen characteristically included formal, semicircular subdivisions and planning expressing the social structure of the prevailing naval culture including the provision of tennis courts. Water was supplied to the Station and to the newly erected National Broadcasting Station, at Gunghalin, from a new concrete reservoir completed by September 1938.

The Belconnen site was originally far enough away from the capital city to avoid interference with commercial stations. The facility was also sufficiently far to instil feelings of isolation in staff and families living at the transmitting station. The first batch of thirty naval officers and ratings arrived in March 1939 to operate and guard the stations. This group was to form the advance guard of the 200 men who were to occupy the two naval villages being established on either side of Canberra: '...the base was the most powerful short wave naval wireless station in the British Empire and the largest naval or commercial station in the southern hemisphere' (The Canberra Times 12 April 1939). The first transmission was made on 22 December 1939. These first transmissions appear to have been made using a series of Rhombic aerial arrays, located outside the area of the long wave aerial array completed in 1941. The Rhombic aerials were directional and named after the bases to which they transmitted.
The Belconnen Transmitting Station, known throughout the Australian Fleet as Bels, principally

contained the very powerful 200 kilowatts transmitter operating at the quite low frequency (long wave) of 44,000hz. This was designed to be able to break through the static noise usually encountered over long distances and to be received by submerged submarines. This necessitated the erection of three 600ft high aerial masts set a quarter of a mile apart to support the massive radiating aerial sited east-west to maximise transmissions into the Pacific and Indian Oceans. In conjunction with Rugby in England the facility at Canberra would make it possible to communicate with British Merchant or Fleet shipping anywhere in the world. This role could be fulfilled even, and fortuitously, in the event that stations at Singapore or Hong Kong became inoperable. In January 1941 the three 600ft masts were completed, followed in February and April by tennis courts, recreation hall and garages for those living on site. A cricket pitch and football field were located on the banks of Ginninderra Creek. During the war years the base at Belconnen was camouflaged to look like an operational farm. Small farm buildings were dotted about the landscape which also included three camouflaged Observation Stations and a small arms range. In the post war years the grasslands were grazed under lease by local pastoralists including members of the local Southwell family. As high frequency (short wave) radio gained in reliability and efficiency more equipment was acquired occupying many hectares of open country . The HMAS Harman Receiving Station was only commissioned in 1943 and had a range of aerial types to ensure continuing reception. High frequency aerials were often rhombic in shape and directionally aligned to maximise power output towards the UK, Ceylon, New Guinea and Pearl Harbour in Hawaii. From 1942 to the end of World War Two the receiving station was manned by communications personnel from the RAN Shore Wireless Service, RANR, RANVR, WRANS and even the US Navy. During the war years the WRAN, after 1942, was the largest group at HMAS Harman. The establishment of the receiving and transmitting facility in Canberra is important in the history of the WRAN which began to train women as telegraphists in April 1941 under the influence of Mrs Florence McKenzie the founder of the Women's RAN service. With the increase in wartime activities an Auxiliary Receiving Station was established at Fyshwick and named Molonglo. In the early 1950s a new receiving station was erected at Bonshaw next to HMAS Harman. This new station played an important role in receiving the results of the 1956 Olympics and passing them to Belconnen for transmission to the world. Changes at Belconnen included in 1951 additions to the transmission hall and the erection of a new Aerial Switch Room. The village at the entrance to the Belconnen complex was progressively landscaped under the influence of married staff and the Officer in Charge, with the ridgeline defined by groups of pine trees and some formal plantings along the approach driveway. The transmitting and receiving stations remained operational being manned 24 hours a day. From 1959-61 the low frequency transmitter at Belconnen was overhauled, the water cooled valves changed to air cooled types and power output increased to 250kw. In 1960 Ratings Quarters and Messes were constructed at Belconnen and a standby generator building erected in 1973 . Also during the 1960s the Rhombic aerials, located in the aerial farm, were overhauled, the timberpoles being replaced with metal structures. In some cases the new support structures utilised the original bases maintaining the original aerial configuration and orientation. A range of Omni Vector aerials were also erected in the 1960s.
By 1980 only six of the twenty-six cottages in the naval village at Belconnen were still occupied, the area falling into neglect. In 1982 TS (Training Ship) Canberra was installed in Cottage 17 at Belconnen with the modernisation and extension of six of the cottages. The housing area has now been cleared of structures with the exception of the single men's mess and quarters opposite the guardhouse, although the tennis courts remain. In 1986 five high frequency transmitters were installed at the Belconnen transmitting facility, surplus from OTC. From 1988-90 retention of operational potential was carried out on all transmitters and general equipment. The low frequency transmitter was boxed in (screened) to reduce radiation risks. In 1995 the low frequency (LF) transmitter, Bels44, was ceremonially decommissioned. The Belconnen station is

still operational, providing the RAN with the high frequency radio transmission facilities required to send information to HMAS Fleet at sea. The functions of the Belconnen facility are expected to be transferred to Albury by 2001.
The transmitting facility was being considered in 1999, by the Institution of Engineers Australia Heritage Panel, for an Historic Engineering Marker.
PHYSICAL DESCRIPTION:
The Royal Australian Naval Transmitting Station at Belconnen is the transmission facility of the Naval Communications Station (NAVCOMSTA) Canberra. The Communications Station also includes a receive facility at the Naval Receiving Station, Bonshaw and a control facility at HMAS Harman. There is an 11 mile dispersion distance between the receiving and transmitting sites, HMAS Harman and Belconnen respectively, necessary to ensure that the powerful transmitting site did not drown out the sensitive receiving site at Harman. The Royal Australian Naval Transmitting Station at Belconnen consists of the transmitter hall, aerial farm, guardhouse, sailors messing accommodation and remnant landscape of the former married quarters settlement, linked by the access and internal road system. For convenience the description is in two parts.
1. Transmitter Hall and Aerial Farm
The transmitter hall and aerial farm are located on 136.8ha of land in Belconnen, North Canberra. The three 600ft towers and the subordinate transmitter hall are dominant elements in a landscape defined by the technical requirements of low frequency transmission. Although replaced by high frequency transmission expressed in the multiplicity of smaller aerials the landscape and aerial farm, remains subordinate to the 600ft low frequency transmission towers. The area defined by the operation of the Transmitting Station, including the aerial array, transmitting halls and guard post, at Belconnen are located within an area of Danthonia grassland in good condition listed separately in the Register of the National Estate (see RR 018878). Significant features include the following.
- Aerial Farm
There is a very large earth mat buried beneath the ground consisting of a series of copper wires radiating out from the central mast site of the low frequency transmitter. The aerial farm consists of six different types of aerials including Omni-Vector, Rhombic, bi-conical monopole, vertical log periodic, rotatable log periodic, log spiral and vertical folded dipoles. There are approximately fifty aerials on the site. The three, 600ft, low frequency transmitter aerial masts and those Rhombic aerials associated with the original Rhombic aerial array are individually significant within the aerial farm. The seven Omni-Vector aerials are the rarest types found on the site with no other examples identified in Australia. Associated with the three low frequency transmitter aerial masts are a range of structures which include the foundations of camouflage buildings and at least one intact Observation or Guard Post from the 1939-45 war years. Scattered eucalypts are reminders of the former pastoral landscapes which underlie the site.
- Transmitter Building and Transmitting Equipment.
The Transmitter Building has been erected in a number of linked phases. The main building was erected from 1938-39 and in the early 1940s and includes the No 1 transmitter hall and helix room and the 44khz low frequency transmitter and No 2 transmitter hall and a range of attached structures including switch and amenities rooms, TX plant room, classroom, aerial workshop and stores. Extensions in the 1950s and 1960s include the regulating office, maintenance rooms and aerial exchange room on the western front of the transmitter hall. The associated emergency diesel generator building erected in 1973 is not included. The Transmitter Building is characterised by its brick, gabled domestic form with Marseilles tiled roofs and simple fenestration expressing the industrial nature of the buildings. Construction in red brick is typical of Commonwealth construction in the inter-war and World War Two years. With the exception of details the external brickwork is painted white. The two transmitter halls feature similar construction but have

corrugated asbestos cement roofing and lower roof profiles than the associated more domestic structures housing ancillary functions. The 1950s two storey administration and aerial exchange extension on the western side of Transmitter Hall No 1 features an externally expressed frame with minimal pitch gabled roof. The 1950s extension is the main entrance to the building. The transmitting equipment is housed within buildings designed for functions specific to the operations of a high powered transmitting station. Features include blast proofing of the low frequency transmitter, the use of wooden fittings in place of iron within the Helix Room and electrical screening in the walls of the station. The low frequency transmitter and its components is one of the only remaining pieces of equipment remaining from the 1940s. The low frequency transmitter was designed and installed for the RAN by Standard Telephones and Cables Pty Ltd to operate in the frequency range 40khz to 150khz with a 200kw input in the final stage. The transmitter was updated in 1959-61 to allow for frequency shift operation. The original operation used Morse code and this modification allowed the transmitter to send information in telegraphic format. The original water cooling system was replaced by an air cooling system and the power input was increased to 250kw. In the period 1988-90 the mercury arc rectifiers were replaced with semi-conductor rectifiers. The (radio) valves were replaced with more readily available types. The transmitter was also completely boxed in due to concerns regarding radiation. The three original high frequency transmitters have been replaced with more modern equipment. Three different models of high frequency transmitters remain from the late 1950-60s, the 1970s and the 1990s. The station is the only low frequency radio site in the southern hemisphere. The station is also the most powerful Naval communications centre in the southern hemisphere with the oldest surviving communications technology in Australia. At the time of construction, the station was the most advanced communications station in Australia. The custom built 250kw low frequency transmitter was made specifically for Naval use and is unique in this respect.
Those elements of the facility associated with the transmitting function, namely the transmitter buildings, 600 foot aerial masts, Rhombic and Omni Vector aerials, the guardpost, camouflage building foundations and the western part of the access road are located within an area of DANTHONIA grassland which represents the largest such area in good condition in the ACT. The grassland area acts as the habitat for an endangered species, the day flying moth, SYNEMON PLANA. This area is separately listed in the RNE at 8/01/000/0423.

2. Village settlement, entrance road, Guard House and landscaping.
The transmitting facility was entered from the east, from the direction of HMAS Harman. In December 2000 the access road to the site is from Baldwin Drive. The houses in the small village which developed west of the access road at the entrance to the site have been removed with the exception of the 1960s ratings quarters and mess adjacent to the guardhouse. Associated with the Guardhouse is a small ceremonial area defined by a group of cypress trees. Evidence of the village remains in the form of landscaping, roads and introduced planting which define and screen the former village subdivision and access road which accurately follows the line of the original stock route. HMAS Harman, associated with the receiving component of the facilty, has undergone considerable modification compared to the Belconnen settlement.
The village subdivision implemented in 1939 incorporates planning characteristic of the formality effected during the Inter-War years. Features include social zoning reflected in a semi-circular central feature, opposite the site of the Officer in Command, from which a short road below the ridge provides access to the 1960s single storey Ratings Quarters. This siting clearly reflects the influence of the technical requirements which dictated that the married quarters be sited below a hill to reduce absorption.
The entrance to the site is identified by white painted brick walls and piers located close to the edges of the access road adjacent to the former village area. Plantings include three major

elements; a shelter belt, or plantation, of PINUS RADIATA to the west and north of the village area below the crest of the adjacent ridge along the line of the pre 1938 stock route and the entrance road; a shelter belt of pin oaks, (QUERCUS PALUSTRIS), east of the village site aligned with the white painted entrance walls and piers; and a double row of EUCALYPTUS BICOSTATA on the north side of the access road. The line of the former laneway is reflected in the western windbreak of pine trees. The areas between the shelter belts retain landscaping elements associated with the village. Species include various types of cupressus, eucalypts and native and introduced shrubs planted characteristic of the post war period. The ratings quarters comprise single storey domestic scale buildings with low pitched roofs characteristic of cellular accommodation of the period.
The Guard House defines the boundary between the village site and the operational areas of the transmitting station. The former Guard House of 1939-41 is strategically sited at the entrance to the transmitter, aerial array and technical areas and illustrates in its location the strict security arrangements associated with the facility. The building typically features brick construction with tiled gabled roof and simple fenestration of the inter-war years. A single brick chimney articulates one gable. The entrance side features a flat roofed porch on brick piers. The brickwork is painted white externally.
The concrete cricket pitch remains in place adjacent to Ginninderra Creek within the area of the aerial farm.

**History Not Available**

**Condition and Integrity**

Integrity:
The NTS Belconnen is still operational and the buildings and aerials are maintained to working standard. The 250k watt low frequency transmitter is intact and in situ although the aerial conductors have been removed from the 600 foot towers. The houses have been removed from the village site. (March 1998)
Condition:
All elements are generally maintained in good order.
Elements that are starting to deteriorate include the ceilings in the Transmitter exchange room and the protective insulating ceiling in the Helix Room. Some cracking has started to occur in the concrete flooring near the low frequency transmitter and paint is peeling off the door to the Buffer Amplifier of the transmitter. The site has been contaminated in some areas through the dumping of PCBs (polychlorinated biphenyl) which is a toxic liquid used as liquid insulation for some of the transmitting equipment. The RAN has been conducting surveys of the land since the late 1980s and is carrying out a comprehensive site clean up program. (March 1998)

**Location**

About 15ha, off Baldwin Drive, Lawson, comprising the Transmitter Building and its access road; the three 600ft aerial masts 44A, 44B and 44C; the seven Omni Vector aerials; Rhombic aerials numbers 18, 30, 32 to 35, and 37 to 40; the cricket pitch; the guardhouse located 50 metres to the north of the Ratings Quarters; the guardpost located 200 metres to the north of the Transmitter Building; the 1938 subdivision village site and its access road from Baldwin Drive; plantings that include a belt of pines to the west and north of the village area and extending to the west of the Ratings Quarters; a shelter belt of pin oaks east of the village site; and a double row of eucalypts on the north side of the access road. The Ratings Quarters are not included.

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# Synemon Plana Moth Habitat, Baldwin Dr, Lawson, ACT, Australia

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|---|---|
| **Photographs** |  |
| **List** | Commonwealth Heritage List |
| **Class** | Natural |
| **Legal Status** | Listed place (22/06/2004) |
| **Place ID** | 105535 |
| **Place File No** | 8/01/000/0423 |

**Summary Statement of Significance**

The Belconnen Naval Station has one of the largest remnants in the ACT of DANTHONIA grassland in good condition and this ecological community is recognised as having high conservation value. DANTHONIA grassland formerly had a much wider distribution in the ACT. This remnant grassland community is representative of original vegetation characteristic of the Limestone Plains of the Canberra area. Natural temperate grassland such as occurs in this place is nationally endangered and endangered in the ACT.

Danthonia sp. grassland is essential habitat for the day-flying, golden sun moth, SYNEMON PLANA which is endangered in the ACT. The golden sun moth has a restricted distribution and is presently only known from 32 sites; five in Victoria, 11 in NSW immediately north of the ACT, and 16 in the ACT. This place has one of the most extensive populations of the golden sun moth. Because of its relatively large size of approximately 100ha and good condition, the place is important for the long term conservation of the golden sun moth.

The place is important as a research site for the endangered grassland community and for research about the golden sun moth and a number of other as yet undescribed insect species that inhabit the grassland.

**Official Values**

**Criterion A Processes**

The remnant *Danthonia* sp. grassland in the place is representative of once widespread vegetation characteristic of the Limestone plains of the Canberra area (Edwards 1990).
The golden sun moth, *Synemon plana* occurs in the grassland habitat in the place. Castniidae, the family of Synemon moths, has species occurring in Central and South America and South East Asia as well as Australia. Indications are that it is a family that has Gondwanan origins.

**Criterion A Processes**

The native grassland ecological community at Belconnen Naval Station has high conservation value. *Danthonia* sp. grassland is essential habitat for the day-flying, golden sun moth, *Synemon plana*. This place is considered to be one of the best for the conservation of *S. plana* because the *Danthonia* sp. grassland is in good condition and it is a relatively large area of approximately 100ha. The site is one of the largest of 16 sites where the species is known to occur in the ACT (Edwards 1990, S. Sharp pers. comm., Environment ACT 1998).

**Criterion B Rarity**

Natural Temperate Grassland of the Southern Tablelands of NSW and the Australian Capital Territory is listed as a nationally endangered ecological community under the Environment Protection and Biodiversity Conservation Act 1999 and is endangered in the ACT.
*Synemon plana* is endangered in the ACT. The golden sun moth has a limited distribution, and currently it is only known from 32 sites, five in Victoria, 11 in NSW immediately north of the ACT, and 16 in the ACT, with an extensive population occurring at this place (Environment ACT 1998).

**Criterion C Research**

The site represents an opportunity for further research on an endangered ecological community that was originally widespread. The lifecycle of the golden sun moth is yet to be elucidated, as are the lifecycles of other invertebrate species known to occur in the grasslands (Edwards pers. comm.).

**Description**

The place consists of DANTHONIA grassland which was formerly widespread in the region. Dominant grasses of this grassland community are short wallaby grass (DANTHONIA CARPHOIDES) and DANTHONIA AURICULATA, with herbs and prostrate low bushes scattered throughout the site. Other species present include the common everlasting (CHRYSOCEPHALUM APICULATUM), blue devil (ERYNGIUM ROSTRATUM), pink bindweed (CONVOVULUS ERUBESCENS), LOMANDRA sp, GOODENIA sp, and WAHLENBURGIA sp. The presence of DANTHONIA, CHRYSOCEPHALUM and ERYNGIUM indicate the site is relatively undisturbed. The site is predominantly flat, averaging 600m in altitude. Soils are shallow, skeletal and have developed on a shale base.

The Belconnen Naval Radio Station became operational in 1939. It is surrounded by a cleared strip and a security fence. There is a network of communication aerials through the area. Management of the vegetation on the site includes light grazing by a small resident flock of sheep and the occasional high mechanical slashing. This minimal disturbance has discouraged the invasion of weeds.

The place provides suitable habitat for the endangered, day-flying, golden sun moth SYNEMON PLANA. The golden sun moth is about 3.5cm across, with clubbed antennae and wings that are brown, orange and black dorsally, with the ventral surface white. Females have bright orange hind wings (male hind wings are bronze brown) and long ovipositors for inserting eggs into

DANTHONIA grass tussocks. Neither females nor males have mouthparts and live only one to two days. Females are poor fliers and are sought out by the stronger flying males soon after emergence. Females attract males by exposing the bright hind wings. After copulation the female begins depositing eggs. Eggs are mature at the time of emergence in November or December. The larval stage is thought to be twenty-one to twenty-two months, during which time the larvae feed on the underground parts of short wallaby grass. The complete life history is unknown. The moth is seen in large numbers during the period of emergence, but approximate figures are difficult to assess and a minimum viable habitat area has not been postulated. Within the family CASTNIIDAE the S PLANA female is unique in having wings smaller than usually required to support the body size. Another unique feature is the different coloration and size of the sexes. The poor flight of the female moth implies past access to an extensive and continuous habitat without the need to colonise disjunct areas.

CASTNIIDAE, the family of SYNEMON moths, has species occurring in Central and South America and South East Asia as well as Australia. Indications are that it is a family of Gondwanan origins. In Australia, these moths and their habitats were widespread 200 years ago, based on reliable records from throughout south east Australia.

**History Not Available**

**Condition and Integrity**

The condition of the site is very good in comparison with other grasslands in the ACT. The number of exotic plant species is low and those that do occur are in low numbers. As well, native plant species richness is high compared with other grasslands.

Persistence of the golden sun moth and various plants such as native grasses, everlastings and blue devils indicates that there has been insignificant modification of the grassland habitat during the fifty years of its use for military communications purposes. DANTHONIA grassland, although encouraged by light grazing, is susceptible to pasture improvement such as has occurred throughout south east Australia since the 1950s. Current major threats include gradual encroachment by colonising vegetation and total loss or major changes due to changes in land use. The smaller grasslands in the ACT are susceptible to inappropriate management, such as short mowing, which could easily destroy the habitat, along with the moth. (June 1992)

**Location**

About 100ha, at Belconnen, comprising the area bounded by straight lines joining the following AMG points consecutively: 89800064, 89459994, 89529990, 89579973, 89819968, 89979980, 90309962, 90520000, 90440008, 90540018, 90800020, 90800037, 90350068, 89940057 and the commencement point, excluding all man made structures.

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## Appendix C

Belconnen Naval Transmitting Station, Lawson ACT—Indigenous Cultural Heritage Assessment, Navin Officer Heritage Consultants, 2008

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# Appendix D

Literature Review

# Appendix D—Literature Review

The following review of literature traces a chronology of events as the natural values of the site were first identified, consolidated, revised and progressively fleshed out. The bulk of this review has been extracted from the 2009 Belconnen Naval Transmitting Station Heritage Management Plan (2009 HMP) and reviewed and updated by WSP.

## D.1 Early Surveys

The site has long been recognised as significant native grassland of the Canberra region and has been mentioned in a number of regional inventory reports in the early 1990s (eg Hogg[1] and Frawley[2]) However, the earliest cited environmental survey that focuses specifically on the site is the 1995 report of Crawford and Rowell.[3] This report investigated the vegetation and fauna habitat of the site in support of the inclusion of the 'Wallaby grass—Spear grass open grassland', as the natural temperate grassland was then called, in the Australian Heritage Commission's Register of the National Estate (RNE). The Wallaby grass—Spear Grass open grassland was identified as Golden sun moth habitat. Six other fauna species that were 'either threatened, rare or have significantly declined in the ACT' were identified, although no sightings or recordings of them had then been made. No flora species listed as rare or threatened were identified, but the report noted the presence of an undescribed peppercress species (*Lepidium* sp.). Referring to management requirements, Crawford and Rowell made the observation that a managed kangaroo population could provide appropriate biomass control for the grasslands in the absence of other natural pressures (eg fire).

Crawford and Rowell identified the Yellow box/Blakely's red gum woodland on site as a remnant of the endangered ecological community under the ACT *Nature Conservation Act, 1980*.[4] They also made the distinction between grasslands that are remnants of original natural temperate grassland communities (primary grasslands) and grassy woodlands from which the trees have been cleared previously (secondary grasslands), and pointed out that (in 1995) there were no primary grasslands formally reserved in the ACT.

In 1995, the Golden sun moth habitat was placed on the RNE.[5] The listing recognised both the value of the natural temperate grassland as an endangered vegetation community and the site's habitat for the Golden sun moth. The listing noted that the grassland community is representative of the original vegetation characteristic of the limestone plains of the Canberra area. It is also noted that Castniidae, the family of Synemon moths, has species occurring in Central and South America and South East Asia as well as Australia. Indications are that it is a family of Gondwanan origins. In Australia, these moths and their habitats were widespread 200 years ago, based on reliable records from throughout southeast Australia.[6]

The Golden sun moth habitat was placed on the Commonwealth Heritage List (CHL) in 2004.[7]

Following regional survey work on Golden sun moth habitats by Clarke and Dear[8] in 1998, Clarke and Dunford[9] undertook the first quantitative field survey of the species in the site grasslands. They found that the southern, northern and northeastern areas of the aerial field had the highest density of moths (at the male flying stage of the life cycle) and concluded that as much of the *Rytidosperma* grassland as possible should be reserved as a critical requirement of the species' survival in the ACT and surrounding areas of NSW. They also noted the presence of the Perunga grasshopper within the same habitat area.

## D.2 Studies in Support of Site Planning and Future Use

In 2000, the Planning and Land Management Division[10] of the ACT Department of Urban Services released the Belconnen Town Centre Master Plan, which delineated a reserve/open-space boundary for the grasslands at the site predominantly on the central and western part of the aerial field. It extended across the upper reaches of Lake Ginninderra and included the wetlands habitat and *Lepidium* area but excluded the remnant woodland in the east of the fenced area and the *Themeda* grasslands bordering Baldwin Drive in the east of the site (owned by the Department of Defence [Defence] at the time).

In the same year, the Wildlife Research and Monitoring Division[11] of Environment ACT set up permanent sample plots and monitoring stations for the Striped legless lizard, Eastern lined earless dragon and the Golden sun moth on the site area. It also made a detailed study of the *Themeda* grasslands to the east of the Naval Village and concluded that it was a dry *Themeda* grassland (lacking the characteristic species of the wet community), that it had high species diversity and that it was a potential habitat for the Striped legless lizard, the Canberra raspy cricket and the Perunga grasshopper.

In 2001 the University of Canberra[12] prepared a large report on the scientific, Indigenous and historical values of the site (2001 HA), which was not released but was among the first studies to attempt to collect the site's natural and cultural heritage values in one report. However, it stopped short of combining these values into integrated management strategies or delineating site reservations that reflected integrated values. A number of studies published since have been responding to knowledge gaps identified in this report or redressing omissions in it.

The 2001 HA identified the significant habitat provided by the large *Rytidosperma*-dominated grassland of the aerial field for a number of threatened fauna species and based its recommended grassland reserve on this area, which was significantly smaller than that in the Belconnen Town Centre masterplan. It also identified the presence of the (then) undescribed peppercress (*Lepidium*) species.

Parts of the report that have been the subject of reappraisal in subsequent literature include:

- the diminution of the *Rytidosperma* grassland area recommended for reservation;
- the proposed reservation of the rush community adjacent to the lake; and
- the proposed reservation of only a small part of the *Themeda* grassland in the east of the site, which it identified as a 'wet *Themeda* community'.

In contrast to the findings of Crawford and Rowell[13] in 1995, the report rejected the Yellow box/Blakely's red gum trees in the southeast of the fenced area as a representative of the listed grassy woodland community and recommended the area for development.

The HLA Envirosciences review in 2001 introduced the concept of the 'minimum reserve area' required to protect the species covered by legislation. Recommended additions to the minimum area include infill to facilitate management and extensions to include the *Lepidium* area, lake foreshores and the secondary grassland on the south-eastern corner of the fenced area. This latter area is included primarily as an ecological buffer to the minimum reserve area and no reference is made of the value of the Yellow box/Blakely's red gum woodland in that area.

The review is equivocal about the value of the dry *Themeda* grassland between Baldwin Drive and the Naval Village. It noted the reappraisal of the area by the Wildlife Research and Monitoring Division[14] and its upgraded species diversity rating. However, at the time of the review, no threatened species had been found there and appropriate 'open-space' uses within the context of surrounding urban development were considered sufficient for its protection.

The review also introduced the issue of the potential habitat provided by the upper reaches of Lake Ginninderra on the site for the migratory bird species, Latham's snipe. Although no sightings had been recorded, the broad definition of potential habitat for migratory birds under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) was taken as the basis for inclusion of the lakeside wetland as a site value.

The 'recommended minimum area' (the minimum reserve area plus recommended additions) of the HLA-Envirosciences[15] review was much larger than the reserved area in the Belconnen Town Centre Master Plan and the proposed reserve areas in the 2001 HA.

The description of the *Lepidium* (peppercress) species on site by Scarlet[16] was also published in 2001. Scarlet proposed the taxonomic name *Lepidium ginninderrense* and the common name of Ginninderra peppercress as a reference to the species type locality. The suggested ROTAP[17] risk code for this species was 2E a[18], a reference to the extremely small population in a reserved site. The habitat was described as the flood plain of Ginninderra Creek dominated by wallaby grass (*Rytidosperma spp.*) and Redleg grass (*Bothriochloa macra*).

The naval transmission station was placed on the RNE in 2002.[19] The listing included the layout and landscaping of the village site, the tree plantings and shelter belt pine plantations. The listing noted that:

> *[p]lantings include three major elements; a shelter belt, or plantation, of Pinus radiata to the west and north of the village area below the crest of the adjacent ridge along the line of the pre 1938 stock route and the entrance road; a shelter belt of pin oaks, (Quercus palustris), east of the village site aligned with the white painted entrance walls and piers; and a double row of Eucalyptus bicostata on the north side of the access road. The line of the former laneway is reflected in the western windbreak of pine trees. The areas between the shelter belts retain landscaping elements associated with the village. Species include various types of cupressus, eucalypts and native and introduced shrubs planted characteristic of the post war period.*

In 2002, HLA-Envirosciences[20] was commissioned by the Defence Corporate Services and Infrastructure Group to survey for the presence of the Striped legless lizard outside the recommended minimum reserve area. The brief for the survey accepted the validity of the recommended minimum reserve area and aimed to reassess the ecological value of those lands outside it. The survey confirmed the presence of a Striped legless lizard population in the dry *Themeda* grassland between the Naval Village and Baldwin Drive. It also trapped Perunga grasshopper individuals in a site on ACT lands just south of the fence.

The Golden sun moth habitat on site was further investigated by Rowell[21] in 2003. The value of the large area of *Rytidosperma* grassland was confirmed. Three small areas outside the fenced area were found to be potential habitat on the basis of wallaby grass tussock density. However, none were recommended for inclusion in the conservation reserve, due mainly to the nature and distance of their physical separation from the prime habitat areas.

Also in 2003, Rowell[22] prepared a review of the ecological issues pertaining to the Lawson Residential Estate Study being undertaken at that time by Maunsell McIntyre and addressing the proposed

reserve area configuration in the Lawson Outline Plan by Maunsell.[23] This review was in two parts; one updating the other. It inventoried the natural values of the site's ecological communities and significant flora and fauna species and brought their protection status under territory and Commonwealth legislation up to date. Three points are of interest in report were:

- the Yellow box/Blakely's red gum stand in the southeast of the fenced area is regenerating and, though not included in ACT Action Plan No. 10 for the woodland community, may warrant consideration for retention;
- protection of the potential habitat of Latham's snipe is given a much lower priority than that in the HLA-Envirosciences report[24] and the relocation of the fence to the eastern shore of Ginninderra Creek as proposed in the Lawson Outline Plan (excluding the wetland from the reserve area) is not viewed as an issue of concern; and
- grasslands management by kangaroo grazing is discussed as an option. The report notes the existence of a population of '70 resident kangaroos within an area surrounded by the high fence'. It is not clear whether this is referring to a preferred population level for management or an actual population level at that time.

In September 2004, HLA-Envirosciences[25] prepared a report for Resolve FM to provide an assessment of the threatened species and kangaroos at the site and to provide management recommendations for the planned decommissioning of the site. The report briefly summarised the natural values of the site and concentrated on an impact assessment of antenna removal, by examining natural values in the drop zones and the population dynamics of the eastern grey kangaroo population. Its discussion of kangaroo population dynamics was limited to a one-time snapshot. It concluded that the 2004 population level of 202 individuals was within the carrying capacity of the grassland community and should not harm its structure or floristic makeup. However, the report noted that under favourable conditions, growth rates in eastern grey kangaroo populations can be as high as 25–30 percent per year and that further monitoring of population numbers and grassland condition is essential.

Three marginal areas within the study boundary have been subject to conflicting assessments in the literature:

- the *Austrostipa* grassland area in the north-eastern corner of the site (north of the site access road and bordering Baldwin Drive) was assessed by the 2001 HA as of low value due primarily to the presence of weeds. Rowell's report on ecological issues for the Lawson Residential Estate study[26] generally concurred with this assessment but identified a small area of about two hectares in the south-eastern corner in good condition. Her work to delineate Golden sun moth habitat[27] identified this area as potential habitat, but because of its separation from the main habitat area assigned it a low conservation priority. An inspection in early 2008 confirmed that this area is in good condition with a grass and forb species array to qualify as natural temperate grassland;
- the Yellow box/Blakely's red gum stand on the south-eastern corner of the fenced area has been identified by some authors as remnant woodland[28], while others[29] have discounted its value due to site disturbance (landfill). It has a history of agricultural grazing and was not included in the ACT Action Plan No. 10.[30] An inspection in November 2007 confirmed that this stand is in good condition with a grass and forb understorey and active eucalypt regrowth. Additionally, an

examination of the 1940, 1941 and 1956 aerial photographs of the site[31] shows this woodland stand in the same shape and configuration, with no identifiable site disturbance; and

- in the literature, the grasslands to the east of the Naval Village (south-eastern corner of the site) have not been given a high conservation value.[32] In a reappraisal, the Wildlife Research and Monitoring Division[33] of Environment ACT identified them as dry *Themeda* grassland with a high species diversity. Its potential as a habitat for the Striped legless lizard and the Perunga grasshopper was confirmed in subsequent studies.[34] An inspection in November 2007 confirmed that this area is now in very good condition with a characteristic grass and forb species array to qualify as natural temperate grassland.

In 2008, SMEC Australia undertook an environmental assessment, which involved a literature review and gap analysis as well as flora and fauna surveys to advise on the risks associated with divestment of the site and the environmental (primarily ecological) attributes and management requirements for the future owner.

The field surveys included diurnal fauna searches for mammals, birds, and reptiles; nocturnal sauna surveys including spotlighting and ANABAT; amphibian surveys to the west of the site, near Lake Ginninderra; and pitfall trapping for reptiles. The surveys identified the presence of two threated ecological communities: Natural Temperate Grassland and Yellow-Box Blakely's red gum woodland within the site. No threatened flora species were found during the surveys (including *Lepidium ginninderrense* known to occur on site). A number of rare and locally significant flora species were identified, including Lemon beautyheads (*Calocephalus citreus*), *Carex bichenoviana,* Blue devil (*Eryngium rostratum*), *Lomandra bracteata, Pratia sp. aff. pedunculata, Ranunculus papulentus,* Wiry dock (*Rumex dumosus*), and Spoon cudweed (*Stuartine muelleri*). Heavy infestation by a variety of weed species was noted. A targeted weed control and management program was recommended to target high invasive species listed as Weeds of National Significance. A good range of grassland habitat for reptiles, ground-dwelling mammals and avian species was identified, along with riparian habitat for amphibians, fish, aquatic-birds, and reptiles. Threatened species observed during surveys included the Grey-headed flying fox (*Pteropus poliocephalus*) within the old housing estate and Latham's Snipe (*Gallinago hardwickii*) in the vicinity of Lake Ginninderra. The management plan split the site into seven management zones based on vegetation type and species habitat values.

In 2009, the Commissioner for Sustainability and the Environment Dr Maxine Cooper published a report on the ACT Lowland Native Grassland Investigation. The report identified the site as one of the most important remaining grasslands in the ACT. The report included the recommendation for a long-term grassland management plan to be developed prior to the residential development of the abutting Lawson site to the south. The plan also addresses that the ACT Government has previously stated that they wish to retain this site as a nature reserve, once the Australia Government relinquishes it.

Since 2009, various reports have been produced in relation to the site. The majority of these reports did not have a strong ecological focus until a 2014 due diligence report produced by Eco Logical Australia. The report included a review of previous environmental reports, identification of knowledge gaps, and advice relating to matters not covered in available documentation. The report identified a need for additional grassland fauna surveys, particularly for Striped legless lizard (*Delma impar*) and an updated Kangaroo Management Plan. The study also reviewed the preferred concept plan against the existing Environmental Management Plan determining potential issues with disrupting Striped legless lizard habitat connectivity, kangaroo management, and asset protection zones.

The 2017 ACT native grassland conservation strategy and action plans identify the site as being of highest conservation significance (category 1) in the ACT based on its relatively large size (>100 ha) and presence of threatened species.

## D.3 Recent Studies: Filling in the Gaps

In 2018, WSP Australia was engaged by the current landholder, Defence Housing Australia (DHA) to undertake environmental investigations at the site. The program includes ecological assessment including vegetation mapping and condition assessment, target surveys for threatened species likely to occur, and review of other environmental constraints for the whole of the site. Surveys and associated reporting is underway and will be published in a series of ecological reports and management plans. These recent surveys have confirmed the presence of the vulnerable Striped legless lizard (*Delma impar*) within the site. The highest density has been found within the Themeda Grassland at the south-eastern portion of the site. Limited additional records of the species have been within the northern area of *Rytidosperma* Grassland.

The habitat for the Golden sun moth known to occur on site was determined to have a very wide extent and the density of the species was significant.

## D.4 Endnotes

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3 Crawford I and Rowell, A 1995, *Vegetation and Fauna Habitat Survey of the Belconnen Naval Station ACT, Stage 2*, Australian Botanical Surveys, Canberra.

4 *Nature Conservation Act 1980*, ACT, Canberra.

5 Australian Heritage Database Register of the National Estate Listing for Synemon Plana Moth Habitat, Baldwin Drive, Lawson, ACT.

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7 Australian Heritage Database Register of the National Estate Listing for Synemon Plana Moth Habitat, Baldwin Drive, Lawson, ACT.

8 Clarke, GM and Dear, C 1998, *A Survey of Native Grassland Sites in Southeastern New South Wales for the Endangered Golden Sun Moth,* Synemon plana. CSIRO Entomology, Canberra.

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10 Planning and Land Management 2000, *(Draft) Belconnen Town Centre Master Plan*. Department of Urban Services. ACT, Canberra.

11 Wildlife Research and Monitoring 2000, Dry Themeda paddock, Belconnen Naval Station (Site C). Unpublished report. ACT Government, Canberra.

12 Natural, Cultural and Military Heritage Assessment—Belconnen Naval Transmitting Station and ACT Government Land, Lawson, University of Canberra Cultural Heritage Research, September 2001.

13 Crawford I and Rowell, A 1995, *Vegetation and Fauna Habitat Survey of the Belconnen Naval Station ACT, Stage 2*, Australian Botanical Surveys, Canberra.

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15 HLA Envirosciences 2001, *Draft Review of Grassland Significance: Belconnen Naval Transmission Station, Lawson, ACT*. Report to the Defence Estate Organisation.

16 Scarlett, NH 2001, Lepidium ginninderrense *(Brassicaceae), a new species from the Australian Capital Territory*. Muelleria 15:69.

17 Briggs, JD and Leigh, JH 1995, *Rare or Threatened Australian Plants (ROTAP)*, CSIRO.

18 ROTAP code: 2E a: **2** Geographic range in Australia less than 100 km. **E** Endangered. **a** 1000 plants or more are known to occur within a conservation reserve.

[19] Australian Heritage Database Register of the National Estate Listing for Royal Australian Naval Transmitting Station, Baldwin Drive, Lawson, ACT.

[20] HLA-Envirosciences 2002, *Targeted Survey for Striped Legless Lizard at Lawson, ACT*. Report to Corporate Services and Infrastructure, Department of Defence, Canberra.

[21] Rowell, AM 2003a, *Further Investigation of Golden Sun Moth* Synemon plana *habitat at Lawson, ACT, June 2003*. Report to Planning and Management, Department of Urban Services. ACT, Canberra.

[22] Rowell, AM 2003b, *Lawson Residential Estate Study Ecological Issues*. Report to Maunsell McIntyre Pty Ltd, August 2003.

[23] Maunsell Australia 2001, *Lawson Outline Plan (Preliminary Assessment)*.

[24] HLA-Envirosciences 2002, Targeted Survey for Striped Legless Lizard at Lawson, ACT. Report to Corporate Services and Infrastructure, Department of Defence, Canberra.

[25] HLA-Envirosciences 2004, *Threatened Species and Kangaroo Management at Belconnen Naval Transmitter Station, ACT*. Report for Resolve FM, HMAS Harman, Canberra.

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[31] KD462 Weetangera, 18 APL'40, Run 1, photo 19971. Map and Photo Archives, National Library of Australia, Canberra.
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CAC.89 Canberra – Lake George 29.3.56, Run 2, photo 5033. Map and Photo Archives, National Library of Australia, Canberra.

[32] Rowell, AM 2003a, *Further Investigation of Golden Sun Moth* Synemon plana *habitat at Lawson, ACT, June 2003*. Report to Planning and Management, Department of Urban Services. ACT, Canberra;, Natural, Cultural and Military Heritage Assessment—Belconnen Naval Transmitting Station and ACT Government Land, Lawson, University of Canberra Cultural Heritage Research, September 2001; HLA Envirosciences 2001, *Draft Review of Grassland Significance: Belconnen Naval Transmission Station, Lawson, ACT*. Report to the Defence Estate Organisation.

[33] Wildlife Research and Monitoring 2000, Dry Themeda paddock, Belconnen Naval Station (Site C). Unpublished report. ACT Government, Canberra.

[34] HLA-Envirosciences 2002, *Targeted Survey for Striped Legless Lizard at Lawson, ACT*. Report to Corporate Services and Infrastructure, Department of Defence, Canberra.

# Appendix E

Transmitting Station Technology and Design

# Appendix E—Radio Transmitting Technology and Design

## E.1 Introduction

The Belconnen Naval Transmitting Station was completed in 1939 together with its first high-frequency transmitters. The low-frequency transmitter was not installed until 1942. Mellor has documented the history of the transmitting station in his volume of *Australia in the War of 1939–1945 The Role of Science and Industry*, the official history of the war of 1939–1945.[1] A more detailed military history is provided in the 2001 Natural, Cultural and Military Heritage Assessment prepared by the University of Canberra Cultural Heritage Research Centre (2001 HA).[2]

This discussion of the transmitting equipment is based on a site visit carried out on in 2007 and discusses the transmitting station in terms of its engineering heritage value, describing what was found on the site, the technologies represented and their heritage significance.

This report is focused on the transmitters located at Belconnen Naval Transmitting Station, since all the aerials have been removed from the site. This focus is appropriate given the attention to the aerials in the 2001 HA and the lack of attention to the Belconnen Naval Transmitting Station transmitters. This report also includes comments on the helix room, a part of the low-frequency transmitter, since the room has technologically significant features.

## E.2 Brief Description

### E.2.1 Inventory of Transmitters

All the transmitters found on the site are listed in Table 1. The transmitters are located in the two transmitting halls in the main transmitting building.

WT Muscio's book *Australian Radio: the Technical Story 1923–1983* has provided useful information about the technology discussed in this section.

**Table 1** Inventory of Transmitters Located in the Main Transmitting Building.

| Transmitter Model and Power | Number | Engineer | Manufacturer | Year Installed |
|---|---|---|---|---|
| LF transmitter 200kW (I)<br>LF transmitter 250kW (II) | 1<br>1 | HB Wood, STC | STC, Sydney | 1942[3]<br>1961 |
| HF transmitter CLH-40AA, 40kW | 8 | ? | AWA, North Ryde, Sydney | 195—[4] |
| HF linear amplifier ATS-10, 10kW | 11 | ? | AWA, North Ryde, Sydney | 197— |
| HF transmitter model 1241, 40kW | 4 | ? | Marconi, UK | 199— |

The oldest transmitter is a high-power low-frequency transmitter dating from 1942. It was designed and manufactured by Standard Telegraph and Cables (STC), Sydney.[5] The transmitter assembly is visually overpowering given its large floor area and height (approximately four metres) and is located in the original transmitter hall. The interior is accessible through two doors in the grey section, giving access to the rear of the front panels, the transmitting valves, helixes and other high voltage components. HB Wood was the senior STC engineer who led the engineering design team. This transmitter went through an upgrade from 1959–1961, which included a major redesign and an increase in the power to 250 kilowatts.[6] Both versions of the transmitter were designed by STC engineers.

In 1939, STC also supplied three high-frequency transmitters for the site, but these have not been located.

The output of the low-frequency transmitter proceeds to the aerial through the helix room. The aerial loading coil found in the helix room is physically overwhelming by its height and area. The exterior of the helix room at the point where the cable exits is technologically significant, having a 'fibreglass laminate window with corona rings'.[7] The helix room walls and ceiling have embedded wires to provide electrical shielding (Faraday cage).[8]

Chronologically, the next transmitter is the AWA HF Transmitter CLH-40AA. These transmitters are physically much smaller with cases providing front and rear access to the internal circuitry. They are found in rows in another transmitter hall. AWA has consistently maintained in-house design capability by the employment of radio engineers and has undertaken research and development in radio technology through employment of research scientists and engineers.[9] It is likely that these transmitters were designed by AWA engineers as well as being manufactured by AWA.

The next transmitter is the AWA HF Linear Amplifier ATS-10. These transmitters are physically smaller again and examples are found in both transmitter halls. It is likely that these transmitters were also designed by AWA engineers as well as being manufactured by AWA.

The most recent transmitter is the Marconi HF Transmitter Model 1241. This transmitter was designed and manufactured by Marconi, UK.

## E.2.2 Transmitter Technology and Design

A brief description of the transmitter technology and design of each transmitter is provided in Table 2.

### LF Transmitter

> *The designs of this and the much more powerful low-frequency transmitter were to a large extent original though they did of course embody the best features of oversea equipment.*[10]

The original design of the LF transmitter allowed for radiotelephony as well as telegraphy. However, during the upgrade, the transmitter was redesigned to allow for frequency-shift keying (FSK) in addition to CW modes of operation and this entailed some clever and exacting design of the exciter together with strict tuning and monitoring.[11] FSK considerably improves the resistance of transmission to interference, improves the range and allows for automatic telegraphy. The aerial loading coil found in the helix room is technologically unusual in its construction (eg in its use of 7680 strands of Litz wire) and perhaps unique in this respect.[12] Physically, the coil is 'extremely large'.

### HF Transmitter CLH-40AA

This transmitter was part of the first generation of the independent sideband Operation type of communication transmitters, which represented a complex design change on its predecessors of the immediate postwar period.[13] Muscio acknowledges the CLH-10 and CLH-30 models, which put out 10 kilowatts and 30 kilowatts respectively, but does not appear to be aware of the CLH-40AA, which produces 40 kilowatts.[14] In this respect, this model is unusual and was possibly a low production run specifically for Defence. It is likely that the CLH40-AA was the highest power model in the series, as was the case for the comparable STC model of the same power. Ross mentions that in the 1960s (the following decade) there was only one AWA broadcast transmitter of 50 kilowatts.[15]

### HF Linear Amplifier ATS-10 Mod 1

This model has ISB, SSB, DSB, TSK, CW or FSK modes of operation in conjunction with an exciter/modulator and a programmable interface unit. This model is a sophisticated design of the 1970s/1980s. The ATS-10 Mod 1 differs from the ATS-10 in having faster tuning time, having a digital coarse frequency discriminator and having more remote monitoring capabilities.[16]

### HF Transmitter Model 1241

No technical or engineering manuals were found for this transmitter at the transmitting station and no further information was found through research. It is expected that this transmitter has the same modes of operation as the ATS-10, although there is no technical/engineering information to support this. The output power of 40 kilowatts is not exceptional for this era.

**Table 2** Transmitter Details

| Transmitter Model and Power | Technology Used | Modes of Operation | Output Driver | Comments |
|---|---|---|---|---|
| LF transmitter 200kW (I)<br>LF transmitter 250kW (II) | thermionic valve | CW<br>CW, FSK | water cooled triodes (4228, 4030)[17] | Local manufacture<br>Local components[18] |
| HF Transmitter ISB CLH-40AA, 40kW | thermionic valve/solid-state | CW, SSB, ISB, FSK, DSB | 3x4CX10000A air-cooled ceramic valves[19] | Local manufacture<br>Largely local components[20] |
| HF Linear Amplifier ATS-10 Mod 1, 10kW | solid-state/valve | ISB, SSB, DSB, TSK, CW or FSK | 4CX10000D air-cooled ceramic valve | Local manufacture<br>Many local components |
| HF Transmitter Model 1241, 40kW | solid-state | | | Overseas components |

## E.3 Significance of Transmitters

The individual transmitters will be assessed in terms of rarity of the item and its technology. Some general comments may be made on the rarity of World War II telecommunications equipment and other related electronic equipment. In recent years, there has been interest in World War II militaria including telecommunications equipment. However, the number of such items that have survived is small eight decades after the end of the war. For example, there is only one known example of the Australian-built Light Weight Air Warning (LW/AW) radar, which is held by the Australian War Memorial. This may be the only Australian-built radar remaining out of about 2,000 manufactured and the only model of 20 models produced. To the knowledge of the author there is only one remaining example of the Australian-designed and built ionosonde, which was used for ionospheric measurement and monitoring and was important for frequency management.[21] High-powered telecommunications transmitters tend not to be kept or preserved, partly for reasons of their size and tendency to obsolescence. The Kurrajong Heights Radio Museum holds one AWA radio broadcast transmitter.

### E.3.1 LF transmitter

The low-frequency transmitter is physically overwhelming but also technologically impressive in terms of its power, its engineering design and its usage of high-voltage components of physically large dimensions. The power output was considerably larger than any other broadcast transmitter made by STC at that time.[22] The design was innovative. The helix room is technologically significant and unique

in the Australian context. The assessment of significance is that the low-frequency transmitter is unique in the Australian context and rare in the international context.

### *E.3.2* HF Transmitter CLH-40AA

Because of its technological features, this transmitter is assessed as rare in the Australian context, with the possibility that Belconnen Naval Transmitting Station has eight out of the total production by AWA.

### E.3.3 HF Linear Amplifier ATS-10

This transmitter is assessed as relatively rare in the Australian context, in the absence of production information.

### E.3.4 HF Transmitter Model 1241

This transmitter has no Australian design content, nor is it of local manufacture.

## E.4 Endnotes

1 Mellor, DP 1958, *Australia in the War of 1939–1945 The Role of Science and Industry,* AWM, Canberra, p 493.
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11 Muscio, WT 1984, *Australian Radio The Technical Story 1923–1983*, Kangaroo Press p 98; Elias, 1964, The Belconnen LF Transmitter, 1961 IRE Radio and Electronic Engineering Convention, Sydney, p 4.
12 Elias, 1964, The Belconnen LF Transmitter, 1961 IRE Radio and Electronic Engineering Convention, Sydney, p 2, March 20–24; Muscio, WT 1984, *Australian Radio The Technical Story 1923–1983*, Kangaroo Press, p 96.
13 Muscio, WT 1984, *Australian Radio The Technical Story 1923–1983*, Kangaroo Press, p 106.
14 Muscio, WT 1984, *Australian Radio The Technical Story 1923–1983*, Kangaroo Press, p 109.
15 Ross, JF 1998, *Radio Broadcasting Technology*, Port Macquarie, p 110.
16 ABR 5461 Volume 1 Linear Amplifier ATS-10MOD1 1J64620MOD1, Chapter 1, AWA, North Ryde, 1982.
17 Muscio, WT 1984, *Australian Radio The Technical Story 1923–1983*, Kangaroo Press, p 95.
18 Muscio mentions one Second World War transmitter which was made entirely from local components, with only one exception: Muscio, WT 1984, *Australian Radio The Technical Story 1923–1983*, Kangaroo Press, pp 104–5. It is presumed that high local content was not unusual during this war.
19 Muscio, WT 1984, *Australian Radio The Technical Story 1923–1983*, Kangaroo Press, p 109.
20 AWA was a vertically integrated company which manufactured assemblies down to components well into the postwar period.
21 Jim Woods, caretaker Belconnen Naval Transmitting Station and former technician at the site, has suggested that this type of transmitter was in use at HMAS Harman to provide frequency and power management information for the Belconnen transmitters.
22 Ross, JF 1998, *Radio Broadcasting Technology*, Port Macquarie, chapter 2.

# Appendix F

Comparative Analysis

# Appendix F—Comparative Analysis

## F.1 Introduction

Mellor in his book *Australia in the War of 1939–1945 The Role of Science and Industry, 1958* has described Belconnen Naval Transmitting Station (BNTS) as 'the most important single communication project of the war' and hence, in his estimation, the site has industrial and technological significance at the national level.[1]

Comparable sites have been identified by searching the Commonwealth Heritage List (CHL) and by broadly searching for similar surviving naval stations in Australia and associated sites internationally. It can be concluded from this comparative analysis that BNTS is rare example of an inland naval transmitting station due to its original 1939 fabric, in its isolated setting and long history of use as a naval radio transmitting.

Some of the text below has been extracted from the 2009 HMP and revised for the 2019 update.

## F.2 Australian Sites

### F.2.1 HMAS Harman

HMAS Harman was established in 1939 as part of the Royal Australian Navy (RAN) secure communications network.[2] During World War II, HMAS Harman was the location of the Number One Receiving Station. The Belconnen Naval Transmitting Station was the partner site of the Harman Receiving Station.

A summary of key points about HMAS Harman is provided below:

- included in the Commonwealth Heritage List (CHL)
- amenities and facilities were built over time, including a recreation hall and general Mess opening in the early 1940s;
- cottages were provided onsite for OIC, Warrant officer, CPO, PO and Junior ratings;
- cottages and a Gangway (Guardhouse) were built in Federal Capital Architecture style with terracotta tiles and rendered, painted brickwork walls;
- original dormitories were corrugated iron, gable roof structures on brick piers;
- formal semicircular park and roadway was landscaped at Harman;
- cottages removed in 1982 to make room for 11 new Group 1 (Junior Sailor's) Married Quarters;
- a three-row windbreak was planted in semicircular shape (identifiable in a 1955 image, but now no longer visible); and
- accommodation buildings in the formal park have been removed as have the accommodation blocks to the west of the site

Facilities at Harman include the receiving station, aerial farm, associated buildings and accommodation facilities. Amenities were built over time with the recreation hall and general Mess opening in the early-1940s.

The site was planned with a formal design using a semicircular roadway, similar to the 'D' at the BNTS site. HMAS Harman was divided into uses with accommodation in the north and receiving equipment in the south of the site. A three-row windbreak to the west of the accommodation area was planted sometime after 1955[3]. Cottages were provided onsite for officers and soldiers were accommodated in dormitories on the northern side of the naval base.[4] The cottages, station buildings and gangway (guardhouse) were built in a Federal Capital style with terracotta roof tiles and rendered and painted brickwork walls. The dormitories were clad with corrugated cement sheet or iron, had gable roofs and were elevated on brick piers. Inside, the ceilings were lined with caneite and had polished timber floors.[5]

The Old Gangway at Harman and the extant Guardhouse at BNTS were of almost identical design with a tiled terracotta gable roof, stacked chimney at one end, half-height porch wall, and terracotta tile barge details. The Harman gangway has been demolished as have many of the cottages, the dormitory structures, the original Receiving Station buildings and aerial farm.

The original street layout at Harman has been largely maintained but has been extensively extended at the rear of the site. Harman retains the landscaped park style of landscaping and layout that was associated with its establishment. While the current accommodation buildings are now distanced from the original location, the continuation of onsite accommodation and working environment demonstrates the base's integrity. The site is comparable to BNTS through the street layout, mature plantings, age, original use of the site and location in an inland region.

**Figure 1** Aerial photograph of HMAS Harman in 1955 showing the semicircular road layout, residential accommodation at the northern end of the site and three-row windbreak running north-south.

**Figure 2** The Old Gangway at HMAS Harman – an almost identical exterior design to the Gangway (Guardhouse) at BNTS. (Source: HMAS Harman 1943–2013)

## F.2.2 Naval Communication Station Harold E. Holt—Exmouth, WA

In 1967, the Naval Communication Station in far north Western Australia was commissioned as the location for a United States Naval Communication Station. Concurrently, development commenced on Exmouth, a town 6km south of the station to house Navy personnel and their families. The station transmitted Very Low Frequency (VLF) radio transmission to US Navy and RAN ships and submarines in the Indian and Pacific Oceans.[6] In 1968, the station was named US Naval Communication Station Harold E. Holt.[7]

A summary of key points about the station is provided below:

- construction began in 1963;
- officially commissioned in 1967;
- listed on RNE and as indicative place in the CHL;
- used Very Low Frequency (VLF) radio transmission to US Navy and Royal Australian Navy (RAN) ships and submarines;
- key part of US Navy communications for 20+ years;
- US Navy personnel were withdrawn, and full control moved to RAN in 1992;
- had 400 US and 40 RAN personnel at its peak;
- station and facilities managed by Raytheon Australia from 2002;
- maintains responsibility for VLF to Australian and US ships and submarines;
- no on-site residences;
- the low frequency function of the BNTS was transferred to the Harold E. Holt in 1995; and
- antenna array was once the largest in the world.[8]

The station was listed on the now obsolete Register of the National Trust for its historic values and has been listed as an indicative place in the Commonwealth Heritage List, meaning the data has been provided to the Heritage Branch and has been entered on the database. However, a formal nomination has not been made and the Council has not received the data for assessment.

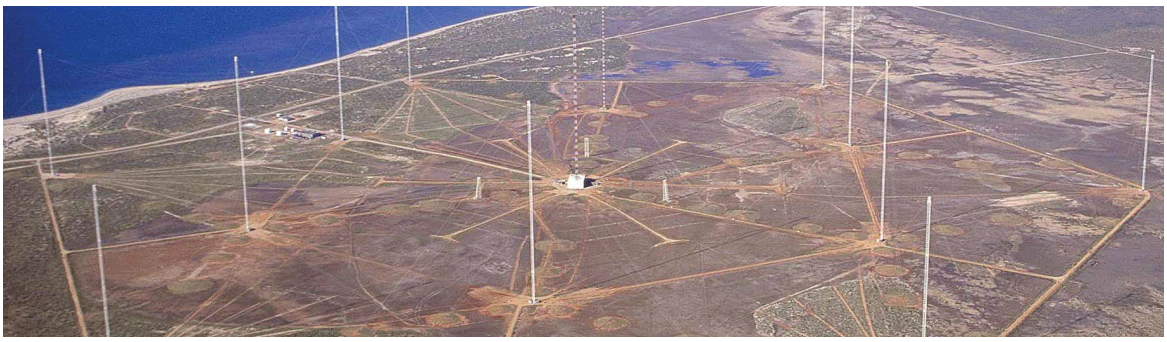

**Figure 3** Photograph of the Naval Communication Station aerial field. (Source: Raytheon Australia)

**Figure 4** Aerial view of the town of Exmouth, 1967. (Source: NAA A12111 7467671)

**Figure 5** Pool and town amenities at Exmouth. (Source: ABC News)

The station is made up of three sites running the length of the North West Cape. All three areas contain antenna farms with concentric circles of aerials. Administration buildings and mess amenities are contained in Area B and Area C contains the main receiver site of the communication station.

The station is comparable to BNTS because of the similar role they played in transmitting VLF radio waves to naval vessels. The current condition and integrity of the site is unknown. However, it is still maintained and used to transmit VLF communications to Australian and US submarines. The three aerial field sites are extant and operational.[9]

While the station itself does not contain accommodation, the dedicated dwellings and amenities in the purpose-built town of Exmouth demonstrate the necessity to provide facilities for personnel in the isolated region. The Naval Communication Station is a good example of radio communication stations in Australia that provides accommodation and transmitting facilities for the Australian Navy and international allies.

### F.2.3 HMAS Creswell—Royal Australian Naval College

The Commonwealth Heritage Listed place, HMAS Creswell was established in 1911 at the Federal Capital port at Jervis Bay.[10] Construction began in 1913 with the main buildings designed by Commonwealth Architect John Smith Murdoch. In 1915 the first intake of students arrived at the land ship to enlist at the Royal Australian Naval College. The layout of the 40-hectare site was influenced by contemporary garden city ideas and traditional British naval design, epitomized by the Royal Naval College at Dartmouth, England.

A summary of key points about the station is provided below:

- construction began in 1913 and the first intake of students was in 1915;
- extant buildings date from the establishment period;
- Capital Port in Jervis Bay was selected following the formation of the RAN in 1911;
- RAN College temporarily moved from Jervis Bay to HMAS Cerberus in Victoria in 1930 but relocated back in 1950s due to overcrowding and Cerberus' less favourable location;
- HMAS Creswell was re-opened and commissioned in 1958;

- site design was influenced by contemporary ideas about garden cities and traditional British naval design such as that of the Royal Naval College at Dartmouth, England;
- layout reflects the organisation of a ship—can be seen in division of precincts; and
- the integrated landscape design includes formal vistas, sea views and eucalypts both natural and planted that create a park-like setting.

The layout of the site reflects the organisation of a ship with emphasis on formal and informal areas and a hierarchy of residences based on Naval order. The Garden City movement ideas incorporated into the planning of the site are evident today in the formal axial links between major buildings and generally a geometric layout. All formal roads are aligned, perpendicular to, or mirror a central site axis.

Accommodation and residential buildings are gathered informally around the area south of the quarterdeck. Most of the extant buildings are single-storey timber construction of the Federation architecture style.[11] The two-storey Captain's residence holds a dominating position overlooking Jervis Bay.

The site is significant because of its associations with early naval development in Australia, and because of the collection of features that contribute to a rich cultural landscape that includes a prominent setting, surviving architecture from the site's establishment and formal landscape design.

While the interior of many buildings have been altered to suit current needs, the condition of the exterior fabric is good and the site displays high levels of integrity with many buildings and elements surviving from the sites establishment. HMAS Creswell and BNTS share common themes related to their formal designation of spaces through formal and informal landscape design, the separation of official facilities and residential areas, and garden city ideals.

## F.3 International Sites

In the international setting, BNTS can be compared with a number of heritage telecommunications sites and museums. Table 1 shows a comparison of BNTS with some European heritage transmitting stations.[12] It could be argued that the technologies of Varburg and Belconnen complement each other and in fact represent two rare examples of differing technologies from different decades: Varburg from the 1920s and Belconnen from the 1940s. Little is known of the heritage transmitter sites at Poldhu and Carnarvon, Wales. Varburg and Belconnen are the only two sites with transmitters present.

**Table 1** Comparison of International Heritage Transmitters

| Transmitter Site | Manufacturer/Inventor | Technology | Status of Site |
|---|---|---|---|
| Varburg, Sweden | General Electric, USA<br>Fessenden/Alexanderson[1] | Alexanderson alternator[131,3]<br>VLF 400kW | World Heritage listed<br>Aerials + Transmitter present |
| Poldhu, UK | JA Fleming[1] | Alternator[1,3]<br>LF (+HF) 12kW | Site only: National Trust museum |
| Carnarvon, Wales | Marconi[2] | Alexanderson alternator<br>LF 300kW | Buildings only |
| Belconnen, Australia | AWA, Australia (HF)<br>STC, Australia (LF) | Thermionic valve<br>LF 250 kW &<br>HF 40 kW etc | Listed CHL/RNE<br>Buildings and transmitters only |

### F.3.1 Rugby Radio Station

In January 1926, the Rugby Radio Station in Warwickshire, England transmitted the official news broadcast across the globe using VLF transmission. The station housed the world's most powerful radio transmitter that changed worldwide communications.[14] The station played an important role in World War Two by sending false and misleading information to German night fighter transmissions, dubbed operation 'Corona'[15] and its role continued into the Cold War.

The transmitter closed in 2003 after British Telecom, the facilitating company lost the contract for VLF service and in 2003, the final Morse code message was transmitted from Rugby. Later that year the transmitter was dismantled and 8 of the 12 masts were felled, and in 2007 the remaining masts were lowered—ending 80 years of radio transmission from Rugby.[16]

The Rugby Radio Station is listed as Grade II heritage site in the Historic England List.

The site is now home to the residential development called Houlton. Within 15 years it is planned to have 6,200 dwellings on the 1,200-acre site. Elements from the station have been removed to the Science Museum for conservation and display, and the sites heritage has been document in a book and is understood to be presented throughout the development.

It is understood that the main transmitting building will be retained at the site, the integrity of the site has been lost due to the demolition of all masts, removal of elements to a museum. The new development of 6,000 dwellings and facilities will hamper the legibility of the previous use of the site.

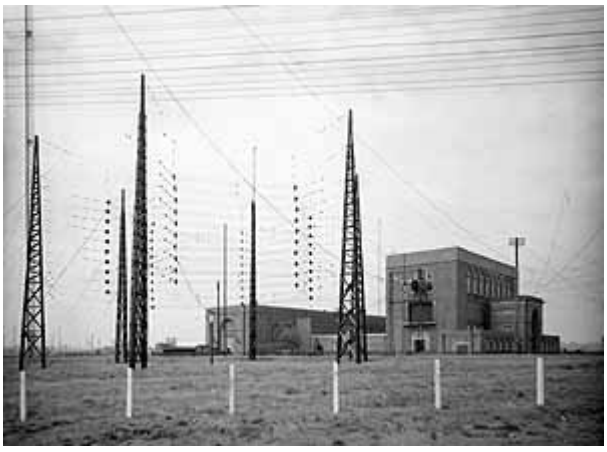

**Figure 6** The original Rugby Radio Station and some of the aerials (Source: Subterranea Brittananica)

**Figure 7** The proposed development at Rugby Radio Transmitting Station. (Source: Rugby Radio Station)

## F.4 Summary of Findings

The site, with its collection of heritage transmitters, is unique in the international setting and represents a remarkable history of the development of communications transmitters (of mainly Australian origin) from 1941 to the 1990s. That the transmitters are operational is another important positive factor. Of the international heritage transmitter sites surveyed, BNTS is one of only two in the world known to have any heritage transmitters remaining.

An evolving area of historical research is that of technological development. There are excellent opportunities for research encompassing radio engineering and high-voltage technology because the BNTS collection of transmitters shows the evolution of engineering design from the 1940s through to the 1990s.

Transmitters*:* The low-frequency transmitter, the helix room and the low-frequency aerial are unique in the Australian context. The HF CLH-40AA transmitters made by the iconic Australian radio manufacturer AWA are rare examples of Australian electronics from the postwar period. The later AWA HF ATS-10 transmitter is of no less interest or rarity because of its unusual model number.

Loss of aerials*:* There is a description of the Belconnen Naval Transmitting Station aerials in the Egloff et al 2001 study. The loss of the aerials detracts from the engineering heritage value of the site. However, the retention of the copper earth mat, aerial remnants and the open space around the transmitter complex will allow for the continued interpretation of the relationship between the building and the site and of the way the site functioned when operational.

The BNTS historical cultural landscape provides evidence of pre-military use (the travelling stock route); military use of the site from 1938 to the present, including the transmitting building and its transmitting equipment; the copper earth mat associated with the low-frequency aerial and the remains of removed/demolished aerials. The observation posts, chemical store and Guardhouse also provide significant evidence of the World War II period and subsequent Defence use of the site. The copper earth mat, aerial remnants and the open space around the transmitter complex are important to enable the continued interpretation of the relationship between the building and the site and of the way the site functioned when operational.

## F.5 Conclusion

BNTS is a good representative example of a naval village with a designated residential village and transmitting areas. While HMAS Harman remains as a functioning Naval Base, the integrity of the site has been altered by the removal of many original buildings and the removal/degradation of the planted windbreak. The surviving Gangway at BNTS and the demolition of its twin at Harman demonstrates the high integrity of BNTS and its surviving elements.

The Royal Australian Naval College is a better example of Naval villages with many buildings remaining in good condition. The surviving landscape design featuring axial and geometric forms is a good surviving example of traditional British Naval design and the garden city elements. The hierarchy of residences is no longer visible at BNTS which has lowered the site's integrity. However, the separation of functional spaces and the residential area is still obvious with the retention of plants, layouts, and curtilages.

The site of the former naval village with its windbreak plantings and recreation facilities reflect Garden City planning, defining a model naval village with the usual hierarchy of facilities. The windbreaks now form particularly striking landscape features marking out the different areas of the base. The naval village also illustrates the then relatively isolated nature of this place before the development of the surrounding suburbs in what was considered a remote location, reflecting the need to house personnel on site for efficiency, safety and security.

BNTS remains a good example of naval villages in Australia that typifies traditional British layouts, garden city ideals with buildings in fair to good condition.

## F.6 Endnotes

1 Mellor, DP 1958, *Australia in the War of 1939–1945 The Role of Science and Industry,* AWM, Canberra, p 493.

2 ERM 2009, HMAS Harman and Bonshaw Heritage Assessment, March, p 1.

3 ACT Government, ACTMapi Canberra Aerial Photography 1955, http://www.actmapi.act.gov.au/

4 Lieutenant Commander Nelson, A 2013, *HMAS Harman 1943-2013*, Canberra.

[5] Lieutenant Commander Nelson, A 2013, *HMAS Harman 1943-2013*, Canberra. p9

[6] Shire of Exmouth, HEH Naval Communication Station, https://www.exmouth.wa.gov.au/heh-naval-communication-station.aspx

[7] ABC, 2015 *Little America in the remote Pilbara: The ruins of a cold war US defence base,* https://www.abc.net.au/news/2015-09-09/former-us-defence-base-a-little-america-in-western-australia/6758890

[8] http://www.navy-radio.com/commsta/holt/holt-welcome-1976.pdf

[9] Raytheon Australia, Harold E Holt, https://www.raytheon.com/au/capabilities/products/heh

[10] Department of Environment and Energy 2004, Royal Australian Naval College http://www.environment.gov.au/cgi-bin/ahdb/search.pl?mode=place_detail;place_id=105380

[11] Department of Environment and Energy 2004, Royal Australian Naval College http://www.environment.gov.au/cgi-bin/ahdb/search.pl?mode=place_detail;place_id=105380

[12] This was a limited study which could be extended to US, France and Germany for example.

[13] P Dunsheath 1962, *A History of Electrical Power Engineering*, MIT Press, Cambridge, Mass., Ch 17, and Jensen, PR 2000, *From the wireless to the web*, UNSW Press, Sydney.

[14] http://rugbyradiostation.co.uk/articles/1926-article/

[15] Warwickshire, Rugby Radio Station, https://www.ourwarwickshire.org.uk/content/article/rugby-radio-station-2

[16] Warwickshire, Rugby Radio Station, http://rugbyradiostation.co.uk/articles/2007-article/

# Appendix G

Community Consultation

# Appendix G: Belconnen Naval Transmitting Station Community Consultation Meeting 17 December, 2007

## G.1 Background

Stakeholders who had expressed some previous interest in the historical heritage values of the Belconnen Naval Transmitting Station at Lawson (the site) were invited to attend a consultative meeting on 17 December, 2007. A full record of the meeting is set out in below.

The aims of the meeting were to:

- inform stakeholders about the Heritage Management Plan being prepared for the site and the study process being undertaken;
- seek stakeholder input and comment on the identified heritage values and the heritage conservation issues affecting the place; and
- involve stakeholders in planning for the future conservation and management of the Belconnen Naval Transmitting Station.

The meeting was facilitated by Professor Richard Mackay, AM, of Godden Mackay Logan. Dr Tracy Ireland and Mr Geoff Ashley of Godden Mackay Logan also attended and participated in the meeting. Mr Nathan Donegan of GHD, Project Managers for Defence, also attended the meeting.

The meeting followed a workshop format as follows:

- The historical heritage values of the place and preliminary findings related to heritage values were outlined in a PowerPoint presentation by Tracy Ireland.
- Key heritage issues where stakeholder input was sought were introduced by Richard Mackay. These included the:
  - heritage values of the area of land around the transmitting station building where the aerial arrays were previously located;
  - significance of the remains of the naval village and its potential for re-use and redevelopment; and
  - conservation management issues, interpretation potential and other constraints and opportunities related to the transmitting equipment and transmitter building complex.
- The meeting then broke into two discussion groups to discuss the issues.
- The two groups reported back on their issues.
- Conclusion: Richard Mackay summed up with a plenary discussion, thanked participants and outlined the process for the completion of the Heritage Management Plan.

## G.2 Key Conclusions of the Consultative Meeting

It can be concluded from the discussion at the meeting that there is very strong support in the stakeholder group for conservation in situ of the transmitting building, all of its remaining equipment and evidence of

the aerial farm, and of the need to interpret and provide public access to the heritage values of the place through an appropriate new use.

The stakeholder group agreed future development of the naval village site was possible with appropriate guidelines to protect the layout and landscape of the place, including the windbreak plantings. The group was concerned to ensure the ongoing security of the site, stressing the need for it be used and occupied.

The group supported adaptive re-use of the senior sailors mess.

The group encouraged the interpretation of the travelling stock route and of the overlay of natural, historical and Indigenous heritage values of the place.

## G.3 Meeting Minutes

Stakeholders who had expressed some previous interest in the historic heritage values of the place were invited to attend to attend a consultative meeting on 17 December, 2007, held at the Kingston Hotel in Kingston from 5.30–7.30pm. A list of individuals invited and those who attended is included below.

The aims of the meeting were to:

- inform stakeholders about the Heritage Management Plan being prepared for the site and the study process being undertaken;
- seek stakeholder input and comment on the identified heritage values and the heritage conservation issues affecting the place; and
- involve stakeholders in planning for the future conservation and management of the Belconnen Naval Transmitting Station.

The meeting was facilitated by Professor Richard Mackay, AM, of Godden Mackay Logan. Dr Tracy Ireland and Mr Geoff Ashley of Godden Mackay Logan also attended and participated in the meeting. Mr Nathan Donegan of GHD, Project Managers for Defence, also attended the meeting.

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- Key heritage issues where stakeholder input was sought were introduced by Richard Mackay. These included:
  - the heritage values of the area of land around the Transmitting station building where the aerial arrays were previously located;
  - the significance of the remains of the naval village and its potential for re-use and redevelopment; and
  - the conservation management issues, interpretation potential and other constraints and opportunities related to the transmitting equipment and transmitter building complex.
- The meeting then broke into two discussion groups to discuss the issues (notes made on butchers paper). This discussion is summarised below.
- The two groups reported back on their issues.

- Conclusion: Richard Mackay summed up with a plenary discussion (notes made on butchers paper and summarised below), thanked participants and outlined the process for the completion of the Heritage Management Plan.

Workshop attendees were issued with a feedback form at the meeting to ensure stakeholders could raise issues which were not discussed within the limited timeframe of the workshop. One feedback response was received—a letter from Dr Brian Egloff. Also received following the meeting was a large amount of additional historical material from Mr Keith Baker and Mr Andrew Willet.

### G.3.1 Stakeholders Invited to Historic Heritage Consultative Meeting

The following stakeholders were invited to the meeting. This list was assembled through review of past reports and published literature and consultation with the Sea Power Centre, Dr Peter Dowling of the National Trust (ACT), Dr Brian Egloff, University of Canberra, and Mr Duncan Marshall, Australia ICOMOS.

| Stakeholders Invited to Historic Heritage Consultative Meeting | | |
|---|---|---|
| **Organisation** | **Contact name** | **Attended** |
| **Commonwealth Government** | | |
| Department of the Environment, Water, Heritage and the Arts | Ms Ilse Wurst<br>Acting Director<br>Historic Heritage Management Branch<br>Heritage Division | Attended |
| **ACT Government** | | |
| ACT Heritage Council | Dr Michael Pearson<br>Chair | Replied—not available |
| ACT Heritage Unit | Mr Gerhard Zatschler<br>Director | No reply |
| **Professional Organisations** | | |
| Engineering Heritage Australia<br>Australian Institution of Engineers | Mr Keith Baker | Attended |
| Engineering Heritage Australia<br>Australian Institution of Engineers | Mr Rob Breen<br>Secretary | Replied—not available |
| University of Canberra | Associate Professor Brian Egloff<br><br>Mr Andre Willett | Attended<br><br>Attended |
| **Australia ICOMOS** | | |
| Australia ICOMOS | Mr Duncan Marshall | Replied—not available |

| | | |
|---|---|---|
| **National Trust of Australia (ACT)** | | |
| National Trust of Australia (ACT) | Dr Peter Dowling | Attended |
| **Caretakers of Belconnen Naval Transmitting Station** | | |
| | Mr Jim Woods | Attended |
| | Mr Eddy Mol | Replied—not available |
| **Navy** | | |
| Royal Australian Navy Communications Branch Association ACT Chapter | Mr Peter Guy<br>Secretary ACT Chapter | No reply—contact may be out of date |
| Sea Power Centre | Mr John Perryman<br>Senior Naval Historical Officer | Replied—not available |
| Naval Heritage Centre | Commander Shane Moore<br>Director | Replied—not available |
| Ex CO HMAS Harman | Mr Dick Perryman | Attended |
| | Sonny O'Hara | Replied—not available |
| | Richard Begbie | Replied—not available |
| Lawson Navy Project | Olaf Moon<br>Kerry Riches | Replied—not available<br>Replied—not available |

### G.3.2 Discussion Group 1

The group discussed three areas, (1) the naval village/accommodation area, (2) the aerial farm and (3) the transmitting building and equipment.

There was seen to be risks to the conservation of areas (1) and (2) because limited fabric remains. However, there is a strong argument for conservation of (3). The following points were discussed:

- Important to recognise links between Belconnen Naval Transmitting Station, Harman and Bonshaw.
- Could new use involve University of Canberra link? Research Use? Related to research on grasslands, waterbirds, rare habitat.
- Senior sailors mess should be re-used.
- The aerials—could they be re-instated?
- Loss of aerials is significant loss in the potential of the place.
- Security absolutely critical to decisions about in-situ conservation of material.
- Recognise important relationship between the transmitter building and the equipment.

- Uses—transmitters must remain in situ. Ideal use is as a museum of 1939 to present, linked to Navy.
- Could link with Australian War Memorial be established?
- Potential to interpret link with Harman.
- Naval village—residential development possible here; desirable to retain size of blocks and layout.
- The windbreak plantings have high landscape value.
- Retain the shape and form of the village and interpret.
- Heritage value of the fence around the military site—it has protected the site's natural and historic values.
- Transmitting station provides crucial evidence of the development and evolution of radio technology—the low-frequency transmitting equipment is most important.

### G.3.3 Discussion Group 2

The following points were discussed:

- Use of the place as a naval museum? Interactive education facility? Don't want to duplicate uses already at other places.
- Explore partnership opportunities eg Australian War Memorial, universities to assist with maintenance, interpretation and use.
- Further study of the significance of the transmitting equipment required—need to differentiate significance of the high-frequency and low-frequency equipment.
- Should also interpret the equipment no longer on site. There is enough equipment on the site to understand its significance and the story of the place (changes in technology etc).
- Value of the place diminished with removal of the aerials—risk of losing the relationship between the transmitting building and aerials but potential there to interpret this.
- An appropriate curtilage around the transmitting building would include the three bases of the masts and their guys.
- Social value of the mess—important need for active use for long-term conservation—continue family use of mess.

### G.3.4 Plenary Discussion

#### The Transmitting Equipment

- Conserve in situ and interpret.
- Ideal to keep it as an assemblage—must keep examples from all periods of use to show change and development.
- Equipment should not be redeployed elsewhere—should be listed/itemised in future agreements.
- Place should have public access in the future.

- Could include hands-on opportunities like the Telstra Museum in Bankstown.

### The Aerial Farm

- At a minimum conservation should include the area of the earth mat.
- Overlay of natural values in this area relating to grassland/sun moth.
- Needs a buffer zone to protect threatened species.
- Significant aspect is the overlay of the historical, natural and Indigenous values.

### The Naval Village Area

- Retain the plan and the block size.
- Appropriate to sell the blocks with suitable caveats to protect and interpret the historic values.
- Need planning guidelines to protect scale and form of the area.
- Senior sailors mess should be retained and adaptively re-used.
- The windbreak plantings should stay.
- Area could be used for a campus style development such as aged care or institution.

### Final Points

- This place is highly significant—the remaining evidence should be used to tell the story of the place.
- Uses of the transmitting building could include museum, educational, research, radio enthusiast groups.
- The travelling stock route should be interpreted.
- Equipment should stay in situ, so most feasible display/museum function required. Could involve radio enthusiasts.
- Re-instatement of functioning aerials required for demonstrating use.
- Some additional building could be placed around the transmitting building if appropriately designed/sited.
- Biggest issue is to ensure the security of the place—therefore must be occupied.

## G.4Conclusions

It can be concluded from the above discussion that there is very strong support in the stakeholder group for conservation in situ of the transmitting building, its remaining equipment and evidence of the aerial farm. It was agreed there is a need to interpret and provide public access the heritage values of the place. The group was concerned to ensure the ongoing security of the site, stressing the need for it be used and occupied.

The stakeholder group agreed future development of the naval village site was possible with appropriate guidelines to protect the layout and landscape of the place, including the windbreak plantings.

The group supported adaptive re-use of the Senior Sailors' Mess.

The group encouraged the interpretation of the travelling stock route and of the overlay of natural, historic and Indigenous heritage values of the place.

# Appendix H

Condition Reports

# Appendix H—Condition Report

The following includes a condition report for the BNTS Transmitter Buildings and Guardhouse.

A condition report of the Sailors' Mess was not undertaken as a hazardous building's material assessment confirmed the presence of various previously identified contaminants. Due to the proposed remediation works to make the building safe by removing contaminants and repairing vandalism, the condition assessment has not been updated for the HMP. The 2008 condition assessment undertaken by Philip Leeson Architects has been included instead.

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | |
| 2 | **Element** | **Description** | **Age** | **Condition** | **Rating** | **Integrity** | **Work Required** | **Category** | **Urgency** |
| 3 | | | **Aproxx.** | | **P,F,G** | **L,M,H** | | **D, M, R,A** | **O, R, L** |
| 4 | **ROOM 1** | | | | | | | | |
| 5 | **Floor substrate** | Concrete | 1950 | | G | M | none | | |
| 6 | **Floor finish** | sheet vinyl | | minor damage | G | M | minor repairs and clean | M | R |
| 7 | **East Wall** | Painted cement render | 1950 | | G | M | clean | M | R |
| 8 | **South wall** | Painted cement render | 1950 | | G | M | clean | M | R |
| 9 | **West wall** | Painted cement render | 1950 | | G | M | clean | M | R |
| 10 | **North wall** | Painted cement render | | | G | M | clean | M | R |
| 11 | **Ceiling** | Painted cement render on slab | 1950 | | G | M | clean | M | R |
| 12 | **Door 1.1** | pair of painted solid core with glass top light | 1950 | Glass missing, boarded up windows a recent addition. Door handle missing | F | M | paint | M | R |
| 13 | **Door 1.2** | pair of painted solid core in steel jamb with perspex top panel | post 1950 | Perspex cracked | F | M | replace perspex | R | O |
| 14 | **Door 1.3** | Solid core with glazed top panel | 1950 | | G | M | paint | M | R |
| 15 | **Door 1.4 to stairs** | Solid core with glazed panels | 1950 | minor cracks | G | H | monitor cracks | M | R |
| 16 | | | | | | | | | |
| 17 | **ROOM 2** | | | | | | | | |
| 18 | **Floor substrate** | Concrete | 1950 | | G | M | | | |
| 19 | **Floor finish** | carpet | post 1950 | poor qulaity | F | L | remove | D | L |
| 20 | **East Wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 21 | **South wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 22 | **West wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 23 | **North wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 24 | **Ceiling** | Painted cement render on slab | 1950 | Minor crack | F | M | Repair crack and clean | M | R |
| 25 | **Door 2.1** | Painted hollow core | 1950 | | F | M | paint | D | L |
| 26 | **Windows East** | Timber double hung, painted with painted steel grille | 1950 | steel grilles are recent additions | F | H | paint. Consider removing grilles+G38 | D | L |
| 27 | | | | | | | | | |
| 28 | **ROOM 3** | | | | | | | | |
| 29 | **Floor substrate** | Concrete | 1950 | | G | M | | | |
| 30 | **Floor finish** | carpet | post 1950 | poor quality and condition | P | L | remove and make good substrate | D | L |
| 31 | **East Wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 32 | **South wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 33 | **West wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 34 | **North wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 35 | **Ceiling** | Painted cement render on slab | 1950 | | G | M | clean | M | R |
| 36 | **Door 3.1** | Painted hollow core | 1950 | Door frame loose - peeling off from wall | F | M | Reaffix loose door frame or remove and replace with like | D | R |
| 37 | **Windows East** | Timber double hung, painted with painted steel grilles | 1950 | steel grilles are recent additions and boarded up with ply | F | H | paint. Consider removing grilles. Replace glass | R | O |

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 2 | **Element** | **Description** | **Age** | **Condition** | **Rating** | **Integrity** | **Work Required** | **Category** | **Urgency** |
| 3 | | | **Aproxx.** | | **P,F,G** | **L,M,H** | | **D, M, R,A** | **O, R, L** |
| 38 | **ROOM 4** | | | | | | | | |
| 39 | **Floor substrate** | Concrete | 1950 | | G | M | | | |
| 40 | **Floor finish** | vinyl tiles | ? | | P | L | minor repairs | | |
| 41 | **East Wall** | Caneite lining over masonry | 1950 | impact and pin damage | P | L | Remove caneite. Make good substrate. | D | L |
| 42 | **South wall** | as above | 1950 | | F | L | Remove caneite. Make good substrate. | D | L |
| 43 | **West wall** | As above | 1950 | obsolete conduits in corner | F | L | Remove caneite. Make good substrate. | D | L |
| 44 | **North wall** | as above | 1950 | | F | L | Remove caneite. Make good substrate. | D | L |
| 45 | **Ceiling** | caneite suspened below slab | 1950 | | F | L | Remove caneite. Make good substrate. | D | L |
| 46 | **Door 4.1** | Painted hollow core with origianl handle | 1950 | | - | - | Paint | M | R |
| 47 | **Windows east** | Timber double hung, painted with painted steel grille | 50 | steel grilles are recent additions. Smashed glass | F | H | Paint. Consider removing grilles. Replace glass | R | O |
| 48 | | | | | | | | | |
| 49 | **ROOM 5** | | | | | | | | |
| 50 | **Floor substrate** | Concrete | 1950 | | G | M | none | | |
| 51 | **Floor finish** | carpet | Post 1950 | poor quality carpet | P | L | Consider removing carpet & making good | D | L |
| 52 | **East Wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 53 | **South wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 54 | **West wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 55 | **North wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 56 | **Ceiling** | Painted cement render on slab | 1950 | | G | M | clean | M | R |
| 57 | **Door 5.1** | Painted hollow core | 1950 | | F | M | paint | P | R |
| 58 | **Windows East** | Timber double hung, painted with painted steel grilles | 1950 | steel grilles are recent additions. Glass smashed | F | H | Paint. Consider removing grilles. Replace glass | R | R |

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 2 | **Element** | **Description** | **Age** | **Condition** | **Rating** | **Integrity** | **Work Required** | **Category** | **Urgency** |
| 3 | | | **Aproxx.** | | **P,F,G** | **L,M,H** | | **D, M, R,A** | **O, R, L** |
| 59 | **ROOM 6** | | | | | | | | |
| 60 | **Floor substrate** | Concrete | 1950 | | G | M | | | |
| 61 | **Floor finish** | Vinyl tiles | post 1950 | Lifting up at edges | P | L | Re-glue lifting tiles | R | L |
| 62 | **East Wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 63 | **South wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 64 | **West wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 65 | **North wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 66 | **Ceiling** | Painted cement render on slab | 1950 | | G | M | clean | M | R |
| 67 | **Door 6.1** | Painted hollow core | 1950 | | F | M | paint | M | R |
| 68 | **Windows East** | Timber double hung, painted with painted steel grilles | 1950 | steel grilles are recent additions. Smashed glass | F | H | Paint. Consider removing grilles. Replace glass | M & A | R |
| 69 | | | | | | | | | |
| 70 | **ROOM 7** | | | | | | | | |
| 71 | **Floor substrate** | Concrete | 1950 | | G | M | | | |
| 72 | **Floor finish** | vinyl tiles | ? | minor damage | P | L | minor repairs | M | R |
| 73 | **East Wall** | Painted cement render | 1950 | minor damage to wall and render where furniture has been removed | G | H | repair and clean | M | R |
| 74 | **South wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 75 | **West wall** | Painted cement render | 1950 | minor damage to wall and render where furniture has been removed | G | H | repair and clean | M | R |
| 76 | **North wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 77 | **Ceiling** | Painted cement render on slab | 1950 | minor crack | F | M | clean | M | R |
| 78 | **Door 7.1** | painted solid core, barn door with glazed upper leaf | 1950 | | G | H | paint | M | R |
| 79 | **Door 7.2** | painted hollow core, flush panel | 1950 | Large hole in leaf. Open to under stair cupboard | P | M | Replace with like door | R | O |
| 80 | **Windows North** | Timber double hung, painted with painted steel grilles | 50 | steel grilles are recent additions. Glass smashed | F | H | Paint. Consider removing grilles. Replace glass | M | R & L |
| 81 | | | | | | | | | |
| 82 | **ROOM 8 Upstairs** | | | | | | | | |
| 83 | **Floor substrate** | Concrete | 1950 | | G | M | none | | |
| 84 | **Floor Finish** | sheet vinyl | 1950 | joints lifting and cuts in vinyl. Some water damage at south east corner | F | L | minor repairs and investigate water damage | D | R |
| 85 | **East Wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 86 | **South wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 87 | **West wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 88 | **North wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 89 | **Ceiling** | caneite sheet with cover straps | 1950 | all intact | G | M | | M | O |
| 90 | **Windows N, E, S** | painted timber awning windows with venting upper panel | 1950 | hardware in good order. Glass smashed and boarded up with ply | G/F | H | paint and replace glass | R | O |

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 2 | **Element** | **Description** | **Age** | **Condition** | **Rating** | **Integrity** | **Work Required** | **Category** | **Urgency** |
| 3 | | | **Aproxx.** | | **P,F,G** | **L,M,H** | | **D, M, R,A** | **O, R, L** |
| 91 | **STAIR** | | | | | | | | |
| 92 | **Floor substrate** | Concrete | 1950 | | G | M | clean | M | R |
| 93 | **floor finish** | sheet vinyl | 1950 | joints lifting | F | L | minor repairs | R | R |
| 94 | **East Wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 95 | **South wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 96 | **West wall** | Painted cement render | 1950 | large cracking | F | H | repair cracks | | |
| 97 | **Ceiling** | asbestos cement sheet with cover straps | 1950 | | G | M | none | | |
| 98 | **Ceiling** | asbestos cement sheet with cover straps | 1950 | | G | M | none | | |
| 99 | | | | | | | | | |
| 100 | **ROOM 9** | | | | | | | | |
| 101 | **Floor substrate** | Concrete | 1950 | | G | M | none | | |
| 102 | **Floor finish** | sheet vinyl | Not known | patched, different colours and materials. | F | M | Minor repairs and gluing down required. | | |
| 103 | | painted concrete | | good enough condition to leave as is | F/G | H | none | | |
| 104 | | painted timber floor duct covers | 1950 | various materials incl boards, particle board | F/G | H | none if different materials acceptable | | |
| 105 | **East Wall** | Painted cement render | 1950 | minor cracking, generally good | G | H | clean | M | R |
| 106 | **South bulkhead** | Side of duct - unknown material. Mineral fibre tiles fixed under. | 1950 | | G | H | clean | M | R |
| 107 | **West wall** | Painted cement render | 1950 | minor cracking | G | H | clean | M | R |
| 108 | **North wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 109 | **Skirting** | painted bullnosed timber | 1950 | | F | M | paint | M | R |
| 110 | **Ceiling** | Mineral fibre tiles suspended below roof framing | 1950 | <10% mismatched, loose, fallen out but generally good condition. Surface mounted lights, ceiling access hatch, duct & flue penetrations. | G | M | <10% refix or replace | R | R |
| 111 | **Cornice** | painted timber | 1950 | | G | H | none | | |
| 112 | **Door 9.1** | Pair of painted solid core in steel jamb | post 1950 | Note AC lined infill wall surrounding doors | G | M | paint | M | R |
| 113 | **Windows east wall** | Timber double hung, painted with painted steel grilles | 1950 | | F | H | Replace glass, remove board | R | O |
| 114 | **Windows north wall** | Expanded metal screen inside fixed alumin framed windows. | 1950 | Boarded up not visable from interior | F | H | Replace glass, remove board | R | O |
| 115 | **Windows west wall** | Timber double hung, painted with painted steel grilles | 1950 | | F | H | Replace glass, remove board | R | O |

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 2 | **Element** | **Description** | **Age** | **Condition** | **Rating** | **Integrity** | **Work Required** | **Category** | **Urgency** |
| 3 | | | **Aproxx.** | | **P,F,G** | **L,M,H** | | **D, M, R,A** | **O, R, L** |
| 116 | **ROOM 10** | | | | | | | | |
| 117 | **Floor substrate** | Concrete | 1950 | | G | M | none | | |
| 118 | **Floor finish** | sheet vinyl | ? | patched, different colours etc | F | M | none | | |
| 119 | | painted Concrete | | | F/G | H | none | | |
| 120 | | painted timber floor duct covers | 1950 | various materials incl boards, particle board | F/G | H | none | | |
| 121 | **East Wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 122 | **South wall** | Painted cement render | 1950 | | G | H | clean | M | R |
| 123 | **West wall** | Painted cement render | 1950 | crack above window in SW corner & above opening to room 11 | G | H | patch/fill crack and paint wall | R | O |
| 124 | **North bulkhead** | Side of duct - unknown material. Mineral fibre tiles fixed under. | 1950 | | G | H | clean | M | R |
| 125 | **Skirting** | painted bullnosed timber | | termite damage SW corner | F | M | paint, replace <5% | R | O |
| 126 | **Ceiling** | Mineral fibre tiles suspended below roof framing | 1950 | <10% mismatched, loose, fallen out but generally good condition. Surface mounted lights, ceiling access hatch, duct & flue penetrations. | G | M | <10% refix or replace | R | R |
| 127 | **Cornice** | painted timber | 1950 | | G | M | none | | |
| 128 | **Windows East** | Timber double hung, painted with painted mesh grilles | 1950 | rendered reveals, timber sill. Smashed glass, boarded with ply | F | H | Replace glass, remove board | R | O |
| 129 | **windows south** | Timber double hung, painted with painted mesh grilles | 1950 | rendered reveals, timber sill. Smashed glass, boarded with ply | F | H | Replace glass, remove board | R | O |
| 130 | **windows west** | Timber double hung, painted | 1950 | rendered reveals, timber sill. Smashed glass, boarded with ply | F | H | Replace glass, remove board | R | O |
| 131 | | | | | | | | | |
| 132 | **ROOM 11** | | | | | | | | |
| 133 | **Floor** | Concrete | 39 - 50 | | G | H | none | | |
| 134 | **Floor finish** | Sheet vinyl | ? | minor damage & patching | G | M | none | | |
| 135 | **Wall East** | Painted cement render + asbestos cement sheet infill panel around doors D9.1 | 39-50 | | G | H & M | clean | M | R |
| 136 | **Wall south** | Painted cement render | 39-50 | | G | H | clean | M | R |
| 137 | **Wall West** | Painted cement render | 39-50 | Note large switch board on west wall | G | H | clean | M | R |
| 138 | **Wall North** | Painted cement render | 39-50 | | G | H | clean | M | R |
| 139 | **Skirting** | Timber & vinyl | 39-50 | | F | | minor repairs | R | R |
| 140 | **Ceiling** | asbestos cement sheet with cover strips | 39-50 | water damage | P | | restore with comparable material | R | R |
| 141 | **Cornice** | painted cover strip | 39-50 | | F | | reinstate cornice after repair of ceiling | R | R |
| 142 | **Door 11.1** | Framed ledged & braced, boarded. Timber jamb | 39-50 | Left stile cracked. | F | H | Repair droor, Paint | R | R |

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 2 | **Element** | **Description** | **Age** | **Condition** | **Rating** | **Integrity** | **Work Required** | **Category** | **Urgency** |
| 3 | | | **Aproxx.** | | **P,F,G** | **L,M,H** | | **D, M, R,A** | **O, R, L** |
| 143 | **ROOM 12** | | | | | | | | |
| 144 | **Floor** | Concrete | 39-50 | | G | M | none | | |
| 145 | **Floor finish** | Sheet vinyl | 39-50 | minor damage | G | M | none | | |
| 146 | **Wall East** | Painted cement render | 39-50 | | G | M | clean | M | R |
| 147 | **Wall south** | Painted cement render | 39-50 | | G | M | clean | M | R |
| 148 | **Wall West** | Painted cement render | 39-50 | | G | M | clean | M | R |
| 149 | **Wall North** | Painted cement render | 39-50 | | G | M | clean | M | R |
| 150 | **Skirting** | Painted cement render | 39-50 | | F | M | clean | M | R |
| 151 | **Ceiling** | fibrous plaster | 39-50 | water damage, sagging | P | M | replace/restore, paint | R | O |
| 152 | **Cornice** | coved plaster | 39-50 | | F | M | | | |
| 153 | **Doors 12.1** | Framed with timber & glass panels in timber jamb | 39-50 | impact damage on architrave and jamb. Smashed glass | F/G | M | make good to damage & paint. Replace glass | R | R |
| 154 | **Door 12.2** | Painted solid core with glass panel & weldmesh screen | 39-50 | | F/G | M | Paint | M | R |
| 155 | | | | | | | | | |
| 156 | **ROOM 13** | | | | | | | | |
| 157 | **Floor** | timber | 39-50 | | G | H | none | | |
| 158 | **Floor finish** | sheet vinyl + timber floor duct covers | 39-50 | | F | M | none | | |
| 159 | **Wall East** | Painted cement render | 39-50 | | G | H | clean | M | R |
| 160 | **Wall South** | Painted cement render | 39-50 | moisture drip marks | G | H | investigate moisture marks | D | R |
| 161 | **Wall West** | Painted cement render. Wall mounted flurescent lights | 39-50 | | G | H | clean | M | R |
| 162 | **Wall North** | Painted cement render | 39-50 | | G | H | clean | M | R |
| 163 | **Skirting** | Moulded timber & vinyl | 39-50 | rotten damaged in north west corner | F | M | Repair and paint | R | O |
| 164 | **Ceiling** | painted fibrous plaster | 39-50 | poor condition, flakey paint. Some water damage | P | H | patch and paint | R | O |
| 165 | **Cornice** | Plaster | 39-50 | | F | M | repair with ceiling | R | O |
| 166 | **Door 13.1** | Framed ledged & braced | 39-50 | | F | H | paint | M | |
| 167 | **Window East** | timber hoppers with roller insect screen | 39-50 | appear to be intact and working | G | H | clean and paint | M | R |
| 168 | | | | | | | | | |

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 2 | **Element** | **Description** | **Age** | **Condition** | **Rating** | **Integrity** | **Work Required** | **Category** | **Urgency** |
| 3 | | | **Aproxx.** | | **P,F,G** | **L,M,H** | | **D, M, R,A** | **O, R, L** |
| 169 | **ROOM 14** | | | | | | | | |
| 170 | **Floor** | timber | Not known | | | | | | |
| 171 | **Floor finish** | sheet vinyl | | generally good. Fair at duct covers | F/G | H | minor repairs to vinyl | M | R |
| 172 | **Wall East** | Painted cement render | | Peeling paint | F | H | Patch and paint | M | R |
| 173 | **Wall south** | Painted cement render | | | G | | clean | M | R |
| 174 | **Wall West** | Painted cement render | | | G | | clean | M | R |
| 175 | **Wall North** | Painted cement render | | | G | | clean | M | R |
| 176 | **Skirting** | painted profiled timber | | | F | H | paint | M | R |
| 177 | **Ceiling** | painted fibrous plaster | | poor condition, sagging | P | H | repair/restore with plasterboard | R | O |
| 178 | **Cornice** | Plaster | | | F | H | clean and paint | R | O |
| 179 | **Doors 14.2** | pair of painted solid core, self closing doors + pair alumin security doors inside. | | | F | M | none | | |
| 180 | **Door 14.1** | framed and panelled door | | brass hardware, loose | F | H | fasten hardware & paint | M | R |
| 181 | | | | | | | | | |
| 182 | **ROOM 15** | | | | | | | | |
| 183 | **Floor** | timber | 39-50 | | G | | | | |
| 184 | **Floor finish** | sheet vinyl | 39-50 | mismatched patches, loose and lifting. | F | M | Partial replacement and repairs | R | R |
| 185 | **Wall East** | Painted cement render | 39-50 | opening with timber architrave all round | G | H | none | | |
| 186 | **Wall South** | Painted cement render | 39-50 | minor cracking around infil of new fire rated door | F | H | Monitor cracks | M | R |
| 187 | **Wall West** | Painted cement render | 39-50 | | | | clean | M | R |
| 188 | **Wall North** | Painted cement render | 39-50 | | | | clean | M | R |
| 189 | **Skirting** | pianted profiled timber | 39-50 | minor damage | F | H | paint | R | R |
| 190 | **Ceiling & light well** | painted fibrous plaster to main ceiling & skylight sides & ceiling | 39-50 | Flaking paint, sagging plaster | P | H | replace damaged sheets with like. Paint | R | O |
| 191 | **Cornice** | Coved plaster | 39-50 | flaking paint | F | M | paint | R | O |
| 192 | **Skylight** | Wire cast glass louvres & fixed lights in timber frame | 39-50 | solid panes of glass are broken | F | H | Clean. Replace broken louvres and panes | M | R |
| 193 | **Door 15.1** | Pair painted solid core self closing doors | 39-50 | | F | L | Paint | M | R |

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 2 | **Element** | **Description** | **Age** | **Condition** | **Rating** | **Integrity** | **Work Required** | **Category** | **Urgency** |
| 3 | | | **Aproxx.** | | **P,F,G** | **L,M,H** | | **D, M, R,A** | **O, R, L** |
| 194 | **ROOM 16** | | 39/ 52 | | | | | | |
| 195 | **Floor** | timber | | structurally sound | G | H | none | | |
| 196 | **Floor finish** | sheet vinyl | | Loose & lifting, mismatched patches, timber floor duct covers. Some water damage | F | M | consider replacing mismatched covers & vinyl. Investigate water damage | D | L |
| 197 | **Wall East** | Painted cement render | | to bulkhead/beam at room 15. Air conditioner units installed. | G | H | paint | R | R |
| 198 | **Wall south** | Painted cement render | | note wall mounted lights, conduits etc | G | H | consider removing wall lights. Paint | D | L |
| 199 | **Wall West** | Painted cement render | | to bulkhead at room 23/24 | G | H | none | | |
| 200 | **Wall North** | Painted cement render. | | note wall mounted lights, conduits etc | F/G | H | none | | |
| 201 | **Skirting** | Painted profiled timber | | minor damage | F | H | paint | R | O |
| 202 | **Ceiling** | painted fibrous plaster to beam. Caneite & cover strips, plywood panels | | Sagging linings, poor jointing. Note ceiling mounted lights | P | L | Replace ceiling & sky light linings with like | R | O |
| 203 | **Cornice** | Stepped plaster | | | F | M | Reinstate on completion of ceiling work | R | R |
| 204 | **Skylight** | Wire cast glass louvres in timber frame | | skylight walls linings in poor condition - sagging. Water damage visable. Windows boarded with ply. | P | H | Replace linings with like. Clean glass. Seal glass to frame. | R | O |
| 205 | | | | | | | | | |
| 206 | **ROOM 17** | | 1939-52 | | | | | | |
| 207 | **Floor** | timber | | structurally sound | G | H | none | | |
| 208 | **Floor finish** | sheet vinyl | | mismatched patches, timber floor duct covers. | F | M | consider replacing mismatched covers & vinyl | D | R |
| 209 | **Wall East** | Painted cement render | | minor cracks in render | G | H | Patch and paint | R | L |
| 210 | **Wall south** | Painted cement render | | minor cracks in render | G | H | Patch and paint | R | L |
| 211 | **Wall West** | Painted cement render | | Painted cement render wall and reveals | G | H | Patch and paint | R | L |
| 212 | **Wall North** | Painted cement render | | minor cracks in render | G | H | Patch and paint | R | L |
| 213 | **Skirting** | Moulded timber+vinyl on some | | | F/G | H | paint | R | R |
| 214 | **Ceiling** | painted AC or hardboard with cover strips to joints | | many patches, vent & service pentrations | P | H | Minor repairs & paint | R | O |
| 215 | **Cornice** | painted timber quad | | | | | paint | R | R |
| 216 | **Windows** | Timber hoppers with weld mesh screens | 1939 | Screens are modern | F | H | Consider removing security screens. Paint | D | L |

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 2 | **Element** | **Description** | **Age** | **Condition** | **Rating** | **Integrity** | **Work Required** | **Category** | **Urgency** |
| 3 | | | **Aproxx.** | | **P,F,G** | **L,M,H** | | **D, M, R,A** | **O, R, L** |
| 217 | **ROOM 18** | | 1939-50 | | | | | | |
| 218 | **Floor** | Concrete | | structurally sound | G | H | none | | |
| 219 | **Floor finish** | Exposed concrete. Vinyl on Concrete steps. Raised timber platform | | Carpet has been removed exposing glued concrete floor. timber platform is rudimentry. | P | L | Remove glue | D | R |
| 220 | **Wall East** | Painted cement render | | some surface damage | F | H | repair and paint | R | R |
| 221 | **Wall south** | painted fibrous plaster on battens over masonry | | evidence of sheet metal lining behind plaster | P | H/H | repair and paint | R | R |
| 222 | **Wall West** | Painted cement render | | some surface damage | F | H | repair and paint | R | R |
| 223 | **Wall North** | painted fibrous plaster on battens over masonry | | as above | P | H/H | repair and paint | R | R |
| 224 | **Skirting** | painted bullnosed timber | | | F | M | paint | R | R |
| 225 | **Ceiling Generally** | painted fibrous plaster. Beams enclosed with painted fibrous plaster | | Round vent, cover strips | P/F | | repair and paint | R | O |
| 226 | **Ceiling Low part** | asbestos cement sheet & cover strips | | | F | M | repair and paint | R | O |
| 227 | **Cornice** | painted stepped plaster | | | | | paint | M | R |
| 228 | **Door 18.1** | flush panel with glass light | | | F | L | Paint | M | R |
| 229 | **Door 18.2** | Face mounted sliding alumin grille | | | F | M | none | | |
| 230 | | | | | | | | | |
| 231 | **ROOM 19** | Not inspected 2018 | | | | | | | |
| 232 | **Floor** | Concrete | | note changes of level | G | H | clean | M | R |
| 233 | **Floor finish** | paint | | paint badly worn | P | M | clean | M | R |
| 234 | **Wall East** | Painted cement render | | | F | H | none | | |
| 235 | **Wall south** | Painted cement render | | | F | H | none | | |
| 236 | **Wall West** | Painted cement render | | | F | H | none | | |
| 237 | **Wall North** | flush set FC lining on stud frame | | | G | M | none | | |
| 238 | **Skirting** | none | | | | | | | |
| 239 | **Ceiling** | asbestos cement sheet & cover strips | | gaps at edges plus patches | P | L/M | fill gaps and paint | D | R |
| 240 | **Cornice** | cover strip | | | | | as above | | |
| 241 | **Door 19.1** | painted solid core in steel jamb | M | modern jamb | F | | none | | |

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 2 | **Element** | **Description** | **Age** | **Condition** | **Rating** | **Integrity** | **Work Required** | **Category** | **Urgency** |
| 3 | | | **Aproxx.** | | **P,F,G** | **L,M,H** | | **D, M, R,A** | **O, R, L** |
| 242 | **ROOM 20** | | | | | | | | |
| 243 | **Floor** | Concrete | | note changes of level | G | H | clean | M | R |
| 244 | **Floor finish** | painted | | paint badly worn | P | M | clean | M | R |
| 245 | **Wall East** | Painted cement render | | | | | none | | |
| 246 | **Wall south** | flush set FC lining on stud frame | | | G | M | none | | |
| 247 | **Wall West** | Painted cement render | | | | | none | | |
| 248 | **Wall North** | Painted cement render | | Note grille in modified window frame | | | none | | |
| 249 | **Partition** | sheet metal | | | G | M | none | | |
| 250 | **Skirting** | none | | | | | | | |
| 251 | **Ceiling** | asbestos cement sheet & cover strips | | broken in places, service pipe penetrations | P | L/M | patch holes | M | R |
| 252 | **Cornice** | cover strip | | | | | | | |
| 253 | **Door 20.1** | Framed ledged & braced boarded, timber jamb. New grille. | 39 | Original hardware + modern night latch. External weathering | F | H | paint | M | R |
| 254 | **Door 20.2** | timber boarded with glass upper panel & steel grille inside | 39 | | F | H | Paint outside | | |
| 255 | **Windows North** | Glass louvres in timber frame | 39 | | | | Paint, replace 6 blades | R | O |
| 256 | | | | | | | | | |
| 257 | **ROOM 21** | | | | | | | | |
| 258 | **Floor** | Concrete | | | G | H | none | | |
| 259 | **Floor finish** | painted | | paint degraded | P | M | clean | M | O |
| 260 | **Wall East** | Painted cement render | | Note most of wall is air intake filter | P | M | none | | |
| 261 | **Wall south** | Painted cement render | | | F | M | none | | |
| 262 | **Wall West** | Painted cement render | | | | | none | | |
| 263 | **Wall North** | Painted cement render | | | G | M | none | | |
| 264 | **Skirting** | none | | | | | | | |
| 265 | **Ceiling** | asbestos cement sheet & cover strips | | straps missing in places | P | L/M | replace missing straps | M | R |
| 266 | **Cornice** | cover strip | | | F | M | none | | |
| 267 | | | | | | | | | |

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 2 | **Element** | **Description** | **Age** | **Condition** | **Rating** | **Integrity** | **Work Required** | **Category** | **Urgency** |
| 3 | | | **Aproxx.** | | **P,F,G** | **L,M,H** | | **D, M, R,A** | **O, R, L** |
| 268 | **ROOM 22** | | | | | | | | |
| 269 | **Floor substrate** | Concrete & timber | 1939 | | G | M | none | | |
| 270 | **Floor finish** | sheet vinyl on concrete & timber. | ? | Vinyl patched, different colours etc | F | M | minor repair at some joints | D | L |
| 271 | **Floor finish** | painted timber floor duct covers | 1950 | various materials incl boards, particle board | F/G | H | none | M | L |
| 272 | **East Wall** | Painted cement render | 1939 | Painted cement render reveals to openings. Peeling paint | P | H | repair, clean | M | L |
| 273 | **South wall** | Painted cement render | 1939 | | G | H | clean | M | L |
| 274 | **West wall** | Painted cement render | 1950 | | G | H | clean | M | L |
| 275 | **North wall** | Sheet metal enclosure to wireless equipment | | | G | H | clean | M | L |
| 276 | **Skirting** | profiled timber | | minor damage | F | M | paint, replace <5% | R | R |
| 277 | **Ceiling** | caneite in large panels | 1950 | Some loose sheets & open joints. Some water damage - panels dropping in areas | F | M | <10% refix or replace. Investigate water damage | R | O |
| 278 | **Cornice** | stepped plaster or timber | 1939 | | F/G | M | <5% refix | R | O |
| 279 | **Windows south** | Steel hoppers, wire cast glass | 1950 | rendered reveals, timber sill. Hardware missing | F | H | paint | R & M | R |
| 280 | **windows west** | Steel hoppers, wire cast glass | 1950 | rendered reveals, timber sill. One bay modified for ducting | F/G | H | paint | M | R |
| 281 | **windows west** | Steel hoppers, wire cast glass | 1950 | rendered reveals, timber sill | F | H | paint | M | R |
| 282 | | | | | | | | | |
| 283 | **ROOM 23** | | | | | | | | |
| 284 | **Floor substrate** | Concrete & timber | 1939 | | G | M | none | | |
| 285 | **Floor finish** | sheet vinyl on Concrete & timber. | ? | Vinyl patched, different colours etc | F | M | Very minor repair at some joints | D | R |
| 286 | **Floor finish** | painted timber floor duct covers | ? | various materials incl boards, particle board | F/G | H | none | | |
| 287 | **East wall** | Painted cement render | 1939 | Note sink in corner. Peeling paint on east wall. | F/G | H | clean & paint wall near sink | R | R |
| 288 | **West wall** | Sheet metal enclosure to wireless equipment | ? | Some glass windows smashed | F/G | H | replace glass and clean | | |
| 289 | **North wall** | Painted cement render | 1939 | note sink in NE corner. Not original. | G | H not sink | clean wall & paint | R | R |
| 290 | **Skirting** | painted profiled timber | 1939 | minor damage | F | M | paint, replace <5% | R | R |
| 291 | **Ceiling** | caneite in large panels | 1950 | Some loose sheets & open joints | G | M | clean | D | L |
| 292 | **Cornice** | stepped plaster or timber | 1939 | | F/G | H | <5% refix | R | O |
| 293 | **Door 23.1** | pair soild core doors with stainless steel lining to room 18 face. Timber jambs | ? | note chicken wire wrapping to door jamb | G | H | paint | M | R |
| 294 | **Doors 23.2** | 4 panel timber with glazed highlight in timber jambs | 1939 | Note steel frame high light, wire cast glass, integral blind | G | H | paint | M | R |

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|---|---|---|---|---|---|---|---|---|---|
| 2 | **Element** | **Description** | **Age** | **Condition** | **Rating** | **Integrity** | **Work Required** | **Category** | **Urgency** |
| 3 | | | **Aproxx.** | | **P,F,G** | **L,M,H** | | **D, M, R,A** | **O, R, L** |
| 295 | **ROOM 24** | | | | | | | | |
| 296 | **Floor substrate** | Concrete. Timber covers to floor ducts | 1939 | minor cracking & patching | G | M | none | | |
| 297 | **Floor finish** | painted | 1939 | | F | M | paint | M | R |
| 298 | **East Wall** | sheet metal enclosure. | ? | | G | H | none | | |
| 299 | **South wall** | sheet metal enclosure. | ? | note access panel | G | H | none | | |
| 300 | **West wall** | Painted cement render | 1939 | | G | H | clean | D | L |
| 301 | **North wall** | Sheet metal enclosure to wireless equipment | | note access panel. | G | H | none | | |
| 302 | **Skirting** | profiled timber | 1939 | minor damage | F | M | paint, replace <5% | R | R |
| 303 | **Ceiling** | caneite in large panels | ? | Some loose sheets & open joints | G | M | 25% refix or replace | R | R |
| 304 | **Cornice** | stepped plaster or timber | 1939 | | F/G | M | Re-fix loose lights | R | R |
| 305 | **Doors 24.1** | Pair 2 panel timber in timber jambs. 2 panel highlight | 1939 | Note ply infill panels to door. Highlight partly covered | F | H | Paint | D | R |
| 306 | **Windows south** | Steel hoppers, wire cast glass | 1950 | rendered reveals, timber sill. 50% of hardware missing | F | H | Reinstate hardware & paint. Replace any broken glass | R/M | R |
| 307 | **windows north** | Steel hoppers, wire cast glass | 1950 | rendered reveals, timber sill. One bay modified for ducting. Temporary plywood infill | F/G | H | Reinstate hardware, paint and replace glass | R/M | R |
| 308 | **windows west** | Steel hoppers, wire cast glass | 1950 | rendered reveals, timber sill | F | H | Reinstate hardware & paint. replace any broken glass | R/M | R |
| 309 | | | | | | | | | |
| 310 | **ROOM 25** | | | | | | | | |
| 311 | **Floor substrate** | Concrete. | 1939 | minor cracking | G | M | none | | |
| 312 | **Floor finish** | painted + painted timber floor duct covers | 1939 | | G | M | paint | M | R |
| 313 | **East Wall** | Painted cement render | 1939 | minor cracking under window | G | H | fill cracks and paint | R | R |
| 314 | **South wall** | Painted cement render | 1939 | minor cracking, loose plaster near pulley fixing. | G | H | prepare & paint | R | R |
| 315 | **West wall** | Painted cement render | 1939 | minor cracking over arch | G | H | prepare & paint | R | R |
| 316 | **North wall** | Painted cement render | 1939 | | G | H | none | | |
| 317 | **Skirting** | profiled timber | G | minor damage | F | M | paint | R | R |
| 318 | **Ceiling** | caneite in large panels fixed with dowels & timber caps | ? | Some loose sheets & open joints | F/G | M | Refix 50% & paint | R | O |
| 319 | **Cornice** | stepped plaster or timber | 1939 | | F/G | M | <5% refix | R | R |
| 320 | **Doors 24.1** | 2/2 panel timber in timber jambs. 2 panel highlight | 1939 | Water damage to 1 sheet, 50% have minor deflections | F | H | Paint | M | R |
| 321 | **Windows east** | 3/5 pane timber hoppers. Ropes & pulleys intact. rendered reveals | 1939 | Temporary ply infill | F | H | clean and replace smashed glass, remove ply. | R | R |
| 322 | **windows south** | Small timber with fixed glass in splayed reveals | 1939 | rendered reveals, timber sill. One bay modified for ducting | F/G | H | clean and replace smashed glass, remove ply. | M | R |
| 323 | **Door 25.1** | Large, arched opening with 2 panelled doors. | | Ply infill at glazed panels | G | H | Replace glass. Remove ply | R | R |
| 324 | **Partition** | timber framed with solid panel below glazed upper lights. | ? | 50% glazed panels smashed | G | M | Replace glass | R | O |

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| 2 | **Element** | **Description** | **Age** | **Condition** | **Rating** | **Integrity** | **Work Required** | **Category** | **Urgency** |
| 3 | | | **Aproxx.** | | **P,F,G** | **L,M,H** | | **D, M, R,A** | **O, R, L** |
| 325 | **ROOM 26** | LINK | | | | | | | |
| 326 | **Floor substrate** | Concrete & timber | 1939 | | G | M | none | | |
| 327 | **Floor finish** | Sheet vinyl | 1939 | original patches over underfloor services | G | M | none | | |
| 328 | **East Wall** | Painted cement render | 1939 | | G | H | none | | |
| 329 | **South wall** | Painted cement render | 1939 | | G | H | none | | |
| 330 | **West wall** | Painted cement render | 1939 | | G | H | none | | |
| 331 | **North wall** | Painted cement render | 1939 | | G | H | none | | |
| 332 | **Skirting** | profiled timber | 1939 | | F | M | paint | R | R |
| 333 | **Ceiling** | flush set fibrous plaster | 1939 | Some sagging of plaster | G | M | paint | M | R |
| 334 | **Cornice** | 50mm plastercoved profile | 1939 | Seperation from ceiling in some areas | F | M | Repair and reattach to ceiling | R | R |
| 335 | **Windows east & west** | Steel hoppers, wire cast & clear glass. Black weldmesh screens | 1950 | rendered reveals, timber sill. Hardware missing from west. Glass smashed east | F | H | consider removing security grille. Replace west wall windows hardware and replace glass | R | O |
| 336 | | | | | | | | | |
| 337 | **ROOM 27** | **Kitchen** | | | | | | | |
| 338 | **Floor substrate** | Concrete & timber | 1939 | | G | M | none | | |
| 339 | **Floor finish** | Sheet vinyl and timber | 1939 | carpet worn, vinyl fair | P/F | L | none | | |
| 340 | **East Wall** | Painted cement render | 1939 | 20% peeling paint | F | H | patch and paint | M | R |
| 341 | **South wall** | Painted cement render | ? | kitchen cupboard doors have been damaged and removed | F | H | Replace/repair cupboards, paint wall | R | O |
| 342 | **West wall** | Painted cement render | ? | | F | H | paint | M | R |
| 343 | **North wall** | Painted cement render | ? | paint peeling | P | H | patch and paint | M | R |
| 344 | **Skirting** | profiled timber | 1939 | minor damage | G | M | paint, replace <5% | R/M | R |
| 345 | **Ceiling** | mineral fiber tile suspeded below flush set fibrous plaster | | since 2009 Condition Report, mineral fibre tile has been removed and fibrous plaster ceiling has been restored | G | H | none | | |
| 346 | **Cornice** | stepped plaster or timber | | has been restored since 2009 Condition Report | G | H | | | |
| 347 | **Doors 27.1** | Flush solid core in timber jamb | ? | | F | L | Paint, replace hardware | R | R |

| | A | B | C | D | E | F | G | H | I |
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| 2 | **Element** | **Description** | **Age** | **Condition** | **Rating** | **Integrity** | **Work Required** | **Category** | **Urgency** |
| 3 | | | **Aproxx.** | | **P,F,G** | **L,M,H** | | **D, M, R,A** | **O, R, L** |
| 348 | **ROOM 28** | Corridor | | | | | | | |
| 349 | **Floor substrate** | timber | 1939 | | G | M | none | | |
| 350 | **Floor finish** | Sheet vinyl | ? | patches in some area | F | M | none | | |
| 351 | **East Wall** | Painted cement render | 1939 | | G | H | clean | D | L |
| 352 | **South wall** | Painted cement render | 1939 | | G | H | clean | D | L |
| 353 | **West wall** | Painted cement render | 1939 | | G | H | clean | D | L |
| 354 | **North wall** | Painted cement render | 1939 | previously repaired cracks | G | H | clean | D | L |
| 355 | **Skirting** | profiled timber | 1939 | minor damage, dropping and cracked in some areas | F | M | paint | R | R |
| 356 | **Ceiling** | flush set fibrous plaster | 1939 | peeling paint at western end | G | L | <10% restore. Paint | R | R |
| 357 | **Cornice** | stepped plaster | 1939 | | G | H | none | | |
| 358 | **Doors 28.1** | Pair painter solid core in steel jambs, magnetic hold open devices, closers | ? | modern | F | L | Paint | M | R |
| 359 | **Doors 28.2** | Pair painted, rebated solid core in timber jambs. Glazed highlight | 1939 | | F | M | paint | M | R |
| 360 | | | | | | | | | |
| 361 | **ROOM 29** | | | | | | | | |
| 362 | **Floor substrate** | Concrete | 1939 | | G | M | none | | |
| 363 | **Floor finish** | painted Concrete + painted timber floor trench covers | 1939 | | F | M | none | | |
| 364 | **East Wall** | Painted cement render | 1939 | peeling paint | F | H | patch and paint | D | L |
| 365 | **South wall** | Painted cement render | 1939 | note large switchboard set into wall | G | H | none | | |
| 366 | **West wall** | Painted cement render | 1939 | peeling paint in SE corner | F | H | paint | M | O |
| 367 | **North wall** | Painted cement render | 1939 | | G | H | none | | |
| 368 | **Skirting** | paint on wall | 1939 | | F | M | none | | |
| 369 | **Ceiling** | flush set fibrous plaster | 1939 | 50% badly peeling | P | M | paint | R | O |
| 370 | **Cornice** | stepped plaster or timber | 1939 | 25% peeling | P | M | paint | R | O |
| 371 | **Door 29.1** | timber framed and panelled door in timber jamb | 1939 | | G | H | paint | M | R |

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|---|---|---|---|---|---|---|---|---|---|
| 2 | **Element** | **Description** | **Age** | **Condition** | **Rating** | **Integrity** | **Work Required** | **Category** | **Urgency** |
| 3 | | | **Aproxx.** | | **P,F,G** | **L,M,H** | | **D, M, R,A** | **O, R, L** |
| 372 | **ROOM 30** | | | | | | | | |
| 373 | **Floor substrate** | Concrete | 1939 | | G | M | none | | |
| 374 | **Floor finish** | painted Concrete + painted timber floor trench covers | ? | paint in poor condition | F | M | clean | M | R |
| 375 | **Timber floor** | Hardwood floor above void | 39 | Poor, springy | P | M | check stability | M | O |
| 376 | **East Wall** | Painted cement render | 1939 | rising damp at base of wall | P/F | H | seal 20% of wall and paint | R | O |
| 377 | **South wall** | Painted cement render | 1939 | rising damp at base of wall | P/F | H | seal 20% of wall and paint | R | O |
| 378 | **West wall** | Painted cement render | 1939 | rising damp at base of wall + peeling to 50% of wall | P/F | H | seal 20% of wall and paint | R | O |
| 379 | **North wall** | Painted cement render | 1939 | rising damp at base of wall with paint peeling | P/F | H | seal 20% of wall and paint | R | O |
| 380 | **Ceiling** | fibrous plaster and cover straps to joints | 1939 | 50% badly peeling | P | M | paint | M | O |
| 381 | **Cornice** | cover straps | 1939 | 25% peeling | P | M | paint | M | O |
| 382 | **Door 30.1** | painted flush panel solid core in timber jamb. | 1939 | | G | H | paint | M | R |
| 383 | **Door 30.2** | framed ledged & braced, timber boarded, painted | 1939 | | G | H | paint | M | R |
| 384 | **Windows North** | 3 pane steel frame hoppers, wire cast glass, integral fly screens | | Sash ropes missing. | F | H | Install sash ropes. Paint | R | R |
| 385 | **Landing & steps** | Timber posts, strings & treads | 1939 | Appears to be in sound condition | G | M | none | | |
| 386 | **Skylight** | Timber lined opening, roof framing exposed, raised roof with fixed AC louvre blades | 1939 | | G | H | none | | |
| 387 | | | | | | | | | |
| 388 | **ROOM 31** | | | | | | | | |
| 389 | **Floor substrate** | Concrete | 1939 | | G | M | none | | |
| 390 | **Floor finish** | Timber floor boards, concrete in patches | 1939 | >5% missing timber | F | L | replace missing boards | R | O |
| 391 | **East Wall** | Painted cement render | 1939 | minor peeling & patching | F | H | make good & paint | M | R |
| 392 | **South wall** | Painted cement render | 1939 | | G | H | paint | M | R |
| 393 | **West wall** | Painted cement render | 1939 | | G | H | paint | M | R |
| 394 | **North wall** | Painted cement render | 1939 | | G | H | paint | M | R |
| 395 | **Skirting** | profiled timber | 1939 | loose at 20% | F | M | make good and paint | R | R |
| 396 | **Ceiling** | flush set fibrous plaster. Note esposed steel beam under. | 1939 | Flurescent bar lights installed more recently. <25% peeling | P | M | prepare & repaint | R | O |
| 397 | **Cornice** | stepped plaster | 1939 | <25% peeling | F | M | prepare & repaint | R | O |
| 398 | **Door 29.1** | pair timber framed and panelled door in timber jamb | 1939 | | G | H | paint | M | R |
| 399 | **Windows North** | 5 pane steel frame hoppers, wire cast glass, integral fly screens + WM screens + internal blinds | | Air conditioning units removed recently. Recently installed secrutiy grill. 1 pane temporary ply infill | F | H | Replace glass, consider removing grill | R/D | O |
| 400 | **Joinery on north** | Solid timber bench and cupboards | 1939 | some damage to joinery | F | H | make good and paint | D | O |
| 401 | **Skylight** | Fibrous plaster shaft walls, infill timber | 1939 | Glass infilled with ply, shaft walls peeling | F | H | paint | M | O |

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| 2 | **Element** | **Description** | **Age** | **Condition** | **Rating** | **Integrity** | **Work Required** | **Category** | **Urgency** |
| 3 | | | **Aproxx.** | | **P,F,G** | **L,M,H** | | **D, M, R,A** | **O, R, L** |
| 402 | **ROOM 32** | | | | | | | | |
| 403 | **Sub floor** | Concrete at subfloor level with brick piers supporting timber floor. | 1939 | | G | M | none | | |
| 404 | **Floor** | Timber flooring on bearers & joists. Note hinged subfloor access panels | 1939 | | G | H | none | | |
| 405 | **East Wall** | Painted cement render | 1939 | | F | H | clean/repaint | D | L |
| 406 | **South wall** | Painted cement render | 1939 | | G | H | clean/repaint | D | L |
| 407 | **West wall** | Painted cement render | 1939 | | G | H | clean/repaint | D | L |
| 408 | **North wall** | Painted cement render | 1939 | | G | H | clean/repaint | D | L |
| 409 | **Skirting** | profiled timber | 1939 | | F | M | paint | | |
| 410 | **Ceiling** | flush set fibrous plaster. | 1939 | <10% peeling and cracked | P | M | repair & paint | R | O |
| 411 | **Cornice** | stepped plaster | 1939 | <25% peeling, >5% removed | P | M | prepare & repaint | R | R |
| 412 | **Door 32.1** | pair timber framed and panelled door in timber jamb | 1939 | hardware removed, panes smashed | F | H | paint, reinsate hardware, replace glass | D | L |
| 413 | **Door 32.2** | Pair 5 panel timber screen doors inside. Framed and boarded door outside. Plywood infill at inside obsucuring view. 2/2pane highlight with wire glass. Steel security grille | 1939 | Ply infill, internal condition not known | F | H | Remove ply infill, paint. | D | L |
| 414 | | | | | | | | | |
| 415 | **ROOM 33** | | | | | | | | |
| 416 | **Sub floor** | Concrete at lower level with brick piers supporting timber floor. | 1950 | | G | M | none | | |
| 417 | **Floor** | Timber flooring on bearers & joists. Note hinged subfloor access panels | 1950 | | G | H | none | | |
| 418 | **East Wall** | Painted cement render. Note diferent texture to render | 1950 | slight cracking | F/G | H | repair crack & paint | R | R |
| 419 | **South wall** | Painted cement render Note diferent texture to render | 1950 | slight cracking | | H | repair crack & paint | R | R |
| 420 | **West wall** | Painted cement render Note diferent texture to render | 1950 | crack near door | F/G | H | repair crack & paint | R | R |
| 421 | **North wall** | Painted cement render Note diferent texture to render | 1950 | | G | H | none | | |
| 422 | **Skirting** | 50mm quad timber | 1950 | note floor shrinkage below skirting | P | M | Make good skirting | R | O |
| 423 | **Ceiling** | Caneite and cover strips | 1950 | 1 damaged panel, sagging and water damage visable | P | M | repair and stop sagging, repaint. Investiate water damage. | R | O |
| 424 | **Cornice** | stepped plaster | 1950 | <25% peeling | F | M | repair & repaint | R | R |
| 425 | **Window east** | 1/5 pane steel hopper. Wire cast glass and securtiy bars | 1950 | 50% ropes & sash stays missing | F | H | reinstate stays & ropes | D | L |
| 426 | **Window north** | 2/5 pane steel hopper. Wire cast glass and securtiy bars | 1950 | 50% ropes & sash stays missing | F | H | reinstate stays & ropes | R | R |
| 427 | **Door 33.1** | Framed ledge and braced with boarding on outside face. | 1950 | Plywood infill on inside | G | H | Paint and remove ply infill | M | R |
| 428 | **Subfloor door** | Solid door to subfloor space | 1950 | | F/G | M | paint | M | R |

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 2 | **Element** | **Description** | **Age** | **Condition** | **Rating** | **Integrity** | **Work Required** | **Category** | **Urgency** |
| 3 | | | **Aproxx.** | | **P,F,G** | **L,M,H** | | **D, M, R,A** | **O, R, L** |
| 429 | **ROOM 34** | **WORKSHOP** | | | | | | | |
| 430 | **Floor** | Concrete. | 1939 | Was painted but 90% worn off | G | M | none | | |
| 431 | **Raised floor** | Timber & checkerplate covering | 1939 | patchy but reasonably sound | G | H | none | | |
| 432 | **East Wall** | Painted cement render | 1939 | note electrical ducts etc | F/G | H | none | | |
| 433 | **South wall** | Painted cement render. Note engaged piers supporting hoist beams | 1939 | paint peeling | F/G | H | patch and repaint | D | L |
| 434 | **West wall** | Painted cement render | 1939 | | F/G | H | clean | D | L |
| 435 | **North wall** | Painted cement render. Note engaged piers supporting hoist beams | 1939 | | G | H | clean | D | L |
| 436 | **Skirting** | none | | | | | | | |
| 437 | **Ceiling** | Flush set fibrous plaster, skylight (see below) | 1939 | 20% peeling | P | M | repair & paint | R | O |
| 438 | **Cornice** | stepped plaster | 1939 | | G | M | prepare & repaint | M | R |
| 439 | **Window south** | 3/5 pane steel hopper. Wire cast glass and securtiy bars | 1939 | check sash stays. Some cracks in panes | F | H | replace stays (4?), replace 1 broken pane | R | O |
| 440 | **Window north** | 2/5 pane steel hopper. Wire cast glass | 1939 | ropes and sash stays missing. Some cracks in panes | F/G | H | replace stays (4?) replace broken pane | R | O |
| 441 | **Door 34.1** | Painted flush panel solid core, closer, steel jambs | ?? | SS kick plates | F | M | paint | R | R |
| 442 | **Door 34.2** | Roller shutter with access door | 1939 | | F/G | M | none | | |
| 443 | **Skylight** | Timber lined opening, roof framing exposed, raised roof with fixed AC louvre blades | 1939 | glass cracked | G | H | repair glass | | |
| 444 | **Mesh enclosures** | Steel frame and weldmesh | ? | | G | M | none | | |
| 445 | | | | | | | | | |
| 446 | **ROOM 35** | **Not inspected** | | | | | | | |
| 447 | **Floor substrate** | Concreterete | 1939 | | G | M | none | | |
| 448 | **Floor finish** | painted Concrete + painted timber floor trench covers | ? | | F | M | none | | |
| 449 | **East Wall** | Painted cement render | 1939 | | G | H | seal 20% of wall and paint | R | O |
| 450 | **South wall** | Painted cement render | 1939 | | G | H | seal 20% of wall and paint | R | O |
| 451 | **West wall** | Painted cement render | 1939 | | G | H | seal 20% of wall and paint | R | O |
| 452 | **North wall** | Painted cement render | 1939 | | G | H | seal 20% of wall and paint | R | O |
| 453 | **Skirting** | paint on wall | 1939 | | F | M | repaint | M | R |
| 454 | **Ceiling** | flush set fibrous plaster generally. Centre panel with cover straps to joints | 1939 | 50% peeling & slightly damaged | P | M | prepare & repaint | M | O |
| 455 | **Cornice** | cover straps | 1939 | | P | M | prepare & repaint | M | R |
| 456 | **Door 35.1** | painted timber frame with expanded metal screen on outer face | 1939 | | Frame G, screen F | H | paint | M | R |

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 2 | **Element** | **Description** | **Age** | **Condition** | **Rating** | **Integrity** | **Work Required** | **Category** | **Urgency** |
| 3 | | | **Aproxx.** | | **P,F,G** | **L,M,H** | | **D, M, R,A** | **O, R, L** |
| 457 | **ROOM 36** | **FEMALE TOILETS** | | | | | | | |
| 458 | **Floor substrate** | Concrete | 1939 | | G | M | none | | |
| 459 | **Floor finish** | painted tiles | 1939 | peeling | F | M | prepare and paint | M | R |
| 460 | **East Wall** | Gloss painted cement render + gloss tiles to shower recess | 1939 | tiles in poor condition | Walls G. Tiles P | Walls H. Tiles L | remove tiles & make good to wall | D | O |
| 461 | **North wall** | Gloss painted cement render | 1939 | | G | M | paint | M | R |
| 462 | **West wall** | Gloss painted cement render | 1939 | | G | M | paint | M | R |
| 463 | **South wall** | Gloss painted cement render + gloss tiles to shower recess | 1939 | | G | M | paint | M | R |
| 464 | **Ceiling** | Flushset fibrous plaster | 1939 | 90% peeling. Water damage to cornice in south east corner | G | M | prepare and paint. Investigate water damage | R | O |
| 465 | **Cornice** | 100mm plaster cove | 1939 | | F | M | prepare and paint | R | O |
| 466 | **Shower partition** | timber & FC infill panel | 1939 | | F | M | none | | |
| 467 | **WC partition** | Terrazzo | 1939 | | F | M | none | | |
| 468 | **Window centre east** | 3 pane steel, hoppers top & bottom, centre fixed | 1939 | top sash stay defective. Panes in good condition | F/G | M | Replace top sash stay. Paint. | D/R | O |
| 469 | **Windows E & S** | Steel frame with 2 fixed panes & top fixed louvres | 1939 | Panes in good condition | G | M | paint | M | R |
| 470 | **Door 38.1** | Framed & panelled door with original hardware | 1939 | | F | H | paint | M | R |
| 471 | **Cubicle door** | timber framed & panelled | 1939 | | F | M | paint | M | R |
| 472 | | | | | | | | | |
| 473 | **ROOM 37** | **MALE TOILETS** | | | | | | | |
| 474 | **Floor substrate** | Concrete | 1939 | | F | M | none | | |
| 475 | **Floor finish** | painted tiles | 1939 | moisture erosion, peeling paint on tiles. | P | M | cean, patch and repaint | R | O |
| 476 | **East Wall** | Gloss painted cement render | 1939 | | | | paint | M | R |
| 477 | **South wall** | Gloss painted cement render | 1939 | | G | M | paint | M | R |
| 478 | **West wall** | Gloss painted cement render | 1939 | | G | M | paint | M | R |
| 479 | **North wall** | Gloss painted cement render | 1939 | | G | M | paint | M | R |
| 480 | **Ceiling** | Flushset fibrous plaster | 1939 | 90% peeling | G | M | paint | R | O |
| 481 | **Cornice** | 100mm plaster cove | 1939 | | F | M | paint | M | O |
| 482 | **Cubicle partition** | timber & FC/ply infill panel | 1939 | | F | M | paint | M | R |
| 483 | **Windows North** | Steel frame with 2 fixed panes & top fixed louvres | 1939 | | G | M | paint | M | R |
| 484 | **Door 37.1** | Framed & panelled door with original hardware | 1939 | | F | H | paint | M | R |
| 485 | **Cubicle doors** | timber framed & panelled | 1939 | | F | M | paint | M | R |
| 486 | **toilet pan** | original pan in 1 cubicle | 1939 | Rusted and rotted | P | H | none | | |
| 487 | **basins** | wall hung | ? | | F | M | none | | |
| 488 | | | | | | | | | |
| 489 | **ROOM 36** | **PORCH** | | | | | | | |
| 490 | **Floor** | Concrete | 1939 | | G | H | none | | |
| 491 | **Finish** | quarry tiles | ? | | G | L | none | | |
| 492 | **Walls** | Face brick | 1939 | New brick above original '39 low walls | G | M | none | | |
| 493 | **Roof** | Fibreglass roofing on timber | ? | poor conditon | P | L | consider removing roof & framing | D | L |

Rating: Poor, Fair, Good
Integrity: Low, Moderate, High

Category of work required:
Maintain, Repair, Adaption, Desirable

Urgency of work required:
Overdue, Routine, Longterm

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 2 | **Element** | **Description** | **Age** | **Condition** | **Rating** | **Integrity** | **Work Required** | **Category** | **Urgency** |
| 3 | | | **Aproxx.** | | **P,F,G** | **L,M,H** | | **D, M, R,A** | **O, R, L** |
| 494 | **BLOCK A** | | | | | | | | |
| 495 | **Roof** | Flat roof not visible | | Unknown | | | | | |
| 496 | **Barge board & capping** | Red colorbond capping above painted timber barge boards | 1950 | Colorbond good, timber fair | G/F | M | paint fascia | M | O |
| 497 | **Gutter** | Red colorbond squareline gutter to east side | 80s? | | G | L | none | | |
| 498 | **Walls** | | | | | | | | |
| 499 | **Walls generally** | painted brick, white above red base & rendered piers & beams | 1950 | | G | H | paint | D | O |
| 500 | **Windows upper level** | Painted timber hoppers & fixed panels to upper level. Painted timber double hung to lower level. | 1950 | Note modifications to upper south windows. Weathered & peeling paint generally all windows. Most windows now infilled with ply | F | H | Replace glass, paint | R | O |
| 501 | **Windows lower level** | Painted timber double hung. | 1950 | Weathered & peeling paint generally all windows. Note 3/4 infill with ply | F | H | Replace glass, paint | R | O |
| 502 | **Downpipes** | 100 dia colorbond. | 80s? | | G | L | none | | |
| 503 | **Doors 1.1** | Refer room 1 | | infill ply on top panes | | | | | |
| 504 | **Entry Canopy** | Cantilevered concrete. | 1950 | | G | H | None | | |
| 505 | | | | | | | | | |
| 506 | **BLOCK B** | | | | | | | | |
| 507 | **Roof** | Painted corrugated AC sheet. | 1950 | paint peeling in parts | F | M | Replace with colourbond corrugated iron in like colour | A | L |
| 508 | **Gutter** | Half round AC | 1950 | Partly repaired with gal iron | P | M | Replace with colourbond quad gutters | A | L |
| 509 | **Fascia** | Painted timber. | 1950 | | G | M | Paint | M | R |
| 510 | **North end barge** | AC barge capping over timber. | 1950 | peeling paint | P/F | L | Replace AC capping. Paint | A | R |
| 511 | **South end barge** | Folded gal iron over painted timber. | 1950 | Decayed and weathered. | P | L | Replace barge | M | O |
| 512 | **Walls generally** | Painted brick, white above red base. Boxed vents in gable ends | 1950 | Paint fair/good. Boxed vents have missing louvre blades | | | Paint walls, replace missing louvre blades | M | O |
| 513 | **Windows. North** | Alumin frame with fixed glass. | ? | | G | L | none | | |
| 514 | **Windows. East** | Painted timber double hung with expanded metal screen. | 1950 | Weathered & peeling paint | F | H | Paint | P | O |
| 515 | **Windows. South** | Painted timber double hung with expanded metal screen. | | Note sheet metal cover over lower sashes. | F | H | Paint. | P | O |
| 516 | **Downpipes (DP)** | Various types incl AC, PVC & gal iron. | 50+ | AC in poor condition. | P - G | L | replace AC DPs. | A | R |

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 2 | **Element** | **Description** | **Age** | **Condition** | **Rating** | **Integrity** | **Work Required** | **Category** | **Urgency** |
| 3 | | | **Aproxx.** | | **P,F,G** | **L,M,H** | | **D, M, R,A** | **O, R, L** |
| 517 | **BLOCK C** | | | | | | | | |
| 518 | **Roof** | | | | | | | | |
| 519 | **Central flat roof** | GI flat trays with rolled ribs. Originally painted but worn of in most areas. | 1930 | Roof inspection not possible.<br>2009 Condition Report: Surface rust, possibly through rust in parts. Some loose sheets and damaged rib joints. | P/F | M | Thoroughly inspect for signs of leaks. Replace sheeting where necessary. Blast clean & paint | R | O |
| 520 | **Valley gutters** | GI gutters between adjacent tiled roof | 1930 | Badly rusted, lot of debri in gutter. | P | L | Thoroughly inspect & replace if necessary. | R | O |
| 521 | **Skylight (flat)** | Roof inspection not possible.<br>2009 Condition Report: Wire cast glass in sheet metal surround | 1930 | Roof inspection not possible.<br>2009 Condition Report: Weathered and peeling paint. Rust evident. Loose flashings. | P/F | M | Repaint surrounds. Replace rusted material. Clean glass. | R | O |
| 522 | **Ventilated skylight** | Timber framed, wire cast glass, painted GI rolled rib roof, timber fascia. | 1930 | Timber badly weathered. Roof paint in poor condition. Flashings loose. | P/F | H | Blast clean & paint roof. Replace badly weathered timber. Paint all timber | R | O |
| 523 | **Tied roof** | Terracotta tiles, painted valley gutters. | 1930 | | G | H | Check valley gutters & repair as necessary | R | R |
| 524 | **North east corner** | | | | | | | | |
| 525 | **Walls** | painted brick, white above red base | 1950 | | G | | paint | D | R |
| 526 | **Gutter** | half round AC | 1950 | Partly repaired with gal iron | P | | Replace with colourbond quad gutters | A | L |
| 527 | **Fascia** | Painted timber | 1950 | | F | M | None | | |
| 528 | **Soffit** | Painted timber slats | ? | | F/G | H | clean | M | R |
| 529 | **Downpipes** | GI connected to pipe extend-ing around wall | ? | | G | L | None | | |
| 530 | | | | | | | | | |
| 531 | **BLOCK D** | | | | | | | | |
| 532 | **Roof** | Terracotta tiles | 1930 | | G | H | None | | |
| 533 | **Gutters** | AC | 1930 | poor paint | P | M | Replace | M | O |
| 534 | **Fascia** | painted timber | 1930 | | G | H | None | | |
| 535 | **Soffit** | Painted timber slats | 1930 | Loose slats & trim on south | F | H | Refix slats & paint | M | O |
| 536 | **Barge detail** | Brick and pointed roof tile | 1930 | | G | H | None | | |
| 537 | **East and west walls** | Painted render above painted brick base | 1930 | | G | H | paint | D | R |
| 538 | **Gutters** | AC | 1930 | | F | L | Replace | A | L |
| 539 | **Fascia** | painted timber | 1930 | | G | H | None | | |
| 540 | **Soffit** | Painted timber slats | 1930 | | D | H | None | | |
| 541 | **Downpipe** | AC on 7, PVC on 9 | | | F | L | replace AC downpipe | A | L |
| 542 | **Windows west wall** | painted steel hoppers | 1930 | | G | H | None | | |
| 543 | **Windows east wall** | painted steel hoppers | 1930 | Note large vent duct in top right pane. | G | H | None | | |
| 544 | **North wall** | Painted render above painted brick base | 1930 | Fine cracking | F/G | H | paint | D | R |
| 545 | **Barge detail** | Brick and pointed roof tile | 1930 | | G | H | None | | |
| 546 | **South wall** | | | | | | | | |
| 547 | **Walls** | Painted render above painted brick base | 1930 | Fine cracking | F/G | H | paint | D | R |
| 548 | **Barge detail** | Brick and pointed roof tile | 1930 | | G | H | None | | |
| 549 | **Windows** | painted steel hoppers | 1930 | Note large vent duct in top right pane. | G | H | paint | D | R |

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 2 | **Element** | **Description** | **Age** | **Condition** | **Rating** | **Integrity** | **Work Required** | **Category** | **Urgency** |
| 3 | | | **Aproxx.** | | **P,F,G** | **L,M,H** | | **D, M, R,A** | **O, R, L** |
| 550 | **BLOCK E** | | | | | | | | |
| 551 | **Roof** | Terracotta tiles | 1930 | | G | H | None | | |
| 552 | **Gutters** | AC | 1930 | Weathered & peeling paint. | P | M | Replace with colourbond | A | R |
| 553 | **Fascia** | Painted GI folded overpainted timber. | 1930 | Peeling paint. | G | H | Paint | M | O |
| 554 | **Soffit** | Painted timber slats. | 1930 | Loose slats & trim on south. | D | H | Refix & paint. | M | R |
| 555 | **North, South walls** | | | | | | | | |
| 556 | **Walls** | Painted render. | 1930 | | G | H | paint | D | R |
| 557 | **Windows** | Painted steel hoppers. | 1930 | Peeling paint. | F/G | H | Paint frames. | M | O |
| 558 | | | | | | | | | |
| 559 | **BLOCK F** | | | | | | | | |
| 560 | **Roof** | | 1930 | | G | H | None | | |
| 561 | **Roof** | GI flat trays with rolled ribs. | 1930 | Surface rust | F/G | H | Paint | M | L |
| 562 | **Gutters** | GI box gutters. | 1930 | Gutters full of debri | F/G | M | Clean | M | R |
| 563 | **Parapet capping** | GI capping to north walls. | 1930 | Peeling paint | G | H | Paint | M | O |
| 564 | **Ventilating Roof** | | 1930 | | G | H | None | | |
| 565 | **Roof** | GI flat trays with rolled ribs. | 1930 | Surface rust | F/G | H | None | | |
| 566 | **Louvres** | Fixed AC sheet louvres in timber frames. | 1930 | Clean | F/G | M | Clean | M | U |
| 567 | **End walls** | AC sheet on timber frame. | 1930 | | G | H | None | | |
| 568 | **Wall** | | | | | | | | |
| 569 | **North Wall** | Painted render above painted brick base. | 1930 | Crack in wall below windows. | F/G | H | paint | D | R |
| 570 | **Windows** | Painted steel hoppers. | 1930 | | F/G | H | Paint | M | U |
| 571 | **Door 30.2** | Framed & boarded. | 1930 | Weathered apint and timber | F/G | H | Paint | M | U |
| 572 | **Downpipes** | 1 GI & 1 AC. | 30 + | GI good, AC poor | P/G | M | Replace AC DP | M | R |
| 573 | | | | | | | | | |
| 574 | **BLOCK G** | | | | | | | | |
| 575 | **Roof** | | | | | | | | |
| 576 | **Roof** | GI flat trays with rolled ribs | 1930 | surface rust | F/G | H | Paint | M | L |
| 577 | **Gutters** | GI box gutters. | 1930 | Gutters full of debri | F/G | M | Clean | M | R |
| 578 | **Wall capping** | GI capping to north walls. | 1930 | Weathered & peeling paint. | G | H | Paint | M | O |
| 579 | **Wall** | | | | | | | | |
| 580 | **South Wall** | Painted render above painted brick base. | 1930 | | F/G | H | paint | M | R |
| 581 | **Windows** | Painted steel hoppers. | 1930 | Mid panels have wire netting | F/G | H | Paint | M | O |
| 582 | **Door 35.1** | Framed & boarded. | 1930 | Weathered paint and timber | F/G | H | Paint | M | O |
| 583 | **Downpipes** | 1 GI & 1 AC. | 30 + | GI good, AC poor | P/G | M | Replace AC DP | A | R |

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 2 | **Element** | **Description** | **Age** | **Condition** | **Rating** | **Integrity** | **Work Required** | **Category** | **Urgency** |
| 3 | | | **Aproxx.** | | **P,F,G** | **L,M,H** | | **D, M, R,A** | **O, R, L** |
| 584 | **BLOCK H** | | | | | | | | |
| 585 | **Roof** | | | | | | | | |
| 586 | **Roof** | Terracotta tiles. | 1930 | | G | H | None | | |
| 587 | **Gutters** | AC on east. GI on west side. | 1930 | Weathered & peeling paint on east side. Good condition on west side. | P | M | Replace AC gutters | A | L-AC, R |
| 588 | **Fascia** | painted timber. | 1930 | weathered & peeling paint | G | H | Paint | M | R |
| 589 | **Soffit** | Painted timber slats. | 1930 | minor loos slats | D | H | Fix loose slats & paint | M | R |
| 590 | **Barge detail** | Brick and pointed roof tile. | 1930 | | G | H | None | | |
| 591 | **Roof lights** | Fixed wire cast glass. | | | | | | | |
| 592 | **Oil store roof** | Corrugated iron? | ? | ? | ? | L | None | | |
| 593 | **East walls** | Mainly above Blocks F & G. | | | | | | | |
| 594 | **Walls** | Painted render above painted brick base. | 1930 | | G | H | paint | D | R |
| 595 | **Downpipe** | AC | | weathered & peeling paint | F | L | replace AC downpipe | M | R |
| 596 | **Windows west wall** | Painted steel hoppers. | 1930 | | G | H | None | | |
| 597 | **West wall** | | | | | | | | |
| 598 | **Walls** | Painted render above painted brick base | 1930 | Fine cracking in render. Wall cracking near window & door. Some peeling paint. | F/G | H | Paint | M | R |
| 599 | **Doors** | Refer rooms 28 & 32 | | | | | | | |
| 600 | **Subfloor door** | Solid core | 1930 | Weathered | F | M | Paint | M | R |
| 601 | **North wall** | | | | | | | | |
| 602 | **Walls** | Painted render above painted brick base. Face brick panels between windows | 1930 | Fine cracking | G | H | Paint | | |
| 603 | **Barge detail** | Brick and pointed roof tile | 1930 | | G | H | | | |
| 604 | **Windows** | painted steel hoppers | 1930 | | F | H | Paint | M | R |
| 605 | **South Wall** | | | | | | | | |
| 606 | **Walls** | Painted render above painted brick base. Face brick panels between windows. Note chevron vents in gable. | 1930 | Fine cracking | F | H | paint | M | R |
| 607 | **Barge detail** | Brick and pointed roof tile. | 1930 | | G | H | None | M | D |
| 608 | | | | | | | | | |
| 609 | **Windows** | painted steel hoppers | 1930 | Note air con units installed in 1 window. 2 panes of glass broken | F | H | Replace broken glass. Paint | R | R |
| 610 | **Door** | Steel roller shutter & small access door | 1930 | | F | M | None | | |
| 611 | **Oil store walls** | painted render | ? | | F | M | None | | |

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 2 | **Element** | **Description** | **Age** | **Condition** | **Rating** | **Integrity** | **Work Required** | **Category** | **Urgency** |
| 3 | | | **Aproxx.** | | **P,F,G** | **L,M,H** | | **D, M, R,A** | **O, R, L** |
| 612 | **BLOCK I** | | | | | | | | |
| 613 | **Roof** | | | | | | | | |
| 614 | **Roof** | Terracotta tiles. | 1950 | | G | H | None | | |
| 615 | **Gutters** | AC on east. GI on west side. | 1950 | Weathered & peeling paint on east side. Good condition on west side. | P | M | Replace | A | L, R |
| 616 | **Fascia** | painted timber. | 1950 | weathered & peeling paint | G | H | Paint | M | R |
| 617 | **Soffit** | Painted timber slats. | 1950 | minor loos slats | D | H | Fix loose slats & paint | M | R |
| 618 | **Barge detail** | Brick and pointed roof tile. | 1950 | | G | H | None | | |
| 619 | **Roof lights** | Fixed wire cast glass. | | | | | | | |
| 620 | **East walls** | | | | | | | | |
| 621 | **Walls** | Painted render above painted brick base. | 1950 | | G | H | paint | M | R |
| 622 | **Downpipe** | GI quad | | weathered & peeling paint | F | L | Paint | M | R |
| 623 | **Windows** | Painted steel hoppers. | 1930 | | F/G | H | Paint | M | R |
| 624 | **West wall** | | | | | | | | |
| 625 | **Walls** | Painted render above painted brick base | 1930 | Fine cracking in render. Wall cracking near window & door. Some peeling paint. | F/G | H | paint | D | R |
| 626 | **Doors** | Refer rooms 33 | | | | | Paint | M | R |
| 627 | | | | | | | | | |
| 628 | **North wall** | | | | | | | | |
| 629 | **Walls** | Painted render above painted brick base. Face brick panels between windows | 1930 | Fine cracking | G | H | paint | M | R |
| 630 | **Barge detail** | Simplified version of original brick and pointed roof tile found on Block D, H, L | 1950 | | G | H | None | | |
| 631 | **Windows** | Painted steel hoppers. | 1950 | Steel frame hoppers. | F | H | Paint | M | R |
| 632 | **Subfloor door** | Flush solid core in timber frame & architrave | 1930 | Decayed architrave. Weathered paint. | F | M | Repair architrave.Paint | R | R |
| 633 | **Doors 33.1** | Refer Room 33. | | Weathered paint | F | H | Paint | M | R |

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 2 | **Element** | **Description** | **Age** | **Condition** | **Rating** | **Integrity** | **Work Required** | **Category** | **Urgency** |
| 3 | | | **Aproxx.** | | **P,F,G** | **L,M,H** | | **D, M, R,A** | **O, R, L** |
| 634 | **BLOCK J (Room 36)** | | | | | | | | |
| 635 | **Roof** | | | | | | | | |
| 636 | **Roof** | Painted GI flat trays with rolled ribs. | 1930 | Paint mostly missing. Surface rust | F/G | H | None | | |
| 637 | **Gutters** | AC each side | 1930 | Poor | P | L | Replace | A | R |
| 638 | **Fascia** | Painted timber | 1930 | | F/G | M | Paint | | |
| 639 | **Soffits** | Painted timber slats | 1930 | | F/G | H | Paint | R | R |
| 640 | **Walls** | | | | | | | | |
| 641 | **Walls generally** | Painted render above painted brick base | 1930 | | F/G | H | paint | D | R |
| 642 | **Windows** | Steel framed with fixed glass, hopper & fixed louvres. | 1930 | | F | H | Paint | M | R |
| 643 | | | | | | | | | |
| 644 | **BLOCK K** | | | | | | | | |
| 645 | **Roof** | | 1930 | | G | H | None | | |
| 646 | **Roof** | Corrugated AC | ? | | F | L | None | | |
| 647 | **Gutters** | AC on south side | 1930 | poor paint | P | M | Replace | A | R |
| 648 | **Fascia** | painted GI folded overpainted timber | 1930 | Peeling paint | G | H | paint | M | O |
| 649 | **Soffit** | Painted timber slats | 1930 | Loose slats & trim on south | D | H | Refix slats & paint | M | R |
| 650 | **East & west walls** | Painted render above painted brick base. | 1930 | Fine cracking on each wall. | F/G | H | Paint | M | R |
| 651 | **Downpipe** | AC on south wall. | 1930 | | F | L | replace AC downpipe. | A | R |
| 652 | **Windows** | Painted timber hoppers. | 1930 | Peeling paint. | F/G | H | Paint timber. | M | O |
| 653 | | | | | | | | | |
| 654 | **BLOCK L** | | | | | | | | |
| 655 | **Roof** | Terracotta tiles incl annexe | 1930 | | G | H | None | | |
| 656 | **Gutters** | AC | 1930 | Weathered & peeling paint. | P | M | Replace if painting not achievable | M | L |
| 657 | **Fascia** | Painted timber | 1930 | | G | H | paint | M | R |
| 658 | **Soffit** | Painted timber slats | 1930 | | F | H | None | | |
| 659 | **Barge detail** | Brick and pointed roof tile | 1930 | | G | H | None | | |
| 660 | **East, west walls** | Painted render above painted brick base | 1930 | Fine cracking on each wall. Peeling paint on west wall. | F/G | H | Paint | D | R |
| 661 | **Downpipe** | AC | 1930 | Weathered & peeling paint. | F | L | replace AC downpipe | M | R |
| 662 | **Windows east wall** | painted timber hoppers | 1930 | | G | H | None | | |
| 663 | **Doors west wall** | Temporary plywood infill. Doors are in adjacent w'shop being repaired | | | | | Complete repairs & reinstall doors & hardware. | | |
| 664 | **North, south walls generally** | Painted render above painted brick base. | 1930 | | G | H | None | | |
| 665 | **Walls to annexe** | painted brick, white above red base. | 30? | | G | H | None | | |
| 666 | | | | | | | | | |
| 667 | **BLOCK M** | | | | | | | | |
| 668 | **Walls around rooms 20, 21, 37** | Painted render above painted brick base | ? | Holes in wall where equipment removed | G | H | Paint | D | R |
| 669 | **Barge cappings** | painted gal iron folded over walls | | peeling paint | F | L | paint | M | O |
| 670 | **Gutters** | half round AC | 1950 | Partly repaired with gal iron | P | | Replace with colourbond quad gutters | A | L, R |
| 671 | **Fascias** | painted timber | | 30% decayed. Peeling paint | P | L | replace decayed timber. Paint | | |

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 2 | **Element** | **Description** | **Age** | **Condition** | **Rating** | **Integrity** | **Work Required** | **Category** | **Urgency** |
| 3 | | | **Aproxx.** | | **P,F,G** | **L,M,H** | | **D, M, R,A** | **O, R, L** |
| 672 | **Downpipes** | 3 AC & 1 gal iron downpipes | | | P/F | L | Replace AC DPs with gal | A | R |
| 673 | **Wall louvre grilles** | steel & aluminium louvre grilles | ? | | F | L | None | | |
| 674 | **Doors** | Refer room 20 above | | | | | | | |
| 675 | **Windows room 20** | Woven wire mesh over louvres | ? | | F | M | Refer room 20 above | | |
| 676 | **Windows to WC** | Refer room 37 above | | | | | | | |

## Belconnen Naval Transmitting Station, Guard House—Condition Report

| | | Aproxx. | | P,F,G | L,M,H | | D, M, R,A | O, R, L |
|---|---|---|---|---|---|---|---|---|
| **EXTERIOR** | | | | | | | | |
| **Roof** | Terracotta tiles | 1939 | Appers to be in good condition | G | H | Check ridge and barge pc | M | O |
| **Gutters** | Painted quad gutter | c1970 | Appers new gutter | G | M | Clean | M | R |
| **Facia** | Painted timber | 1939 | Minor defects | F | H | Clean | M | R |
| **Soffit** | Painted timber slats | 1939 | Fairly sound | G | H | Clean | M | R |
| **Barge detail** | Brick and pointed roof tile | 1939 | Good | G | H | Clean | M | R |
| **Verandah roof** | New' galvanised cliplock deck | c1970 | Appears to be replacement roof | G | M | Check flashing | M | R |
| **Verandah posts** | Painted timber | c1939 | Good condition generally | G | H | Clean | M | R |
| **Verandah soffit** | Asbestos cement sheet & battens | c1939 | Good condition generally | G | M | Clean | M | R |
| **Walls** | Painted cement redner above ' terracotta red' pa | 1939 | Recent paint, generally in good condition. Very minor cracks on so | G | H | Clean | M | R |
| **Downpipe** | 100x50 painted galv material | c1970 | appear to be replacement DPs in reasonable condition | F | L | Clean | M | R |
| **Windows (all except WC** | Painted timber double hung | 1939 | Weathered, loose and missing trims. Infill with ply on some window | F | H | Retain as much original fa | R | O |
| **Exterior doors** | Painted framed and glazed with fluted glass and | 1939 | Smashed glass on both external doors. Ply infll from exterior | F | H | Replace missing glass | R | O |
| **Screen Doors** | Timber framed 1 Door has ply panel afixed inside | 1939 | Fairly sound | F | M | Clean, remove ply when s | M | R |
| **Verandah floor** | Vitrified tiles on concrete. Brick edge and set | 1939 | Fairly sound | F | H | Clean | M | O |
| | | | | | | | | |
| **INTERIOR** | | | | | | | | |
| **Floor in rooms 1&4** | Exposed timber boards | 1939 | Good condition, gaps to sub-floor at man hole in room 4 | F/G | H | Seal gaps, particularly arc | M | R |
| **Floor in room 2&3** | Sheet vinyl on concrete | 1939 | Substrait good, Vinyl fair. | G/F | H | Clean vinyl. | M | R |
| **Walls** | Painted smooth set plaster. Painted bullnose skir | 1939 | Some minor cracks on western wall in room 1, recent painting | G | H | Clean, patch and paint | M | R |
| **Ceiling** | Painted fibrous plaster with strapped joints. Cove | 1939 | Good condition, recent painting | G | H | Clean | M | R |
| **Windows** | Painted double hung | 1930 | Worn paint, 1 roller screen extant all others removed leaving dama | P | H | Repair and paint | R | O |
| **Door 2.1** | Framed and panelled door | 1939 | Good condition | G | H | | | |
| **Door 4.2** | Framed and panelled door | 1939 | Good condition | G | H | | | |

| ELEMENT | DESCRIPTION | AGE | CONDITION | RATING | INTEGRITY | WORK REQ'D | CATEGORY | URGENCY |
|---|---|---|---|---|---|---|---|---|
| Room/Block | | *Approx* | | P/F/G | L/M/H | | M, R, A, D | O, R, L |
| **BLOCK A** | | | | | | | | |
| **Roof Cladding** | *Colourbond Brownbuilt 406 deck* | *?* | *Faded but sound* | *F/G* | *M* | *check fixings and secure as necessary* | *M* | *R* |
| **Flashings at "chimney"** | *Sheet metal* | | | *F* | *M* | *check fixings and secure as necessary* | *M* | *R* |
| **Barges & Fascias** | *Painted timber* | *?* | *Weathered with 40% Paint Peeling* | *P* | *M* | *secure loose boards and Paint* | *M* | *R* |
| | *Colorbond flashing on barge* | *?* | *Faded but sound* | *F/G* | *M* | *check fixings and secure as necessary* | *M* | *R* |
| **Gutters** | *Squareline gutter* | *?* | *Detached from west side* | *P* | *L* | *Install new to match* | *R* | *O* |
| | | | *Fair on east side* | *F* | *L* | *None* | | |
| **Downpipes** | *100 x 50mm* | *1960* | *40% Paint Peeling* | *F* | *L* | *check fixings, secure as necessary and paint* | *M* | *O* |
| **Barge capping** | *Colourbond folded over original timber fascia* | *?* | | *F* | *L* | *None* | | |
| **Soffits** | *Flat AC cover strips at joints* | | *Some later infill panels* | *F* | *L* | *Paint* | *M* | *O* |
| **Walls** | *Painted cement render UNO* | *1960* | *Generally fair.* | *F* | *M* | *Paint* | *M* | *R* |
| | | | *Small areas of render missing on east side near door 20.3.* | *P/F* | *M* | *Repair render* | *R* | *O* |
| | *Painted cement render on brick subwall* | *1960* | *Small amounts of render along groundline missing.* | *P/F* | *M* | *Repair render* | *R* | *O* |
| | *Sandstone feature wall at west side* | | *Good. Note exposed electrical conduit* | *F* | *H* | *Remove conduit and make good to wall* | *R* | *R* |
| | | | *Render below floor level in minor areas is in poor condition* | *F* | *M* | *Make good poor workmanship* | *R* | *O* |
| **Windows to rooms 20 & 21** | *Generally aluminium sliding units, 75% sashes and glass missing.* | *1960* | *Windows have been covered with plywood, screw fixed to aluminium frame. Assume poor to fair condition.* | *P/F* | *M* | *Remove plywood and inspect frames. Windows may need to be replaced if too damaged & new matching sashes cannot be obtained* | *A* | *O* |

Rating: P=poor, F=fair, G=good
Integrity: L= low, M=moderate, H=high

Category of work required:
M=maintain, R=repair, A=adaptation, D=desirable

Urgency of work required:
O=overdue, R=routine, L=long term maintenance

| ELEMENT | DESCRIPTION | AGE | CONDITION | RATING | INTEGRITY | WORK REQ'D | CATEGORY | URGENCY |
|---|---|---|---|---|---|---|---|---|
| Room/Block | | *Approx* | | P/F/G | L/M/H | | M, R, A, D | O, R, L |
| **Window Walls to west elevation** | *100mm alumin shopfront suites with fixed glass panels, glazed doors, hopper sashes and glazed highlights* | *1960* | *Window wall covered with plywood secured through frames. 75% of glass and hardware missing. Some damage to frames* | *Assume P/F* | *H* | *Remove plywood. Check frames and make good as necessary. Replace glass & hardware.* | *A* | *O* |
| **Doors to rooms 17, 18, 19, 20 & 21** | *Doors covered by plywood. Cannot be assessed* | *N/A* | *Condition of outer face not assessible.* | *assume F* | *M* | *Remove plywood. Check frames & door and make good. Replace glass & hardware.* | *A* | *O* |
| **Misc** | *PVC conduits, painted and fixed by brackets along walls, barges and fascias, with connection points located all around. Some lead to external GPOs* | *N/A* | *Not tested. 20% peeling paint and some loose fixing points* | *N/A* | *L* | *Discover use and remove if unecessary* | *D* | *O* |
| | *Awning on Western side, proprietry aluminum sheet on tophat sections, supported by aluminium posts.* | *N/A* | *Fair* | *F* | *L* | *Remove awning* | *D* | *R* |
| | *Aluminium housed wall lights with white opaque glass on each blade wall to western side of Building A* | *N/A* | *Not tested.* | *N/A* | *M* | *Make operational* | *D* | *R* |
| | *Painted slab edge below window wall sill* | *1960* | *Visible cracks in concrete slab edge, paintwork is 80% weathered* | *F* | *M* | *Paint* | *M* | *O* |
| | *Terrace slab on rendered brick subwall* | *1960* | *Good, minor cracking.* | *F/G* | *H* | *None* | | |

| ELEMENT | DESCRIPTION | AGE | CONDITION | RATING | INTEGRITY | WORK REQ'D | CATEGORY | URGENCY |
|---|---|---|---|---|---|---|---|---|
| Room/Block | | *Approx* | | P/F/G | L/M/H | | M, R, A, D | O, R, L |
| **LINK 1** | | | | | | | | |
| **Roof Cladding** | *Galvanised Brownbuilt 305 decking* | *1960* | *Surface rust* | *P/F* | *M* | *check fixings and secure as necessary. Blast & paint* | *M* | *R* |
| **Flashings & Cappings** | *Painted Galvanised Iron* | *1960* | *Weathered* | *F* | *M* | *Paint* | *M* | *O* |
| **Barges & Fascias** | *Painted timber* | *1960* | *Weathered* | *F* | *M* | *Paint* | *M* | *O* |
| **Gutters** | *Quad Gutter* | *1960* | *Weathered* | *F* | *M* | *Paint* | *M* | *O* |
| **Downpipes** | *100 x 50mm* | *1960* | *Weathered* | *F* | *L* | *check fixings, secure as necessary and paint* | *M* | *O* |
| **Soffits** | *Flat AC cover strips at joints* | *1960* | *Fair* | *F* | *L* | *Paint* | *R* | *O* |
| **Walls** | *Painted cement render UNO* | *1960* | *Generally fair.* | *F* | *M* | *Paint* | *M* | *O* |
| | | | *Render damage along door* | *P/F* | *M* | *Repair render* | *R* | *O* |
| **Window Wall to west elevation** | *100mm alumin shopfront suites with fixed glass panels, glazed doors, hopper sashes and glazed highlights* | *1960* | *Window wall covered with plywood secured through frames. 75% of glass and hardware missing. Some damage to frames* | *P/F* | *H* | *Remove plywood. Check frames and make good as necessary. Replace glass & hardware.* | *R* | *O* |
| **Doors** | *1.1 Flush panel, solid core door* | *1960* | *Fair* | *F* | *M* | *Paint* | *M* | *O* |
| **Misc** | *PVC conduits, painted and fixed by brackets along walls, barges and fascias, with connection points located all around.* | *N/A* | *Not tested. 20% peeling paint and some loose fixing points* | *N/A* | *L* | *Discover use and remove if unecessary* | *D* | *R* |
| | *Painted slab edge below window wall sill* | *1960* | *Visible cracks in concrete slab edge, paintwork is 80% weathered* | *F* | *M* | *Paint* | *M* | *R* |
| | *Terrace slab on rendered brick subwall* | *1960* | *Good, minor cracking.* | *F/G* | *M* | *None* | | |
| | *Concrete ramp to front door* | *N/A* | *Good, minor cracking.* | *F/G* | *M* | *None* | | |

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Category of work required:
M=maintain, R=repair, A=adaptation, D=desirable

Urgency of work required:
O=overdue, R=routine, L=long term maintenance

| ELEMENT | DESCRIPTION | AGE | CONDITION | RATING | INTEGRITY | WORK REQ'D | CATEGORY | URGENCY |
|---|---|---|---|---|---|---|---|---|
| Room/Block | | *Approx* | | P/F/G | L/M/H | | M, R, A, D | O, R, L |
| **BLOCK B** | | | | | | | | |
| **Roof Cladding** | *Galvanised Brownbuilt 305 decking* | *1960* | *Surface rust but not severe.* | *P/F* | *M* | *check fixings and secure as necessary. Blast & paint* | *M* | *R* |
| **Barges & Fascias** | *Painted timber* | *N/A* | *Weathered with 40% Paint Peeling* | *P* | *M* | *Secure loose boards. Replace 20% of barge* | *M* | *O* |
| | *Folded & painted galvanised iron* | *N/A* | *Some damaged & loose* | *F/G* | *M* | *check fixings and secure as necessary* | *M* | *R* |
| **Gutters** | *Colorbond quad gutters* | *1960* | *Detached from NE side* | *P* | *M* | *Install new to match* | *R* | *O* |
| | | | *Fair on east side* | *F* | *M* | *None* | | |
| **Downpipes** | *100 x 50mm* | *N/A* | *40% Paint Peeling* | *F* | *M* | *check fixings, secure as necessary and paint* | *R* | *O* |
| **Barge capping** | *Colourbond folded over original timber fascia* | | | *F* | *M* | *None* | | |
| **Soffits** | *Flat AC cover strips at joints* | | *Mismatched infill panels on south side* | *F* | *M* | *Paint* | *M* | *O* |
| **Walls** | *Painted cement render UNO* | *1960* | *Generally fair but uneven at ground level* | *F* | *M* | *Minor repair at ground level* | *R* | *O* |
| **Windows** | *Generally aluminium sliding units, 75% sashes and glass missing.* | *1960* | *Windows have been covered with plywood, screw fixed to aluminium frame. Assume poor to fair condition.* | *P/F* | *M* | *Remove plywood and inspect frames. Windows may need to be replaced if too damaged & new matching sashes cannot be obtained* | *A* | *O* |
| **Doors 26.1, 28.1** | *Doors covered by plywood. Cannot be assessed* | *N/A* | *Condition of outer face not assessible.* | *assume F* | *M* | *Remove plywood. Check frames & door and make good. Replace glass & hardware if necessary.* | *U* | *O* |
| **Gable infill** | *Crimped aluminium infill panel above & below window at west end.* | *1960* | *Loose* | *F* | *H* | *Check fixings & repair as necessary* | *M* | *R* |

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Category of work required:
M=maintain, R=repair, A=adaptation, D=desirable

Urgency of work required:
O=overdue, R=routine, L=long term maintenance

| ELEMENT | DESCRIPTION | AGE | CONDITION | RATING | INTEGRITY | WORK REQ'D | CATEGORY | URGENCY |
|---|---|---|---|---|---|---|---|---|
| Room/Block | | *Approx* | | P/F/G | L/M/H | | M, R, A, D | O, R, L |
| **LINK 2** | | | | | | | | |
| **Roof Cladding** | *Galvanised Brownbuilt 305 decking* | *1960* | *Surface rust* | *P/F* | *M* | *check fixings and secure as necessary. Blast & paint* | *M* | *R, L* |
| **Flashings & Cappings** | *Painted Galvanised Iron* | *1960* | *Weathered* | *F* | *M* | *Paint* | *M* | *O* |
| **Barges & Fascias** | *Painted timber* | *1960* | *Weathered* | *F* | *M* | *Paint* | *M* | *O* |
| **Gutters** | *Quad Gutter* | *1960* | *Weathered* | *F* | *M* | *Paint* | *M* | *O* |
| **Downpipes** | *100 x 50mm* | *1960* | *Weathered* | *F* | *L* | *check fixings, secure as necessary and paint* | *M* | *O* |
| **Soffits** | *Flat AC cover strips at joints* | *1960* | *Fair* | *F* | *L* | *Paint* | *M* | *O* |
| **Walls** | *Painted cement render UNO* | *1960* | *Generally fair. Minor damage at widow wall sill and at ground* | *F* | *M* | *Repair render & paint* | *M* | *O* |
| **Window Wall to west elevation** | *100mm alumin shopfront suites with fixed glass panels, glazed doors, hopper sashes and glazed highlights* | *1960* | *Window wall covered with plywood secured through frames. 75% of glass and hardware missing. Some damage to frames* | *P/F* | *H* | *Remove plywood. Check frames and make good as necessary. Replace glass & hardware.* | *R* | *O* |
| **Terrace slab** | *Terrace slab on rendered brick subwall* | *1960* | *Good, minor cracking.* | *F/G* | *M* | *None* | | |

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Urgency of work required:
O=overdue, R=routine, L=long term maintenance

| ELEMENT | DESCRIPTION | AGE | CONDITION | RATING | INTEGRITY | WORK REQ'D | CATEGORY | URGENCY |
|---|---|---|---|---|---|---|---|---|
| Room/Block | | *Approx* | | P/F/G | L/M/H | | M, R, A, D | O, R, L |
| **BLOCK C** | | | | | | | | |
| **Roof Cladding** | *Galvanised iron 155mm cliplock decking* | *1960* | *Visible surface rust* | *P/F* | *M* | *check fixings and secure as necessary. Blast & paint* | *R* | *R, L* |
| **Fascias & barge boards** | *Painted timber* | *N/A* | *Weathered with 40% Paint Peeling* | *P* | *M* | *Secure loose boards. Replace 20% barge board. Paint* | *M* | *R* |
| | *Folded & painted galvanised iron* | *N/A* | *Some Damaged & Loose* | *F/G* | *M* | *check fixings and secure as necessary* | *M* | *R* |
| **Gutters** | *Colorbond quad gutters* | *1960* | *Detached from NE side* | *P* | *M* | *Install new to match* | *R* | *O* |
| | | | *Weathered elsewhere* | *F* | *M* | *Paint* | *M* | *O* |
| **Downpipes** | *100 x 50mm* | *N/A* | *Paint Peeling, some detached* | *F* | *M* | *check fixings, secure as necessary and paint* | *R* | *O* |
| **Barge capping** | *Colourbond folded over original timber fascia* | | | *F* | *M* | *None* | | |
| **Soffits** | *Flat AC cover strips at joints* | | *Some missing cover strips* | *F* | *M* | *New cover strips over missing and Paint* | *P* | *U* |
| **Walls** | *Painted cement render UNO* | *1960* | *Generally fair but uneven at ground level* | *F* | *M* | *Minor repair at ground level* | *R/M* | *O* |
| **Windows** | *Generally aluminium sliding units, 75% sashes and glass missing.* | *1960* | *Windows have been covered with plywood, screw fixed to aluminium frame. Assume poor to fair condition.* | *P/F* | *M* | *Remove plywood and inspect frames. Windows may need to be replaced if too damaged & new matching sashes cannot be* | *A* | *O* |
| **Doors 5.2, 5.3, 6.2** | *Doors covered by plywood. Cannot be assessed* | *N/A* | *Condition of outer face not assessible.* | *assume F* | *M* | *Remove plywood. Check frames & door and make good. Replace glass &* | *U* | *O* |
| **Porch** | *Alsanite roof, painted timber roof frame, fascias and timber* | *N/A* | *Poor condition* | *P* | *L* | *Remove* | *D* | *R* |
| | *Concrete slab, steps & path* | *N/A* | *Good* | *F/G* | *M* | *None* | | |
| **Misc** | *PVC conduits, painted and fixed by brackets along walls,* | *N/A* | *Not tested and some loose fixing points* | *N/A* | *L* | *Discover use and remove if unecessary* | *D* | *O* |

Rating: P=poor, F=fair, G=good
Integrity: L= low, M=moderate, H=high

Category of work required:
M=maintain, R=repair, A=adaptation, D=desirable

Urgency of work required:
O=overdue, R=routine, L=long term maintenance

| ELEMENT | DESCRIPTION | AGE | CONDITION | RATING | INTEGRITY | WORK REQ'D | CATEGORY | URGENCY |
|---|---|---|---|---|---|---|---|---|
| Room/Block | | *Approx* | | P/F/G | L/M/H | | M, R, A, D | O, R, L |
| **Room 1 - Link & phone booth** | | | | | | | | |
| **Ceiling** | *Plasterboard with 75mm coved cornice* | *1960* | *Minor cracking & spot damage* | *F* | *M* | *Repair, patch & paint* | *M* | *O* |
| **Walls** | *Painted cement rendered walls* | *1960* | *Some visible cracking. Peeling paint* | *P* | *L* | *Repair cracks and paint* | *M* | *R* |
| **Floor** | *Vinyl tiles on timber floor* | *1960* | *5% patchy* | *P* | *M* | *Repair patches and paint* | *M* | *R* |
| **Door 1.2** | *Phone Booth: Glazed flush panel door.* | *1960* | *Glass missing* | *P* | *L* | *Paint and Replace Glass* | *R/M* | *O* |
| **Door 2.1** | *2 x Flush panel hollow core doors with wall mounted* | *1960* | *Dirty, magnetic stops* | *F/G* | *M* | *Paint* | *M* | *R* |
| **Window Wall** | *Refer to Link 1 pg3.* | | | | | | | |
| **Door 1.4** | *Veneered solid core with glass panel & veneer solid core panel sidelight.* | *1960* | *Wear and tear on veneer finish* | *P/F* | *M* | *Sand and apply clear finish* | *M* | *R* |
| | | | | | | | | |
| **Room 15** | | | | | | | | |
| **Ceiling** | *600mm square perforated plaster tiles with plasterboard surround & 75mm coved cornices* | *1960* | *Minor marks, peeling paint* | *F/G* | *M* | *Paint* | *M* | *R* |
| **Walls** | *Timber panelling* | *1960 ?* | *Minor marks* | *F/G* | *L* | *Sand and refinish* | *M* | *R* |
| | *faux brick panelling* | *?* | *Some 'bricks' missing on wall.* | *P* | *L* | *Remove and Paint* | *A* | *O* |
| **Floor** | *Carpet on timber floor* | *?* | *Dirty, general wear and tear* | *P* | *L* | *Replace carpet* | *R* | *O* |
| **Window Wall** | **See Block A pg1.* | | | | | | | |
| **Room 16 (A) - BAR** | | | | | | | | |
| **Ceiling** | *Plasterboard ceiling with 75mm coved cornices.* | *1960* | *Minor cracking. Peeling paint* | *F/P* | *L* | *Repair cracks and paint* | *M* | *O* |

Rating: P=poor, F=fair, G=good
Integrity: L= low, M=moderate, H=high

Category of work required:
M=maintain, R=repair, A=adaptation, D=desirable

Urgency of work required:
O=overdue, R=routine, L=long term maintenance

| ELEMENT | DESCRIPTION | AGE | CONDITION | RATING | INTEGRITY | WORK REQ'D | CATEGORY | URGENCY |
|---|---|---|---|---|---|---|---|---|
| Room/Block | | *Approx* | | P/F/G | L/M/H | | M, R, A, D | O, R, L |
| **Walls** | *Painted plasterboard over cement rendered walls* | *1960* | *Render missing along bar window wall.* | *P* | *M* | *Replace missing render and paint walls.* | *M* | *O* |
| **Floor** | *Carpet over concrete* | *1960* | *Dirty, weathered with Wear and tear and tear* | *P/F* | *L* | *Replace carpet* | *R* | *O* |
| **Door 16.1** | *Roller shutter above bar* | *?* | *Not tested* | *F/P* | *L* | *Consider removing* | *D* | *O* |
| | *Counter & door* | *?* | *poor condition* | *P* | *L* | *Consider removing* | *D* | *O* |
| **Window Wall** | **See Link 1 pg3.* | | | | | | | |
| **Misc** | *Stainless steel sink* | *?* | *poor* | *P* | *L* | Consider removing | *D* | *O* |
| **Room 17 (A) - STORE** | | | | | | | | |
| **Ceiling** | *AC sheeting with timber cover strips* | *1960* | *Fair* | *F* | *M* | *Paint* | *M* | *O* |
| **Walls** | *Painted cement render brick wall* | *1960* | *Some remnant joinery fixings still attached. Staining on wall* | *F* | *M* | *Remove fixings, paint wall* | *R* | *O* |
| **Floor** | *concrete* | *1960* | | *F* | *M* | *None* | | |
| **Door 17.1** | *Missing* | | | | | | | |
| **Door 17.2** | *External Flush panel solid core door.* | *1960* | *Weathered* | *F* | *M* | *Paint* | *P* | *O* |
| **Room 18 & 19 - not accessible** | | | | | | | | |
| N/A | N/A | N/A | N/A | N/A | N/A | | | |
| **Room 20** | | | | | | | | |
| **Ceiling** | *Plasterboard ceiling with 75mm coved cornices.* | *1960* | *Some cracking. Peeling paint* | *F/P* | *L* | *Repair cracks and paint* | *M* | *O* |
| **Walls** | *Painted cement rendered brick walls above tiles.* | *1960* | *Walls dirty, 10% tiles missing or damaged* | *F/P* | *L* | *Replace tiles & Paint* | *M* | *O* |

Rating: P=poor, F=fair, G=good
Integrity: L= low, M=moderate, H=high

Category of work required:
M=maintain, R=repair, A=adaptation, D=desirable

Urgency of work required:
O=overdue, R=routine, L=long term maintenance

| ELEMENT | DESCRIPTION | AGE | CONDITION | RATING | INTEGRITY | WORK REQ'D | CATEGORY | URGENCY |
|---|---|---|---|---|---|---|---|---|
| Room/Block | | Approx | | P/F/G | L/M/H | | M, R, A, D | O, R, L |
| **Floor** | *200 x 100 Quarry tiles on concrete floor, with plinth* | *1960* | *Dirty, weathered with Wear and tear and tear* | *F* | *L* | *Clean* | *R* | *O* |
| **Door 20.1** | *Roller shutter* | *?* | *Not tested* | *F/P* | *L* | *Consider removing* | *D* | *O* |
| **Door 20.2** | *Roller shutter* | *?* | *Not tested* | *F/P* | *L* | *Consider removing* | *D* | *O* |
| **Door 20.3** | *External Flush panel solid core door.* | *1960* | *Weathered* | *F* | *M* | *Paint* | *M* | *O* |
| **Misc** | *Various kitchen Equipment* | *Vary* | *Not tested,* | *P* | *L* | *Remove* | *A* | *R* |
| | | | | | | | | |
| **Room 21 - not accessible** | | | | | | | | |
| **Room 22 - Lounge** | | | | | | | | |
| **Ceiling** | *600 Perforated plaster tiles with plasterboard surround & 75mm coved cornices* | *1960* | *Minor cracking. Peeling paint. Hole in ceiling next to door 23.1* | *F/P* | *L* | *Repair cracks and paint* | *R/M* | *O* |
| **Walls** | *Painted cement rendered walls* | *1960* | *5% patchy/damaged, weathered* | *P* | *M* | *Repair patches and paint* | *R/M* | *O* |
| **Floor** | *40% Vinyl tile/ 60% Carpet on timber floor* | *1960* | *Dirty & Weathered. Wear and tear* | *F/P* | *L* | *Remove carpet, clean vinyl.* | *R* | *R* |
| **Window Wall** | **See Block A pg1.* | | | | | | | |
| **Door 20.2** | *timber veneered and glazed* | *1960* | | *F* | *M* | *Sand and refinish* | M | R |
| **Room 23 - Link & phone booth** | | | | | | | | |
| **Ceiling** | *Plasterboard ceiling with 75mm coved cornices.* | *1960* | *Condensation damage, significant peeling paint* | *P* | *L* | *Repair and Paint* | *M* | *O* |
| **Walls** | *Painted cement rendered walls* | *1960* | *5% patchy/damaged, weathered* | *P* | *M* | *Repair patches and paint* | *M* | *O* |
| **Floor** | *Vinyl tiles on timber floor* | *1960* | *Dirty* | *F* | *L* | *Clean floor* | *M* | *O* |

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Integrity: L= low, M=moderate, H=high

Category of work required:
M=maintain, R=repair, A=adaptation, D=desirable

Urgency of work required:
O=overdue, R=routine, L=long term maintenance

| ELEMENT | DESCRIPTION | AGE | CONDITION | RATING | INTEGRITY | WORK REQ'D | CATEGORY | URGENCY |
|---|---|---|---|---|---|---|---|---|
| Room/Block | | *Approx* | | P/F/G | L/M/H | | M, R, A, D | O, R, L |
| **Window Wall** | **See Link 2 pg6.* | | | | | | | |
| **Door 23.1** | *Timber veneer panel door* | *1960* | *Wear and tear* | *F* | *L* | *Sand & refinish door* | *P* | *O* |
| **Door 23.2** | *Flush panel hollow core to phone booth room 42* | *1960* | *Wear and tear* | *F* | *L* | *Paint* | *M* | *R* |

| ELEMENT | DESCRIPTION | AGE | CONDITION | RATING | INTEGRITY | WORK REQ'D | CATEGORY | URGENCY |
|---|---|---|---|---|---|---|---|---|
| Room/Block | | *Approx* | | P/F/G | L/M/H | | M, R, A, D | O, R, L |
| **Room 24 - Store** | | | | | | | | |
| **Ceiling** | *Plasterboard ceiling with 75mm coved cornices.* | *1960* | *Peeling paint* | *F/P* | *L* | *Repair and Paint* | *M* | *O* |
| **Walls** | *Painted cement rendered walls* | *1960* | *5% patchy/damaged* | *P* | *M* | *Repair patches and paint* | *R/M* | *O* |
| **Floor** | *Painted concrete floor* | *1960* | *Dirty* | *F* | *L* | *Clean floor & Repaint* | *M* | *O* |
| **Door 24.1** | *Flush panel hollow core door* | *1960* | *Wear & tear* | *F* | *L* | *Paint* | *P* | *R* |
| **Misc** | *Sink* | *1960* | *Wear & tear* | *F* | *L* | *remove* | *A* | *L* |
| **Room 25 - Store** | | | | | | | | |
| **Ceiling** | *Plasterboard ceiling with 75mm coved cornices.* | *1960* | *Peeling paint* | *F/P* | *L* | *Repair and Paint* | *M* | *O* |
| **Walls** | *Painted cement rendered walls* | *1960* | *5% patchy/damaged, weathered* | *P* | *M* | *Repair patches and paint* | *M* | *O* |
| **Floor** | *Vinyl tiles on concrete floor* | *1960* | *Dirty* | *F* | *L* | *Clean floor* | *M* | *O* |
| **Door 25.1** | *Flush panel hollow core door* | *1960* | *Wear & tear* | *F* | *L* | *Paint* | *M* | *O* |
| **Room 26** | | | | | | | | |
| **Ceiling** | *Painted plasterboard ceiling with 75mm coved plaster* | *1960 ?* | *Ceiling detached at NW end. Peeling paint.* | *P* | *L* | *Repair ceiling & timber structure.* | *R* | *O* |
| **Walls** | *Painted cement rendered brick walls* | *1960* | *50% of walls have surface damage*<br>*Water damage visible at NW end*<br>*Wall cracked at NW corner.*<br>*Damp damage visible bathroom side* | *P* | *M* | *Repair & paint* | *R* | *O* |
| **Floor** | *Carpet on timber floor* | *1960* | *Carpet stained and damaged* | *P* | *L* | *Replace carpet- Inspect floor* | *R* | *O* |

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M=maintain, R=repair, A=adaptation, D=desirable

Urgency of work required:
O=overdue, R=routine, L=long term maintenance

| ELEMENT | DESCRIPTION | AGE | CONDITION | RATING | INTEGRITY | WORK REQ'D | CATEGORY | URGENCY |
|---|---|---|---|---|---|---|---|---|
| Room/Block | | *Approx* | | P/F/G | L/M/H | | M, R, A, D | O, R, L |
| **Door 26.1** | *Flush panel solid core* | *1960* | *Wear and tear and tear, weathered* | *F* | *M* | *Paint* | *P* | *O* |
| **Room 4 & 41 - Electrical switch room** | | | | | | | | |
| **Ceiling** | *AC sheeting with cover strips* | *1960* | *Fair* | *F* | *M* | *Paint* | *P* | *O* |
| **Walls** | *Painted cement rendered walls* | *1960* | *Fair* | *F* | *M* | *Paint* | *P* | *O* |
| **Floor** | *Concrete* | *1960* | *Fair* | *F* | *M* | *none* | | |
| **Door ??** | *Flush panel* | *1960* | | *F* | *M* | *Paint* | *M* | *O* |
| **Misc** | *Switchboard* | *??* | *vandalised* | *P* | *M* | *repair switchboard & walls* | *A/M* | *O* |
| **Rooms 10 to 14 & 27 to 36 Bedrooms** | | | | | | | | |
| **Ceiling** | *Painted plasterboard ceiling with 75mm coved plaster cornices* | *1960 ?* | *50% ceilings in poor condition. Peeling paint, damaged plasterboard* | *P - F* | *M* | *Repair and paint* | *M* | *O* |
| **Walls** | *Painted cement rendered brick walls* | *1960* | *Minor staining and surface damage* | *P* | *M* | *Repair & paint* | *M* | *O* |
| **Floor** | *Carpet on timber* | *1960* | *Carpet worn & dirty. Timber floor assumed good* | *P/F* | *L* | *Remove carpet* | *A* | *O* |
| **Doors** | *Flush panel veneer* | *1960* | *50 % doors are missing* | *F* | *M* | *Replace missing doors. Re-finish remaining doors* | *R* | *O* |
| **Windows** | *Aluminium framed sliding windows* | *1960* | *Windows may need to be replaced if too damaged & new matching sashes cannot be obtained* | *P* | *M* | *Check frames, replace missing glass & components as needed.* | *A* | *O* |
| | *Wall mounted mirrors in rooms 27 to 36.* | *??* | *75% damaged* | *P* | *L* | *Remove & make good wallls* | *A* | *O* |
| **Rooms 7 & 37 - Storerooms** | | | | | | | | |
| **Ceiling** | *Painted AC sheeting with cover strips* | *1960* | *Good* | *G* | *M* | *Paint* | *M* | *O* |

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Urgency of work required:
O=overdue, R=routine, L=long term maintenance

| ELEMENT | DESCRIPTION | AGE | CONDITION | RATING | INTEGRITY | WORK REQ'D | CATEGORY | URGENCY |
|---|---|---|---|---|---|---|---|---|
| Room/Block | | *Approx* | | P/F/G | L/M/H | | M, R, A, D | O, R, L |
| **Walls** | *Painted cement rendered brick walls* | *??* | *Wear and tear and tear* | *G/F* | *M* | *Paint walls* | *M* | *O* |
| **Floor** | *150 Quarry tiles on concrete* | *1960* | *Dirty* | *G* | *M* | *Clean* | *M* | *O* |
| **Room 6, 38 - Laundries** | | | | | | | | |
| **Ceiling** | *Painted AC sheeting with cover strips* | *1960* | *Good* | *G* | *M* | *Paint* | *P* | *O* |
| **Walls** | *Painted cement rendered brick walls above tiles* | *??* | *Some damaged tiles* | *F* | *M* | *Repair and Paint* | *R* | *O* |
| **Floor** | *150 Quarry tiles on concrete* | *1960* | *Dirty* | *G* | *M* | *Clean* | *M* | *O* |
| **Windows** | *Aluminium sliding windows with obscure glass* | *1960* | *Some damage to frame from screwing temporary plywood* | *P* | *M* | *Repair/replace as required* | *R* | *O* |
| **Door 38.1** | *Flush panel solid core door* | *1960* | *Wear and tear and tear. Dirty* | *F/G* | *M* | *Paint* | *P* | *R* |
| **Door 38.2** | *As above* | *1960* | *As above* | *F/G* | *M* | *Paint* | *P* | *R* |
| **Door 38.3** | *Door missing* | | | | | *Replace* | *R* | *R* |
| **Room 8, 9, 39 & 40 - Bathrooms & toilets** | | | | | | | | |
| **Ceiling** | *Painted flush plasterboard ceiling* | *1960* | *minor damage and staining* | *F/G* | *M* | *Repair and Paint* | *M* | *O* |
| **Walls** | *Painted cement rendered brick walls above tiles* | *??* | *minor damage and staining. <5% tiles missing* | *F/G* | *M* | *Repair tiling. Repair and paint walls* | *R* | *O* |
| **Floor** | *Mosaic ceramic tiles on concrete* | *1960* | *minor damage and staining* | *G* | *M* | *Clean* | *M* | *O* |
| **Windows, room 3** | *Aluminium Louvre windows with composite wire mesh & glass* | *1960* | *50% louvre blades missing. Damage to frames from plywood panel fixings* | *P* | *M* | *Check frames, replace missing glass & components as needed.* | *R* | *O* |
| **Door 39.1, 39.2, 40.1** | *Flush panel solid core door* | *1960* | *Wear & tear* | *F* | *M* | *Paint* | *M* | *O* |
| **Windows, room 40** | *Aluminium sliding windows with obscure glass* | *1960* | *Damage to frames from plywood panel fixings* | *P* | *M* | *Check window operation & repair as necessary.* | *M* | *O* |
| **Partitions** | *Terrazzo with flush panel solid core doors* | *1960* | | *F/G* | *M* | *Clean* | *M* | *R* |

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| ELEMENT | DESCRIPTION | AGE | CONDITION | RATING | INTEGRITY | WORK REQ'D | CATEGORY | URGENCY |
|---|---|---|---|---|---|---|---|---|
| Room/Block | | Approx | | P/F/G | L/M/H | | M, R, A, D | O, R, L |
| **Plumbing equipment** | *Ceramic sinks, toilet pans and stainless steel urinal* | *1960* | *Damaged/broken pans and sinks* | *P* | *L* | *Seal fitting outlets* | *A* | *O* |
| **Room 2 - Corridor** | | | | | | | | |
| **Ceiling** | *Painted plasterboard ceiling with 75mm plaster coved* | *1960* | *Good, some staining* | *F/G* | *M* | *Paint* | *P* | *O* |
| **Walls** | *Painted cement rendered brick walls* | *1960* | *Wear and tear and tear* | *F/G* | *M* | *Paint walls* | *P* | *O* |
| **Floor** | *Carpet on timber floor* | *1960* | *Dirty* | *P/F* | *L* | *Replace* | *R* | *D* |
| **Door 2.2** | *Flush panel solid core door* | *1960* | *Wear and tear and tear* | *F/G* | *L* | *Paint* | *P* | *D* |
| **Door 2.3** | *Flush panel hollow core door with glazed panel* | *1960* | *Wear and tear and tear* | *F/G* | *L* | *Paint* | *M* | *R* |
| **Room 3 - Toilets** | | | | | | | | |
| **Ceiling** | *AC sheet with cover strips* | *1960* | *Fair* | *F* | *M* | *Paint* | *M* | *R* |
| **Walls** | *Painted cement rendered brick walls* | *1960* | *Wear and tear and tear* | *F/G* | *M* | *Paint walls* | *M* | *R* |
| **Floor** | *Sheet vinyl on timber floor* | *1960* | *Dirty* | *P/F* | *L* | *Clean* | *M* | *R* |
| **Partitions** | *Tilux partitions with hollowcore doors* | *1960* | *Fair* | *F* | *L* | *None* | | |
| **Plumbing fixtures** | *ceramic sink and pans* | *?* | *Not tested* | *F* | *M* | *none* | | |
| **Door 3.1** | *Flush panel solid core door* | *1960* | *Wear and tear and tear* | *F/G* | *L* | *Paint* | *M* | *R* |
| **Room 5 - Corridor** | | | | | | | | |
| **Ceiling** | *Painted plasterboard ceiling with 75mm coved plaster* | *1960* | *Evidence of movement cracks* | *F/P* | *M* | *Paint* | *R* | *O* |
| **Walls** | *Painted cement rendered walls* | *1960* | *Fair* | *F* | *M* | *Paint* | *R* | *O* |

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| ELEMENT | DESCRIPTION | AGE | CONDITION | RATING | INTEGRITY | WORK REQ'D | CATEGORY | URGENCY |
|---|---|---|---|---|---|---|---|---|
| Room/Block | | *Approx* | | P/F/G | L/M/H | | M, R, A, D | O, R, L |
| **Floor** | *Carpet on timber* | *1960* | *Carpet worn & dirty. Floor assumed good* | *P/F* | *L* | *Remove carpet* | *A* | *O* |

# Appendix I

Unanticipated Finds Protocol

# Aboriginal Archaeology

## What is Aboriginal Heritage?

Aboriginal heritage is the culture, landscape and places that are special to Aboriginal people.

It includes artefacts (eg stone tools), camp sites, rock art and other indicators of how and where Aboriginal people resided in the landscape over thousands of years. It includes archaeological sites and cultural places for ceremonies and stories.

Aboriginal heritage sites occur all over the country and are often uncovered and disturbed during development activities.

Wherever conditions could support the lives of Aboriginal people in the past, archaeological and cultural sites may occur.

## What is an Aboriginal Artefact?

Aboriginal artefacts are any material evidence of the Aboriginal occupation of Australia.

Aboriginal artefacts are defined as '…the physical evidence of the use of an area by Aboriginal people. They can also be referred to as 'Aboriginal sites', 'objects', 'relics' or 'cultural material'.'

All Aboriginal objects are protected under State and Commonwealth legislation.

## What do Aboriginal Artefacts Look Like?

Aboriginal objects that may occur on The BNTS Site include:

- stone tools or stone fragments modification through striking (flaking), grinding or pecking;
- scarred trees;
- archaeological features;
- skeletal remains.

Stone tool fragments may be found in isolation, in clusters or in association with archaeological features.

## Aboriginal Stone Artefacts

Key indicators to look for are:

- **Distinctive stone types**—Stone tools are often made from distinctive looking stone. It is usually smooth with sharp edges; distinctive colours—yellow ochre, red, dark red, cream, grey, with either a shimmery, glittery surface, a sugary-looking texture, or very smooth with no visible texture.
- **Sharp edges**—stone which is flaked by Aboriginal people fractures in a certain way, it is very smooth and sharp.

## What Do You Do if You Find an Aboriginal Artefact?

If you think you have found an Aboriginal artefact or human remains during the works, you need to follow the Unanticipated Finds Protocol outlined below:

### Unanticipated Finds Protocol

- Stop work immediately in the area of the suspected **Aboriginal artefact or site** and ensure that no further works or disturbance occurs within a five-metre exclusion zone. This suspension may be temporary, but work must not recommence until you receive instructions from the Project Manager, Project Archaeologist and Aboriginal community representatives. Work can continue in other areas of the site.
- Immediately contact your Project Manager. They will contact the correct Aboriginal representative/s and an archaeologist to inspect the suspected Aboriginal artefact or site to make a positive identification.
- If the artefact/site is Aboriginal in origin or manufacture, the Aboriginal community representative/s and Project Archaeologist will advise the Project Manager on how to proceed. That advice will be communicated to the project works team. Work cannot continue in that area until the agreed management recommendations are implemented and sign-off has been agreed with the Aboriginal community representative/s, Project Archaeologist and Project Manager.
- If **suspected human remains** are discovered, the Project Manager must contact the ACT Police on 131 444, and the Project archaeologist.
- Management of suspected humans remains will be determined by the Police, the Coroner and the Project archaeologist, and if the remains are identified as belonging to Aboriginal ancestors, the Aboriginal community will also be consulted for management directions.
- Works can recommence after sign-off has been given by the Police, Coroner, Aboriginal community, Project Archaeologist and Project Manager.

# Historical Archaeology

## What is Historical Archaeology?

Australia contains a rich assortment of historical archaeological sites which reflects the country's settlement, growth and change.

Historical archaeological finds could include artefacts or features dating back to European settlement which have been deposited or buried in soil. Artefacts or features at BNTS may date from earlier phases of Commonwealth use of the site back to 1938.

## What do Historical Archaeological Artefacts and Features Look like?

Historical features that may occur at BNTS include remnants of:

- building footings
- pavements and landscaping features
- utilities and services
- clusters of crockery, glass bottles
- machinery and tools
- clothing items such as buttons

## What Do You Do if You Find Historical Archaeology?

If you think you have found a historical artefact or feature during the works, you need to follow the Unanticipated Finds Protocol outlined below:

### Unanticipated Finds Protocol

If you think you have found an historical artefact or feature during works you must:

- **Stop work** immediately in the area of the suspected artefact or feature and ensure that no further works or disturbance occurs. A five-metre exclusion zone around the artefact or site is to be established. This suspension may be temporary, but work must not recommence until you receive instructions from the Project Manager and/or Project Archaeologist to continue. Work can continue in other areas of the site.
- **Immediately contact** your Project Manager. They will contact an archaeologist to inspect and assess the nature, extent and possible significance of the suspected historical archaeological find.
- The Project Archaeologist will assess the finds and discuss with the Project Manager the requirements for managing the historical archaeological remains. That management advice will be communicated to the project works team. Work cannot continue in that area until agreed management recommendations are implemented and sign-off has been agreed between the by the Project Archaeologist and Project Manager. .
- If suspected human remains are discovered the Project Manager must contact the ACT Police on 131 444, and the Project archaeologist.
- Management of suspected humans remains will be determined by the Police, the Coroner and the Project archaeologist.
- Works can recommence after sign-off has been given by the Police, Coroner, Project Archaeologist and Project Manager.