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Heritage Assessment

Former CSIRO Forestry Precinct, Yarralumla

19 June 2020

Project No.: 0502267

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ERM

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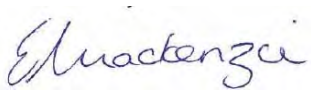

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Acronyms and Abbreviations

Name	Description
ACT	Australian Capital Territory
ACHA	Australian Cultural Heritage Assessment
AHT	Australian Historic Themes
AFS	Australian Forestry School
ALA	Atlas of Living Australia
ANU	Australian National University
AWM	Australian War Memorial
Burra Charter	The Australian ICOMOS Charter for Places of Cultural Significance, 2013
CHL	Commonwealth Heritage List
CMP	Conservation Management Plan
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAWE	Department of Agriculture, Water and the Environment
EPBC	*Environmental Protection and Biodiversity Conservation Act 1999*
FCC	Federal Capital Commission
HMP	Heritage Management Plan
PMST	Protected Matters Search Tool
TEC	Threatened Ecological Community
WWI	World War One
WWII	World War Two

EXECUTIVE SUMMARY

Environmental Resources Management Australia Pty Ltd (ERM) was commissioned by Oakstand Pty Ltd (Oakstand / the Client) on behalf of The Shepherd Foundation to prepare a Heritage Assessment (HA) for the (former) Commonwealth Scientific and Industrial Research Organisation (CSIRO) Forestry Precinct Yarralumla (the Site). CSIRO disposed of the property in 2002, however retained management control through a twenty-year lease which placed the responsibility for managing and maintaining the property with CSIRO, a Commonwealth agency. The property has therefore been required to be managed in accordance with the provisions of the Commonwealth legislation *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Oakstand is currently investigating the feasibility of various future use options at CSIRO Yarralumla. The property is recognised as being of Commonwealth heritage significance for its association with the CSIRO Forestry Precinct and as the site of the Former Australian Forestry School [Commonwealth Heritage List (CHL) Place ID 105426 and Place ID 105595].

A Conservation Management Plan (CMP) and Heritage Management Plan (HMP) were previously prepared for the Site in 2001 and 2008 by Peter Freeman Pty Ltd Conservation Architects & Planners. In 2018, ERM prepared an updated HMP for CSIRO Yarralumla which addressed changes to the Site since the 2008 HMP, which included the removal of several buildings, and provided updated heritage advice that directly relates to the divestment of the property from Commonwealth control and its future use and development. In 2019, ERM also prepared a Constraints Analysis and Preliminary Master Plan Heritage Review that identified the need for a detailed Heritage Assessment (HA).

This HA includes a gaps analysis of all previous research which informs a comprehensive contextual history for CSIRO Yarralumla. A three day site visit was undertaken on the 4 – 6 March 2020, which involved a site visit to CSIRO Yarralumla and also visits to the CSIRO Black Mountain Library, the National Archives of Australia and the ACT Heritage Library.

A natural heritage assessment has been included within this HA to address any important ecosystems, biodiversity and geodiversity for their existence value or any scientific, social, aesthetic and life-support value as determined by the Australian Natural Heritage Charter (2002). The natural assessment concluded that no natural heritage values are present within CSIRO Yarralumla. While there are some mature trees that may be regarded as having aesthetic characteristics, these have no endangered or rare natural values. Similarly, while CSIRO Yarralumla is noted in the CHL [Place ID: 105426] as 'containing experimental plantings and a significant genetic resource for Australia' these species are not rare and it is considered that the Site could not contribute further substantial information to that already on record.

The historic heritage assessment validates the CHL listing and provides additional information regarding the historic significance of the site, its important views, associations and social significance. The historic assessment found CSIRO Yarralumla meets additional CHL criteria, including both b) for rarity and d) for its representative value. The historic assessment includes a detailed breakdown of contributory site elements at CSIRO Yarralumla (both built and landscape) and provides justification for individual significance rankings. Significant fabric mapping has been prepared for the high significance buildings which include the former Australian Forestry School (Building number 9), the former Forestry and Timber Bureau Offices/Museum (Building number 10) and Forestry House (building number 2) in order to assist in the future conservation of these buildings.

Opportunities for the adaptive reuse and interpretation of buildings have been provided, with specific reference to the high significance buildings (2, 9 and 10). Both general and more specific recommendations have also been provided in *Section 6.2* to assist Oakstand in the Master Planning considerations for CSIRO Yarralumla's redevelopment.

1. INTRODUCTION

Environmental Resources Management Australia Pty Ltd (ERM) was commissioned by Oakstand Pty Ltd (Oakstand / The Client) on behalf of The Shepherd Foundation to prepare a detailed Heritage Assessment (HA) for the (former) Commonwealth Scientific and Industrial Research Organisation (CSIRO) Forestry Precinct Yarralumla (CSIRO Yarralumla/the Site), in Canberra, Australian Capital Territory (ACT).

CSIRO Yarralumla is already listed on the Commonwealth Heritage List (CHL) as The CSIRO Forestry Precinct [Place ID: 105595].The most significant building within CSIRO Yarralumla is the Australian Forestry School (AFS). The stripped classical single storey building was established in 1927 and is listed separately on the CHL [Place ID: 105426]. This HA will assist the Client in meeting their obligations under the *Environmental Protection and Biodiversity Conversation Act 1999* (EPBC Act) by providing a detailed natural and historic heritage assessment. This assessment also provides practical guidance to assist with the Site's Master Planning process, including a clear establishment of the Site's values, and significant fabric mapping to guide the adaptive reuse of significant buildings.

It should be noted that while CSIRO Yarralumla is currently on Commonwealth land and managed under the EPBC Act, a Conservation Management Plan (CMP) will be required for Yarralumla if the Site is no longer considered a Commonwealth Heritage Place and is subsequently listed on the ACT Heritage Register. This HA will form a strong foundation for the preparation of a CMP for the Site.

1.1 Site Location

CSIRO Yarralumla is situated in a suburban residential area, abutted by the Royal Canberra Golf Club to the west and north. It is bounded to the east by Banks Street, and its western and southern cadastral boundary follows a general arc south towards Bentham Street. The site comprises approximately 10.9 hectares (ha) of land that includes groups of buildings mainly comprising the former Australian Forestry School that are clustered around an oval, plant nursery and arboretum. The oval was originally part of the Forestry School, but no longer forms part of the Site and is now ACT Government land (and responsibility).

1.2 Heritage Status and Previous Assessments

CSIRO Yarralumla comprises two heritage places which are listed on the CHL for historic, aesthetic, representative, technical, social and associative values, these are:

- The Australian Forestry School (former) (Place ID 105426); and
- The CSIRO Forestry Precinct (Place ID 105595).

The CHL entries for both of these Places are provided in *Appendix A*.

There are a number of previous assessments that have been prepared for the CSIRO Yarralumla site. In 2001, Peter Freeman Pty Ltd Conservation Architects & Planners (Peter Freeman Pty Ltd) prepared a CMP for the site. In 2008 a Heritage Management Plan (HMP) was prepared by Peter Freeman Pty Ltd. In 2018, ERM finalised an updated HMP for the Site on behalf of the CSIRO that provided relevant updates and heritage advice pertaining to the future conservation of the Site and its policies in the event of divestment from Commonwealth management. In 2019, ERM prepared both a Constraints Analysis and a Preliminary Master Plan Heritage Review on behalf of Oakstand.

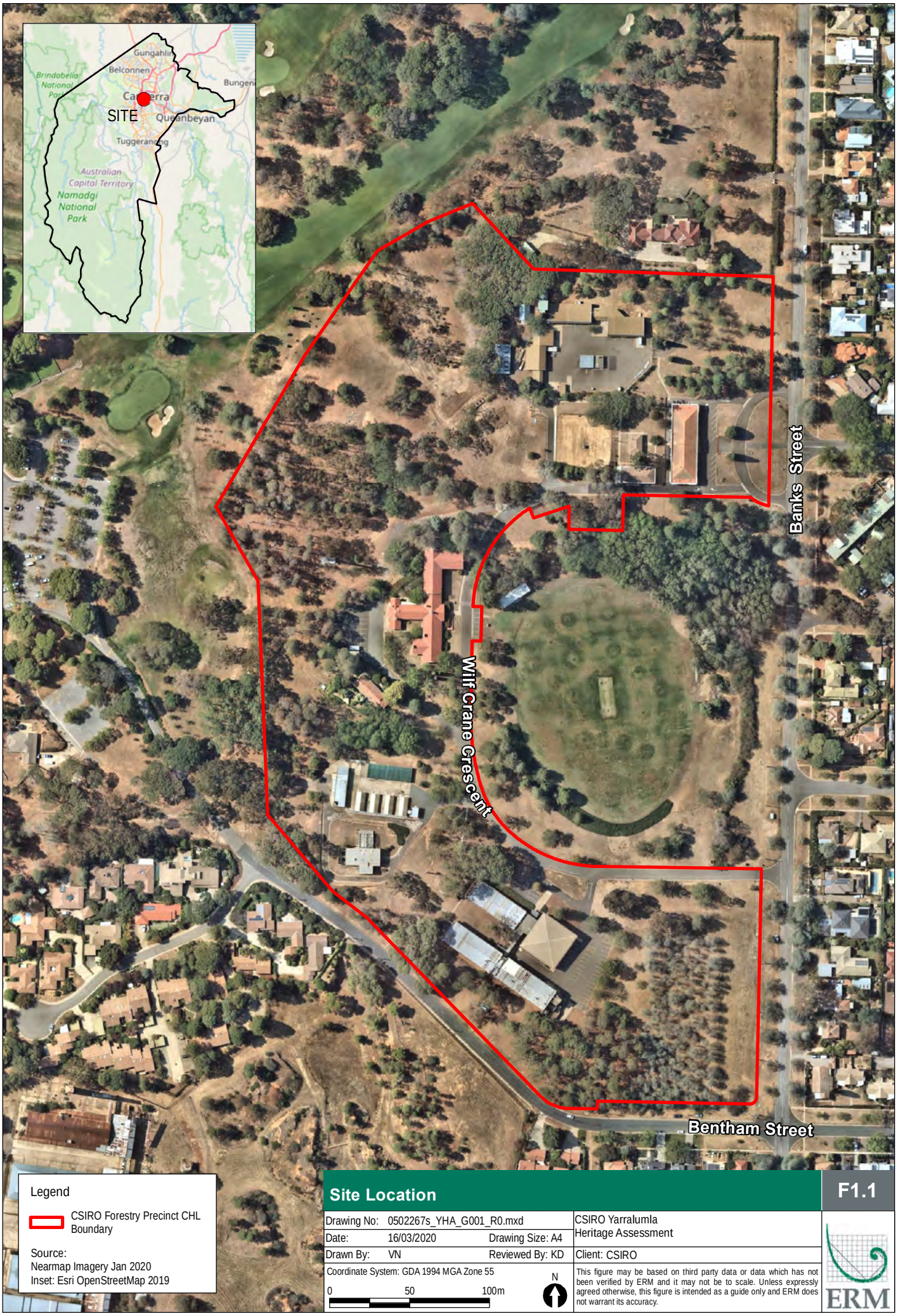
ERM has also reviewed two recent environmental reports to inform the natural heritage assessment of the Site, these are:

- Capital Ecology (January 2020) Block 7, Section 4, Yarralumla ACT – Targeted Golden Moth Survey; and
- Canopy Tree Experts (May 2020) Arboricultural Assessment – Block 7, Section 4 Yarralumla Act.

1.3 Aims and Objectives of this Report

CSIRO Yarralumla's historic heritage values are recognised in the historic, aesthetic, representative, technical, social and associative aspects of the place. These attributes are represented through the historic buildings, assets, historic plantings, views and landscape design. With respect to the feasibility process associated with this CHL-listed property development project, the Client is investigating the potential future uses for the Site, which may require a lease variation and an amendment to the National Capital Plan (NCP) through submission to the National Capital Authority (NCA). As such, a range of discipline studies have been commissioned to assess permissible use of Yarralumla, which includes a detailed HA (this report) to address and validate the historic heritage values for the Site as well as assessing potential for natural heritage values.

This HA has been prepared to assist the Client in understanding both the historic and natural heritage significance of CSIRO Yarralumla in order to ensure these values are considered and protected within the planned development for CSIRO Yarralumla.



Legend

CSIRO Forestry Precinct CHL Boundary

Source:
Nearmap Imagery Jan 2020
Inset: Esri OpenStreetMap 2019

Site Location

F1.1

Drawing No:	0502267s_YHA_G001_R0.mxd		CSIRO Yarralumla Heritage Assessment
Date:	16/03/2020	Drawing Size: A4	
Drawn By:	VN	Reviewed By: KD	Client: CSIRO

Coordinate System: GDA 1994 MGA Zone 55

0 50 100m

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1.4 Methodology

This HA has been prepared in accordance with the following legislation and heritage industry best practice guidelines:

- The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance (International Council on Monuments and Sites (ICOMOS) 2013);
- Cultural Heritage Reporting Policy (ACT Heritage 2015) ;
- The Australian Natural Heritage Charter for the conservation of places of natural heritage significance (Australian Heritage Commission 2002);
- Protecting Natural Heritage – Using the Australian National Heritage Charter guideline;
- The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act);
- *National Capital Plan* (ACT); and
- *Heritage Act 2004* (ACT)

The preparation of the HA involved the following tasks:

- Background research of existing relevant studies and reports, online databases such as Trove, National Archives or Australia and library references;
- Detailed review of existing historical background and gaps analysis;
- Targeted site investigation including photographic recording (3rd and 4th March 2020);
- Targeted archival research with visits to the CSIRO Black Mountain Library, the National Archives of Australia and the ACT Heritage Library;
- *Database searches*: searches of the relevant databases were undertaken including:
  - Commonwealth Department of Agriculture, Water and the Environment (DAWE) Protected Matters Search Tool (PMST) for ecological Matters of National Environmental Significance (MNES) eg threatened ecological communities (TECs) and species and migratory species listed under the EPBC Act. The search was undertaken om [16/03/2020] with a 1 km buffer around the Site);
  - Atlas of Living Australia (ALA) searches for specific species records regionally for CSIRO Yarralumla
  - Australian Heritage Database (World Heritage List, Commonwealth Heritage List and Register of the National Estate), National Trust ACT Register, and the ACT Heritage Register. These searches were undertaken [10/03/2020].
- Review of previous historic heritage assessment and validation or additional information provided;
- Assessment of natural heritage values;
- Detailed assessment of individual significant site elements; and,
- Preparation of significant fabric mapping for high significance buildings (Buildings 9, 10 & 2).

1.5 Limitations

The scope of this HA was limited to both natural and historic heritage values, no consideration has been given to Aboriginal heritage values. ERM has been commissioned by Oakstand to prepare a separate Aboriginal Cultural Heritage Assessment (ACHA) as part of the suite of reporting associated with the investigation of development feasibility for the Site.

The 4th and 5th March 2020 were heavily overcast and rainy days and while all effort was made to capture all elements of the Site during both these days, some photographs cannot be used in this report. As such, where required, site photographs have been supplemented with photographs taken by ERM in March 2018 and are indicated as such.

Further, internal access was not possible to the Site Residence (Building 5) due to a private lease. Also, a number of moveable heritage items noted in the CHL listing for the CSIRO Forestry Precinct (Place ID 105595) were not captured as part of this assessment. While a general appraisal of movable heritage items is included in the report, a comprehensive audit and assessment of values relating to movable heritage was beyond the scope of this report.

1.6 Authorship

The site visit, preparation of this HA and historic heritage assessment was undertaken by Toyah Morath (Heritage Consultant), the natural heritage assessment component was undertaken by Amelia James (Ecologist). Technical Review was conducted by Principal Heritage Consultant Erin Finnegan and Senior Ecologist Katherine Taske. A quality control review was conducted by ERM Partner Peter Lavelle.

1.7 Acknowledgements

ERM would like to acknowledge the following individuals and organisations for their assistance in the preparation of this HA:

- Oakstand
- Kim Hogan – CSIRO
- Anne-Marie Slattery - CSIRO Black Mountain Library
- ACT Heritage Library Staff
- National Archives of Australia, Canberra

2. LEGISLATION

2.1 Statutory Considerations

The Site is on National Land under the NCP and CSIRO is a Government Agency who currently leases the property and has operational control of the Site until this lease ends in 2022. As such, the Site is subject to Commonwealth Legislation during this time, specifically the EPBC Act. Following the end of lease, the Site will no longer be under Commonwealth management, and as such, Commonwealth Legislation may no longer apply if the title is converted to ACT land and the Site is no longer considered a Commonwealth Heritage Place. In this instance, please refer to Section 2.1.2 Territory Legislation below.

The CSIRO also employs a practice of complying with State and Territory environmental policies, initiatives and legislation (where these do not conflict with Commonwealth Legislation). In addition, under s.26 and s.28 of the EPBC Act, the CSIRO is required to avoid, minimise or manage potentially significant impacts on the environment. This provision takes in the broader suite of issues listed under the EPBC Act and can include State/Territory listed species and heritage values. The Act defines the environment as:

a) Ecosystems and their constituent parts, including people and communities;

b) Natural and physical resources;

c) The qualities and characteristics of locations, places and areas;

d) Heritage values of places; and

e) The social, economic and cultural aspects of a thing mentioned above (a, b, c, d).

2.1.1 Commonwealth Legislation

2.1.1.1 Environmental Protection and Biodiversity Conservation Act 1999

The Primary objective of the EPBC Act is to provide for the protection of the environment, particularly those aspects that are matters of National Environmental Significance (NES). It should be noted that no matters of NES have been identified for CSIRO Yarralumla. The key parts of the EPBC Act that are of direct relevance to the heritage assessment of CSIRO Yarralumla are as noted below.

EPBC Act Ss. 341ZC

This section of the EPBC Act required the minimisation of adverse impacts to the heritage values of a National or Commonwealth Heritage Place. This includes direct impacts from physical disturbance or secondary impacts that may affect visual aspects, cultural importance, landscaping or curtilage of an adjacent property.

EPBC Act Ss.341ZE

This section of the EPBC Act applies if CSIRO (as a Commonwealth Agency) sells or leases a Commonwealth area that is or includes part of Commonwealth Heritage Place. CSIRO must notify the Minister for the Environment of such intent, and include in the sale of lease contract a covenant to protect the Commonwealth Heritage values of the place during the sale process and after the property had left Commonwealth control.

2.1.2 Territory Legislation

2.1.2.1 Tree Protection Act 2006

Under the obligations of the *Tree Protection Act* 2006, written permission is required from Environment ACT before any activity that has potential to cause tree-damage can occur. At this stage this Act is not relevant to the CSIRO Yarralumla site, as this Act applies only to leased ACT land. In

the event that the CSIRO Yarralumla site is passed from Commonwealth ownership and control into private or State Government ownership, then this Act will become applicable.

2.1.2.2 ACT Heritage Act 2004

The *ACT Heritage Act 2004* (Heritage Act) may apply to the Site in the event that the property leaves Commonwealth control. Guidance on managing this type of change is provided in the HMP (ERM 2018) and reproduced in Section 5.1 of the CSIRO Yarralumla Constraints Analysis (ERM 2019).

The ACT Government has legislation designed to conserve significant heritage places and objects in the ACT. This legislation is in close alignment with those used in other states and territories. Following five years of consultation with the community and key stakeholders, the *Heritage Act* came into force on 9 March 2005. The *Heritage Act* protects the natural and cultural history of the ACT through protection provisions and the establishment of a Heritage Council. This Act was updated with the Heritage Legislation Amendment Bill 2013, which came into effect on 4 October 2014.

2.1.2.3 Heritage Development under the Act

The ordinary definition of 'development' under the *Planning and Land Management Act 1988* is broadened where the land to be developed is in an urban lease area and is registered or nominated for registration under the ACT Heritage Register. In this circumstance, any works that would affect the landscape of the land are considered to be 'development' and therefore must be considered for approval by the ACT Environment and Planning Directorate and the ACT Heritage Council, as appropriate.

For development which requires an Environmental Impact Assessment (EIA), consideration must be given to the heritage significance of the land including the surrounding land. Development applications that have potential to damage heritage items listed on the Heritage Register are sent from ACT Planning and Land Authority to the Heritage Council for advice.

2.1.3 Approvals under the National Capital Plan

Any buildings or structures, demolition, landscaping or excavation works in designated areas as defined by the National Capital Plan (NCP) require the prior written approval of the National Capital Authority (NCA). Applicants may also be require to provide evidence of environmental clearance or approval from the Department of Agriculture, Water and Environment (DAWE) before the NCA will give its approval to development proposals on;

- Commonwealth land;
- Designated areas (the Site is part of a designated area);
- Sites that may have endangered and protected species of flora and fauna, or some other environmental value (including heritage); or
- Development that has a significant impact on the heritage values of a place entered in the CHL or NHL.

2.1.4 Lake Burley Griffin and Foreshores Precinct

Designated Areas are subject to specific policies; each designated area precinct is subject to its own code, the Lake Burley Griffin and Foreshores Precinct Code includes policies relating to building form and envelope and architectural requirements that apply within this precinct. The CSIRO Yarralumla site is subject to the Lake Burley Griffin and Foreshores Precinct's Land Use Policy which restricts the range of uses in the precinct to the following:

- Aquatic Recreation Facility;
- Club (related to lake use only);

- Community Facility;
- Landscape Buffer;
- National Capital Use;
- Outdoor Education Establishment;
- Park;
- Pathway Corridor;
- Public Utility;
- Reserve;
- Restaurant;
- Restricted Access Open Space;
- Road;
- Single Dwelling Housing (Block 6 Section 4 Yarralumla only);
- Scientific Research Establishment; and
- Tourist Facility (not including service station).

The CSIRO Yarralumla site is currently designated as a community facility in the NCP (*Figure 2.1*).

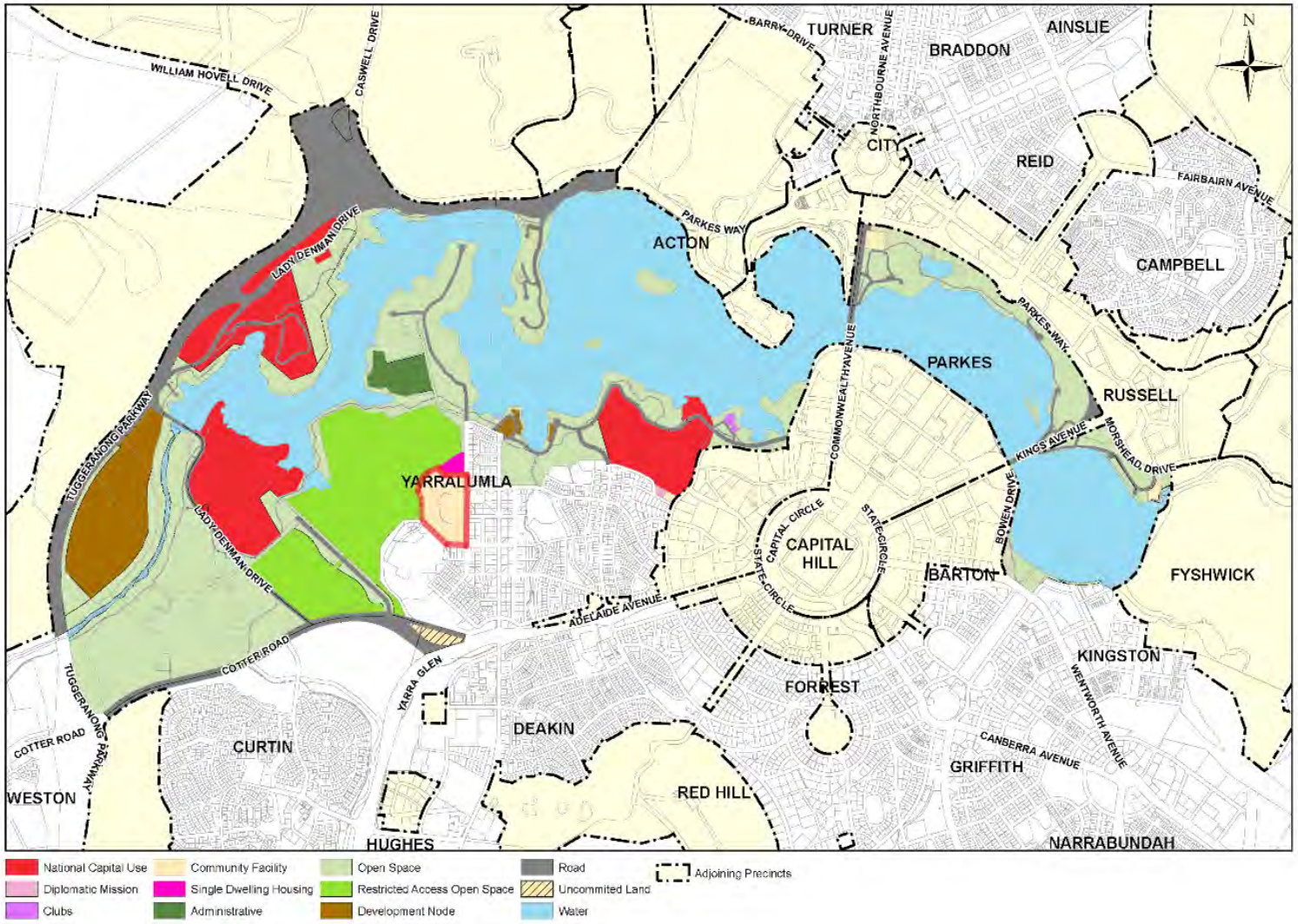


Figure 2.1 Lake Burley Griffin and Foreshores Land Uses, CSIRO Yarralumla designated as Community Facility (outlined by ERM in red) (NCP 2020)

2.1.5 Non-Statutory Considerations

2.1.5.1 The Burra Charter 2013

The Australian ICOMOS Charter for the conservation of place of cultural significance (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 Charter provides specific guidance for physical and procedural actions that should occur in relation to significant places. A copy of the charter can be accessed online at http://icomos.org/australia.

2.1.5.2 National Trust of Australia (ACT)

The National Trust is a non-government organisation dedicated to the protection and conservation of places of heritage value. It has no statutory powers though is an advocate, enabling community input into sites of heritage value. The National Trust has been gathering information about heritage places in Australia for more than three decades, and has a list of heritage places including individual buildings, precincts, natural environment places or culturally significant places. These listings do not attached any legal protection, nor do they put the owner of a listed place under any legal obligation.

The CSIRO Yarralumla site is not listed on the National Trust (ACT) places list.

2.1.5.3 Yarralumla Residents Association

Established in 1988, The Yarralumla Residents Association (YRA) is an incorporated association formed to represent the views of residents of Yarralumla. The YRA has been active over many years in putting forward members' interests to Government. Priorities have been the desire to preserve the amenity of the suburb in the context of a desire by governments and developers for 'urban consolidation'. The YRA has a general list of significant sites associated with the history of Yarralumla and are active in ensuring the conservation of these sites.

The CSIRO Forestry Precinct is included in the YRA Significant Sites list.

3. SITE BACKGROUND

3.1 Site Description

The (former) CSIRO Forestry Precinct is a large 'U' shaped parcel of land situated in the suburban residential area of Yarralumla, ACT (*Figure 3.1*). The site is located along Banks Street, which terminates to the north where it then changes to Weston Park Road and terminates at the base of Black Mountain (the location of Telstra Tower) and Lake Burley Griffin (approximately 1.7 km to the north) (*Photograph 3.1*). The Site is abutted by Bentham Street to the south-west which terminates at the carpark to the Royal Canberra Golf Club. The Site is located approximately 1.4 km west of the Diplomatic precinct of Yarralumla, an area distinguished by grand properties and formal tree-lined vistas. The Site is located approximately 500 m south of the Lake Burley Griffin and Adjacent Lands Historic precinct, a Commonwealth Heritage Nominated Place (Place ID 105230).

Figure 3.1 CHL boundary of CSIRO Yarralumla (Google Earth CHL layer 2020)

Photograph 3.1 View facing north down Banks Street towards Lake Burley Griffin and Black Mountain (all photographs ERM 2020 unless otherwise noted)

CSIRO Yarralumla comprises approximately 10.9 ha that includes groups of buildings within the north, west and southern portions of the Site, clustered around the ACT State-owned and managed oval. The sequential site uses of CSIRO Yarralumla are:

- Pre-1913 – 1920: Westbourne Woods (Nursery and Arboretum);
- 1927 – 1968: Australian Forestry School;
- 1968 – 1975: Forestry and Timber Bureau;
- 1975 – 2004: CSIRO Division of Forest Research/CSIRO Corporate; and
- 2004 – Current: CSIRO and external tenants.

CSIRO Yarralumla is important for its array of features from different phases of development linked to the scientific and educational purpose of the Site. Site development at CSIRO Yarralumla can be grouped into the following key phases:

- AFS establishment (1927 -1938)
- Inter-war period (1938-1942)
- Post-war period (1948 – 1958)

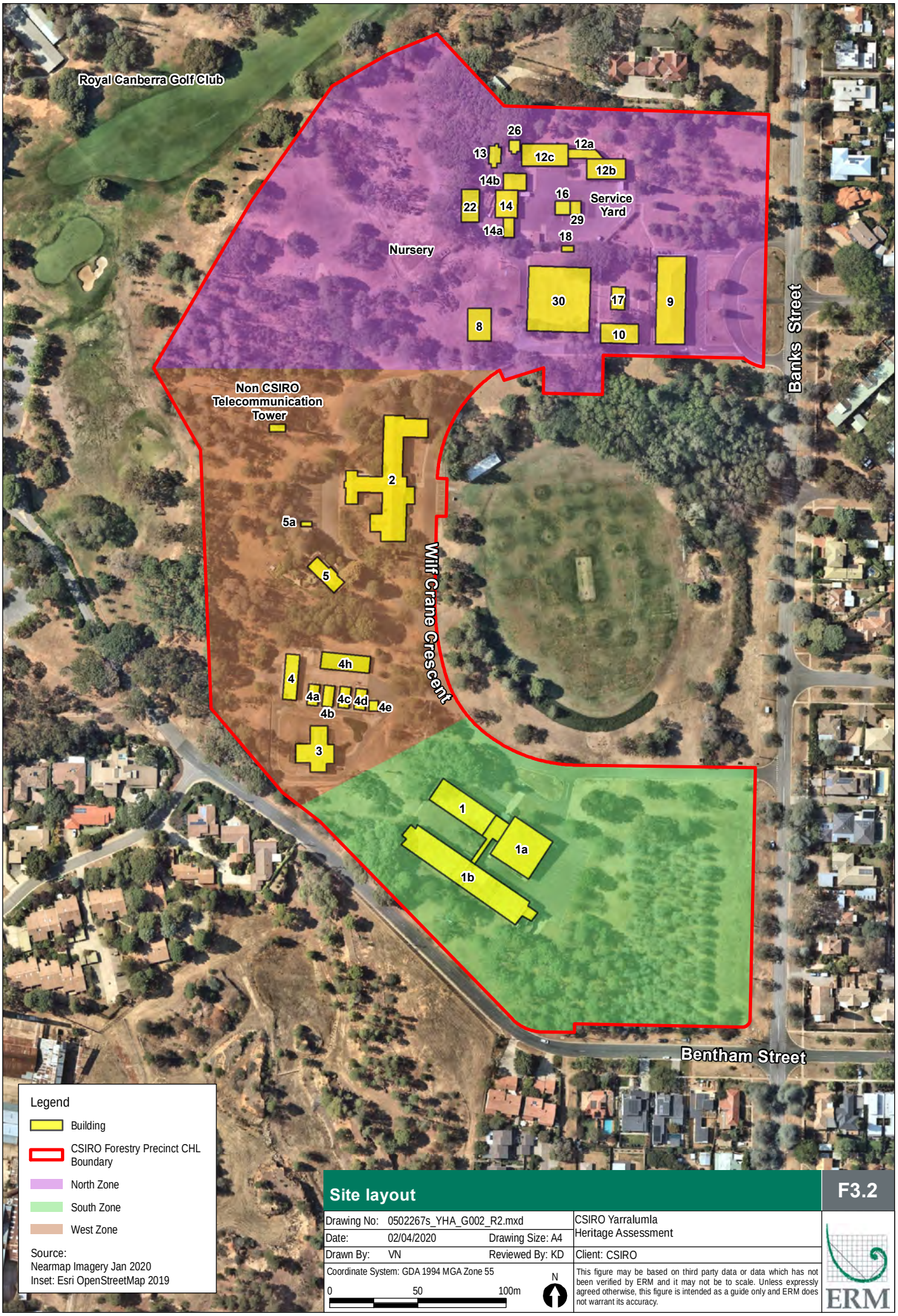
- Administration Period (1969 – 1975)
- CSIRO period (1975 – 2004)

The North Zone comprises key buildings and features from both the AFS phase, Inter-war period and later CSIRO period. That is, the AFS (9), the (former) Industrial Museum and Offices (10) and an early Seeds Store (17) and some of the earliest trees and landscape elements. The North Zone also comprises buildings from the later phase of construction when CSIRO took over management of the Site from 1975. These structures are within the former CSIRO Pyrotron Complex also known as the Service Yard Group (c.1980s/1990s).

The West Zone comprises buildings from the post-war phase of development within CSIRO Yarralumla, including the student accommodation building Forestry House (2) which began construction in 1949 and was completed in 1952, and the construction of the Glasshouses Complex (also known as Building 4 group) in the late 1950s. The West Zone also comprises the Controlled Environment Building (3) which was constructed during the Administration Period (1969).

The South Zone comprises the Divisional Headquarters Building (also known as Building 1 Group) constructed during the Administration Period (1967) and also diverse groupings of mature pine species and an early (c.1913) grouping of Atlas Cedar that is a notable feature within the south-east corner of the Site along Banks Street.

Each Zone with its individual buildings, features and environmental context is described in detail in the Sections *3.4* (environmental) and *3.5* (built) below. The description of the environmental context (refer to *Section 3.4*) lists a sample of natural and landscape elements that includes a detailed review of tree plantings.


Royal Canberra Golf Club
Nursery
Service Yard
Non CSIRO Telecommunication Tower
Wilf Crane Crescent
Banks Street
Bentham Street
26
13
12a
12c
12b
14b
22
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14a
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4a
4c
4d
4e
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3
1
1a
1b
Legend
Building
CSIRO Forestry Precinct CHL Boundary
North Zone
South Zone
West Zone
Source:
Nearmap Imagery Jan 2020
Inset: Esri OpenStreetMap 2019
Site layout
F3.2
Drawing No: 0502267s_YHA_G002_R2.mxd
Date: 02/04/2020
Drawing Size: A4
Drawn By: VN
Reviewed By: KD
Coordinate System: GDA 1994 MGA Zone 55
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CSIRO Yarralumla Heritage Assessment
Client: CSIRO
This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.
ERM

3.2 Setting

3.2.1 Lake Burley Griffin and Foreshores Precinct

The following section has been extracted from the National Capital Plan (NCA 2020). The key objectives for the conservation of the Precinct provides context as to the overall visual and landscape importance of CSIRO Yarralumla as part of the Lake Burley Griffin and Foreshores Precinct.

Lake Burley Griffin is an integral part of the design of Canberra and a vital and key element in the plan for the National Capital. The lake is not only one of the centrepieces of Canberra's plan in its own right but also forms the immediate foreground of the Parliamentary Zone.

The Lake Burley Griffin and Foreshores Precinct is part of the National Capital Open Space System. The key objectives for Lake Burley Griffin and Foreshores are as follows:

- Conserve and develop Lake Burley Griffin and Foreshores as the major landscape feature unifying the National Capital's central precincts and the surrounding inner hills and to provide for National Capital uses and a diversity of recreational opportunities.
- Lake Burley Griffin and Foreshores should remain predominantly as open space parklands while providing for existing and additional National Capital and community uses in a manner consistent with the areas' national symbolism and role as the city's key visual and landscape element.
- Lake Burley Griffin and Foreshores are intended to provide a range of recreational, educational and symbolic experiences of the National Capital in both formal and informal parkland settings with particular landscape characters or themes. These should be maintained and further developed to create a diversity of landscape and use zones which are integrated into the landscape form of the city and reflect the urban design principles for the National Capital.

3.2.2 Yarralumla

CSIRO Yarralumla is situated on Banks Street in arguably one of the most striking residential suburbs in the ACT (*Photograph 3.2*). The AFS, having been constructed prior to the residential development of the suburb, has been part of the growth of the suburb since its establishment and has remained a significant landmark to the local community and the ACT. The following section will briefly describe this setting to assist in understanding the overall aesthetic and locational value of the Site.

Photograph 3.2 View north looking down Banks Street, AFS is approx. 100 m north on the left

The modern suburb of Yarralumla was officially gazetted by the government in 1928 and according to the 2016 census, was home to approximately 2,890 people (Quickstats Census data 2016). More than half of the area of Yarralumla consists of striking open spaces and non-residential development, including both Weston Park (*Photograph 3.3*) and Stirling Park, and the Royal Canberra Golf Club (located west of CSIRO Yarralumla). Yarralumla also includes the grounds of Government House, a Georgian style property constructed in 1891 around which the suburb of Yarralumla had initially grown (*Photograph 3.4*). The residents of Yarralumla are known for their proactive conservation and protection of its historic places. The AFS is recognised by the Yarralumla Residents Association (YRA) as a place of historical significance (Yarralumla Residence Association 2020) (refer to *Section 2.1.5.3*). Other examples include Albert Hall, the Yarralumla Brickworks, Yarralumla Woolshed, Westbourne Woods, Weston Park and Yarralumla Nursery (*Photograph 3.5*). Yarralumla's residential area has a high proportion of houses occupied by diplomatic missions and is highly desirable to the ACT's wealthy population for its wide and leafy tree-lined streets (*Photograph 3.6*), lakeside setting and central location (being only 3 km from Canberra's City Centre).

Photograph 3.3 Weston Park, Yarralumla (Australia's Guide Capital Territory 2016)

Photograph 3.4 Government House in 1927, the same year AFS was constructed (Wikiwand via NAA)

Photograph 3.5 Yarralumla Nursery within Westbourne Woods, north-west of CSIRO Yarralumla

Photograph 3.6 View east down the tree lined Schlich Street from the AFS

3.3 CSIRO Yarralumla

3.3.1 Site Layout

CSIRO Yarralumla is located on a generally flat plain adjacent to a large manicured oval, which is currently owned and managed by the ACT Government. As described earlier in *Section 3.1* the Site can be understood from its various historical site phases, involving the establishment of the AFS (9) in 1927, located within the north-east of site along Banks Street, and the former Industrial Museum and Offices (10) established in 1938 which is located behind the AFS along Wilf Crane Crescent, looking out onto the oval. Within this North Zone is also the early Seeds Store (17), located behind both the AFS and former Industrial Museum. These buildings have similar design characteristics and form a close spatial and visual relationship (refer *Photograph 3.7*). To the west of Wilf Crane Crescent within the West Zone is Forestry House (2), the Caretaker's Cottage (5), the Glasshouses Complex (Building 4 Group) and the Controlled Environment Laboratory (3). To the south of Wilf Crane Crescent in the South Zone is the former Divisional Headquarters Building (Building 1 Group).

Photograph 3.7 View facing south with AFS (left) former Industrial Museum (middle) and early Seeds Store (foreground)

CSIRO Yarralumla also comprises large formal plantings and groupings of tree species throughout the Site. The groupings of mature pine trees throughout the south and south-west of the Site are known as the Arboretum, which is considered by the current CHL listing for the Site (Place ID: 105595) to hold a 'significant genetic resource for Australia'. The tree-growing trials which constitute the arboretum identified trees suitable for the urban forests of Canberra and at the same time provided public park amenity for the Canberra community. Yarralumla Nursery to the north of the arboretum has supplied planting stock for Canberra's parks, streets and residential blocks since 1914.

There are large groupings of pine throughout the Site, these plantings are also associated with its former use as the AFS Precinct and the scientific uses by both the Forestry and Timber Bureau and later CSIRO as a forestry research site. The West and South Zones comprise the highest genetic variety of tree species associated with the international interest in forestry and is important for an array of scientific achievements, such as Monterey pine propagation and breeding and the Australian Tree Seed program (refer *Photograph 3.8*).

Photograph 3.8 A grouping of Canary Island pines west of Building 1 Group

3.3.2 Views and Sight Lines

Views and sight lines to and from a heritage place can be an important part of a place's heritage significance and as such, are important to the place's conservation. There are a number of important aesthetic views and sight lines to and from, and within the CSIRO Yarralumla site; these views are short (between buildings) and medium distance views (outside of the Site looking in, and from the Site looking out). The most noteworthy of these sight lines is the axial alignment of the AFS building as the termination of Schlich Street, a wide tree-lined residential street. The symmetrical arrangement of the AFS and Schlich Street intersecting on east/west axes of symmetry is the principal view within CSIRO Yarralumla. The two Roman Cypress trees framing the AFS east façade also contribute to this important sight line (*Photograph 3.9*). This feature is noted within the CHL entry for the Site (Place ID: 105426) that states:

> *The School building including its formal landscaped frontage, in its setting of mature pine forest plantings has aesthetic values for its historic character. As the terminal feature of the Schlich Street axial vista, it creates a major landmark feature in Yarralumla (Criterion E1).*

Photograph 3.9 View of AFS and two mature Roman Cypress trees framing the east Façade at the termination of Schlich Street

The AFS predates the construction of the surrounding residential blocks and street, though only by a few years (*Photograph 3.10*). Schlich Street first appears on a 1933 plan of Canberra, it was included in the original 1918 Canberra Plan (though unnamed) as part of one of Walter Burley Griffin's geometric residential groupings alongside Westbourne Woods (*Figure 3.3*).

Photograph 3.10 View of AFS building from Solander Street (looking north-west) soon after construction, c.1929 (NAA #3174884)

Figure 3.3 1918 Capital City Plan, Schlich St designation (outlined by ERM) with Westbourne Woods to the left (west) (NAA #1145962)

The central line of the AFS eastern façade was designed to align with the soon to be constructed Schlich Street (named after Sir William Schlich, a prominent Oxford professor of Forestry). This significant view is one of many in Canberra where buildings, roads and trees work together to make a picturesque and liveable city. This view is a demonstration of Walter Burley Griffin's artistic grasp on town planning and the consideration of his plan in the design process for the AFS.

As noted within the CHL statement of significance above, the mature pine forest setting also contributes to the overall aesthetic attributes of CSIRO Yarralumla. These views remain as further evidence of use of the Site as a forestry school and forestry research precinct (*Photograph 3.11* and *Photograph 3.12*).

Further, the view from the patio east façade of Forestry House onto the large oval with views of mature plantings both north-east and south-east and the view of Forestry House facing north-west from Wilf Crane Crescent both also contribute to CSIRO Yarralumla's setting and significant views (*Photograph 3.13*). Also, as noted above in *Section 3.3.1* the AFS, former Industrial Museum and Offices and the early Seeds Store also form a close spatial and visual relationship, as they are connected through the early uses of the Site and through similar design features.

Photograph 3.11 View facing north-east of the AFS, scattered mature Ponderosa and Stone Pines

Photograph 3.12 View facing south-east of AFS, cluster of mature Ponderosa Pines

Photograph 3.13 View facing west from Wilf Crane Crescent, oval in middle ground and Forestry House in background

3.4 Environmental Context

CSIRO Yarralumla is located approximately 1 km south of Lake Burley Griffin, which traverses through the city of Canberra. Additionally, there is a smaller water source present the eastern boundary of the Site, closest to Banks street. In terms of the Site's context with larger nature areas, it is found approximately 2 km south of Black Mountain. Black Mountain is protected from development as the Canberra Nature Park and contains native bushland which makes it suitable habitat for many native wildlife species. The Site is also found within 5-10 km of many other protected areas which include Mount Ainslie (north-east), Red Hill Nature Park (south-east) and Jerrabomberra Wetlands Nature Reserve (east). Given the availability of larger, highly vegetated areas in close proximity, the habitat within the Site is less likely to represent an important area for native flora and fauna species.

The Critically Endangered Golden Sun Moth (GSM) has been found to occur in open grassland within the Site, however this is a small estimated habitat that includes small patches of low-quality grassland and the GSM noted within the Site represents only a very minor portion of the GSM population overall (Capital Ecology 2020).

The Site contains numerous vegetation plantings, due to its past use for research and as a forestry school. The most significant plantings throughout the Site are comprised of pine species (including *Pinus radiata*) and a smaller planting of eucalypt species can be found in the western section of the Site. There are also a number of purposeful landscape plantings throughout the site that contribute to the visual amenity. These include oaks, elms, and cherry plum trees.

CSIRO Yarralumla comprises a large number of mature plantings and a number of significant early plantings. For ease of reference, the Site has been separated into three Zones; north, west and south, as described above in *Section 3.1*, refer to *Figure 3.2* for site layout. For a complete Arborists assessment of tree species within the Site, please refer to the Canopy Tree Experts Arboricultural Assessment prepared for Oakstand on behalf of the Shepherd Foundation May 2020.

3.4.1 North Zone– Natural Elements

The following table is an example of the types of key species present within the North Zone of CSIRO Yarralumla. The North Zone comprises some of the earliest site plantings, associated with its establishment as an Arboretum and Nursery by Charles Weston, known previously as 'Westbourne Woods'. The North Zone also comprises the landscape plantings associated with the AFS, which provide striking visual amenity. These plantings include the Roman Cypresses framing the AFS entrance, a mature Tasmanian Blue gum behind the AFS to the west, a mature Bunya Pine to the north of the former Industrial Museum and Offices and various groupings of Ponderosa Pines. The North Zone also comprises the former Nursery to the north-west of the AFS building. The Nursery was established in 1913 along with Westbourne Woods and contains mature plantings of Monterey pines, and groupings of eucalypts as well as Stone pines.

Table 3.1 Examples of plantings within CSIRO Yarralumla: North Zone

Common Name	Species Name	Location and estimated planting area	Picture
Roman Cypress	*Cuppresses sempervirens*	Located outside the AFS east façade c.1930 (prior to 1948)	

Common Name	Species Name	Location and estimated planting area	Picture
Flowering Plum	*Prunus sp.*	West elevation of AFS	
Tasmanian Blue Gum	*Eucalyptus globulus*	West elevation of AFS 1920s to 1950s	
Bunya Pine	*Araucaria bidwillii*	Between north elevation of former Museum building and Store c.1920s to 1950s	
Ponderosa pine	*Pinus ponderosa*	South of AFS building across Wilf Crane Crescent	
Roman Cypress	*Cuppresses sempervirens*	Another two Roman Cypresses to the north of the AFS, likely associated with the original use of the Site as Westbourne Woods (c.1913)	
Ponderosa pine	*Pinus ponderosa* (in the background)	North of AFS across Wilf Crane Crescent	

Common Name	Species Name	Location and estimated planting area	Picture
Stone Pine	*Pinus pinea*	North of building 4 group near Westridge House, c.1920s to 1950s	
Ponderosa Pine	*Pinus ponderosa*	Either side of Building 9 c.1920s or earlier	
Ponderosa Pine	*Pinus ponderosa*	South of AFS across Wilf Crane Crescent	
Pine Oak	*Quercus palustris*	South of AFS between Wilf Crane Crescent and Oval	
Bunya pine	*Araucaria bidwillii*	Between Shed (22) and Store (13)	

Common Name	Species Name	Location and estimated planting area	Picture
Virginiana pine	Potential *Pinus virginiana*	South of Fire Wind Tunnel (in front of)	
Stone Pine	*Pinus pinea*	Cluster west of Store (13) within nursery	
Monterey Pine	*Pinus radiata*	North-west of Nursery	
Kurrajong	*Brachychiton populneus*	Within Eastern fence line of Meteorological Plot	

3.4.2 West Zone – Natural Elements

The West Zone contains a large number of trees, not all of which could be identified. The plantings identified below are largely associated with the establishment of Forestry House (landscape and garden plantings) and forestry research undertaken by the Forestry and Timber Bureau and later the CSIRO with groupings of Kurrajong, Eucalypts and various pine species. The remainder of trees within the West Zone have been identified as landscape amenity plantings.

Table 3.2 Examples of plantings within CSIRO Yarralumla: West Zone

Common Name	Species Name	Location	Picture
unknown	n/a	North elevation of Forestry House either side of staff carpark	
unknown	n/a	Landscape planting along east façade of Forestry House	
Unknown	n/a	Landscape planting along west elevation and framing garden/picnic area	
Unknown	n/a	Within garden/picnic area south of Forestry House, landscape planting	
Unknown	n/a	West elevation of Forestry House, landscape planting	

Common Name	Species Name	Location	Picture
Eucalypt groupings	n/a	West of Forestry House	
Kurrajong	*Brachychiton populneus*	West of Building 4 Group c.1920s to 1950s	
Pine Oak	*Quercus palustris*	North of Building 4 Group, south of Caretaker's Residence	
Pine Oak	*Quercus palustris*	West façade of Caretaker's Residence	
River She oak	*Casuarina cunninghamiana*	West of the Caretaker's Residence	

Common Name	Species Name	Location	Picture
Cypress Pine	*Cuppresses sempervirens*	Cluster of x3 Cypress Pines south of Forestry House	
Kurrajong	*Brachychiton populneus*	East of Building Group 4, west of Wilf Crane Road	
Flooded gum or Rose gum	*Eucalyptus grandis*	West of Building 3, c.1979	
Italian stone pine	*Pinus pinea*	South-west of Building 3	
Chir pine	*Pinus roxburghi*	South of Building 3 c.1920s to 1950s	

Common Name	Species Name	Location	Picture
Spotted gum	*Eucalyptus maculata*	South-east of Building 3 across access road c.1950s	

3.4.3 South Zone – Natural Elements

The South Zone has the largest and most diverse collection of tree species within CSIRO Yarralumla, including a large selection of pine species. A number of these groupings are associated with both Charles Weston's early plantings (prior to 1920) and later forestry research by the Forestry and Timber Bureau in the 1950s.

Table 3.3 Examples of plantings within CSIRO Yarralumla: South Zone

Common Name	Species Name	Location	Picture
■ Shortleaf pine ■ Yunnan pine ■ Virginia pine ■ Coulter pine ■ Austrian pine	■ *Pinus Echinata* ■ *Pinus Yunnanensis* ■ *Pinus Virginiana* ■ *Pinus Coulteri* ■ *Pinus Nigra*	Clustered along southern site boundary along Bentham Street c.1950s	
Douglas pine	*Pinus douglasiana*	West of Building Group 1 scattered within larger planting groups c.1950s	

Common Name	Species Name	Location	Picture
Calabrian pine	*Pinus brutia*	Planted around Building Group 1, scattered within larger groups, 1950s	
Michocan pine	*Pinus michoacana*	West of Building 1 scattered within larger planting groups c.1950s	
Aleppo pine	*Pinus halepensis*	Around Building 1 Group, planted prior to 1920, some scattered plantings in the 1950s	
Canary Island pine	*Pinus canariensis*	North of Building 1 Group, planted prior to 1920	

Common Name	Species Name	Location	Picture
Mexican Cypress	*Taxodium muchronatum*	Within the wings of Building 1, c.1960s	
Giant Sequoia	*Sequoiadendron giganteum*	East façade of Building 1, c.1920s or earlier	
Coulter pine	*Pinus coulteri*	East of Building one across Wilf Crane Road	
Atlas cedar	*Cedrus atlantica*	South-east of Building 1 near Bentham Street, planted prior to 1920	
Ponderosa pine	*Pinus ponderosa*	East of Building 1, c.1920s or earlier (also planted either side of AFS building)	
Monterey pine	*Pinus radiata*	Planted around Building 1 Group, scattered within larger planting groups c.1920s – 1950s.	

3.5 Built Environment

The built environment of CSIRO Yarralumla comprises both individual buildings and groups of buildings that are associated with key phases of development starting with the establishment of the AFS, as identified in *Section 3.1*.

A major phase of construction was also during the Administration Period of the 1960s and 1970s (*Photograph 3.14*) and again in the 1990s following the Site's takeover by CSIRO. Both buildings and features within CSIRO Yarralumla have been divided into North, West and South Zones for ease of reference. Key built features within each Zone are listed below, with more detailed descriptions provided in the following Sections.

North Zone

- AFS (9)
- Former Industrial Museum and Offices (10)
- Seeds Store (17)
- Nursery
- Tennis Courts (30)
- Meteorological Plot (8)
- CSIRO Pyrotron Complex/Service Yard Group

West Zone

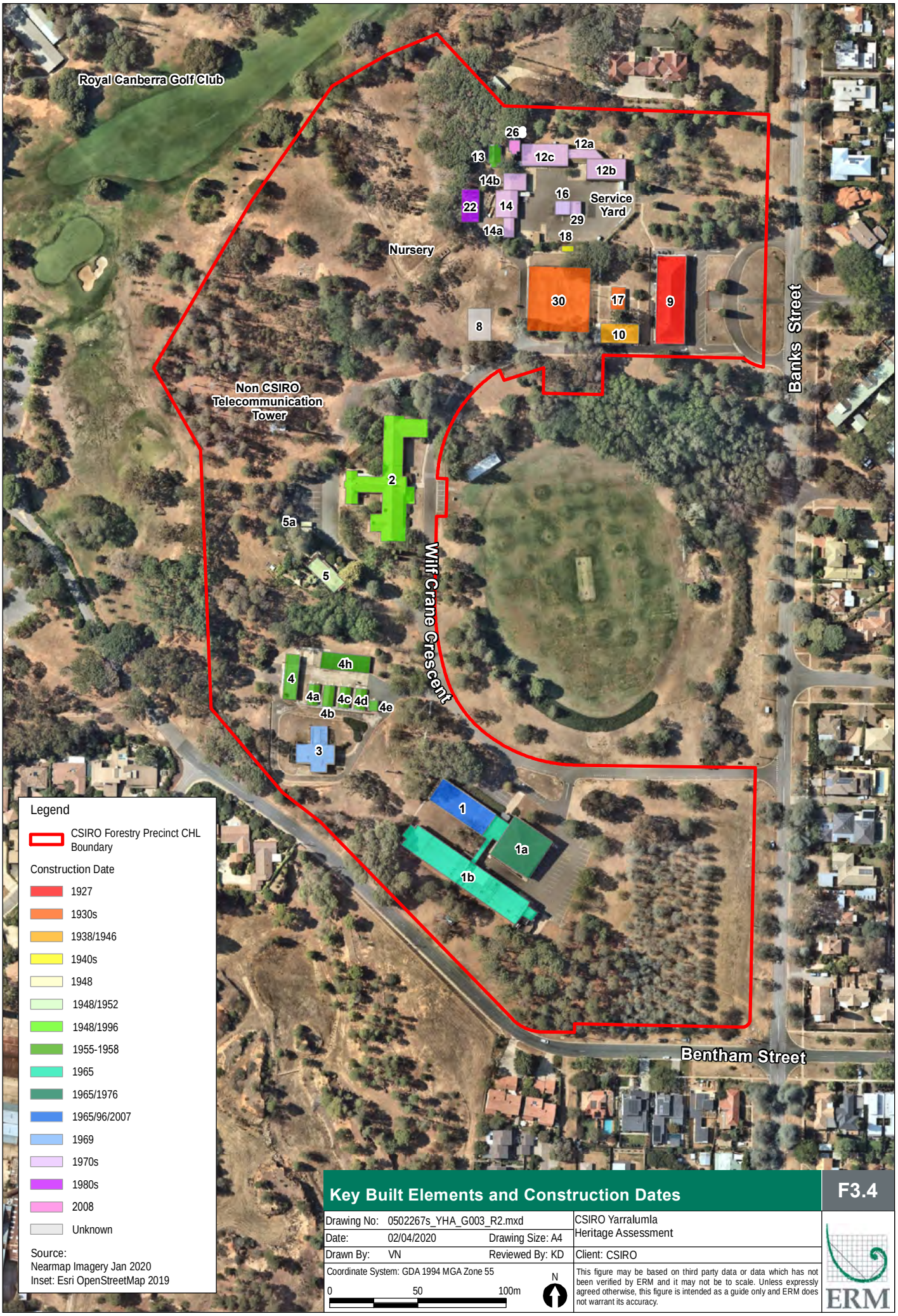
- Forestry House (2)
- Caretaker's Cottage (5)
- Glasshouses Complex (Building 4 Group)
- Controlled Environment Building (3)

South Zone

- Divisional Headquarters Building (Building 1 Group)

A map of CSIRO Yarralumla's key built elements and construction dates has been provided in *Figure 3.4*.

Photograph 3.14 Aerial photograph of CSIRO Yarralumla c.1970s (CSIRO Black Mountain Library)



Key Built Elements and Construction Dates

F3.4

Drawing No:	0502267s_YHA_G003_R2.mxd		CSIRO Yarralumla Heritage Assessment
Date:	02/04/2020	Drawing Size: A4	
Drawn By:	VN	Reviewed By: KD	Client: CSIRO

Coordinate System: GDA 1994 MGA Zone 55

0 50 100m

N

ERM

3.5.1 North Zone – Built Elements

The North Zone of CSIRO Yarralumla comprises the eastern entrance along Banks Street to the northern fence line (abutting Westridge House) and to the western fence line that houses the Nursery adjacent to the Royal Canberra Golf Club grounds. The North Zone includes key built elements such as the AFS building (9), the former Industrial Museum/ Forestry and Timber Bureau Offices (10), Tennis Court (30), two early Store buildings (13 & 17) and the Changeroom/Lavatory (18) and a number of other assets, as outlined in *Table 3.4*. Each asset is discussed in more detail below.

Table 3.4 North Zone – key elements log

Asset number	Asset name	Photo
8	Meteorological Plot	
9	Australian Forestry School (former)	
10	Forestry and Timber Bureau Offices/ Industrial Museum (former)	
13	Store	
14, 14a, 14b, 12c, 12a, 12b, 12c, 16, 29	CSIRO Pyrotron complex/Service Yard Group	

Asset number	Asset name	Photo
17	Store	
18	Lavatory/Change Room	
22	Shed	
26	Fire Wind Tunnel	
30	Tennis Court	
-	Nursery	

3.5.1.1 Meteorological Plot (8

The Meteorological Plot is a small fenced area within north-west of the AFS, between the Nursery (west) and Tennis Courts (east) (*Photograph 3.15*). The area was designated with fencing by CSIRO some time during their occupation of the Site, it appears on aerial mapping to have been cleared prior to 1968 (*Photograph 3.16*). The Meteorological Plot is associated with the AFS as the remains of the meteorological station (1927-1981) and includes footings on which several meteorological instruments were located. It was also the only meteorological station in Canberra from 1927 to 1939. Various instruments associated with the Meteorological Plot are located inside the AFS.

Photograph 3.15 Meteorological Plot, north-west of the AFS

Photograph 3.16 The Plot, designated by a metal fence

3.5.1.2 Australian Forestry School (9)

The AFS is located on an elevated site fronting the intersection of Banks and Schlich Streets in Yarralumla (*Photograph 3.17*). The elevation of the site is emphasised by the brick paved steps leading to the front portal from the middle semi-circular drive (*Photograph 3.18* and *Photograph 3.19*). The AFS was constructed in 1927 on a flat, excavated block in the south-east corner of Westbourne Woods.

Photograph 3.17 View west towards AFS from Schlich Street

Photograph 3.18 View of AFS east façade with brick paved steps

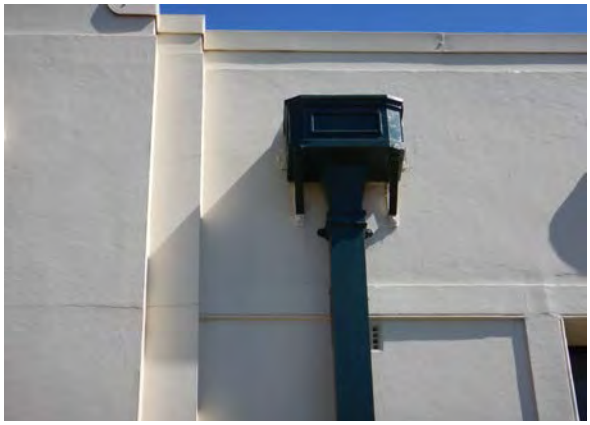
Photograph 3.19 Looking east down Schlich Street and onto semi-circular drive

External

The AFS is a single storey rendered masonry building, with a parapet and hipped roof clad with unglazed Marseilles tiles (*Photograph 3.20*). The AFS was designed in the inter-war stripped classical style, and the key features of this style are the symmetrical façade, vertical bay fenestration, restrained wall treatment, horizontal banding, roundels suggesting classical entablature and an expressive entrance portal. The building mass is a rectangular block, with the corners emphasised by the use of projecting bays. The east west axis is emphasised by the projecting front portal, where the parapet wall is stepped.

Photograph 3.20 East façade of AFS with tiled hipped roof, clad with unglazed Marseilles tiles

The downpipes are cast iron and evenly spaced along each elevation of the AFS, they are each painted the same colour as window frames, a dark teal (*Photograph 3.21*). The entrance door and rear external door are large classically designed arched doors of Queensland Maple (*Photograph 3.22* and *Photograph 3.23*). Either side of the main entrance are vertical, equally proportioned timber framed picture windows with cross bar section patterning, similar decorative treatment is seen on the main entrance door fanlight (*Photograph 3.22*).



Photograph 3.21 East façade of AFS with cast iron downpipes

Photograph 3.22 East façade main entrance. vertical picture windows and fanlight above main door

The remainder of the windows are generally vertically proportioned triple hung painted timber windows, with each corner of the building composed of arched windows (*Photograph 3.24*). A number of these arched windows have been sealed. Above the main entrance door is a crest, with the school motto, 'Mihi Cura Futuri', translated as 'to us is entrusted the future' (devised by N.W. Jolly, first Principal of the School) (*Photograph 3.25*). There are entrances to the building both from the east façade (main entrance) and the west façade (rear entrance), which has additional ramp access to the former museum (most southern room). The northern façade also has an additional stepped entrance which accesses the Conference Room (room #15) (former Laboratory) (*Photograph 3.26*).

Photograph 3.23 West elevation rear entrance door

Photograph 3.24 Timber framed arched window

Photograph 3.25 AFS crest, with the school motto, 'Mihi Cura Futuri'

Photograph 3.26 Northern façade of the AFS with additional stepped entrance to Conference Room

Internal

The AFS internal layout has remained relatively unchanged since its original construction and much of the original fabric has remained intact. Later conversions include:

- the original Museum is now an open plan office;
- Library is now a meeting room;
- Drafting room has been split into two small store rooms;
- the original laboratory is now an open plan office/meeting room, and
- both original lecture rooms on the north-east elevation have undergone layout changes (refer to *Figure 3.5* for current floor plan).

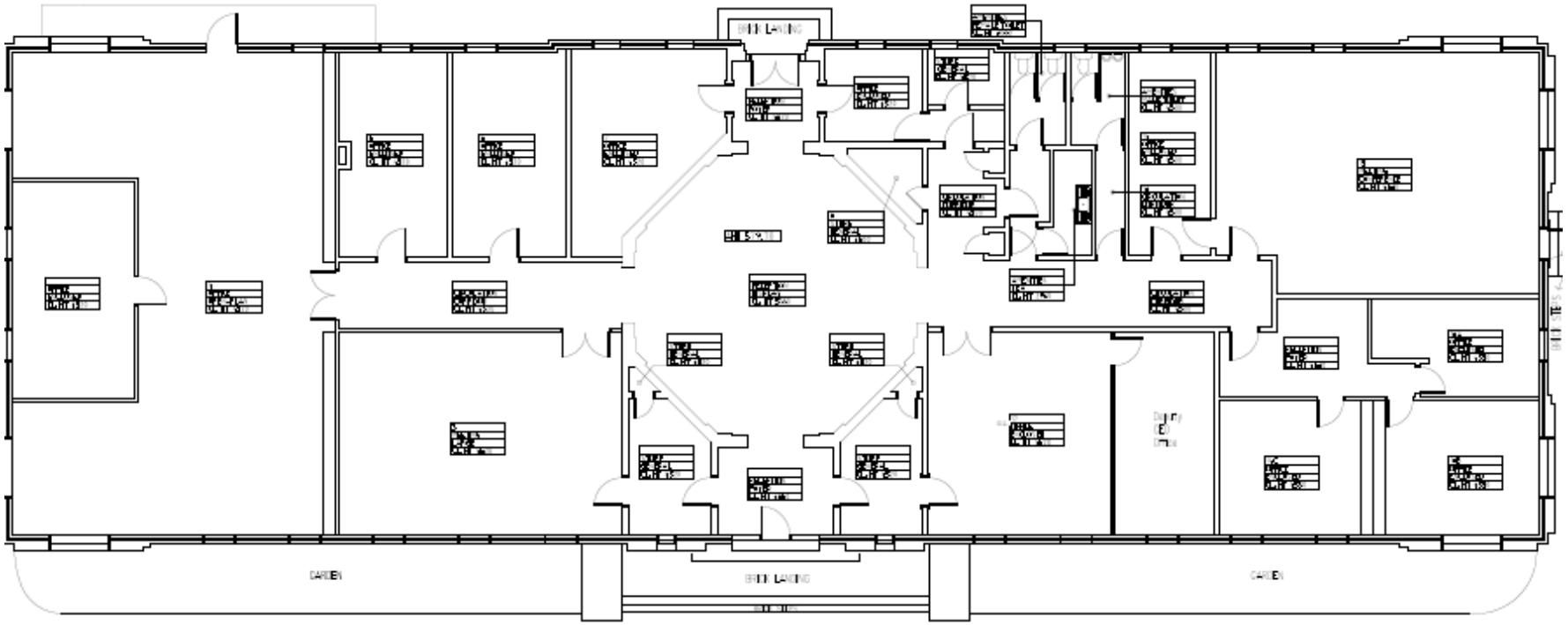


Figure 3.5 Current floor plan of AFS building (Oakstand 2020)

The timbers used in construction throughout, including concealed timbers, are all Australian hardwoods and softwoods and were a selection of both purchased and donated timbers from across the country. C.E. Lane-Poole wanted to showcase the variety of uses of Australian timbers, both hardwoods and softwoods, at a time when exotic timbers were preferable for construction.

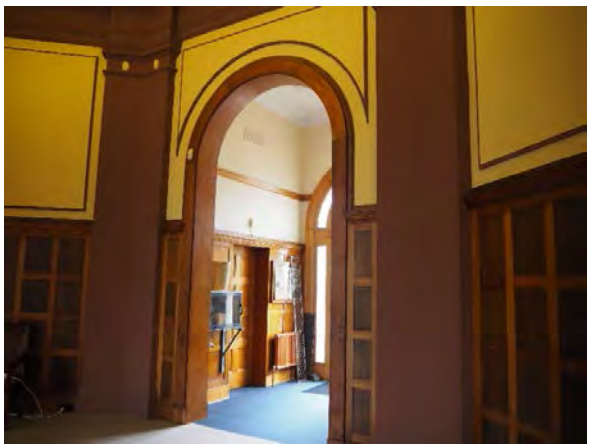
A vestibule leads from the entrance through an archway into a large octagonal hall in the centre of the building. The doors at the front and rear entrances, as well as all the interior doors and picture rails throughout the building are of Queensland maple. The front and rear vestibules have floors of jarrah, with an edging of blackwood and tallowwood, although this flooring has been concealed with carpet throughout most of the building (*Photograph 3.27*).The wall panelling, extending to a height of 2.3 m, is of Queensland maple. The two small rooms flanking the front vestibule have flooring of red mahogany. The flooring in these rooms is overlaid with linoleum sheeting, and both rooms are currently used for storage (*Photograph 3.28*).

Photograph 3.27 The front vestibule timber flooring has been concealed with carpet

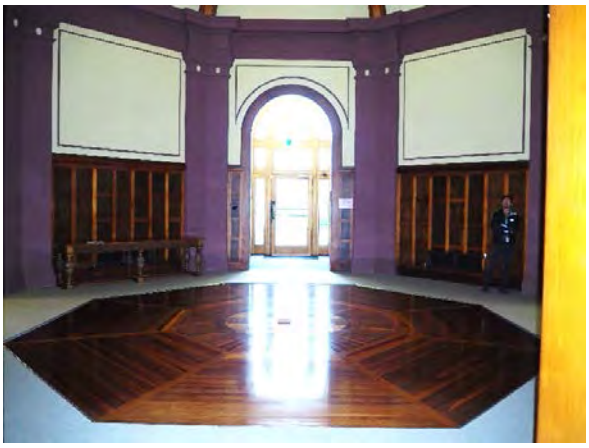
Photograph 3.28 Small room flanking the front vestibule used for storage (south)

The domed octagonal hall is possibly the most notable feature of the AFS. It occupies the centre of the building, and is entered from the east and west vestibules and north and south corridors by archways, each faced with a wide architrave of Queensland maple (*Photograph 3.29*. The extreme height from floor to dome is 7.62 m, and the floor has a diametrical width of 9.15 m. The parquet flooring utilises dark and light coloured hardwoods to striking effect (*Photograph 3.30*).

In the centre, a circle 1.5 m in diameter is inlaid with alternate dark red and light coloured squares of jarrah and mountain ash, forming a chessboard pattern (*Photograph 3.31*). From here to the base of the panelled walls there is a wide edging of blackwood, made up of 76 mm boards. The octagonal centrepiece has been sectioned off with metal strips around its perimeter and the remainder of the flooring in the central vestibule has been carpeted to protect the timber. A small sign in the centre of the timber feature reads '*Please do not walk on the wooden floor*'.



Photograph 3.29 Central vestibule with Queensland Maple archway



Photograph 3.30 Central dome with striking octagonal parquet flooring feature

The wall panelling has rails and stiles of blackwood and panels of Queensland walnut and extends up along the eight walls, broken by masonry columns at each of the eight corners (*Photograph 3.32*). Bounding a grill in the centre of the dome there is an octagon of Queensland maple, and from each corner of this to the capitol of each corner column there is a wide arch of the same timber. The white ceiling, with its eight wide groins or arches of maple, is lit indirectly from light globes concealed in a flat bowl or electrolier of blackwood, suspended below the centre of the dome by four long heavy brass chains (*Photograph 3.33*).

Photograph 3.31 Striking feature of the central vestibule, the octagonal parquet flooring inlaid with various Australian hardwoods (facing north) (NAA #3097919)

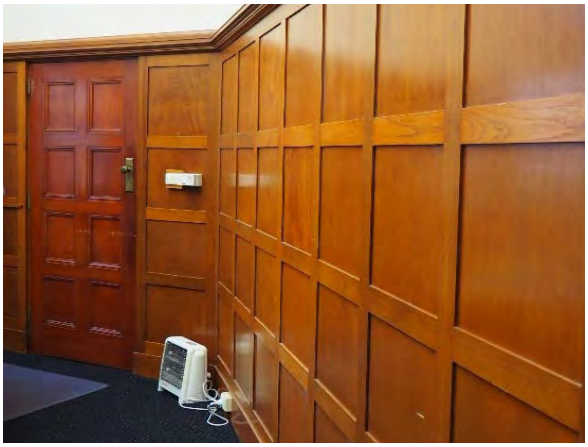
Photograph 3.32 Blackwood and Queensland walnut wall panels in central vestibule

Photograph 3.33 Electrolier of blackwood suspended by brass chains

The south corridor leads to the former library (first door on the left) and former museum at the end of the hall, the original principal's office (first door on the right) and two storage rooms (also on the right). The two storage rooms were originally one large open room known as the drafting room. A wall has been constructed to separate the two rooms, though the continuous maple picture rail was fitted to ensure continuity of design, the two doors and door framing is original. The floor in the original drafting room was blackbutt, this is likely to remain under the current carpet.

The south corridor is floored with coachwood, though this has been carpeted (*Photograph 3.34*). The former principal's office (first room on right) is floored with crow's ash, (again, carpeted) and panelled with red cedar (*Photograph 3.35*). The next room along (south corridor, western side) is floored with blackbutt.

Photograph 3.34 Southern corridor is floored with coachwood, though this is concealed with carpet

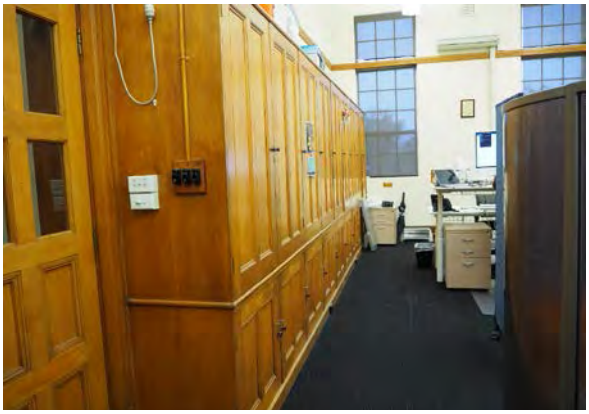


Photograph 3.35 Original Principals Office panelled with red cedar

The large room at the end of the corridor is the former museum (*Photograph 3.36*). This room has a number of early and original features, including early timber switchboard and in-built cupboards (*Photograph 3.37*). The floor here is of tallowwood, though this has been carpeted. The original built-in cupboards are of Queensland maple and the later wall shelving is of hoop pine with facing and ends of cedar (*Photograph 3.38* and *Photograph 3.39*). A picture rail of maple runs around the perimeter of the room, this is mirrored throughout the AFS.

Photograph 3.36 The end of the southern hall, former museum entrance now offices

Photograph 3.37 Timber switchboard fixed to original in-built cupboards

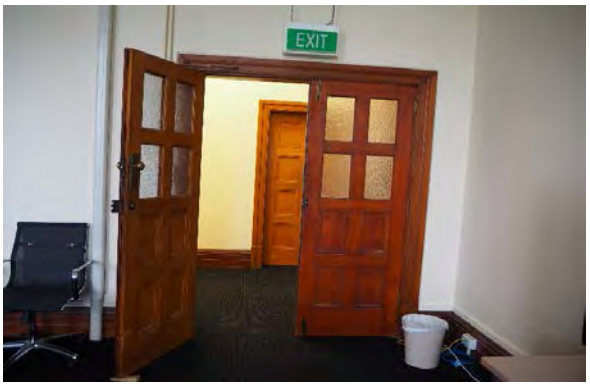


Photograph 3.38 Original built-in cupboards of Queensland maple

Photograph 3.39 Later wall shelving along northern wall is hoop pine

The large open plan room has remained relatively intact since its original construction, however there was an intrusive addition to the room added sometime during the early 2000s when the AFS was utilised by the National Aeronautics and Space Administration (NASA) working with the CSIRO at the time. The addition is a large gyprock and plaster room (floor to ceiling) that fills a large space in the centre of the room along the south wall. The room is currently utilised as a server room and for storage (*Photograph 3.40*).

Photograph 3.40 Modern gyprock and plaster internal office, added c.2000s



Photograph 3.41 The original doors to the library, entered from the southern hall

The room on the eastern side of the south corridor (original library) is floored with Tasmanian myrtle. The hallway carpet extends into this room (*Photograph 3.41*). There is a picture rail of maple around

the perimeter of the room (*Photograph 3.42*). The library has had a number of internal alterations for its current use as a conference/lecture space however it retains its original double access doors, timber flooring (now carpeted) and maple picture rails. Along the northern wall is an original door that provides rear access to the store room within the front vestibule.

Photograph 3.42 Original Library, picture rail of maple runs around the perimeter of the room

The northern corridor is floored with mountain ash, as is the first room to the right (original lecture room) (*Photograph 3.43* and *Photograph 3.44*). The first room to the right (originally one large lecture room) is divided into two sections, separated by a glass viewing window supported by a central beam, maple picture rails run around the perimeter of the room and frame the centre divider (*Photograph 3.45*).

Photograph 3.43 Northern corridor facing the central vestibule (ERM 2020)

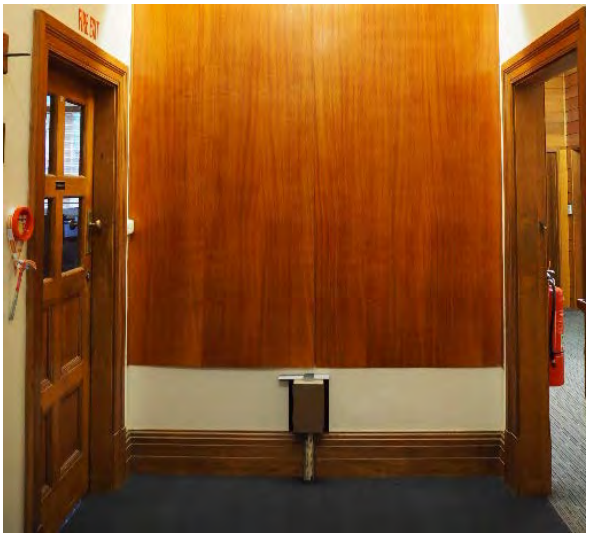
Photograph 3.44 Original lecture room which are now offices

Photograph 3.45 Dividing wall and original maple picture railing

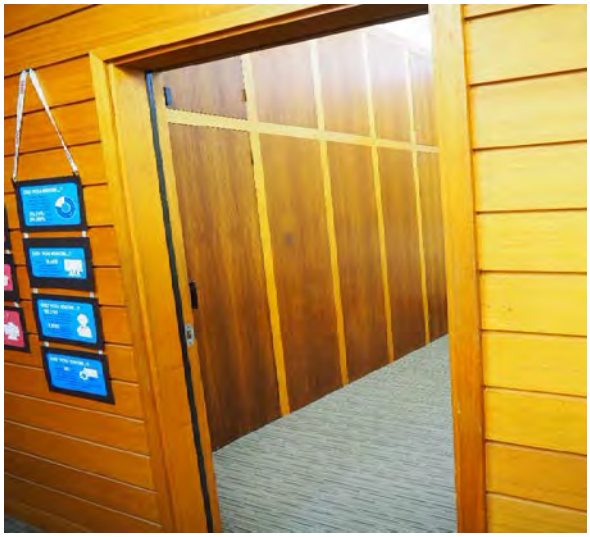
The northern corridor also provides access to a number of small storage areas, the male and female lavatory, the original typists' room and switchery (located in the north-west corner of the central vestibule). This suite of rooms has undergone minor modifications over time to allow for new uses, however much of the original timber finishes, and all original doors have been retained. There is also an original panic button located on the timber archway to the central vestibule, this button would have been wired from the original switchery room located behind this wall (*Photograph 3.46*).

Photograph 3.46 Original c.1920s panic button

The northern end of the hall is accentuated by the large timber panel. On the left is access to the conference room (#15) (original laboratory) and to the right is a later addition vestibule (*Photograph 3.47*). The suite of offices to the north-east corner (originally one larger lecture room) has been divided by a small vestibule used as a waiting area and access to offices 16a, 16b and 16c. This small room has been clad in later addition hardwood panels (timber unknown), this same panelling is along the western wall of office 16c (*Photograph 3.48*). Each office has elements of original fabric, including the continuation of maple picture rails, timber skirting and original window fabric, as well as each ceiling has the same continuous detailing and cornices (*Photograph 3.49* and *Photograph 3.50*). These spaces have flooring of spotted gum (*Eucalyptus maculate*), though again this has been concealed with carpeting.

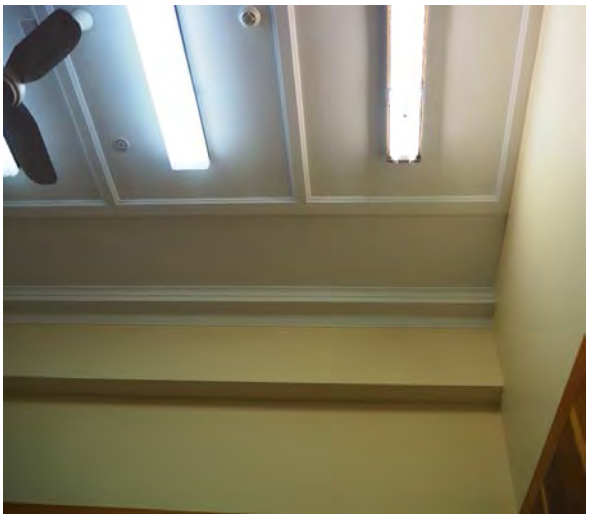


Photograph 3.47 Access to offices 16a, 16b and 16c (right) and the conference room 15 (left)



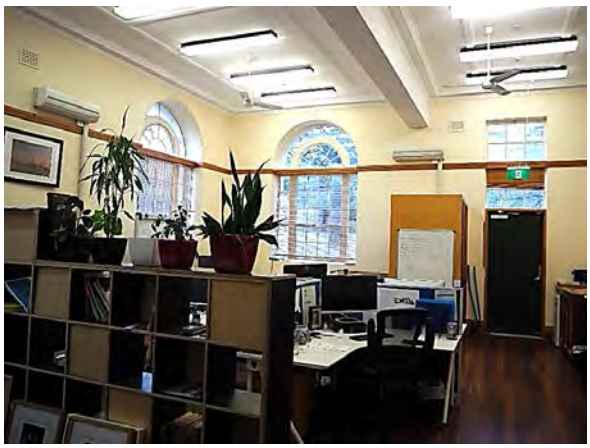
Photograph 3.48 Northern waiting room vestibule and office 16c, clad with later addition timber panels

Photograph 3.49 Corner office 16b with original window fabric and picture rails

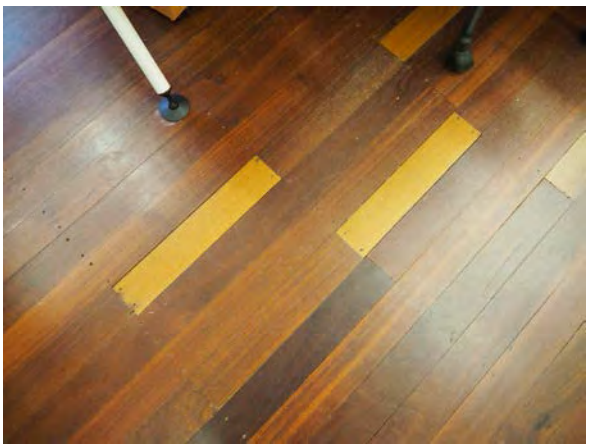


Photograph 3.50 Each office has the same continuous detailing and moulded cornices

The conference room (#15) in the north-west corner was originally divided into two rectangular spaces, the dividing wall beam in the centre of the ceiling remains. The room is current used as an open plan office (*Photograph 3.51*). The conference room has jarrah 'wood strip' style flooring, areas of some cut-in replacement sections can be seen (*Photograph 3.52*).



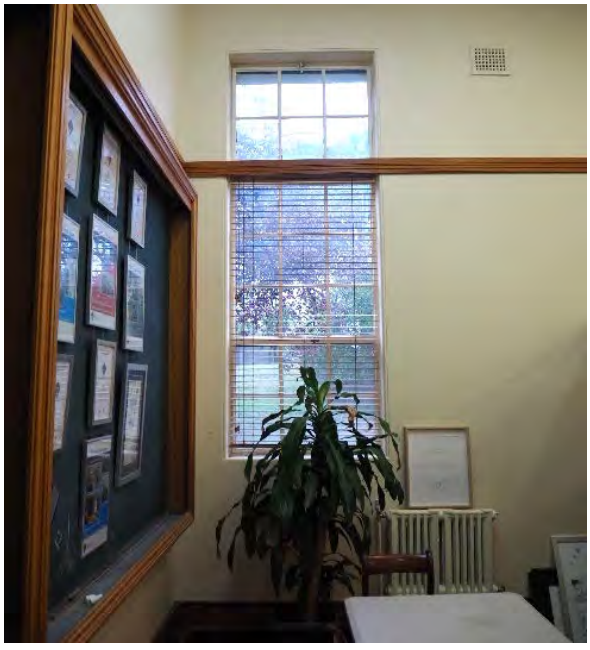
Photograph 3.51 Conference room (#15) (originally a laboratory)



Photograph 3.52 Jarrah 'wood strip' style flooring with two cut-in replacements of different wood

The conference room, like the other rooms within the AFS, has the same maple picture railing, timber skirting and original cast iron radiators (*Photograph 3.53*). There is also an original timber frame notice board fixed to the southern wall and a series of small wall vents between the ceiling and picture railing (*Photograph 3.54*). The conference room has retained its original timber framed windows.

Photograph 3.53 Timber skirting and cast iron radiator fixed to wall (ERM 2020)



Photograph 3.54 Original features such as timber frame notice board (left) and small vent above picture railing (ERM 2020)

3.5.1.3 Industrial Museum; Forestry and Timber Bureau Offices (10)

The former Industrial Museum/Forestry and Timber Bureau Offices is located behind the AFS to the west and fronts onto Wilf Crane Crescent and the oval. The building was originally designed as an industrial museum for the collections held by the Forestry and Timber Bureau. The museum was to display seeds, papers, woods and soils, and included a carpenter's workshop.

The building was constructed in 1938 by the Department of the Interior with plans and specifications supplied by the Works & Services Brach in Acton, Canberra.

External

The building is a single storey rendered masonry building, with parapet walls and a terracotta tile hipped roof. It has key features of the same inter-war stripped classical style, such as the symmetrical façade, vertical bay fenestration, restrained wall treatment, horizontal banding of the base, roundels suggesting classical entablature, an expressive entrance portal, and the stepped parapet and corners (*Photograph 3.55*). These design features were chosen deliberately in order to match the existing AFS building, these features have remained intact (*Figure 3.6*).

Photograph 3.55 Former Industrial Museum southern façade with vertical bay fenestration and expressive entrance portal

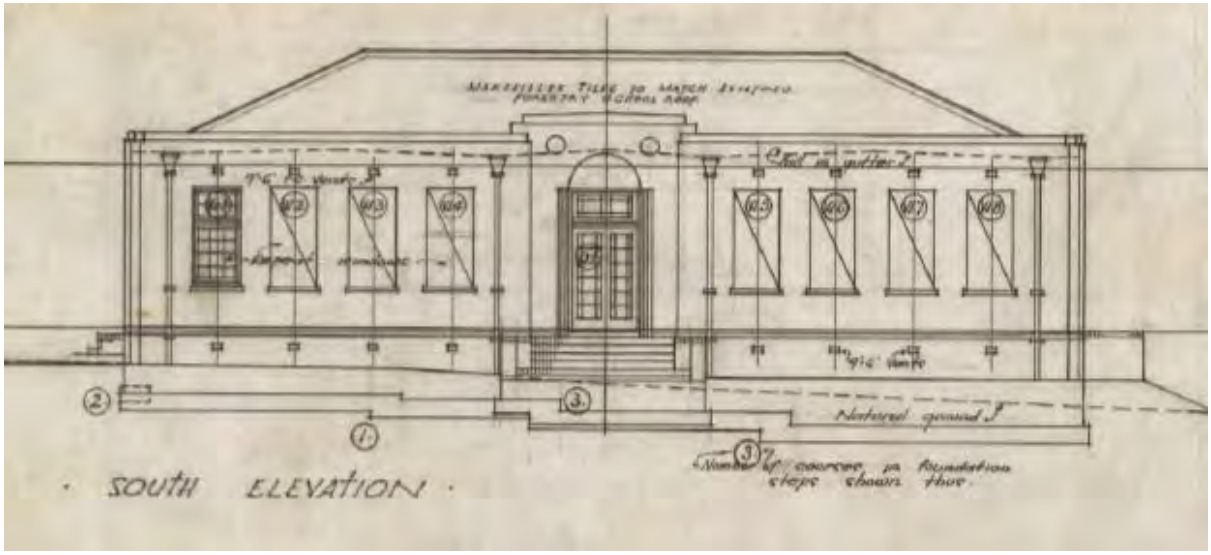


Figure 3.6 The original plan for the southern façade of the Industrial Museum, the external details have remained intact (NAA #7689917

The roof is framed in seasoned hardwood with wall plates bolted to brickwork. The roof of the former Industrial Museum is clad with unglazed Marseilles tiles, these are tied to pine roof battens with No.14 gauge copper wire.

A number of spare tiles are piled along the building's north elevation, including the modern 'Monier Wunderlich' French tiles (*Photograph 3.56* and *Photograph 3.57*). All flashing and box guttering is 24 gauge sheet copper.

Photograph 3.56 Spare roof tiles located along north elevation

Photograph 3.57 Close-up of roof tile, 'Monier Wunderlich' French tiles

The former Industrial Museum was carefully constructed with deliberate selection of brick faces. The bricks for this build were all purchased from the Department of Interior's brickworks. The building has brick reinforcement under all window sills and over all window and door heads. All thresholds are terrazzo or brick on edge. Dampcourse throughout the building has lead core for brick walls and lead for windows. All windows are of timber box frame with the sill, transom, sashes and fanlights either alpine ash, tallow wood or red cedar.

The expressive entrance portal is brick stepped, with small roof extension to protect visitors from the elements (*Photograph 3.58*). There are two layers of double doors, including screen door and timber framed door. Either side of the entrance are landscaped garden beds planted into dwarf walls. The building has reinforced concrete foundations with face bricks used for bases, dwarf walls and all steps.

Photograph 3.58 Expressive entrance portal, southern façade

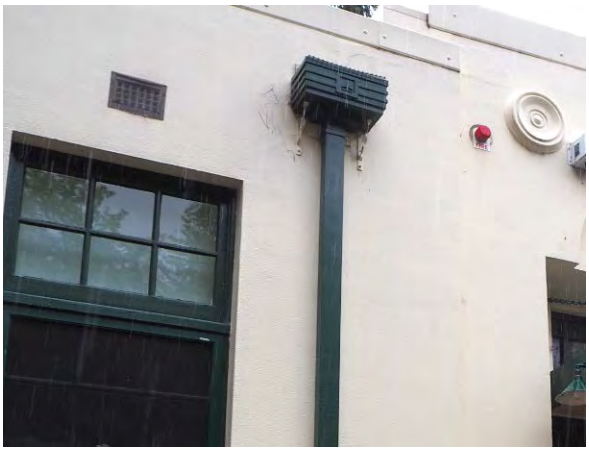
Photograph 3.59 East elevation with face brick stepped entrance

The eastern elevation has the original face brick stepped entrance, which was formally used as side access to the seeds store and woods room (*Photograph 3.59*). The western elevation has a set of four evenly spaced vertical bay windows with transom windows, the two centre windows were added during the conversion of the building to offices for the Forestry and Timber Bureau in 1946 (*Photograph 3.60*). The northern elevation has seven vertically aligned sash windows with transom windows, these are separate by cast iron downpipes (*Photograph 3.61*).

The intent for the cast iron downpipes was to match the design of the AFS cast iron downpipes however they are more decorative than the AFS building, and also do not appear to be the preferred shape in the original plans (*Photograph 3.62* and *Photograph 3.63*).

Photograph 3.60 Western elevation, originally had stepped entrance flanked by two vertical bay windows

Photograph 3.61 Northern elevation, seven vertical sash windows with transoms



Photograph 3.62 Cast iron downpipe with subtle classic inter-war period detailing

Photograph 3.63 Cast iron downpipe from the AFS building

Internal

The former Industrial Museum is a single storey building with a rectangular floor plan. The building has undergone a number of internal changes since its original construction and layout as a museum. It was converted into an administration and offices building for the Forestry and Timber Bureau in 1946, and has undergone minor alteration to its internal layout following this conversion.

The 1946 conversion involved the installation of three partitions to create six new office spaces along the northern elevation, the removal of the west elevation doors and installation of an additional two windows. The western half of the woods room was also converted into rest rooms. The conversion also included the removal of all internal original museum shelving and in-built cupboards including hoop pine bench tops, shelving, pigeon holes, benches and bins, as well as removal of the timber flooring in the south-west corner of the building which was replaced with tiles for the rest rooms.

The new internal layout along the northern elevation included offices 1, 2, 3 and 4, typists' office and secretary’s office.

These offices were separated by a central east/west corridor that extends the length of the building. The northern elevation included the restrooms and machine room to the west. The original papers room remained, though the seed's room was converted into an office for the Inspector General of Forests (then, C.E. Lane-Poole, also Principal of the AFS) (*Figure 3.7*).

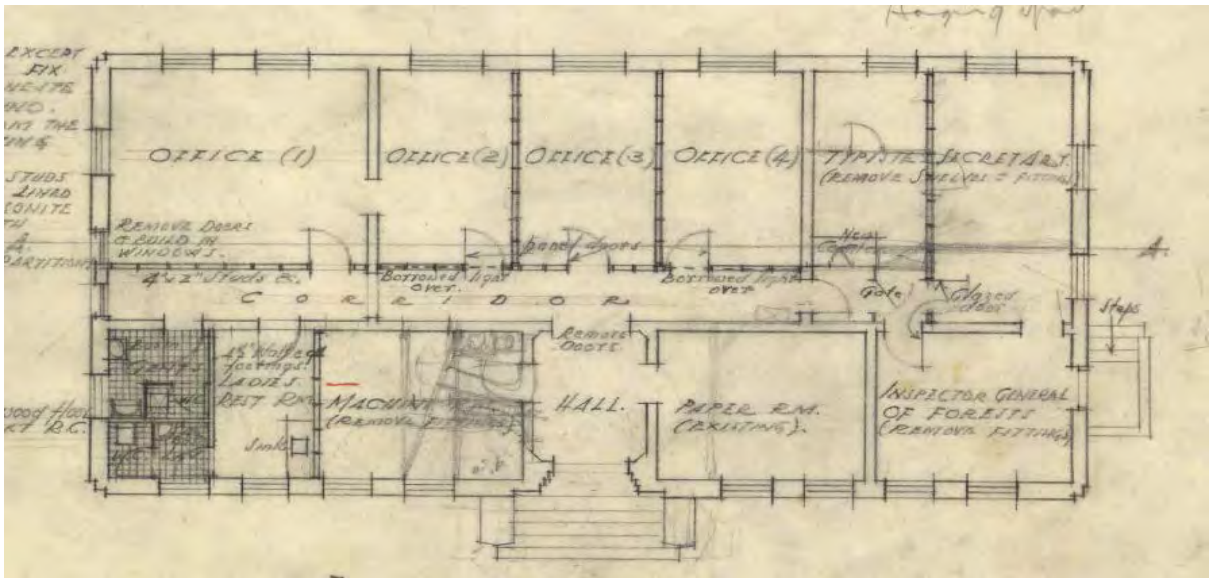


Figure 3.7 Plan for the conversion of the Industrial Museum into administration offices (NAA #7689906)

The results of this 1946 layout conversion have remained relatively unchanged along the northern elevation (*Figure 3.8*). The 1946 men's restrooms have remained in the same location, and the internal fittings and tiling is intact, though the ladies' restroom has been converted into a modern canteen/kitchen.

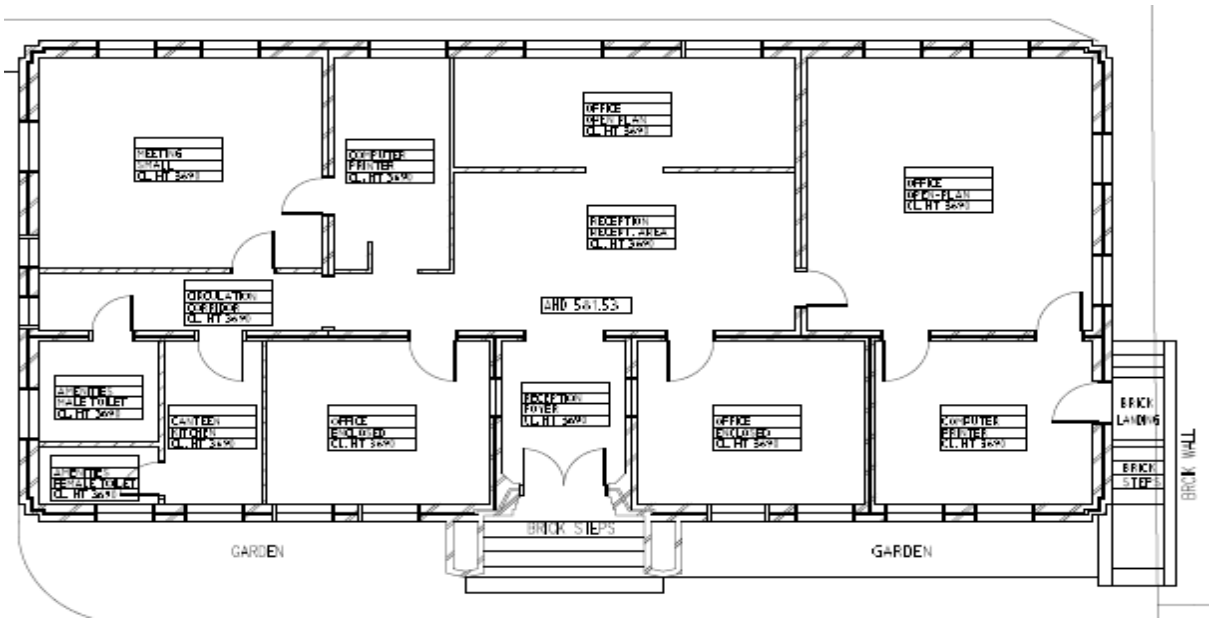


Figure 3.8 Current building 10 plan, only minor alterations since 1946 conversion (Oakstand 2020)

The 1946 machine room is now an office, along with the papers room, and the Inspector General's office has remained an office space. The central corridor remains, though it no longer extends the length of the building as the typists', secretary's room and a portion of the corridor has been converted into one large office. The timber framed glazed door with transom window was installed at the time of this conversion (*Photograph 3.64*).

This new open office provides access to the former Inspector General's office. The original entrance to the former seeds room (later Inspector General's office) is the east opening – the one next to it (west opening) was installed during the 1946 conversion (*Photograph 3.65*). Both office spaces have original window fabric and timber framing as well as timber skirting. The timber framed glazed doors where installed during the 1946 conversion. Both rooms are carpeted, the original timber flooring is likely to remain beneath.

Photograph 3.64 The former typists', secretary's room and a portion of the corridor has been converted into one large office, door with transom installed 1946

Photograph 3.65 Access to former seeds room (later Inspector General's office) doorway on the left original opening – right doorway installed 1946

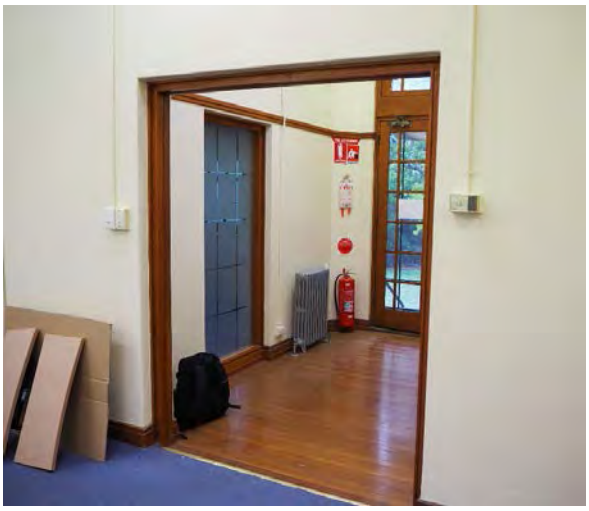
The 1946 central offices 3 and 4 along the northern elevation have been converted into one large open office, vertical partition walls have been removed and two new horizontal partition walls installed. Office 1 layout has remained unchanged since 1946, though the external wall to office 2 was removed and replaced by a thick studded partition wall.

All interior walls have one coat of plaster and fibrous plaster ceilings. The original timber finishes have remained intact, including pine picture railing around whole rooms on all sides in former soils room (now open plan north-east office). Timber is all generally of Australian growth, with hardwood for framing and tallowwood flooring. All joinery, linings, and finishing timber is of alpine ash and Queensland maple. There is original moulded Queensland maple skirting running around the perimeter of nearly all rooms (except the rest rooms and kitchen).

Photograph 3.66 The double entrance doors and transom are Queensland maple

The double entrance doors to the building are heavy Queensland maple, as well as the transom window above (*Photograph 3.66*). Either side of the front vestibule entrance are timber-framed picture windows with frosted patterned glass, these openings were originally doors to the papers room on the east of the vestibule (*Photograph 3.67*) and woods room on the west.

The original tongue and groove tallowwood flooring in the front vestibule entrance hall remains intact. All window sills and external door frames, also of tallowwood, remain intact. The flooring has been carefully sanded and hand sanded where the machine could not reach along skirtings, originally given one coat of linseed oil, and wax polished. The floors to the carpenter's shop (1946 Office 1), wood room (1946 restrooms and machine room) and paper room are tongue and groove cypress pine. These rooms have undergone conversion however some of this flooring may remain intact under the carpet in all rooms except the restrooms and kitchen.



Photograph 3.67 Timber framed frosted picture window, originally door to Papers room

Photograph 3.68 Original tallowwood tongue and groove flooring in the front vestibule

3.5.1.4 Store (Building 013)

The Store building (13) was built in 1949 and is located at the rear of the Service Yard Group. It is close to the Nursery, slightly east and nestled between a grouping of Nursery pines and the Fire and Wind Tunnel (26). The Store is a single storey weatherboard building, with a steep pitched corrugated iron gable roof (*Photograph 3.69*). The Store has a simple post and beam attachment with corrugated iron cladding sheltering the main timber slat double entrance doors. The Store has a set of timber framed casement windows on each elevation except its south façade entrance (*Photograph 3.70*). The Store building appears to have retained its original use, with piled archival boxes currently stored towards the rear of the building (*Photograph 3.71*).

Photograph 3.69 Store (013) southern façade, timber slat double doors

Photograph 3.70 Timber framed casement windows along east elevation

Photograph 3.71 Archival boxes stored in Store

3.5.1.5 CSIRO Pyrotron Complex/Service Yard Group

The Service Yard Group includes buildings 12c, 12a, 12b, 14, 14a, 14b, 15, 16 and 29 within a large fenced area north-west of the AFS and was most recently utilised by CSIRO's Pyrotron research group. The complex was constructed during the 1970s and included carpenter's and engineer's workshops along with several storage sheds and offices. The Service Yard group replaced an original c.1927 carpentry shop, and a lecture room and drafting room that were added in 1948. Building 12c, 12a and 12b are single storey low brick buildings with metal deck roofing, metal framed windows and roller doors (*Photograph 3.72* and *Photograph 3.73*).

Photograph 3.72 Building 12c with metal roller doors in the background (left) and open shed (16) in foreground

Photograph 3.73 Building 12b

Building 12a has timber framed doors and windows (*Photograph 3.74*)To the south of this group is a simple open steel post and beam shed with klip-loc Colorbond roof and west wall (building number 16) which sits next to a modern two-door garage (building 29) (*Photograph 3.75*). Building 14, 14a and 14b are single storey face brick buildings. 14a has an open verandah with terracotta tile skillion roof. Each building has metal framed windows (*Photograph 3.76*).

Photograph 3.74 Building 12a, with timber framed windows

Photograph 3.75 Double door modern shed (29) south of Building 12b

Photograph 3.76 Building 14a, 14 and 14b (left

3.5.1.6 Former Seeds Store (Building 17)

The Store building 17 is located behind the former Museum building (010) to the north and was constructed prior to 1938 as a carpenter's workshop. Store building 17 is a single storey building that is divided into two separate sections, each with separate entrances. The building is clad in horizontal weatherboards and has a terracotta tile hipped roof. The building is composed of timber double hung sash windows and timber doors with fixed glazed panels. The windows are generally located along the top of plate of the timber stud walls.

The building first appears on a site plan for the construction of the former Industrial Museum, which indicates the Store as being an 'existing workshop'. The building was used as a laboratory and store for seeds until the mid-1960s, when it housed printing equipment for some years. The building was converted to a laboratory and seed store sometime during the late 1930s or 1940s by the Department of Works and Housing, Canberra. The conversion included the installation of new stud walls and removal of original partition walls, doors and shelving, and the installation of laboratory sinks. The building is not currently utilised, though it was repainted in 1998. (*Photograph 3.77*).

Photograph 3.77 Building 17, former Seeds Store

The southern section of the Store has two entrances, one double door entrance with transom windows along the southern elevation (as indicated by *Photograph 3.77*) and a single stepped entrance along the east façade. This door also has a small transom window (*Photograph 3.78*). Internally, this south-east portion of the Store has a single timber tie beam in the centre of the room supported by a central post and strut system (*Photograph 3.79*). All internal timber surfaces have been painted white, timber flooring has been carpeted.

Photograph 3.78 East façade of Store 17 with single stepped entrance

Photograph 3.79 Inside the south-east portion of Store 17, timber beam and simple strut system

The northern portion of Store 17 is accessed via a single timber framed door on the north elevation with single concrete step. Internally this space is similar to its neighbour, with central beam, however in this room the tie beam has been fitted with a set of two timber pigeonhole cupboards on either side of the central post (*Photograph 3.81*). These pigeonhole cupboards are likely to be associated with the building's period as a Seeds Store.

Photograph 3.80 Northern elevation access to the Store 17

Photograph 3.81 Timber pigeonhole cupboards fitted either side of central post

3.5.1.7 Lavatory/Changeroom (Building 18)

The Lavatory building (18) was constructed sometime during the 1940s, likely at the same time as other onsite developments in the 1940s such as a Lecture Room and Drafting Room that were constructed within the now Service Yard Group in 1948 (directly adjacent to this lavatory). The Lavatory/Change Room sits on a large concrete base that extends as a path leading towards to Service Yard Group. The building is a single storey vertical weatherboard clad building with a flat slanted roof (*Photograph 3.82*). There are two doorways which have steel mesh doors and highlight glazed louvre windows (*Photograph 3.83*). The original timber 'Ladies' and 'Gents' signage remains on the building (*Photograph 3.84*).

Photograph 3.82 Lavatory/Changeroom (18)

Photograph 3.83 South elevation of Lavatory/ Changeroom with louvre windows

Photograph 3.84 original 'Ladies' signage

3.5.1.8 Shed (Building 22

Shed 22 is the former Forest Research Institute Garage and was erected during the 1970s along with the series of carpenter's and engineer's workshops and storage sheds and offices constructed north of the AFS within the new Service Yard Group. Building 22 is a moderately sized prefabricated steel structure, clad with vertical klip-loc wall sheeting and corrugated iron gable roof (*Photograph 3.85*). The Shed has a large double door way along its south façade, and another set of double garage doors along its eastern elevation (*Photograph 3.86*).

Photograph 3.85 Shed (22) with gable roof and large double doors along south façade

Photograph 3.86 Additional double garage doors along east elevation

3.5.1.9 Fire Wind Tunnel (26

The Fire Wind Tunnel or 'Pyrotron' was constructed by the CSIRO in 2008, designed by the CSIRO Pyrotron research group[1]. The structure was the first of its kind in the state. The bushfire wind tunnel was used to research how bushfires spread and to improve the safety and firefighting capabilities of Australian communities. The Pyrotron is a 25 m long aluminium wind tunnel with a five metre-long fuel bed and a viewing section lined with toughened glass.

Photograph 3.87 Fire Wind Tunnel (26)

Photograph 3.88 View of the Fire Wind Tunnel from the north-east corner of Westridge House yard

3.5.1.10 Tennis Courts (30)

Two Tennis Courts (30) were established for the staff and students of the AFS in 1930. Principal of the AFS, Charles Lane-Poole, had recognised the need for students to have a recreational facility available to them, and requested two tennis courts be constructed for use by staff and students. With a limited budget, much of the work was carried out by the students themselves. The Tennis Courts are located west of the AFS and behind the former Industrial Museum building (10) and early Seed Store (17). The Tennis Courts are contained within a large mesh fence (*Photograph 3.89*).

[1] It is unclear whether this structure is indeed the 'Pyrotron' the previous assessment notes the wind tunnel to have been constructed in 1997. However a description of the 2008 Pyrotron is similar to this structure, information was found in this article: https://theconversation.com/profiles/andrew-sullivan-22618

The surface of the courts is clay (Paddys River gravel). The modern net equipment has been removed. Located between the courts is a timber seat with a klip-loc metal sheet roof, erected by CSIRO staff in memory of a colleague, Jeanette Thomas, who died in 1988.

Photograph 3.89 Tennis Courts, located east of the AFS (ERM 2020)

3.5.1.11 Nursery

The Nursery encompasses the north-west corner of CSIRO Yarralumla and contains large groupings of mature pine plantings, some of which were planted as early as 1914/1915 during the establishment of Charles Weston's Westbourne Woods (*Photograph 3.90*). While there are no remaining built structures within the Nursery, the foundations of an early plant house with brick base on concrete platform remains (*Photograph 3.91*). To the west of the Nursery area is a group of kurrajong (*Brachychiton populneus*) and to the north-west of the Nursery is a large grouping of monterey pine (*Pinus radiata*), a group known as the 'Tower Plot'. To the north of the Nursery is a large group of ponderosa pine (*Pinus ponderosa*). The Nursery also includes groupings of eucalypts.

Photograph 3.90 Grouping of unknown species (ERM 2020)

Photograph 3.91 Remains of early plant house with brick base (ERM 2020)

3.5.2 West Zone – Built Elements

The West Zone of CSIRO Yarralumla comprises a number of key built elements associated with the post-war development of the Site, such as Forestry House (2), the Caretaker's Residence (5), a collection of four Glasshouses and Workshop (Building 4 Group) and the Controlled Environment Building (3). Each element is listed below in *Table 3.5* and described in more detail in the following sections.

Table 3.5 Western section – key elements log

Asset Number	Asset Name	Photo
2	Forestry House	
3	Controlled Environment Building	
4	Glasshouses Workshop	
4a, 4b, 4c, 4d	Glasshouses	
4h	Shade house	

Asset Number	Asset Name	Photo
4e	Soil Preparation Shed	
5	Caretaker's Residence	
5a	Shed	
24	Shed	

3.5.2.1 Forestry House (Building 2

Forestry House sits adjacent to the Oval to the south-west of the AFS (*Photograph 3.92*). Although the Australian Forestry School was a Federal Government initiative, the Commonwealth had not accepted responsibility for student accommodation. When the AFS opened in 1927, students lived off-site at the former Government Printery at Kingston, occupying the staff quarters. In 1949, construction of a new residential college, then referred to as 'the Forestry Hostel', commenced. The building was designed by the Commonwealth Department of Works and designed to be a social living space, with library and open plan lounge and a small billiards room, open air recreation space and large dining room. The hostel was completed in 1952 and was described as:

> '[…] *a modern residential building designed to accommodate 40 students in single rooms, with a library, lounge room, billiard room, dining room and well-appointed kitchen*' (Forestry and Timber Bureau 1952).

The hostel was not known as Forestry House until 1956, though it's unknown who coined the name. The lounge room was used as the library for some years prior to 1976. Since being vacated by students in the late 1960s, the building has undergone several rounds of alterations to convert the student accommodation into offices and laboratories.

Photograph 3.92 Forestry House east façade

External

Forestry House is a rendered masonry building with stucco walls and hipped roof clad in terracotta tiles in the same style as both the AFS and former Industrial Museum building (*Photograph 3.93*). Forestry House is composed of three wings arranged about an east-north-south axis. Each wing centres on the front vestibule which also acts as the main entrance, flanked by manicured hedges and landscaped gardens (*Photograph 3.94*). The east-west wing and the south wing of the building are single storey with timber-framed sash windows, a high-pitched tiled gabled roof and features a bronze and timber turret at its apex (*Photograph 3.95*). The design of Forestry House reflects the post-war American colonial style, a key feature being the bronze and timber turret roof, and exposed ceiling timbers in the former lounge room.

Photograph 3.93 South-east façade of Forestry House with hipped terracotta tiled roof

Photograph 3.94 Central vestibule flanked by manicured hedges and landscaped garden

The south-west elevation has ramp access onto its tiled open verandah and houses a large meeting room and small seminar room and further two enclosed offices (*Photograph 3.96*). The south-west elevation has a series of large timber framed doors with transom windows and double hung fixed windows that open out onto the tiled verandah (*Photograph 3.97*)

Photograph 3.95 Bronze and timber turret at apex of gabled roof elevation

Photograph 3.96 Tiled open verandah along south-west elevation

The north wing, which is 'L' shaped, is double storey with high pitched tiled gabled roof and was originally designed to house up to 40 AFS students in separate dorm rooms (*Photograph 3.98*). This elevation has timber framed sash windows and casement fly screens, these windows have brick sills (*Photograph 3.99*). The west façade of Forestry House (like both the east and north facades) is bordered by manicured gardens and a single concrete pathway (*Photograph 3.100*).

Photograph 3.97 Timber framed doors with transom windows

Photograph 3.98 'L' shaped north wing, originally student accommodation rooms

Photograph 3.99 Timber framed sash windows, casement fly screens

Photograph 3.100 Manicured garden along west elevation

The west elevation is emphasized by a lower border of brick face and timber framed windows brick sills. The west elevation also has a number of chimneys (*Photograph 3.101*). These chimneys (except for one) can't be seen from the east façade, a deliberate attempt to maintain a clean and ordered finish to the building's façade. The north-west corner of the building is sheltered by a large manicured hedge (*Photograph 3.102*). This hedge borders a picnic area that is overlooked by the north-west elevation offices, this area was designated as an 'open air recreation space' in the original design for Forestry House (*Photograph 3.103*). To the south of the picnic area (north elevation) is an open verandah supported by face brick posts and concrete flooring (*Photograph 3.104*).

Photograph 3.101 West elevation brick face dado and series of chimneys

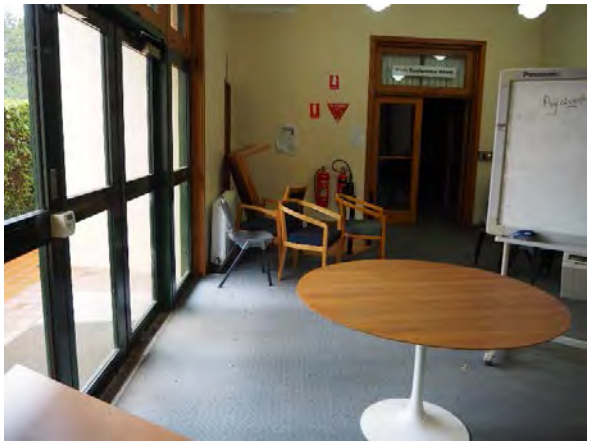
Photograph 3.102 Concrete pathway leading to sheltered picnic area

Photograph 3.103 Sheltered picnic area overlooked by north-west offices

Photograph 3.104 Open verandah with face brick posts (north elevation)

Internal

Forestry House has had number of internal modifications associated with its conversion to an office building by the CSIRO in 1996, however much of the original fabric remains to the ground floor level. The main entrance foyer vestibule has retained the timber entrance doors and door frames (*Photograph 3.105*). The timber skirting and dining hall entrance doors with transom windows are original (*Photograph 3.106*). The area is currently utilised for storage, stacked chairs and tables. The light fittings have been modernised, and the floors are carpeted.



Photograph 3.105 Front vestibule and entrance foyer

Photograph 3.106 Original timber framed dining hall entrance with transom windows (ERM 2020)

The dining hall has also retained much of its original fabric, including timber valance above timber framed sash windows and doors. These overlook the picnic area and verandah along the north elevation, these also have transom windows (*Photograph 3.107*). The timber is unpainted for the sash window next to the service area, this window looks out onto the south-west garden area and former Billiards room extension (now offices) (*Photograph 3.108*). The dining hall includes the Max Jacobs Collection timber conference table (*Photograph 3.109*). The Hall has timber flooring and skirting, and an unusually shaped curved timber service area clad in steel with brass studs, which is a modern addition (*Photograph 3.110*).

Photograph 3.107 Timber sash windows with transom window overlooking picnic area

Photograph 3.108 Timber framed sash window looking out onto the south-west garden and former billiards room

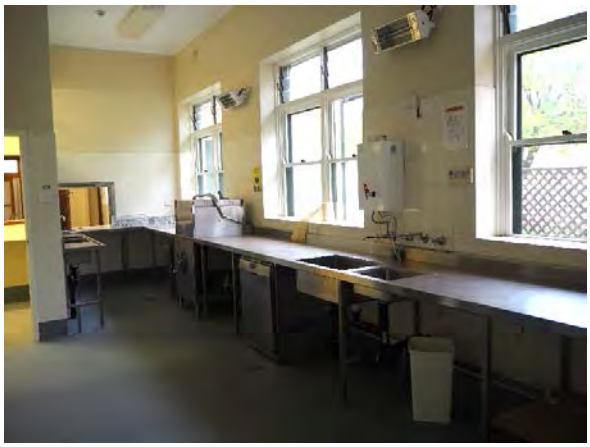
Photograph 3.109 Original dining hall with Max Jacobs conference table

Photograph 3.110 Curved timber service area clad in steel and secured with brass studs, a later 1980s/90s alteration

The dining hall also has an original brick fireplace surround in the centre of its northern wall, however the recess has been panelled over and it is not operational. The kitchen and storage areas located within the west wing of Forestry House have largely maintained original uses. The service area includes the original timber folded service hatch door. Modifications have occurred in the kitchen and storage spaces including the removal of tiled flooring, however the original timber sash windows have been retained throughout (*Photograph 3.113*). The western-most corner of Forestry House has been converted into storage and laboratory support rooms (originally laundry and ironing rooms). The original boiler room space remains, though the 'cook's toilet' has been converted into a cold storage room with tiled walls, the rear door with transom window (*Photograph 3.114*).

Photograph 3.111 Original brick fireplace in Dining Hall (ERM 2020)

Photograph 3.112 Timber service hatch door (ERM 2020)

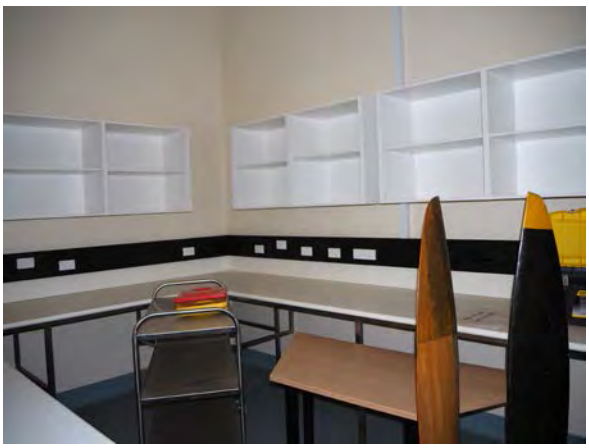


Photograph 3.113 Kitchen has maintained original use, though modified, and original windows remain (ERM 2020)

Photograph 3.114 Original 'Cooks toilet' converted into cold storage room, rear door is original (ERM 2020)

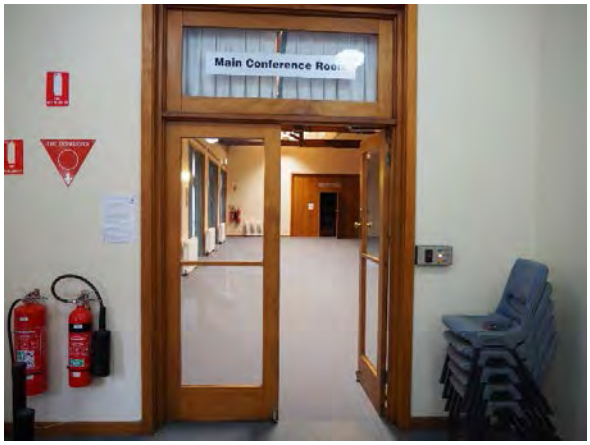
The soil preparation room is accessed via the verandah on the north-west elevation, this timber slat door with frosted window originally provided access to the laundry and ironing rooms (*Photograph 3.115*). This room to the left of the soil preparation room is a modern addition for laboratory support, this area to be part of the kitchen area with tiled flooring (*Photograph 3.116*).

Photograph 3.115 Soil preparation room with timber slat door (ERM 2020)



Photograph 3.116 Modern laboratory support room (ERM 2020)

The main conference room is accessed via the front vestibule main entrance to the south, there is a double timber framed door, with transom window and glass panes separated by timber mullions (*Photograph 3.117*). The main conference room was originally designed to be a dining hall, then later a communal lounge area or ballroom. This room originally had an open fireplace along the western wall. It is one large open plan space with five exposed timber roof trusses and five large floor to ceiling timber framed doors, flanked by large sash windows and transom casement windows (*Photograph 3.118*). These doors open out onto the tiled terrace and overlooks landscaped gardens and the oval (*Photograph 3.119*). The former billiards room (now two offices) is accessed via the main conference room and has the same double timber doors as the conference room (*Photograph 3.120*).



Photograph 3.117 Timber double door access to main conference room (ERM 2020)

Photograph 3.118 Main conference room with exposed timber trusses (ERM 2020)

Photograph 3.119 Timber framed floor to ceiling doors, looking out over landscaped gardens and oval (ERM 2020)

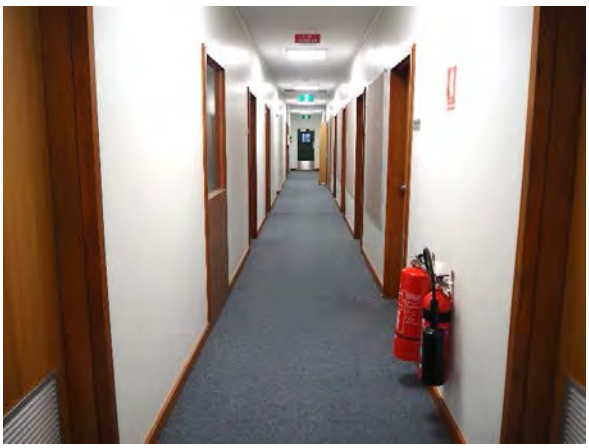
Photograph 3.120 Doors to former billiards room, (now converted into two offices (ERM 2020

Internally, very little remains of the former billiards room. The conversion to offices included the installation of desk space around the perimeter of the room and also installation of wall mounted pigeonhole cupboards. The window fabric has remained intact (*Photograph 3.121*). The seminar room (former Library) is located along the southern wall of the main conference room. The entrance door is a later addition, with the original door removed during the room's conversion to a seminar room (*Photograph 3.122*). Originally the library had an exposed timber truss, this has been plastered and painted. It also had an open fireplace along its southern wall, the chimney still remains and can be seen on the external southern elevation. The window fabric including timber frame and picture railing is original (*Photograph 3.123*).

Photograph 3.121 Inside the former billiards room (now two offices), window fabric original (ERM 2020

Photograph 3.122 Entrance to seminar room, original double doors replaced (ERM 2020

Photograph 3.123 Seminar room, window fabric and picture railing original (ERM 2020



Photograph 3.124 Ground floor north wing facing north (ERM 2020)

The remainder of Forestry House includes a double storey offices wing. This wing was formerly the student accommodation wings that originally had 42 bedrooms housing up to 40 students. Moderate internal alterations have occurred to convert both levels to offices, though a number of rooms appear to have retained the same general size and layout, and also some original fabric. Along the western elevation the ground floor offices (level 1 offices) include an area for amenities, two offices and a lab support office, a printer room and further amenities on the northern most wall (*Photograph 3.124*). Each office is fitted with large built-in cupboards and cast iron wall heaters.

The eastern elevation includes a large meeting room, four stores and five offices. Three of the stores include inbuilt timber shelving (*Photograph 3.125*). The north-eastern arm of this block includes another five offices (two of which are corner offices) and a larger office that was also used for laboratory support. Each room is generally well proportioned, with original timber skirting, sash windows with timber framing and timber sills (*Photograph 3.126*).

Photograph 3.125 In-built timber shelving in store rooms

Photograph 3.126 Corner office with original timber sash windows and timber skirting

The second floor offices (level 2) include seven offices, a plant room and a store along the eastern elevation and three offices, amenities and lab support along the western elevation. The north-eastern arm of the block includes another six offices and can be accessed via a set of continuous stair cases (on the southern arm and the end of the north-eastern arm). These staircases include original timber balustrading, the hand railing was installed later (*Photograph 3.127*), and include large vertically aligned enclosed windows with 12 glass panes separated by iron mullions. The southern staircase window overlooks the picnic area (*Photograph 3.128*).

Photograph 3.127 Original timber balustrading and later handrail

Photograph 3.128 Large vertically aligned staircase window overlooking the picnic area

3.5.2.2 Controlled Environment Building (Building 3)

After the AFS amalgamated with the ANU in 1965, the joint institution continued to function as a research and administrative centre for national forestry, under the auspices of the Forestry and Timber Bureau. The Forest Research Institute was formed in 1963. Along with construction of the Divisional Headquarters building (Building 1) in 1967, a number of other research facilities were constructed during this period, including the Controlled Environment Laboratory in 1969. The Laboratory was built beside the existing Glasshouse Complex (Building 4 group). The Laboratory was used for tissue culture and for growing plants.

The Laboratory is located on an elevated site overlooking the Glasshouses Complex. It has a stone-faced retaining wall circling the building and a timber framed wall set onto the brick face that wraps around the west wall and acts as the balustrading for a set of steel steps (*Photograph 3.129*). It is a double storey building of face brick with concrete floors, a flat roof and aluminium windows. A glasshouse wing extends from the masonry mass to the north (*Photograph 3.129*). The main entrance access is from the eastern side of the building, noted by a distinctive set of concrete steps flaked by brick face wall and aluminium framed entrance doors that open outwards, extended by tall aluminium framed transom windows (*Photograph 3.130*). There is access also via the rear of the building, which is extenuated by its thin rectangular first and second floor aluminium framed windows which are set into the wall and framed above with aluminium detailing (*Photograph 3.131*) The building has been described as distinctly bold in form and composition.

Photograph 3.129 North façade of the Controlled Environment Laboratory

Photograph 3.130 Main entrance of the Controlled Environment Laboratory

Photograph 3.131 The rear of the building

3.5.2.3 Caretaker's Cottage (Building 5)

The Caretaker's Residence was built between 1948 and 1952. The Precinct underwent major redevelopment during the years following WWII with the construction of Forestry House, the Caretaker's Residence and the Glasshouses Complex. After completion in 1951, the building was used for approximately ten years as offices, however its original function was for use as a private residence. Today the Caretaker's Residence is occupied under a private lease, as such, internal inspection was not possible.

The Caretaker's Residence is located on an elevated site, largely hidden by dense vegetation along the east and west elevations, which provides privacy for residents. The Residence is a single storey rendered masonry building, with a stepped terracotta tile gabled roof. The Residence reflects similar design characteristics to Forestry House (*Photograph 3.132*).

Photograph 3.132 Caretaker's Residence, east façade - see the terracotta tiled roof and rendered masonry finish

The Residence has a narrow concrete path, and is neatly manicured on its southern side. The building is composed of three parts, split by two similar end sections and a slightly larger central space. It features a painted brick chimney located on the gable façade off centre from the ridge and a front verandah, which is inserted within the main roof plane (*Photograph 3.133*). The middle section of the building projects from the line of the end verandahs and its ridge is higher and off centre from the end ridges. The windows that can be seen are timber framed with low rendered single brick sills. The western elevation of the building is bound by a small timber fence, other it is heavily obscured by vegetation (*Photograph 3.134*).

Photograph 3.133 Southern gable façade with rendered chimney

Photograph 3.134 Behind the Residence's west boundary, obscured by heavy vegetation

3.5.2.4 Glasshouses Complex - Building 4 Group

CSIRO Yarralumla underwent major development during the early post-WWII years, with the construction of Forestry House and the Caretaker's Residence. While the Glasshouse complex is noted in previous assessments and the CHL listing to have been constructed in 1949, it has been revealed through aerial imagery that they were constructed sometime between 1955 and 1958. The Glasshouse Complex consists of a number of glasshouses and small structures situated on a concrete pad within the south-western portion of CSIRO Yarralumla. The complex includes the Glasshouse Workshop (building 4), which is a single storey red brick workshop with flat roof and highlight windows located to the western end of the complex (*Photograph 3.135* and *Photograph 3.136*).

Photograph 3.135 The Glasshouse Workshop (building 4) east façade

Photograph 3.136 Rear of the Glasshouse Workshop (west façade)

Within the complex is also a Soil Preparation Shed, a single storey structure located next to Glasshouse 4c to the west. The Shed has horizontal hardiplank or vinyl cladding and skillion roof This Soil Preparation Shed is accessed via a short concrete ramp, the entrance doors are aluminium with large transom window above them (*Photograph 3.137*). A long, flat rectangular Shade house (4h) is located directly adjacent to the Glasshouses (*Photograph 3.138*).

Photograph 3.137 Soil Preparation Shed (4e)

Photograph 3.138 Shade house (4h)

Glasshouses

The set of four Glasshouses (4a, 4b, 4c, 4d) were constructed sometime between 1955 and 1958 and are all connected via a large steel beam which supplied water to each Glasshouse (*Photograph 3.139*). The Glasshouses are similar to those found at Yarralumla Nursery and CSIRO Black Mountain, however the design differs slightly between each site (*Photograph 3.140* and *Photograph 3.141*).

Photograph 3.139 Glasshouses 4a, 4b. 4c. 4d (facing north-east)

Photograph 3.140 Plant House at Yarralumla Nursery with brick wall supporting gabled roof

Photograph 3.141 Damaged glasshouses at CSIRO Black Mountain, only frames remain for many

The Glasshouses are composed of a single volume space, with glazed and steel upper portion supported by a face brick lower wall (*Photograph 3.142* and *Photograph 3.143*). Each Glasshouse has a set of small square concrete platforms with associated square steel plating adhered to each north façade (*Photograph 3.144*). These platforms were pad for holding tanks, as they have a fall-line directing liquid (likely water) to a drainage point, part of an earlier system of irrigation. Interally the Glasshouses are filled with metal framed plant holders, some of these are located between each Glasshouse (*Photograph 3.145*). The Glasshouse design appears to be typical for the era, though this exact design could not be found elseware through online and archival research, or via site visits to

CSIRO Black Mountain and Yarralumla Nursery. This might suggest a custom design and construction specific to the AFS, however this could not be confirmed. A number of the glazed panels were destroyed by a severe hail storm in early 2020. Sixty-five glasshouses located at Black Mountain were also destroyed during this same hail storm, with 'years of work' lost. Fifteen of the glasshouses at Black Mountain survied this storm, as it was noted they were 'older structures which used thicker glass' (Evans 2020). These older glasshouses at Black Mountain are likely to have similar characteristics to those a Yarralumla.

Photograph 3.142 north façade of Glasshouse 4d (ERM 2020)

Photograph 3.143 Face brick wall supporting roof system (ERM 2020)

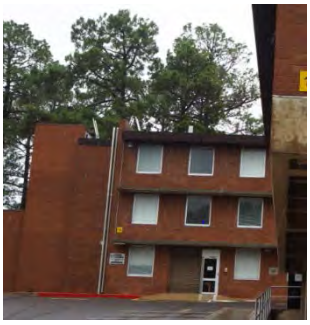
Photograph 3.144 Concrete platform with associated square steel plating

Photograph 3.145 Steel plant holders outside of Glasshouses

3.5.3 South Zone – Built Elements

The South Zone of CSIRO Yarralumla comprises a cluster of buildings around Building 1, formerly the Forest Research Institute Divisional Headquarters. The majority of this section comprises early and mature plantings and areas of tree-growing trials, these have been discussed in more detail in *Section 4.4*. Built elements within the southern section are listed below in *Table 3.6*.

Table 3.6 South Zone – key built elements log

Asset Number	Asset Name	Photo
1	Formerly the Forest Research Institute Divisional Headquarters	
1a	Formerly the Forest Research Institute Divisional Headquarters	
1b	Formerly the Forest Research Institute Divisional Headquarters	

3.5.3.1 Building 1 Group

Building 1 Group was constructed in 1967 and would become the Forest Research Institute Divisional Headquarters. The entire complex comprises three buildings linked together with enclosed walkways and is situated within an excavated site. The front section is in part double storeys (buildings 1 and 1a) and the rear building (1b) is triple storeys (*Photograph 3.146*, *Photograph 3.147* and *Photograph 3.148*). The functional design of the complex has enabled substantial internal modification when required. The buildings comprise rectangular large split-level brick buildings with reinforced concrete columns and slabs, with brick curtain walls. The buildings have corrugated metal flat roofs. The Headquarters building is citing in the CHL entry (Place ID105595) for CSIRO Yarralumla as a contributory element, however due to its substantial internal modifications and common modern design characteristics, the HMP (ERM 2018) has given this building Nil significance.

Photograph 3.146 Building 1 Group north-east façade

Photograph 3.147 Building 1 north-east façade

Photograph 3.148 Buildings 1a and 1b (rear)

3.6 Movable Heritage

CSIRO Yarralumla contains a number of movable heritage items of significance, these have been noted in the CHL entry for the CSIRO Forestry Precinct (Place ID 105595). While a number of these items were seen during the site visit on 4 March 2020, some of objects described below were not captured and may have been removed or relocated from their original locations. The items described contribute to the heritage significance of the Site overall. The following list was extracted from the CHL entry for the CSIRO Forestry Precinct, augmented with additional information by ERM.

Significant furniture within the AFS include:

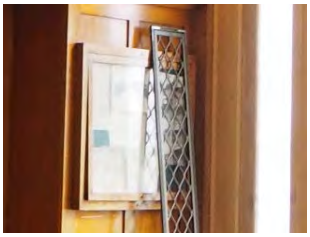
- several original notice boards
- an original timber light fitting
- built in timber cupboards, timber desk, table and chairs, blackboards and clock
- A mountain ash coffer decorated with scrolls and acanthus leaves
- a mountain ash refectory table and bench (believed to have been purchased for the School from C F Rojo & Sons Pty Ltd, Melbourne in September 1928)

Significant moveable heritage within Forestry House include:

- two kidney shaped coffee tables
- a log table
- two mounted propeller blades
- several chairs (part of a set designed by Derek Wrigley)
- a museum table from the AFS museum
- an original Forestry House student's chair
- conference table from the Max Jacobs collection
- a display cabinet
- a red cedar lectern with light; and
- a large table originally from the Forestry School Reading Room.

A collection of historic timber hauling vehicles from different parts of Australia has also been set up as an outdoor exhibit beside Forestry House.

Table 3.7 Moveable Heritage items identified at CSIRO Yarralumla

Item	Location	Photograph
Original notice board	within front vestibule of AFS	
Original notice board	in rear (west) vestibule	
Mountain ash decorated coffer	central dome of AFS	
Mountain ash refectory table	central dome of AFS	
Mountain ash bench	central dome of AFS	
Max Jacobs collection table	Dining Hall of Forestry House	

Item	Location	Photograph
A log buggy used at Koondrook Victoria	Fenced display south of Forestry House	
two tandem axle bogie from Victoria	Fenced display south of Forestry House	

4. HISTORICAL BACKGROUND

The following section provides a summarised history of CSIRO Yarralumla that has been extracted from the Site's CHL entry (Place ID: 105595). A detailed contextual history has been provided in *Appendix B* with Australian Historic Themes (AHT) applied. For ease of reference, a historic timeline has also been provided below in *Table 4.1.*

Canberra experienced its first major phase of development as the National Capital in the 1920s when there was a focus on the completion of the Provisional Parliament House and the relocation of the Parliament to Canberra. This phase also had the intention to relocate Commonwealth Government departments and some national institutions to the new city. One of the national institutions, created in 1925 by Commonwealth legislation, was the AFS. A single forestry school for Australia had been proposed in November 1911 at the first Interstate Forestry Conference. Charles Edward Lane Poole, Conservator of Forests of Western Australia from 1916 until 1921, advocated the establishment of a Commonwealth forestry research organisation together with the school to research forest entomology, botany, silviculture and forest management (CSIRO 1976).

Plans for a 'Federal Forestry Bureau' were submitted to the Bruce-Page Government in 1924, and staff were appointed before the Forestry Bureau Act of 1930 was passed (Jacobs 1961). In 1925, when Lane Poole returned from a three-year assignment in Papua New Guinea, he was appointed forestry adviser to the Commonwealth Government and persuaded Prime Minister Bruce to include a commitment to establish a national forestry school in Canberra in his election policy speech of 1925 (Boden 1993). The Minister for Home and Territories, the Right Honourable Sir George F. Pearce, approached the States with an offer that the Commonwealth would build, equip, staff and maintain the school if the States would send the students. The AFS was temporarily housed at the University of Adelaide in March 1926, with Professor Norman W. Jolly as Principal, while a suitable building was constructed in Canberra. At the end of that year Jolly was appointed Chief Commissioner of Forests of New South Wales and Lane Poole, then Inspector-General of Forests for the Commonwealth, was appointed acting Principal of the Forestry School as well as Inspector-General of Forests (CSIRO 1976).

The establishment of the AFS was followed by the creation of the Commonwealth Forestry Bureau in 1927. Lane Poole saw the AFS as a branch of the Commonwealth Forestry Bureau, the main task of the latter being to develop a national forest policy and to bring Australia's forest resources under national control. Although the School had gone ahead, the Forestry Bureau existed in name only for many years and in this period most of the research undertaken was done by the staff of the School.

The AFS was established in the suburb of Westridge, now Yarralumla, then the western suburb of the Federal Capital, so as to be near the arboretum (Westbourne Woods) and the nursery established in 1913 by Charles Weston, Officer in Charge, Afforestation Branch, Department of Home Affairs. The School building was designed as part of the Federal Capital Commission's (FCC's) building program by J.H. Kirkpatrick, working with H.M. Rolland, Principal Architect of the FCC. The FCC's building program was essentially to provide accommodation and office space for the transfer of the Federal Government from Melbourne to the new capital, and the School, being an institution, was included in this program. The AFS was officially opened on 11 April 1927, with 16 students and three permanent lecturing staff, as well as Lane Poole. The School building incorporated hardwoods and softwoods from all States. Tasmania, Victoria and New South Wales donated floor timber and South Australia donated timber for internal fittings. New South Wales and Queensland refused to give any timber without payment. Although the School had opened in April 1927, the building was not completed until June that year. The formal opening was held on 24 November 1927. The only rooms completed when school work commenced were the Principal's room and the drafting room.

A carpenter's shop, requested by Lane Poole, was built apart from the main educational block as he had specified, in August 1927. He also requested a stove house and frames (a heated glasshouse), to be used for raising seedlings, and this was completed in March 1929. T.R. Casboulte, an architect of the FCC, drew the plan of the approach to the Forestry School building in August 1927.

Students initially had no accommodation and had to occupy the old printers' quarters at Kingston and a camp on the site. In 1928, 27 spruce cubicles were built at the rear of three houses in Solander Place, near the school, for the student accommodation.

Student occupancy of the cubicles ceased at the end of 1951, and students were subsequently located elsewhere. Shortly before WWII, the Government funded a building for an industrial museum and the work of the research sections of the Bureau. After the war the museum was temporarily abandoned and the building used for other purposes. The collected exhibits were stored in a wooden building which was later destroyed by fire, along with most of the exhibits (Jacobs 1961).

A meteorological station located near the tennis courts was run by the Forestry Bureau. Facilities included wind vanes, anemometers, a Stevenson screen and a pit to house thermometers for measuring air and soil temperature. A second station with a tall wooden tower and pit was located in a plot of radiata pine (the 'Tower Plot') to the west of the precinct. An anemometer was also installed on a tall mast above the Forestry School. Weather recordings were taken every day from 1927 to 1981. It was the only meteorological station in Canberra from 1927 to 1939. (Eldridge 2000).

During the Depression years, the numbers of students decreased to around four a year. In 1936 Lane Poole put the staff on half-time lecturing to the four second-year students, and half-time on research. This action stimulated the States to provide more students and the situation improved during the late 1930s. Numbers went down again during World War II, as many potential students enlisted. In the years before and after World War II, the Forestry students and Duntroon cadets vied for social honours, holding dances and other functions. The Forestry students emptied the museum at the Forestry School and turned it into a ballroom. These functions were supported by Lane Poole and his wife.

Research was conducted at the site by the School staff and students on behalf of the Commonwealth. Early research concentrated on growth rates and the effects of thinning (CSIRO 1976). Westbourne Woods, established by T.C.G. Weston, was the first arboretum established in the ACT (1914-18). The Commonwealth Forestry Bureau established Laurel Camp at Pierces Creek in 1928. Dr Maxwell Ralph Jacobs was appointed research officer in the Bureau, in 1937, and undertook research on growth stresses in eucalypt stems and genetic variation in monterey pine (Pinus radiata) for plantation improvement. Lane Poole held the two positions of Principal of the Australian Forestry School and Inspector-General of Forests, Commonwealth Forestry Bureau until his retirement in 1944.

Following WWII, Dr Jacobs was the next Principal of the School, and held the position from 1945 to the end of 1959 when he became Director-General of the Forestry and Timber Bureau.

After the War the number of students increased to 80 in 1950 before declining in the 1950s and rising again to 60 in 1961. From 1949, students from New Zealand, Asia (including Malaysia and Burma) and Ethiopia, attended the school. In the immediate post-war years, a number of Army disposal buildings were acquired to supplement the original spruce cubes in Solander Place (Jacobs 1961). Not long after Jacob's appointment as Principal, plans were made to build a permanent residence for the students, and thus Forestry House, designed by the Commonwealth Department of Works and Housing, was constructed and occupied at the commencement of the 1952 academic year.

Better accommodation was also required after the War for the Research and Administrative Sections of the Bureau, and many proposals were considered. These were outlined for the National Capital Development Commission by Jacobs (Jacobs 1961). The building at the rear of the AFS, originally built for the industrial museum, was occupied by the Director General and his staff as the office of the Forestry and Timber Bureau (re-designated by the Forestry and Timber Bureau Act of 1946) from 1946 until 1961.

Kelvin P. McGrath became Acting Principal of the Forestry School when Jacobs was appointed Director-General of the Forestry and Timber Bureau (1959). McGrath retained that position until the responsibility for forestry education was transferred to the Australian National University early in 1965, when a Department of Forestry was established within the School of General Studies.

The Duke of Edinburgh opened a new building for the Forestry Department of the ANU on 15 May 1968. Until then, the Department had continued to function in the Forestry School buildings at Yarralumla. The former Industrial Museum building was used by the School staff from 1961 until 1968.

After a hesitant start in the 1930s, research at the site expanded after the war. In 1946 the Commonwealth Timber Control and Commonwealth Forestry Bureau were amalgamated to form the Forestry and Timber Bureau with the Central Research Station at Canberra concentrating on silviculture (CSIRO 1976). A nursery for propagating monterey pine (Pinus radiata) was expanded at Yarralumla in the 1940s, following earlier use of a nursery at Pierces Creek for raising the first pines from cuttings in Australia. Later work in the nursery included important investigations of pollination and seed production of flooded gum (or Rose gum) (Eucalyptus grandis), shining gum (or silver top) (E. nitens) and Tasmanian blue gum (E. globulus) (Eldridge 2000).

In the 1950s, research was expanded into fire behaviour and effects of wildfire and control burning in native forests; and into forest resources, botany and nutrition. In the 1960s work started on entomology, pathology, watershed management and logging. In 1961 Jacobs established the nucleus of the Australian Tree Seed Centre as a contribution to the United Nation's Freedom from Hunger Campaign (Vercoe 2000). In 1963 research was given significant impetus with the formation of the Forest Research Institute within the Bureau. In 1964 the Forestry and Timber Bureau was transferred from the Department of the Interior to the Department of National Development, and in 1972 to the Department of Primary Industry. In 1970, Jacobs retired and was succeeded by Dr D.A.N. (Neil) Cromer as Director-General, a role he held until retiring in 1975. Alan McArthur directed the Forest Research Institute in those five years.

In 1975 the CSIRO acquired the whole site as it exists now, apart from the oval, and established a Division of Forest Research to carry out the functions of the Forest Research Institute and the harvesting and management groups of the Forestry and Timber Bureau (CSIRO 1976). The unit became the Division of Forestry and Forest Products in 1988, the Division of Forestry in 1991 and in 1996 the Division of Forestry and Forest Products. The site was sold and leased back to the CSIRO in 2002, who still manages the Site today.

4.1 Historic Timeline: Key Events and Site Development

A summary of the chronology of the region and CSIRO Yarralumla is provided in *Table 4.1* below.

Table 4.1 CSIRO Yarralumla Historic timeline: key events and site development

Date	Event
1900	The region (now Canberra) was home to a number of pioneering families and a few small hamlets and communities
1908	Area known as Limestone Plains was chosen as the site for the new Federal Capital, later named Canberra.
1911	Walter Burley Griffin won the international design competition for the design of the new Capital and rapid progress was made towards the establishment of the new city. Thomas Charles George Weston [1866-1935] visited the new Capital to report on a site for a temporary nursery at Acton and later supervised its establishment.
1911	The inaugural Interstate Conference of the infant forest services of Australia was held in Sydney with the agenda ‘collective consideration in the interests of the whole Commonwealth’ in the area of educated and training future forest officers.

Date	Event
1912	The new Federal Government acquired a site Action in 1912 and then acquired Yarralumla Station in 1913 where the temporary Canberra brickworks were built that year. Federal buildings started to appear around the area, the landscape was otherwise sparse and treeless.
1913	Charles Weston takes up the permanent appointment of Officer-in-Charge, Afforestation Branch of the Department of Home Affairs, Canberra. Weston chose the site at Yarralumla [then Westridge] for a permanent nursery (the current site of CSIRO Yarralumla).
1913	The Administrator of the Department of Home Affairs Colonel David Miller selected Charles Weston to begin the task of testing and selecting the species of trees and plants suitable for the climate and soils of the Canberra region.
October 1913	Work began at Yarralumla Nursery
June 1914	Administrator formally approved the reafforestation of the reserve at Yarralumla
1 September 1914	The first batch of Stone Pines were planted at Yarralumla Nursery.
1918	Burley Griffin, as Director of Design and Construction, ordered Weston to plant Civic Square with native trees that were not climate appropriate. Weston was later given sole control of horticultural planting in Canberra.
1920	Charles Edward Lane-Poole (at the time Conservator of Forests in Western Australia) pushed for the Commonwealth to provide one sixth of the cost of a school, with each state to cover the rest of the cost.
January 1921	A decision was made to house the new school at Laurel Hill in NSW Bago State Forest. The school was not established as two states could not guarantee fixed student numbers.
1921	Yarralumla Nursery was connected to the Town's water supply after years of pumping water from the Molonglo River.
1925	Charles Lane-Poole appointed new Commonwealth Forestry Advisor and found little had been done towards the establishment of a national forestry school.
May 1925	Upon Lane-Poole's advice, Prime Minister Bruce wrote to the State Premiers regarding the proposal for a national forestry school in Canberra. The site of Weston's Nursery was chosen as ideal, as it was within close proximity to Weston's Arboretum and Westbourne Woods.
April 1926	The AFS was temporarily housed at the Adelaide University until the school building was completed in Canberra.
1926	Weston retired and was succeeded by Alexander Bruce who had worked as Weston's principal assistance in 1925.

Date	Event
July 1926	Construction of the AFS begins at Yarralumla, the site for a residence 100 m north was also chosen at this time (Westridge House)
1927	Weston received a MBE for transforming Canberra into a garden city.
29 March 1927	Lane-Poole was appointed the Commonwealth Inspector-General of Forests and became Acting Principal of the AFS.
11 April 1927	The AFS opens, despite only two rooms completed. There were sixteen students and three permanent lecturing staff. Students were to live off-site at the former Government Printery at Kingston, occupying staff quarters, catching the school bus each day.
20 June 1927	The AFS is completed at a cost of £22,022.4.5 and formally opened by the Governor-General Lord Stonehaven on 24 November 1927.
1927	Construction began on the AFS residence, Westridge House.
1930	The Board of Higher Forestry Education was established by the State university representatives to act as a link between the AFS and to advise on curriculum and exams.
1936	Only one student was nominated for the AFS. The school struggled through the Depression years. No buildings were constructed during this time, however two Tennis Courts were constructed in 1930.
1935 - 1940	The Seed Storage Building was constructed during this time (#17).
1938	The Industrial Museum was constructed.
1940	The research nursery was developed. Lane-Poole considered closing the AFS for the duration of the war. The Board of High Forestry Education agreed it was best of keep the AFS open despite small numbers enrolled.
1946	The Forestry and Timber Bureau Act was gazetted. Meaning the AFS became the Division of Education of the new Bureau, During this year the Industrial Museum was converted into offices for use by the new Bureau.
1947	The Commonwealth Forestry Scholarship program began, obliging graduating scholarship students to serve the forestry industry in Australia for at least three years after graduation. During the 1940s, the AFS saw considerable growth and enrolment of international students.
1948-1952	A decision was made to construct permanent on-site student accommodation in 1948. The Student Accommodation Building (referred to as Forestry House from 1956) was designed by the Commonwealth Department of Works and construction commenced in 1949.The building was completed in early 1952.
1952	The Caretaker's Cottage was completed in 1952, the design similar to Forestry House.
1953	The large central oval was completed and used for student recreational activities.

Date	Event
1955-1958	The Glasshouses Complex was constructed.
1963	The former Nurses Quarters building at the Canberra Hospital were located to the Forestry Precinct at Yarralumla. It was used as temporary accommodation for an influx of students in the 1960s. It was only used for five years, then occupied by Greening Australia.
1963-1965	The Australian National University agreed to take over the function of the AFS in a Department of Forestry of the school of General Studies in the university. In 1965 was the first academic year of the new Department.
1965-1967	Construction of the new Forest Research Institute began and the building was opening in May 1967.
1969	A Controlled Environment Laboratory was constructed within the south-west corner of the Site.
1973	Two timber-clad ex-army buildings were moved to the site. The Photography Hut was located beside Westridge House and the Recreation Hut behind Forestry House. These have since been removed/demolished.
1970s	Plans were prepared for the refurbishment of the AFS for its new use as offices. Internal changes were made. Forestry House also underwent alterations, creating offices and conference spaces.
1975	The CSIRO was established to take over the research functions, staff and facilities of the Forest Research Institute and the Forest Research Development Branch of the Forestry and Timber Bureau. The CSIRO acquired the entire AFS precinct, excluding the oval.
1975-1986	A Library was added to the Forest Research Institute building. By 1975, a grouping of Industrial Facilities was completed – a complex of carpenter's and engineer's workshops, including several large storage sheds and offices to the north-west of the AFS. These buildings replaced a weatherboard carpenter's shop [1927], two classrooms [1948] and temporary garages.
1979	Two storage sheds were constructed.
1996	An addition to the eastern end of the Forest Research Institute building was constructed during refurbishments.
1998	Garage beside Caretaker's Cottage was constructed.
2002	A CMP was prepared for CSIRO Yarralumla in preparation for the sale and leasing of the precinct, which also occurred in 2002.
June 2004	CSIRO Yarralumla was entered onto the CHL
2006	CSIRO Heritage Strategy was completed.

Date	Event
2008	CMP for CSIRO was updated. The CSIRO Forest Biosciences Division (the successor to the CSIRO Forest Research Institute) was in the process of being disbanded and moved to Black Mountain and Gungahlin sites.
2008	CSIRO Yarralumla was occupied by CSIRO's Information Management and Technology (IM&T) Group. Other third party tenants also occupy the site from this time.
2011	The Nurses Quarters building was demolished.
2018	An HMP was prepared for CSIRO Yarralumla (ERM).
2019	A Heritage Constraints Analysis was prepared by ERM. A Master Plan Heritage Review was prepared by ERM.

5. ASSESSMENT OF HERITAGE SIGNIFICANCE

An assessment of heritage significance is undertaken to explain why a particular place is important and to enable appropriate management strategies to be formulated. The CSIRO Forestry Precinct (Place ID 105595) is listed on the CHL for its historic heritage values, the AFS is also listed separately on the CHL (Place ID 105426) for its historic heritage values. These values were re-assessed and confirmed for the 2018 HMP, along with an assessment against the ACT Significance Criteria.

The confirmed values for CSIRO Yarralumla have been validated and updated in this HA, including a detailed assessment of individual contributory elements. These elements have been assessed using the significance ranking system in *Appendix F*.

5.1 Previous Assessments

CSIRO Yarralumla and particularly the AFS, has been subject to a number of heritage studies and assessments. The relevant assessments are provided below:

- RNE: The Forestry Precinct, Yarralumla ACT;
- ACT Heritage Register: Registration of the former Australian Forestry School (the place was not entered on this register, as the site is on Commonwealth Land and listed on the CHL already);
- 2001 CSIRO Yarralumla CMP (Peter Freeman Pty Ltd);
- 2008 CSIRO Yarralumla updated CMP (Peter Freeman Pty Ltd);
- 2018 CSIRO Yarralumla HMP (ERM);
- 2019 CSIRO Yarralumla Constraints Analysis (ERM);
- 2019 CSIRO Yarralumla Master Plan Heritage Review (ERM);
- 2020 Block 7, Section 4, Yarralumla ACT Targeted Golden Sun Moth Survey (Capital Ecology); and
- 2020 Block 7, Section, Yarralumla ACT Aboricultural Assessment (Canopy Tree Experts).

5.2 Natural Heritage Assessment

Australian Natural Heritage Charter

Natural heritage is defined in the Australian Natural Heritage Charter (Article 1.1) as:

- natural features consisting of physical and biological formations or groups of such formations which demonstrate natural significance;
- geological and physiographical formations and precisely delineated areas that constitute the habitat of indigenous species of animals and plants, which demonstrate natural significance and/or
- natural sites or precisely-delineated natural areas which demonstrate natural significance from the point of view of science, conservation or natural beauty.

Natural heritage significance means ‘the importance of ecosystems, biodiversity and geodiversity for their existence value or for present of future generations, in terms of their scientific, social, aesthetic and life-support value’ (Article 1.3). Assessing natural heritage significance is fundamental and necessary to the process of heritage conservation because it identifies the values that need to be recognised in conservation management and guides future management of the place. The assessment of natural heritage significance presented in this HA is a consideration of the full range of values and follows the process outlined in *Protecting Natural Heritage: Using the Australian Heritage Charter* (2nd Edition):

Biodiversity values

Biological diversity value is the importance of a variety of life forms – the different plants, animals and micro-organisms, the genes they contain, and the ecosystems they form.

Ecosystem values

Ecosystems value is the importance of the interactions between the complex of organisms that make up a community with their non-living environment and each other.

Existence value

Existence value means that living organisms, earth processes and ecosystems may have value beyond the social, economic or cultural values held by humans.

Geodiversity values

Geodiversity value is the importance of the natural range (diversity) of geological (bedrock), geomorphological (landform) and soil features, assemblages, systems and processes. Geodiversity includes evidence of the past life, ecosystems and environments in the history of the earth as well as a range of atmospheric, hydrological and biological processes currently acting on rocks, landforms and soils.

Scientific values

Scientific value to the community will depend upon the importance of the data involved, on its rarity, quality, or representativeness, and on the degree to which the place may contribute further substantial information.

Aesthetic values

Aesthetic value to the community of a place includes aspects of sensory perception (sight, touch, sound, taste, smell) and may include the form, scale, colour, texture and material of the fabric or landscape, and the smell and sounds associated with the place and its use.

Social values

Social value embraces the qualities for which a place is a focus of spiritual, traditional, economic, political, national or other cultural sentiment to the majority or a minority group.

Significance Ranking Criteria: Natural Heritage

A significance ranking has been applied to contributory natural elements where appropriate and is based on the Significance Ranking System developed by ERM in collaboration with the Department of Finance (refer to *Appendix F*).

Table 5.1 Ranking criteria for Natural Heritage

Ranking	Individual Item
Exceptional	The species, area or ecosystem demonstrates individual or collective characteristics that are rare or unique in Australia. Species, area or ecosystem is in high level of health, condition and integrity. Loss, alteration or removal of component elements would substantially undermine the CH values of the place overall.
High	The species, area or ecosystem demonstrates a rare example of individual or collective characteristics or features physically linking or defining space. Species, area or ecosystem is largely

	intact and in good state of health. Loss, damage or removal of components or defining qualities may detract from the CH values of the area or ecosystem and of the site overall.
Moderate	Area or ecosystem demonstrates valuable (although modified) qualities. Intact enough to be interpreted as a discrete space or as part of the site overall with ability to be regenerated. Loss, damage or removal of component elements or defining qualities may detract from the CH values of the area or ecosystem and potentially of the site overall if inappropriately managed.
Low	Species, area or ecosystem demonstrates some (but possibly largely altered) defining qualities. Area or ecosystem not in a good state of health and regeneration in doubt. Loss, alteration or removal of component elements may not detract from the CH values of the place overall
None (does not meet CHL criteria)	Species, area or ecosystem does not reflect or demonstrate any CH values.
Intrusive	Loss, alteration or removal of component elements actually contribute to the CH values of the place overall.

5.2.2 Description

The following section will assess the overall natural heritage values of CSIRO Yarralumla. An assessment of the Site's natural heritage values has not been undertaken previously, as such, this assessment is important in order to understand and manage any potential natural values accordingly. As an assessment of natural heritage values is generally specific to a sites natural heritage value, this section does not address the historic planting values of individual or groups of trees, these individual elements are assessed below in *Section 6.3.4*. A search of the Protected Matters database was undertaken on 16 March 2020, these results are provided in *Appendix C*.

The area on which CSIRO Yarralumla sits was largely cleared land prior to the establishment of Charles Weston's Westbourne Woods, and subsequently the establishment of the AFS which retained a large majority of mature plantings within the site in order to utilise the site for forestry research. The Site continued to be used for scientific purposes upon its acquisition by the CSIRO and its further development as a CSIRO Research Facility. After this acquisition, the landscape was further transformed to fit its purpose as a place of forestry teaching and research with various exotic and native trees planted. The vegetation that is present at CSIRO Yarralumla is characterised as large pine or eucalypt plantings, and a variety of species that have been planted to provide landscape amenity. These solitary trees as well as the plantations can be found throughout the entirety of the Site, and specific species are listed in Sections *3.4.1* to *3.4.3*.

Table 5.2 presents a description of CSIRO Yarralumla's natural environment as flagged by the PMST search results (*Appendix C*) and ranking assessment of the natural values against the significance ranking criteria provide above.

Table 5.2 Assessment of Individual natural heritage values

Natural Heritage Value	Description	Ranking
Biodiversity values	*Species richness* Records from the Atlas of Living Australia indicate a total of 822 species recorded within 1 km of CSIRO Yarralumla. This includes 311 fauna, 493 flora and 17 fungi species. It is unlikely however that CSIRO Yarralumla supports species richness, as a site of previous afforestation research it has seen moderate areas cleared and re-planted for research. *Endangered, Vulnerable or Migratory species* The PMST identified fourteen EPBC listed migratory species that have the potential to occur within 10 km of CSIRO Yarralumla. None of these migratory species were recorded on the site during the site visit. These species generally prefer areas closer to water, with wetland and muddy or sandy flats. Such habitat requirements are not present in the site and therefore these species are unlikely to be found using the Site. The PMST identified twenty-six EPBC listed fauna species that have the potential to occur within 10 km of CSIRO Yarralumla. None of these species were identified during the site visit. As mentioned in the habitat section above, there is also likely to be only limited suitable/general habitat present for any of these threatened species. Such suitable/general habitat for these species is likely to be in the larger protected areas and larger waterways found within the area. While the critically endangered Golden Sun Moth (GSM) has been found to occur within small portions of low-quality grassland on the Site, the known habitat is degraded and the GSM only a minor portion of the GSM population locally and is unlikely to be significant to the species within the locality (Capital Ecology 2020). The PMST identified a total of fifteen EPBC listed threatened flora species that have the potential to occur within a 10 km radius of the Site. None of these species were located during the field inspection and no important habitat values were determined following further analysis of field photos.	None
Ecosystem values	The EPBC Act Protected Matters Report (*Appendix C*) identifies two TECs with the potential to occur on or within 10 km radius of the site: ■ Natural Temperate Grassland of the South Eastern Highlands; and ■ White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland. These communities are unlikely to be present at the site due to the purposeful nature of the plantings and lack of species corresponding to these TECs. Additionally, the vegetation	None

Natural Heritage Value	Description	Ranking
	communities present throughout the site are predominately introduced Pine species, along with other 'least concern' species. As such, CSIRO Yarralumla is not considered to have ecosystem values.	
Existence value	There are many historical plantings of larger (mature) trees and landscape plantings throughout the Site. These plantings are predominately pine species but smaller clusters of larger Eucalypts are also present. The smaller landscape trees and shrubs are often found close to the buildings throughout the Site and are often solitary, or in small clusters. There are large protected areas close to the Site. Such protected areas include Black Mountain and Jerrabomberra Wetlands Nature Reserve. These larger protected areas are likely to provide high habitat value for threatened species, particularly those that rely on native bushland and wetland environments. Therefore, while vegetation is present that may provide some habitat for species, the larger protected areas found within 10 km of the Site, are of much greater existence value. As such, CSIRO Yarralumla is not considered to have existence value.	None
Geodiversity values	CSIRO Yarralumla was largely cleared for the establishment of Westbourne Woods, and subsequently again for the establishment of the AFS and later CSIRO Research Facility. Therefore, the large plantings that are currently there are not natural assemblages but purposeful displays. This transformation of the Site has resulted in a lack of geodiversity. Therefore, CSIRO Yarralumla is not considered to have geodiversity value.	None
Scientific values	CSIRO Yarralumla was utilised for forestry research since the establishment of the AFS in 1927 and continued being utilised for this purpose following the Site's acquisition by the CSIRO. There are a number of groups of pine plantings and various other species within the Site that have been noted in the CHL listing for CSIRO Yarralumla [Place ID: 105595] as 'containing experimental plantings and a significant genetic resource for Australia'. However, the various tree species within CSIRO Yarralumla are not rare and it is uncertain on the degree to which the Site could contribute further substantial information. As such, CSIRO Yarralumla is considered to have scientific values that relate to its historical importance in natural understandings and teachings and not natural scientific value.	None
Aesthetic values	The Site exhibits a variety of landscape plantings and mature trees that may provide aesthetic value to the larger community and those who have visited the Site. These features include the setting of mature pine plantings, attractive landscape plantings and a variety of mature eucalypt plantings. However, CSIRO Yarralumla is not considered to possess natural aesthetic values as it does not provide a sensory perception or the form, scale,	None

Natural Heritage Value	Description	Ranking
	colour, texture or landscape that is considered of aesthetic value.	
Social values	CSIRO Yarralumla is not a place of spiritual, traditional, economic, political, national or other cultural sentiment to the majority or a minority group.	None

5.2.3 Assessment of Natural Heritage Significance

An assessment of the place and its natural heritage elements against the CHL criteria is contained in *Table 5.3*. The current assessment for Yarralumla Forestry Precinct (CHL Place ID: 105595) does not include an assessment of the natural heritage values of the site.

Table 5.3 Assessment of Natural Values against CHL criteria

Criterion	Discussion
Criterion 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*	The Site has been a part of 'natural' history in the sense that its past uses have been as the Australian Forestry School and the CSIRO Forestry Precinct. Nonetheless, this natural history is unlikely to fall within the category of natural heritage. This is because the significance lies in what the Site was used for, which was for natural research and teaching purposes. The Site itself does not contain any elements that present as natural heritage, as what is present on the Site is not naturally occurring. This is because all plantings and trees were purposefully put there for land use purposes. Thus, this site is important based on its cultural 'natural' history, which is dealt with as part of the historic assessment in *Section 6.3*. **This criterion is not met.**
Criterion 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*	The site itself does not present outstanding value for any EPBC Act or NC Act listed threatened species. While the critically endangered Golden Sun Moth (GSM) has been found to occur within small portions on the Site, the identified GSM represent only a minor portion of the species population locally and is unlikely to be significant to the species within the locality. Most to all of the flora species present on the Site these have been planted specifically by the past owners for the purposes of research and teaching. Therefore, these species would not be regarded as having significant natural heritage value. Additionally, there are large nature reserves which occur in close proximity to the Site which have greater potential to support uncommon, rare or endangered fauna species, unlike CSIRO Yarralumla. **This criterion is not met.**

Criterion	Discussion
Criterion 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*	The plantings are from the past 100 years and were done for the purpose of scientific teaching. Therefore they are unlikely to be highly significant for understanding Australia's natural history. Additionally, the plantings of species present in the Site are either non-native or do not have high significant to Australia's history. There are some Eucalypt plantings and isolated trees present on the Site, nonetheless these are not listed as threatened and so are not naturally protected under the EPBC Act. The Site was cleared previous to its acquisition as the Australian School of Forestry and so the landscape has been purposefully designed to be the way it is. This therefore means the Site does not provide information specific to species that are threatened or of importance to Australia's natural heritage. As mentioned in criterion a), this Site contains values that relate to its historical importance in natural understandings and teachings. **This criterion is not met.**
Criterion d) - 1. *a class of Australia's natural or cultural places; or* 2. *a class of Australia's natural or cultural environments*	The Site contains plantings of trees and landscape plants that were purposefully chosen by past land owners, These species were specifically chosen for research and teaching reasons and so are unlikely to contain a class of Australia's natural places or environments. The surrounding landscape in Canberra contains large nature reserves and protected areas. Such natural areas are likely to have much higher significance, as they were not previously cleared and are naturally occurring. **This criterion is not met.**
Criterion 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*	The Site exhibits a variety of landscape plantings and mature trees that may provide aesthetic value to the larger community and those who have visited the Site. Examples of such trees include the Roman Cypress pines present at the east facade of the Australian Forestry School, the Atlas cedar trees east of Building Group 1 and Bunya pines located at multiple locations, including in the northern elevation of the Museum Building. Additionally, the large plantations of pine species, such as *Pinus pinea* and *Pinus radiata*, offer some aesthetic value to the landscape. These mature plantations stand out in the largely residential surrounding area. While these species are not rare or endangered under the EPBC Act, they exhibit natural heritage in the sense that they provide aesthetic value to the Site. The significance of the natural features in the context of aesthetic views and sight lines is discussed in *Section 6.3* as such, this criterion is not met for natural heritage. **This criterion is not met.**
Criterion f) – *the place has significant heritage value because of the place's importance in demonstrating a high degree of creative or*	This criterion is not relevant to natural heritage.

Criterion	Discussion
technical achievement at a particular period	
Criterion 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*	This criterion is not relevant to natural heritage.
Criterion 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*	This criterion is not relevant to natural heritage.
Criterion i) – *the place has significant heritage value because of the place's importance as part of Indigenous tradition*	This criterion is not relevant to natural heritage.
Conclusion: CSIRO Yarralumla has been assessed as having Nil natural heritage values.	

5.3 Historic Heritage Assessment

Historic Themes

The national framework Australian Historic Themes (Australian Heritage Commission 2001) has been used to assist in the identification, assessment and management of heritage values associated with the Yarralumla Forestry Precinct. *Table 5.4* presents the historic themes and sub-themes relevant to the Yarralumla Forestry Precinct. The AHT Framework is provided in *Appendix F*.

Table 5.4 Historic Themes applicable to the Yarralumla Forestry Precinct

Australian Historic Theme Group	Theme	Sub Theme
AHT 2 Peopling Australia	2.1 Peopling Australia - Living as Australia's earliest inhabitants	
	2.2 Adapting to diverse environments	

Australian Historic Theme Group	Theme	Sub Theme
AHT 3 Developing Local, Regional and National Economies	3.2 Constructing capital city economies	3.4.4 Making forests into a saleable resource
AHT 6 Educating	6.2 Establishing schools	
	6.4 Building a system of higher education	
AHT 7 Governing	7.6 Administrating Australia	7.6.9 Conserving Australian resources
		7.6.11 Conserving economically valuable resources
AHT 8 Developing Australia's Cultural Life	8.10 Pursuing excellence in the arts and sciences	8.10.5 Advancing knowledge in science and technology

5.3.2 Description

CSIRO Yarralumla comprises approximately 10.9 ha that includes groups of buildings within the North, West and South Zones of the Site clustered around the ACT Government owned and managed oval. The Site was originally part the 160 ha area of Westbourne Woods, which included a nursery and arboretum which was established by of Charles Weston in 1913. A number of mature trees within the Site are associated with Westbourne Woods. CSIRO Yarralumla is important for its array of features from different phases of development linked to the scientific and educational purpose of the Site beginning with the establishment of the first Australian Forestry School within the north-east corner of the Site.

Site development at CSIRO Yarralumla can be grouped into the following key phases:

- AFS establishment (1927 -1938)
- Inter-war period (1938-1942)
- Post-war period (1948 – 1958)
- Administration Period (1969 – 1975)
- CSIRO period (1975 – 2004)

The North Zone comprises important buildings and features from both the AFS phase and Inter-war period. That is, the AFS (9), the former Industrial Museum and Offices (10) an early AFS Store (13) and early Seeds Store (17), the Nursery and Meteorological Plot (8) and some of the earliest trees and landscape elements.

The West Zone comprises buildings from the post-war phase of development. Which included the construction of the student accommodation building Forestry House (2) which began construction in 1948 and was completed in 1952, the Caretaker's Residence (5) was also constructed during this time and the Glasshouses Complex (also known as Building 4 group) constructed between 1955 and 1958. The West Zone also comprises the Controlled Environment Building (3) which was constructed during the Administration Period (1969), the building was used for tissue culture and for growing plants.

The South Zone comprises the Divisional Headquarters Building (also known as Building 1 Group) constructed during the Administration Period (1967) and also diverse groupings of mature pine

species and an early (c.1913) grouping of atlas cedar that is a notable feature within the south-east corner of the Site along Banks Street.

5.3.2.1 Built Elements

The Site buildings range in date from the late 1920s to the 1980s with further refurbishments undertaken in the 1990s. The Site contains 34 buildings and assets that were assessed for their heritage significance against the CHL criteria in the most recent HMP (ERM 2018). Three buildings have been assessed as having high heritage significance. These are:

- AFS (building (9);
- former Industrial Museum and Offices (10); and
- Forestry House (2).

The Tennis Courts, located to the west of the AFS have been assessed as have moderate heritage significance, along with an early 1930s Seed Store that was later used as a Printery (17).

A further 11 buildings and assets have been assessed as having low heritage significance. These buildings include:

- Controlled Environment building (3) established in 1969 for the Forest Research Institute;
- a series of four Glasshouses (4a, 4b, 4c, 4d);
- Glasshouses Workshop (4);
- Caretaker's Residence (5) which was established 1948 alongside Forestry House
- Meteorological Plot (8);
- former AFS Store building (13);
- an early Change room/Lavatory (18);
- the Fire Wind Tunnel (Pyrotron) (26); and
- The Nursery.

The Assessment of contributory elements provided in *Table 5.10* will provide either a validation for the rankings described above or provide new rankings as appropriately justified.

5.3.2.2 Important Plantings

CSIRO Yarralumla contains a number of historic plantings, mature plantings and landscaped gardens that contribute to the site's overall heritage significance. These plantings have been mapped previously in the Constraints Analysis (ERM 2019) (this mapping has been updated and provided in *Figure 5.6* following the assessment of these elements). A significant portion of the Site contains trees planted by Charles Weston between 1914 and 1915 during the development of Westbourne Woods, these plantings are considered to be of moderate significance, as they are linked to the earlier use of the Site as an arboretum and nursery and contributes to the Site's overall aesthetic significance. Plantings have occurred at each development phase as part of both experimental studies and to provide landscape amenity. The key phases and significant contributors to the heritage values at the property are:

- trees planted by Charles Weston in the development of Westbourne Woods before 1920;
- plantings associated with the establishment of the Australian Forestry School (9), setting (c.1927);
- plantings made by Dr Lindsay Pryor as part of the landscaping around Forestry House (2) (c.1948-55); and
- plantings made the Forestry and Timber Bureau

North Zone

Other significant historic plantings on the Site are linked with the establishment of the AFS in 1927 and the building's landscaping, including a set of Cypress pines and a planting of Western Yellow pines which line the driveway. Other tree groupings are associated with the forestry activities at the School thereafter. To the north-west of the Nursery is a large grouping of Monterey pine, a group known as the 'Tower Plot'. To the north of the Nursery is a large grouping of Ponderosa pine. Flanking the main entrance to the AFS and also the drive from the school to Westridge House are two large Mediterranean cypress. Behind the AFS are single specimens of Bunya pine, a Flooded gum also known as Rose gum, Tasmanian blue gum and a single Hoop pine is located near the Service Yard group.

West Zone

During the establishment of Forestry House between 1948 and 1952, landscape plantings were made by Dr Lindsey Pryor as part of the landscaping around Forestry House. To the west of Forestry House is a group of Kurrajong. Near the Controlled Environment Laboratory is a small group of Chir pine from the original plantings, a group of Flood gum (or Rose gum), planted in 1979, the product of the early tissue-culture experiments and three eucalyptus trees. Throughout these groups are numerous other landscape plantings including pine oaks, elms, poplars and cherry plums.

South Zone

A small number of trees were planted when the CSIRO Forest Research Headquarters and Laboratories were built 1967 and 1969. The most recent plantings were established in 1998 either side of Wilf Crane Crescent near its junction with Banks Street. These are rare and threatened species of acacias and eucalypts. There are also small experimental plantings resulting from research trials undertaken throughout the scientific uses of the Site.

Around the Headquarters' building (1) are large groups of Canary Island pine, Monterey pine and Aleppo pine all planted prior to 1920. Interspersed with these plantings are scattered plantings from the 1950s, including Yunnan pine, Aleppo pine, Calabrian pine, Shortleaf pine and Virginia pine.

Within the wings of the Headquarters' Building 1 are two Montezuma Bald Cypress pines that were planted alongside the establishment of the building. Towards Bentham Street is another group of Monterey pine planted 1953 and a large plantation of Atlas cedar planted before 1920. In front of the Headquarters Building are four Giant sequoia and closer to the oval are Coulter pine, Ponderosa pine and rows of Austrian pine, all c.1920s or earlier.

5.3.2.3 Important Views and Site Lines

The CSIRO Yarralumla site has been recognised for its aesthetic qualities that include a number of significant views and site lines, these views and site lines are provided in *Figure 5.1*. As discussed *Section 4.3*, the significant view lines and aesthetic attributes at the Site include:

The AFS and its formal landscaped frontage

This medium range view is associated with the AFS formal landscape plantings and setting of mature pine forest and includes views both looking west up Schlich Street (from the junction of Schlich Street and Novar Street) and from the AFS building east façade looking a short distance both south to the mature Stone pines between the AFS and Westridge House and north towards the mature Ponderosa pines at the Banks Street entrance to the AFS. The two Roman Cypress trees framing the AFS east façade also contribute to this important sight line.

The AFS as the termination of the Schlich Street vista

This medium range view is the most noteworthy of views associated with CSIRO Yarralumla. The significance of this view lies in the axial alignment of the AFS building as the termination of Schlich Street, a wide tree-line residential street. The symmetrical arrangement of the AFS and Schlich Street intersecting on east/west axes of symmetry is the principal view within CSIRO Yarralumla. This view

is comprises the view looking west up Schlich Street (from the junction of Schlich Street and Novar Street) and from the AFS building looking east down Schlich Street.

The spatial and visual relationship between buildings 9, 10 and 17

The AFS (9) the former Industrial Museum (10) and the early Seeds Store (17) each possess similar design characteristics (such as the terracotta tiled roof) that connect these buildings both spatially and visually with their obvious association. This short range view involves the view facing east from the Store to the AFS and from the AFS rear entrance looking west at both the Store and former Museum. Within this grouping on buildings is mature Bunya pine (located along the north elevation of the former Museum building) and a mature Tasmanian Blue gum along the west elevation of the AFS, these plantings contribute to this spatial and visual relationship.

The view from Wilf Crane Crescent overlooking the oval and Forestry House

From the entrance to Wilf Crane Crescent from Banks Street looking north-west across the oval is a striking view of the Forestry House, the post-war American colonial style building (a key feature being the bronze and timber turret roof) with its landscaped frontage. The view of Forestry House is unobstructed and provides visitors with a complete view of the building and its setting.

The view from Forestry House to the manicured oval and landscaped frontage

Forestry House was designed to front a large manicured oval for the use of Australian Rules football. The oval was first mentioned in 1950, and completed after Forestry House in 1953. Forestry House, with its large (original) ‘lounge’ area (now conference room), opens out to a patio that overlooks the landscaped frontage, mature trees (both viewed north-east and south-east) and manicured oval and was likely to have been used as a viewing platform for sporting events.

Important Views and Site Lines

F5.1

Drawing No:	0502267s_YHA_G005_R1.mxd		CSIRO Yarralumla Heritage Assessment
Date:	08/04/2020	Drawing Size: A4	
Drawn By:	VN/KV	Reviewed By: KD	Client: CSIRO

Coordinate System: GDA 1994 MGA Zone 55

0 50 100m

N

ERM

5.3.2.4 Associational and Social Value

The CSIRO Yarralumla site has a number of important associations and possibly also social value to foresters nationally as the first national forestry school. The Site was originally designated as a nursery and arboretum within Charles Weston's Westbourne Woods which played a significant role in the afforestation of Canberra. Westbourne Woods Arboretum was placed on the Register of the National Estate (RNE) in 1987 as a historically important arboretum. Today many of Weston's plantings survive, including extensive Monterey pine areas. Weston's Nursery would also play an important role in creating and maintaining the city landscape of Canberra, and Westbourne Woods was to play a fundamental role in the establishment of the Australian Forestry School, Canberra, and become an essential tool for educating Australia's future foresters.

The two key associations are with Charles Edward Lane-Poole and Dr Maxwell Ralph Jacobs Edward Lane-Poole was fundamental in the establishment of the AFS and was Principal of the AFS from 1927 to 1944. He was one of the great pioneers of forestry in Australia, working tirelessly to promote a national policy. From 1934 to 1939 Dr Jacobs worked under Mr. C. E. Lane Poole, Inspector General of Forests, as a Research Officer for the Forestry Bureau and a lecturer at the AFS and later took over Lane-Poole's role as Principal of the AFS. Dr Jacobs was AFS Principal during the post-war years when large numbers of students were being trained in forestry, not only from Australia but from New Zealand, Asia and Africa.

CSIRO Yarralumla is also important as the site of three memorials. On 5 May 1960, the ashes of A.B. (Brian) Patton, a forester who died following a tree fall accident at Jervis Bay, were scattered under the Pine Oaks on the southern side of the AFS. The Tennis Courts include a timber seat, erected by CSIRO staff in memory of a colleague, Jeanette Thomas, who died in 1988. Wilf Crane Crescent was named so in 1993, after Dr Wilf Crane, a senior research scientists for CSIRO's Forestry Division who died of a heart attack at the controls of his homemade plane.

A social values assessment did not form part of this scope, however the former students of the AFS have returned for reunions over the years and are likely to value the Site for the time spent there. The Site's contribution to the history of forestry training and research in Australia is likely to be valued not only by former students and scientists, but also scientists within the wider forestry community.

5.3.3 Comparative Analysis

A comparison with other related or similar sites further assists in determining the historic heritage value of a particular site. Comparative analysis can assist with identifying the appropriate level of heritage significance of a site and is useful in the validation process of determining whether a heritage listing or assessment remains current.

The following sites outlined in *Table 5.5* to *Table 5.7* have been chosen for comparison with CSIRO Yarralumla due to similarities in broad historical context, architectural style or significant features. A search of the Commonwealth Heritage List and Register of the National Estate for similar sites to CSIRO Yarralumla returned limited results. It should also be noted that the AFS was the first purpose built forestry school to serve a higher education. Previously forestry schools in Adelaide and Victoria established in conjunction with the University of Adelaide and Melbourne University (1910) and were noted to have inadequate facilities for forestry research (Lane-Poole 1934). As such, these sites are not considered comparable to CSIRO Yarralumla. However, three sites have been chosen as they most closely compare with CSIRO Yarralumla. The following information has been extracted from the HMP (ERM 2018) with discussion points extended for the purpose of this HA.

Table 5.5 CSIRO Ginninderra

CSIRO Ginninderra

Location	**CSIRO Ginninderra is located in Ginninderra, ACT**
Description	The CSIRO Division of Plant Industry established facilities at the Ginninderra in the late 1950s. CSIRO Ginninderra is a Plant Industry Experimental Site and has been undertaking research into various crops in support of the Australian agricultural industry since this time. There are several buildings present at CSIRO Ginninderra which are functional in nature and include various sheds, vehicle shelters, animal pens, and a small number of residences for site managers and overseers. These buildings were constructed on site from the late 1950s onwards.
Intactness and Condition	The CSIRO Ginninderra site is still in use for CSIRO agricultural activities and is well maintained and in good condition. ERM understands that the CSIRO are currently in the process of moving to the new facility at Boorowa.
Heritage Status	The place is not currently included on the World, National or Commonwealth Heritage Lists established under the EPBC Act. A Heritage Assessment prepared for the site by ERM (2014) found that the site had Indigenous and historic heritage values but limited natural heritage values.
Current Use	The CSIRO Ginninderra site is located on Commonwealth land and is maintained and operated by the CSIRO. The CSIRO has long term leases of four of the five parcels of land within the study area through the Department of Finance. The CSIRO uses the property for agricultural and other scientific research.
Significance	The site is important for historic heritage values relating to the Charnwood Homestead site which has archaeological potential that may provide insight into 19th century history and use of the local area. Charnwood Homestead has potential aesthetic significance arising from its landscape characteristics for the local community; however this has not been determined through a social significance assessment. The site is also known to contain Indigenous and natural heritage values of significance.
Photograph	 Ginninderra Experiment Station (https://the-riotact.com/the-curious-case-of-the-chief-minister-and-the-csiro-development/179485)
Source	ERM (2015) CSIRO Ginninderra Site Heritage Management Plan. A report to CSIRO.

Table 5.6 CSIRO Crace

CSIRO Crace	
Location	CSIRO Crace is located on Bellendan Street, Crace ACT
Description	The CSIRO Crace site currently comprises the Gungahlin homestead and various buildings and associated landscapes and infrastructure for use as a scientific wildlife research station. Gungahlin is a former pastoral property homestead landscape that has been adapted for use as a scientific wildlife research station. The site comprises a complex of buildings, a carriage way and carriage loop with tree plantings, former garden areas, and former paddocks with dams and water race remnant.
Intactness and Condition	Following renovations in the mid-1980s, the building remains in good condition and moderately intact. Changes and repairs to the house and sections of the grounds which have been commented on by the Australian Heritage Commission (AHC) and thus are well documented in AHC files.
Heritage Status	CHL Place ID: 105434
Current Use	Partially leased to external parties.
Significance	It is important for its ability to convey a history of rural property living within its current use as a national research station, encompassing major changes of homestead architecture resulting from economic booms, it is important for its association with Federation, it is one of a few double storey late 19th century country estates of the pre-Canberra rural district.
Photograph	 CSIRO Crace,Gungahlin homestead building
Source	Gungahlin Complex, Barton Hwy, Crace, ACT, Australia, Australian Heritage Database # 105437. Retrieved November 30, 2015 from http://www.environment.gov.au/

Table 5.7 CSIRO Black Mountain

CSIRO Black Mountain	
Location	Cnr Clunies Ross St and Barry Drive, Black Mountain, ACT
Description	The Black Mountain CSIRO site covers an area of approximately 37.385 hectares. At present there are 115 buildings present at the site (excluding site infrastructure), though some of these are proposed for demolition as part of the upgrading of the site to incorporate staff from other CSIRO sites across the ACT. Development of the site commenced in the late 1920s when the Australian Government decided to provide research facilities for

CSIRO Black Mountain

	economic botany and economic entomology. The 40 acre site on the eastern slopes of Black Mountain was designated for this purpose. Several assets at Black Mountain are currently included on the CHL list as individual listings: ■ CSIRO Foundation Building (formerly known as CSIRO Main Entomology Building), Clunies Ross St, Acton ACT Australia (Building 101); ■ Phytotron, Julius St, Acton, ACT Australia (Building). Several additional items have been highlighted for having design interest though are not included on the CHL list, including: ■ Black Mountain Library and extension (Building 60); ■ F.C. Pye Laboratory (Building 19); ■ Discovery Centre (Building 702); and ■ Mural in C.S. Christian Laboratory (Building 201). The Main Entomology building was constructed in 1929-30 and is significant for its association with the history of Commonwealth scientific research, particularly the scientific work of the Division of Entomology and the Division of Plant Industry. It is associated with basic entomological scientific work including taxonomic work and the Australian National Insect Collection, which are of international standing, as well as applied work on veterinary entomology and the biological control of weeds. Like the AFS building, the Main Entomology building is a good example and one of nine examples in Canberra of the Inter-War Stripped Classical Style. The 1956 central block, while later than the 1929-30 wings, generally continues and is sympathetic to the style of the wings. The site has been undergoing continuous development since its initial construction to meet changing requirements for CSIRO's scientific research. The site includes a number of glasshouse structures of a later design to those at CSIRO Yarralumla.
Intactness and Condition	The CSIRO site is still in use for both scientific research and public access and interpretation. The site is therefore very well maintained, with some alterations to buildings to meet current OHS requirements. The building Main Entomology displays a medium level of integrity because of change made, mostly to the interior. External changes include the roofing of the wings. Internal changes include the refurbishment of the laboratory and office spaces, corridors and service areas.
Heritage Status	CSIRO Main Entomology Building - CHL Place ID: 105348 Phytotron – CHL Place ID: 105560
Current Use	The CSIRO Black Mountain site is currently utilised by CSIRO for various research activities.
Significance	CSIRO Black Mountain has been utilised for research by CSIRO since the early 20th century and contains buildings and infrastructure that represent changing technologies. It is also representative of the early designing of Canberra. Several individual buildings exhibit rare and unique architectural and design features. The site has contributed to a variety of research initiatives in Australia, such as research into the dung beetle's effect on reducing the fly population and its subsequent introduction into Australia.

CSIRO Black Mountain	
Photograph	 CSIRO Main Entomology Building, Clunies Ross St
Source	Rappoport Pty Ltd (2013). *CSIRO Black Mountain Acton, Australian Capital Territory*. CSIRO Main Entomology Building, Clunies Ross St, Acton ACT Australia (Building 101), Australian Heritage Database #105428 (2004). Retrieved November 30, 2015 from http://www.environment.gov.au/

5.3.3.1 Discussion

The study area shares strong heritage values with CSIRO facilities at Crace, Ginninderra and Black Mountain. All of these sites share histories of use by the CSIRO for scientific research, and their respective landscapes and buildings have been adapted for these purposes. All sites have undergone continuous development throughout the 20th century to the present, which has seen the demolition and construction of buildings driven by changes in scientific research programing priorities.

The CSIRO Yarralumla is similar to the CSIRO Black Mountain site in its specific designation for research purposes during the development of the ACT in the 1920s. However, CSIRO Yarralumla was initially developed as a Forestry school whereas the Black Mountain site was originally created for CSIRO scientific research. At both the Yarralumla and Black Mountain sites, structures date from the 1920s and at each site, have been continuously adapted for changes in technological requirements and uses. The CSIRO Black Mountain site includes the Main Entomology building, an inter-war stripped classical style building similar to the AFS building within CSIRO Yarralumla. However, the Main Entomology building was purpose built for scientific work of the Division of Entomology and the Division of Plant Industry and was later modified internally for various other research fields (such as basic entomological scientific, veterinary entomology and the biological control of weeds), as such it is of moderate integrity. By comparison, the AFS was purpose built as a school, and has remained highly intact despite years of various uses. Further to this, the construction of the AFS involved higher level of technical achievement though the significant variety of soft and hardwood timbers from across the country that were used in its construction.

The CSIRO Ginninderra site was developed in the 1950s and comprises various functional buildings that are utilised for agricultural purposes, these buildings are only comparable to Yarralumla in the sense of their general scientific and industrial uses.

The Crace site exhibits evidence of a longer European history with the presence of the 1860s Gungahlin homestead. This building has been adapted for scientific research purposes. The CSIRO Ginninderra site also contains evidence of its early European use through the Site. Although this structure is no longer present, exotic tree plantings remain and mark its former location.

CSIRO Yarralumla contains series of buildings of historical significance that set this Site apart from Black Mountain, Crace and Ginninderra as the buildings at CSIRO Yarralumla were purpose built for the first Commonwealth Forestry School established in the country. These buildings include the AFS building itself, the former Industrial Museum and Offices Forestry House and various early stores, workshops and glasshouses and CSIRO laboratories. Development of the AFS precinct during its functional school years demonstrates the commitment of the Commonwealth to ensure the continuation of forestry research and education on a national level. While CSIRO Yarralumla is one of several examples of CSIRO research facilities within the ACT that have similar built elements and share similar scientific uses, CSIRO Yarralumla exhibits both representative and rare values that set it apart from these other facilities.

5.3.4 Assessment of Historic Heritage Values

An assessment of the place and its historic heritage elements against the CHL criteria is contained in *Table 5.8*. This assessment includes the current official values of the CSIRO Forestry Precinct, Banks Street, Yarralumla, ACT (Place ID: 105595) which has either been validated or updated by ERM following the new information gathered through the development of a detailed contextual history of the Site as part of the scope of this HA.

Table 5.8 Assessment of historic values against CHL criteria

Criterion	CHL Listing	Validation/Updates
Criterion 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*	The CSIRO Forestry Precinct, located within the larger Forestry Precinct, is the Commonwealth's centre for forestry and timber research. It is a complex of buildings, arboretum, nursery, and tennis courts forming an important national scientific institution, established as a response to Federation to provide a national forestry school and national forest research centre. It demonstrates both the Commonwealth's interest in scientific endeavour and a vision for Canberra as the location for science as well as general government administration. The precinct is associated with the international interest in forestry and is important for an array of scientific achievements, such as PINUS RADIATA propagation and breeding and the Australian Tree Seed program. The precinct is important as a component of the arboretum and nursery landscape of Yarralumla. The tree-growing trials which constitute the arboretum, identified trees suitable for the urban forests of Canberra and at the same time provided public park amenity for the Canberra community. Yarralumla Nursery to the north of the arboretum has supplied planting stock for Canberra's parks, streets and residential blocks since 1914. Within the precinct, the former Australian Forestry School reflects the successful outcome of efforts to establish a national forestry school in the new National Capital to produce professional foresters for Federal and State services, and forestry research workers. The precinct is important for its array of features from different phases of development linked to the scientific and educational purpose of the site. These features include the former Australian Forestry School, the former Offices of the Forestry and Timber Bureau, the former Seed Storage Building, Forestry House and Caretakers Cottage, the CSIRO Divisional Headquarters, Controlled Environment Laboratory, tennis	**ERM concurs with this assessment with a revision of attributes:** The CSIRO Forestry Precinct is important for its array of features from different phases of development linked to the scientific and educational purpose of the site. These features include the former Australian Forestry School (9) the former Offices of the Forestry and Timber Bureau (10), the former Seed Storage Building (17) and early Changeroom/Lavatory (18) and former Forestry School Store (13) Forestry House (2) and Caretakers Cottage (5), the CSIRO Divisional Headquarters (1), Controlled Environment Laboratory (3), the Glasshouse complex (including glasshouses 4a, 4b, 4c, 4d and Workshop 4) tennis courts (30), arboretum plantings and moveable objects of furniture, collections and historic timber hauling vehicles. The Site is also significant for scientific research that was shared internationally, such as the work undertaken by Dr Jacobs who in 1968 was invited by the then Emperor of Ethiopia to visit that country and report on the situation with respect to eucalypt planting, which resulted in aid from Australia to Ethiopia, for example the supply of eucalypt seeds. During the post-war years, large numbers of students were being trained in forestry at the AFS, not only from Australia but from New Zealand, Asia and Africa. Schooling of international students continued throughout the post-war years up until the 1970s with students and teachers sharing their knowledge internationally. Ongoing research also continued at CSIRO Yarralumla throughout the 1970s and 1980s and into the 1990s with CSIRO's research into bushfire behaviour through the Pyrotron.

Criterion	CHL Listing	Validation/Updates
	courts, arboretum plantings and moveable objects of furniture, collections and historic timber hauling vehicles. **Attributes** The whole precinct including the former Australian Forestry School, the former Offices of the Forestry and Timber Bureau, the former Seed Storage Building, Forestry House and Caretaker's Cottage, the CSIRO Divisional Headquarters, Controlled Environment Laboratory, tennis courts, arboretum plantings and moveable objects of furniture, collections and historic timber hauling vehicles.	**This Criterion is met**
Criterion 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*	Nil	**ERM does not concur with this assessment, and instead proposes:** The Australian Forestry School and associated precinct was the first and only national forestry school in the country. The AFS was endorsed by the country's leading foresters who ensured the School's funding by the Commonwealth Government. The Site, with its purpose built forestry structures, extensive plantings and associated scientific research was integral in establishing plantings and afforestation throughout Canberra since 1913 and ensured the training of some of Australia's most notable Foresters. The closing of the two schools of forestry in New Zealand (Auckland and Canterbury) during the 1930s also left the AFS as the only school in the Southern Hemisphere at the time engaged in training foresters of professional status. **This Criterion is met**
Criterion 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*	The arboretum is an important reference site containing experimental plantings and a significant genetic resource for Australia. **Attributes** Experimental plantings and genetic resources held within the arboretum.	**ERM concurs with this assessment, and adds:** The arboretum, which comprises areas of tree-growing trials throughout the site, and the Nursery to the north, both identified suitable trees for Canberra, and provided public park amenity for the Canberra community. The site also has potential to contribute to an understanding of the development of Australian Government research into forestry practices with the establishment of the Australian Forestry School at the Yarralumla site as a response to Federation to provide a national forestry school and national forest research centre. The Yarralumla site can also contribute to an understanding of the development of the CSIRO and the changing nature and technological requirements of its scientific research.

Criterion	CHL Listing	Validation/Updates
		This Criterion is met
Criterion d) - *the place has significant heritage value because of the place's importance in demonstrating the principal characteristics of:* 1. *a class of Australia's natural or cultural places; or* 2. *a class of Australia's natural or cultural environments*	Nil	**ERM does not concur with this assessment, and instead proposes:** The precinct, as a complete small-scale research and learning institution with classical style architecture and recreation grounds, reflects the design concepts that were held in the early 20th century for such places. The AFS building and its former classrooms, former Industrial Museum and Seeds Store, workshops, glasshouses, student housing (Forestry House) and groupings of various scientific tree plantings demonstrate the Site's national importance as a place of forestry training and clearly demonstrates its former use as a forestry school. Within the precinct, the former Australian Forestry School is significant as a fine example of early twentieth-century architecture. Following its construction, the AFS was seen as an exemplary example of a national forestry school and in 1946 New Zealand authorities requested the blue prints for the AFS in order to construct their own national forestry school. **This Criterion is met**
Criterion 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*	The precinct has aesthetic quality based on the historic character of the former Australian Forestry School building, the former Office of the Forestry and Timber Bureau, Forestry House and the modern Headquarters building all set in the mature forest plantings of Westbourne Woods arboretum. The School, including its formal landscaped frontage and with its arboretum setting, is the terminal feature of the Schlich Street axial vista, and a major landmark feature of Yarralumla. **Attributes** The buildings and their setting within the mature forest plantings of the Westbourne Woods arboretum, plus the School, its landscaped frontage and its prominence at the end of the Schlich Street vista.	**ERM concurs with this assessment, and notes:** While it cannot be verified that the following views are characteristics valued by a community or cultural group, it should be further noted that the central line of the Australian Forestry School's eastern façade was designed in 1927 to align with the soon to be constructed Schlich Street (c.1933). The School building with its classical symmetrical design and subtle entablature forms a striking termination to Schlich Street. This significant view is one of many in Canberra where buildings, roads and trees work together to make a picturesque and liveable city. This view is a demonstration of Walter Burley Griffin's artistic grasp on town planning and the consideration of his plan in the design process for the Australian Forestry School. The landscaped frontage of both the Australian Forestry School with its neatly manicured façade gardens and Roman Cypress Pines framing the entrance from Schlich Street and the landscaped frontage of Forestry House may also contribute to the CSIRO Yarralumla's overall aesthetic value.

Criterion	CHL Listing	Validation/Updates
Criterion 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*	The precinct, as a complete small-scale research and learning institution with classical style architecture and recreation grounds, reflects the design concepts that were held in the early 20th century for such places. Within the precinct, the former Australian Forestry School is significant as a fine example of early twentieth-century architecture. The timbers used in panelling, flooring and joinery of the School, particularly the octagonal entrance foyer, evidence a high degree of creative and artistic achievement. **Attributes** The classically styled buildings set within designed landscape, integrated with recreation areas, plus the school, its octagonal foyer and the timbers used in its panelling, flooring and joinery.	**ERM concurs with this assessment however believes this wording is best associated with Criterion d) for representativeness, and instead adds:** The timbers used in the panelling, flooring and joinery of School, including all concealed timbers, were carefully selected for each room in order to demonstrate the varied uses and aesthetic values of Australian hardwood and softwoods at a time when generally only exotic timbers were thought to be suitable for building construction. Timber was donated by various states as well as purchased, much of which was not costed in the original plans for the School, and required a considerable additional cost to be paid. The School, with its 'dignity of architectural design' (Lane-Poole 1927) was thought to challenge the comparison with any other buildings in Canberra at the time. It was also said to be the first building to be erected in the new Capital of Australia in which the structural and joinery timbers were purely Australian grown. **This Criterion is met**
Criterion 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*	The precinct has social importance to the former students educated at the place and the forestry scientists who have conducted research there. **Attributes** Not clarified	**ERM concurs with this assessment, and adds:** While a social values assessment has not been undertaken, it is likely that CSIRO Yarralumla holds social importance to former students and forestry scientists who conducted research there, and also the wider national forestry community for the Site's overall contribution to forestry research in Australia. It should also be noted that CSIRO Yarralumla is also important as the site of three memorials, though these would likely only be significant to immediate friends and family rather than a particular community or group. On 5 May 1960, the ashes of A.B. (Brian) Patton, a forester who died following a tree fall accident at Jervis Bay, were scattered under the Pine Oaks on the southern side of the AFS. The Tennis Courts include a timber seat, erected by CSIRO staff in memory of a colleague, Jeanette Thomas, who died in 1988. Wilf Crane Crescent was also named after Senior Research Scientist for CSIRO's Forestry Division, who died in 1991 of a heart attack. **This Criterion is met**

Criterion	CHL Listing	Validation/Updates
Criterion 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*	The Australian Forestry School has a strong association with pioneers of forestry research in Australia, Charles E. Lane Poole and Dr Maxwell R. Jacobs. The arboretum is important for its association with T.C.G. Weston who directed the major plantings in the 1910s and 1920s. **Attributes** The Australian Forestry School and the arboretum.	**ERM concurs with this assessment.** **This Criterion is met**
Criterion i) – *the place has significant heritage value because of the place's importance as part of Indigenous tradition*		This criterion is not relevant to this historic heritage assessment. Indigenous values for CSIRO Yarralumla have been assessed in the ACHA for site (ERM 2020).

Conclusion: Yarralumla Forestry Precinct has been validated as having historic heritage values, reaching the following criteria: a), c), e), f), g) h) **as well as two additional criteria: b) for rarity and d) for representative value**. To provide Oakstand with clear guidance for the future management of CSIRO Yarralumla, *Table 5.10* provides an assessment of the heritage values of contributory historic elements.

5.3.4.1 Assessment of Contributory Elements: Historic Heritage

A significance ranking has been applied to contributory elements where appropriate and is based on the Significance Ranking System developed by ERM in collaboration with the Department of Finance (refer to *Appendix B*). This assessment does not include elements that are known to have no heritage value. A list of items with no heritage value has been provided in *Appendix D*.

Table 5.9 Ranking criteria for Historic Heritage

Ranking	Individual Item
Exceptional	The item is a demonstrably rare, outstanding and/or an irreplaceable example of its type. It has a high degree of intact and original fabric that is readily interpreted. Loss or alteration would substantially undermine the Commonwealth heritage values of the place overall.
High	The item demonstrates a rare example of its type. Is largely intact and interpretable. Loss of unsympathetic alteration may diminish the Commonwealth Heritage Values of the item of the place overall.
Moderate	The item may have altered or modified elements. Item is intact enough to be partially interpretable as a single item or as part of the site in its entirety. Loss or unsympathetic alteration is likely to diminish the Commonwealth heritage values of the item and potentially the place if inappropriately managed.
Low	The item may be largely altered. Does not demonstrate the key defining qualities of the CH values, but may be contributory. Alteration and /or modification may make it difficult to interpret the item depending on the existing integrity of the item. Loss may not diminish the Commonwealth heritage values of the place overall.
None (does not meet CHL criteria)	Item does not reflect or demonstrate any Commonwealth heritage values.
Intrusive	Potentially detracts from the overall Commonwealth heritage values of the place as an intrusive element. Loss may actually contribute to the Commonwealth heritage values of the place. The item is an intrusive element in the heritage values of the place in its entirety.

The various contributory elements within the CSIRO Yarralumla site have been ranked according to their relative contribution to the overall significance of the place. The contributory elements and their grading of significance is presented below in *Table 5.10* for built and *Table 5.11* for landscape elements. *Figure 5.2* presents the significant site elements of CSIRO Yarralumla and *Figure 5.3* to *Figure 5.5* present the significant fabric mapping for the AFS (9), Museum Building (10) and Forestry House (2), all ranked as High Significance. The Significant Fabric Mapping provides a practical tool for identifying the original fabric of these buildings and should be factored in to any future development or modifications to these buildings.

Table 5.10 Assessment of contributory historic heritage elements

Asset Number	Photograph	Name	Key Dates	Ranking	Heritage Contribution
2		Forestry House and formal landscape components	1948-1952/modifications 1996	**High**	Forestry House is a relatively intact and representative example of a modern post-war American Colonial style residential building. It is strongly associated with the expansion of AFS and the precinct as whole and it's featured landscaped gardens, both to the west of the building and fronting the oval, provide further aesthetic value to CSIRO Yarralumla. The building was not only utilised as student accommodation, it has been used as a conference space and later as a CSIRO office and research facility and is likely to hold social value associated with these eras of use. Forestry House also contains a historic timber conference table from the Max Jacobs Collection. Forestry House contributes to the significance of CSIRO Yarralumla through criterion a), e) and g).
3		Controlled Environment Building	1969	**Low**	Along with construction of the Divisional Headquarters building (Building 1) in 1967, a number of other research facilities were constructed during this period, including the Controlled Environment Laboratory in 1969. The Laboratory was used for tissue culture and for growing plants. The purpose built facility has remained relatively intact since its original construction and is demonstrative of the different phases of development linked to the scientific and educational purpose of the site. The Controlled Environment Building contributes to the overall heritage significance of CSIRO Yarralumla as an intact example of an early CSIRO scientific building, and meets criteria a) of the CHL.

Asset Number	Photograph	Name	Key Dates	Ranking	Heritage Contribution
4		Glasshouses Workshop	1955-1958	**Low**	The Glasshouses Workshop was constructed in the 1950s as part of the Glasshouses Complex. The Workshop is a single storey red brick workshop with flat roof and highlight windows located to the western end of the complex. The Glasshouses Workshop is associated with the post-war site developments and expansion of site facilities with the growth of student numbers. The Glasshouses Workshop contributes to the overall heritage significance of the Site through criterion a).
4a, 4b, 4c, 4d		Glasshouses	1955-1958	**Low**	The set of four Glasshouses (4a, 4b, 4c, 4d) were constructed in the 1950s alongside a number of other associated support buildings which form the Glasshouse complex. The Glasshouses appear to be of standard design, and typical of this era of plant house design. However, as no other examples of this exact design could be located, this may suggest a custom design and construction specific to the AFS, though could not be verified. While their rarity cannot be confirmed, the Glasshouses demonstrate the large-scale horticultural research undertaken by the AFS post WWII and contribute to the overall significance of CSIRO Yarralumla under criterion a).
5		Caretaker's Residence and formal landscape components	1948-1951	**Low**	The Caretaker's residence was constructed alongside the student residential building Forestry House in 1948. The small cottage has similar design characteristics to Forestry House being a brick masonry structure with terracotta tiled roof. The Caretaker's Residence is contributes to the heritage significance of CSIRO Yarralumla overall under criterion a) for its association with the establishment of Forestry House and the expansion of the AFS precinct following an increase in student numbers post WWII.

Asset Number	Photograph	Name	Key Dates	Ranking	Heritage Contribution
8		Meteorological Plot	N/A	**Low**	The Meteorological Plot is the site of the former AFS Meteorological Station established in 1927 and utilised up until 1981. The area contains remnants of footings on which several meteorological instruments were located and contributes to the heritage significance of the Site under criterion a).
9		(former) Australian Forestry School & formal landscape components	1927	High	The Australian Forestry School (1927) is a fine example of the Inter-War Stripped Classical style of architecture, being symmetrically composed, divided into vertical bays, with central entrance and roundels suggestive of classical entablature. The School, including its formal landscaped frontage, in its setting of mature pine forest plantings has aesthetic value for its historic character. It is also the terminal feature of the Schlich Street axial vista, creating a major landmark feature in Yarralumla. The AFS building also has significant associations with prominent individuals in the Forestry industry of Australia, including Charles Edward Lane-Poole and Dr Maxwell Ralph Jacobs. The building also houses a number of moveable heritage items including original notice boards and decorative mountain ash furniture. The AFS building is highly significant, and contributes to the overall heritage significance of CSIRO Yarralumla under criterion a), b), d), e), f), g) and h). The building itself, along with its landscaped surrounds, is also listed on the CHL (Place ID: 105426) under criterion a), d), e), f), g) and h).

Asset Number	Photograph	Name	Key Dates	Ranking	Heritage Contribution
10		(former) Industrial Museum; Forestry and Timber Bureau Offices	1938/converted to offices 1946	High	The former Industrial Museum and later offices for the Forestry and Timber Bureau was established in 1946. The Museum was a repository for an extensive botanical collection of Australian species including a herbarium, fruits, seeds and timbers. Material of the more important oversees trees, a collection of forest insects, fungi and geological specimens were also displayed. The Museum followed the inter-war stripped classical design of the AFS. The Industrial Museum has a high degree of integrity and is a fine example of an inter-war stripped classical building. The former Museum and Offices contributes to CSIRO's overall heritage significance through criterion a) and criterion e). The former Museum building, along with its landscaped surrounds, is also listed as a contributory element to the AFS CHL listing (Place ID: 105426).
13		Store	1949	Low	The former AFS Store is a single storey weatherboard building, with a steep pitched corrugated iron gable roof. The store is a representative example of a post-war store building and contributes to the overall heritage significance of CSIRO Yarralumla through its association with the AFS under criterion a).
17		Store (heritage)	c.1930s	Moderate	The former Store was constructed prior to 1938 as a carpenter's workshop. The building was converted to a Laboratory and seed store sometime during the late 1930s or 1940s by the Department of Works and Housing, Canberra. The building was used as a laboratory and store for seeds until the mid-1960s, when it housed printing equipment for some years. The former Store retains a high degree of integrity and is a fine example of an early store building, its hipped terracotta tile roof ties in aesthetically

Asset Number	Photograph	Name	Key Dates	Ranking	Heritage Contribution
					with the AFS building directly to its east and the former Museum to its south. The former store contributes to the overall heritage significance of CSIRO Yarralumla under criterion a).
18		Lavatory/Change Room	c.1940s	Low	The Lavatory building was constructed sometime during the 1940s, likely at the same time as the onsite developments within industrial area. The Lavatory building demonstrates design characteristics typical of c.1940s lavatory blocks and contributes to the overall significance of the site under criterion a).
n/a		Nursery	1914 – 1950s	Moderate	The Nursery encompasses the north-west corner of CSIRO Yarralumla and contains large groupings of mature pine plantings, some of which were planted as early as 1914/1915 during the establishment of Charles Weston's Westbourne Woods and arboretum. The Nursery is associated with the scientific research undertaken during the years of the AFS, and the CSIRO years. The Nursery contributes to the overall heritage significance of CSIRO Yarralumla through criterion a).
026		Fire Wind Tunnel	1997	Low	The Fire Wind Tunnel or 'Pyrotron' was constructed by the CSIRO in 2008, designed by the CSIRO Pyrotron research group. The structure was the first of its kind in the state. The Fire and Wind Tunnel 'Pyrotron' represents the varied scientific uses of CSIRO Yarralumla and is a rare example of new bushfire research technology. The structure contributes to the overall heritage significance of the site through criterion c) and f).

Asset Number	Photograph	Name	Key Dates	Ranking	Heritage Contribution
030		Tennis Courts	c.1930s	Moderate	The Tennis Courts were constructed by the students of the AFS in the 1930s. It is documented that Charles Lane-Poole had recognised the need for a recreational facility, and requested two tennis courts be constructed. With a limited budget much of the work was carried out by the students themselves. The Tennis Courts, for the association both with the AFS and the memorial of Jeanette Thomas, contributes to the heritage significance of CSIRO Yarralumla under criterion a) and g).

Significance of Site Elements

F5.2

Drawing No:	0502267s_YHA_G004_R2.mxd		CSIRO Yarralumla Heritage Assessment
Date:	02/04/2020	Drawing Size: A4	
Drawn By:	VN	Reviewed By: KD	Client: CSIRO

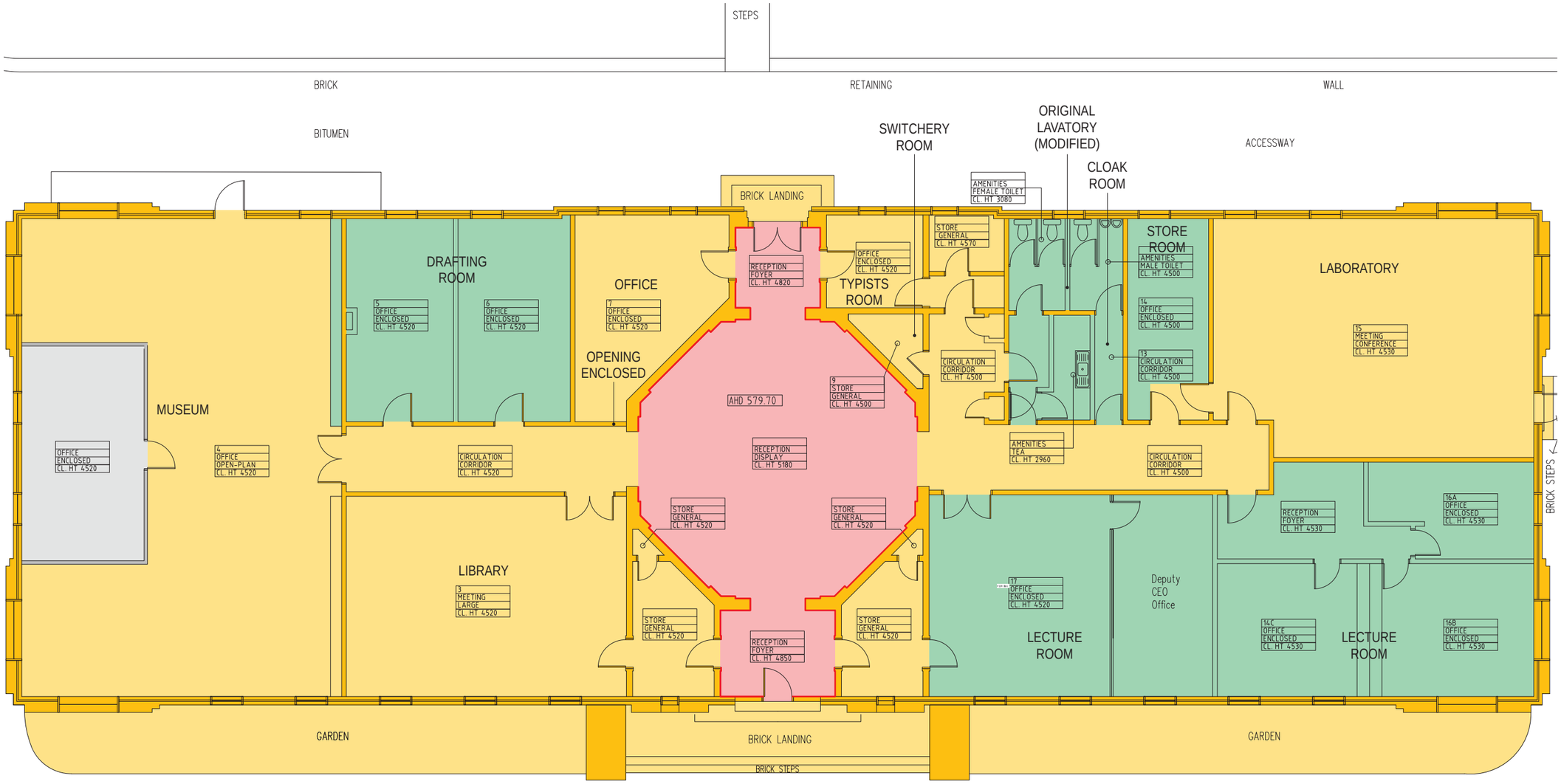
Coordinate System: GDA 1994 MGA Zone 55

0 50 100m

N

This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

ERM



Also of High significance:
- Building form and layout
- Roofline and terracotta tile cladding
- Window fabric and vertical bay fenestration
- Cast iron rainwater heads and downpipes
- Timber skirting and picture railing
- Fascia and guttering
- Symmetrical façade
- Restrained wall treatment
- Horizontal banding
- Roundels
- Expressive entrance portal
- Stepped parapet wall
- AFS Crest above main entrance (East façade)
- Formal landscaped garden beds

Legend

Significance - Walls:	Significance - Flooring:
Exceptional	Exceptional
High	High
Moderate	Moderate
Low	Low
None	None
Intrusive	Intrusive

Source:
CSIRO Yarralumla Site 107, Floor Plan, Building 9, Level 1, Dwg. No. A-09-1 Issue A, August 2002, SKM

Australian Forestry School Significant Fabric (Building 9)

F5.3

Drawing No:	0502567s_YHA_C003_R0.cdr		CSIRO Yarralumla Heritage Assessment
Date:	30/03/2020	Drawing size: A3	
Drawn by:	GC	Reviewed by: TM	Client: CSIRO

0 1 2 3m

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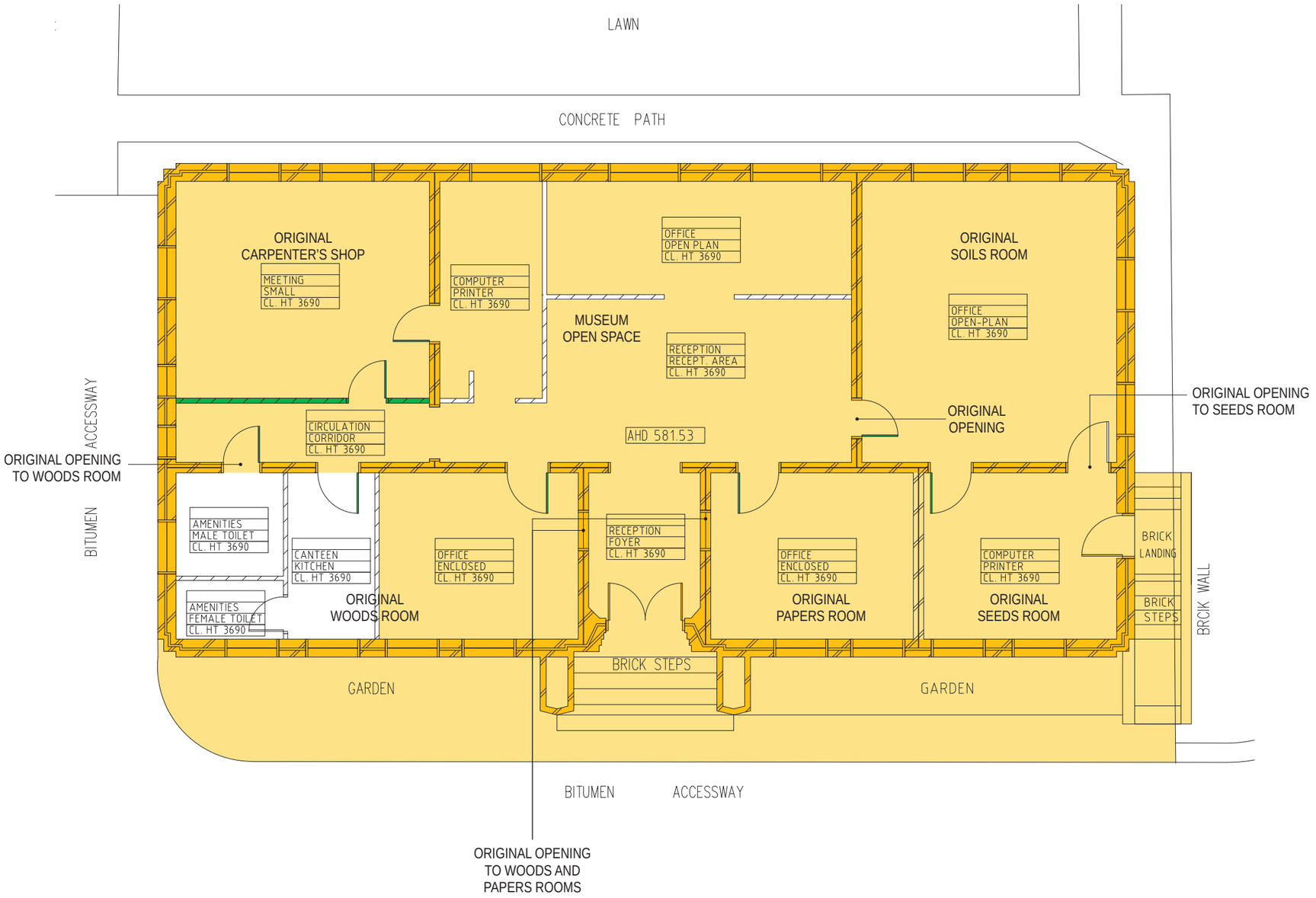
ERM



Also of High significance:
- Building form and layout
- Roofline and terracotta tile cladding
- Window fabric and vertical bay fenestration
- Cast iron rainwater heads and downpipes
- Timber skirting and picture railing
- Fascia and guttering
- Symmetrical façade
- Restrained wall treatment
- Face bricks
- Formal landscaped garden beds

Legend

Significance - Walls:	Significance - Flooring:
Exceptional	Exceptional
High	High
Moderate	Moderate
Low	Low
None	None
Intrusive	Intrusive

Source:
CSIRO Yarralumla Site 107, Floor Plan, Building 10, Level 1, Dwg. No. A-10-1 Issue A, August 2002, SKM

Former Museum and Offices Significant Fabric (Building 10)

F5.4

Drawing No:	0502567s_YHA_C004_R0.cdr		CSIRO Yarralumla Heritage Assessment
Date:	30/03/2020	Drawing size: A3	
Drawn by:	GC	Reviewed by: TM	Client: CSIRO

0 1 2 3m

N

ERM

Also of High significance:
- Building form and layout
- Roofline and terracotta tile cladding
- Bronze and timber turret
- Timber window fabric and brick sills
- Internal timber skirting and picture railing
- Original timber doors and flooring in Dining Hall
- Formal landscaped gardens and garden beds

Legend

Significance - Walls:	Significance - Flooring:
Exceptional	Exceptional
High	High
Moderate	Moderate
Low	Low
None	None
Intrusive	Intrusive

Source:
CSIRO Yarralumla Site 107, Floor Plan, Building 2, Level 1, Dwg. No. A-02-1 Issue A, August 2002, SKM

Forestry House Significant Fabric (Building 2, Level 1)

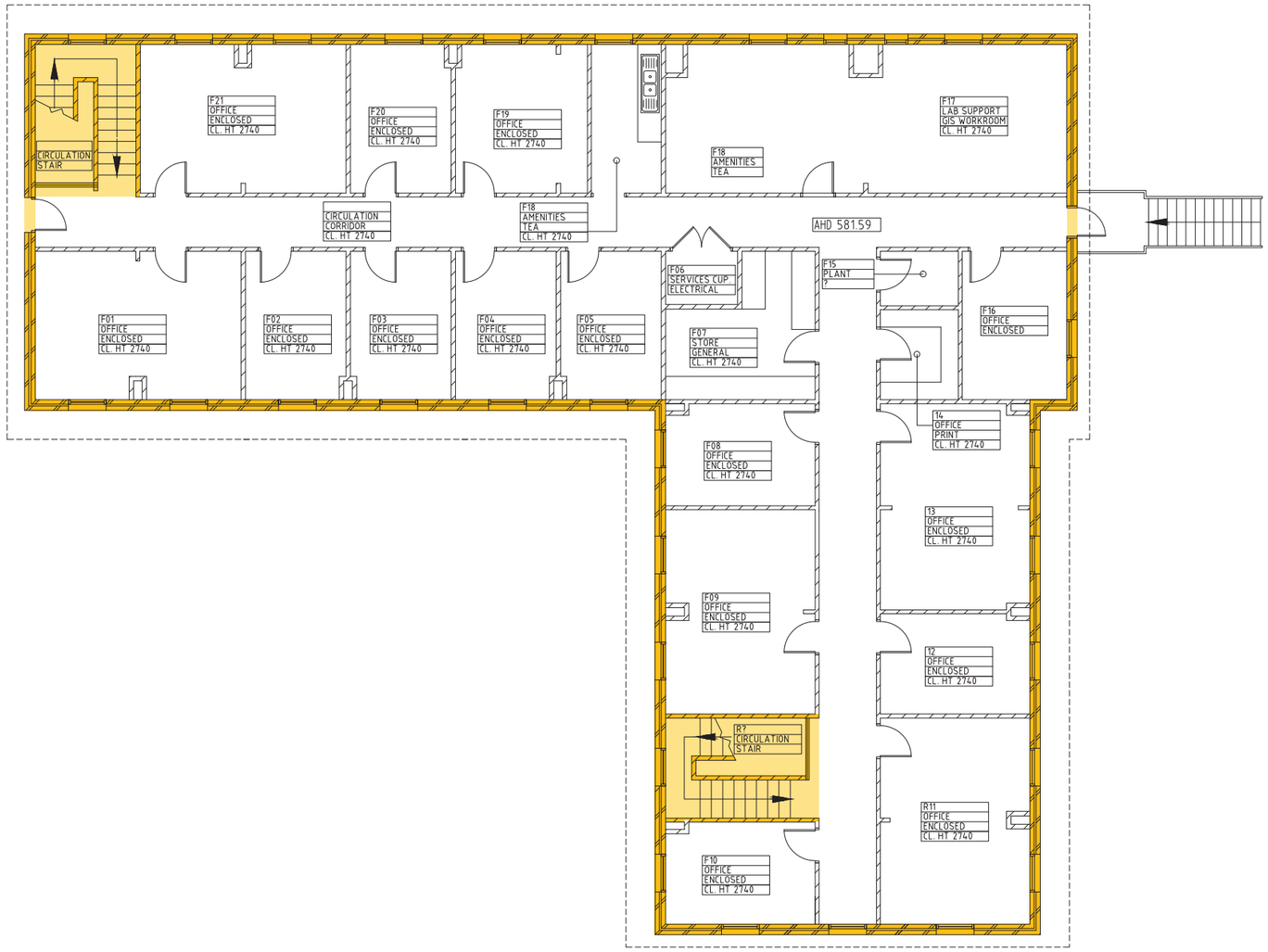
F5.5a

Drawing No:	0502567s_YHA_C001_R0.cdr		CSIRO Yarralumla Heritage Assessment
Date:	30/03/2020	Drawing size: A3	
Drawn by:	GC	Reviewed by: TM	Client: CSIRO

0 5 10 15m

N

ERM



Also of High significance:
- Window fabric and fenestration
- Timber skirting and picture railing

Legend

Significance - Walls:	Significance - Flooring:
Exceptional	Exceptional
High	High
Moderate	Moderate
Low	Low
None	None
Intrusive	Intrusive

Source:
CSIRO Yarralumla Site 107, Floor Plan, Building 2, Level 2, Dwg. No. A-02-2 Issue A, August 2002, SKM

Forestry House Significant Fabric (Building 2, Level 2)

F5.5b

Drawing No:	0502567s_YHA_C002_R0.cdr		CSIRO Yarralumla Heritage Assessment
Date:	30/03/2020	Drawing size: A3	
Drawn by:	GC	Reviewed by: TM	Client: CSIRO

0 1 2 3m

N

ERM

Table 5.11 Assessment of contributory historic landscape elements

Item	Photo	Location	Key Dates	Ranking	Heritage Contribution
Roman Cypresses *(Cuppresses sempervirens)*		East Façade of AFS building	c.1927	High	The two Roman cypresses flanking the stepped entrance to the AFS contribute the significant view of the AFS as the termination of Schlich Street. The trees were planted during the original landscaping of the School and contribute to the overall historic landscape value under criterion a) and e).
Roman Cypresses *(Cuppresses sempervirens)*		north of AFS building	c.1913	Moderate	The two Roman Cypresses location to the north of the AFS (and east of the Services Yard Group) are early plantings associated with Charles Weston's Westbourne Woods. These trees contribute to the overall historic landscape value under criterion a) and e).
Tasmanian Blue Gum *(Eucalyptus globulus)*		West elevation of AFS	West elevation of AFS 1920s to 1950s	Moderate	The Tasmanian Blue Gum is a striking mature eucalypt and contributes to the overall historic landscape value under criterion a) and e).

Item	Photo	Location	Key Dates	Ranking	Heritage Contribution
Bunya pine *(Araucaria bidwillii)*		Between north elevation of former Museum building and Store	c.1920s to 1950s	Moderate	The mature Bunya pine was planted between the 1920s and 1950s and contributes to the overall historic landscape value under criterion a) and e).
Chir pine *(Pinus roxburghi)*		South-east of Building 3	c.1920s to 1950s	Moderate	The mature Chir pine was planted between the 1920s and 1950s and contributes to the overall historic landscape value under criterion a) and e).
Flooded Gum or Rose Gum *(Eucalyptus grandis)*		East of Building 3	1979	Low	The Rose gum was planted by the Research Institute in 1979 to showcase the species of eucalypt and contributes to the overall historic landscape value under criterion a) and e).

Item	Photo	Location	Key Dates	Ranking	Heritage Contribution
Spotted Gum *Eucalyptus maculata*		South-east of Building 3 across access road	c.1950s	Moderate	The Spotted gum was planted by Research Division of the Forestry and Timber Bureau sometime in 1950s contributes to the overall historic landscape value under criterion a) and e).
Atlas Cedar *(Cedrus atlantica*)		East of Building 1 near Bentham Street	Planted prior to 1920	Moderate	The grouping of Atlas cedar was planted prior to 1920 as part of Charles Weston's Arboretum within Westbourne Woods. This grouping is a significant genetic resource to Australia and contributes to the overall historic landscape value under criterion a), c) and e).
Kurrajong *Brachychiton populneus*		Large planting group located west of Building 4 Group.	c.1920s to 1950s	Moderate	The Kurrajong plantings are associated with Westbourne woods and the early scientific research by AFS students and the Forest Research Institute tree growing trials during the 1950s. The trees represent a significant genetic resource to Australia and contribute to the overall historic landscape value under criterion a), c) and e).
Claret Ash *(Fraxinus raywoodII*)	No photograph available	South of Building 3	N/A	Low	The age of the Claret ash is unknown, however the South Australian species was a popular garden addition during the late 1920s and was likely planted during the landscaping of the AFS. The Claret ash contribute to the overall historic landscape value under criterion e).

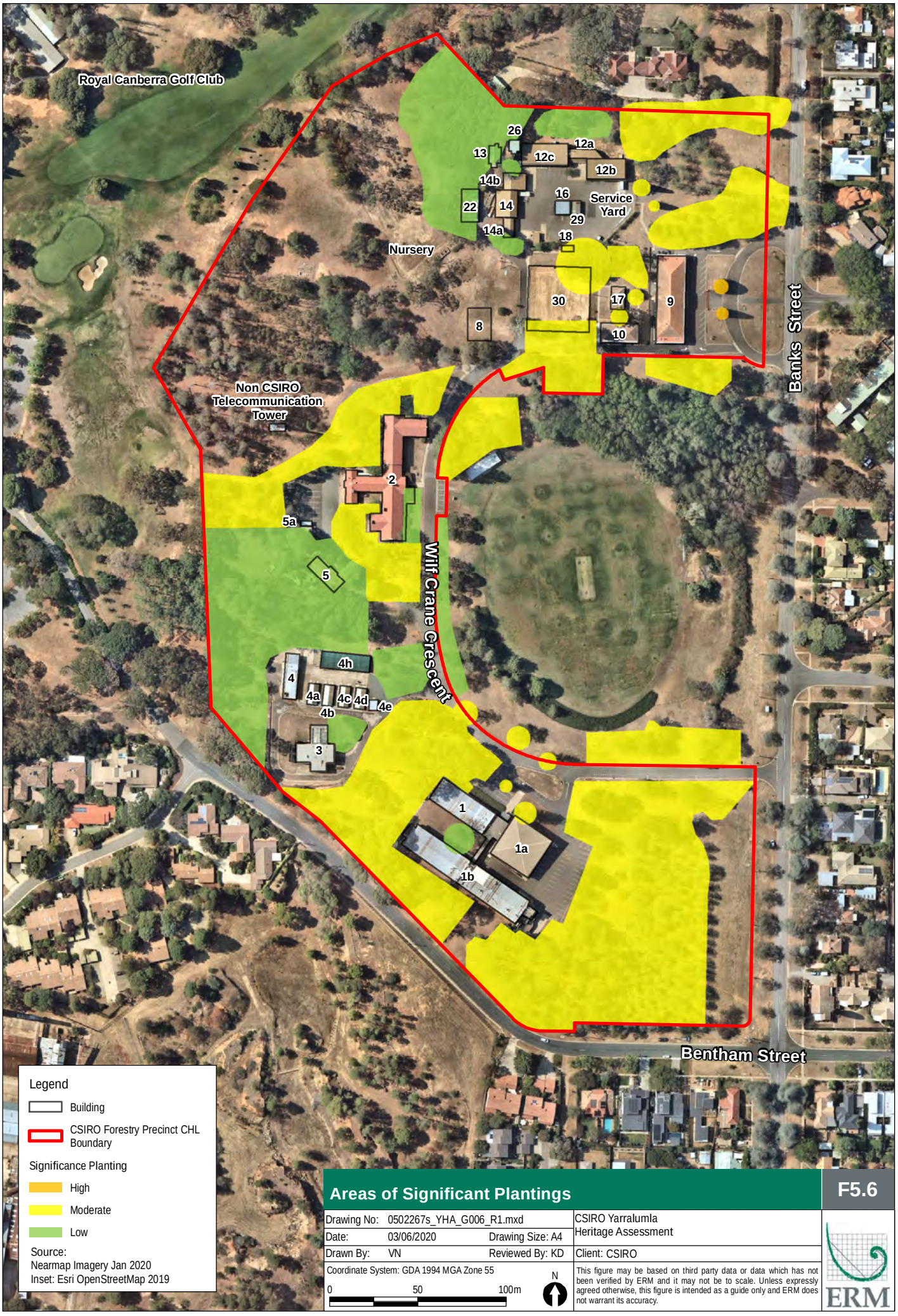
Item	Photo	Location	Key Dates	Ranking	Heritage Contribution
Mexican Cypress *Taxodium muchronatum*		Within the wings of Building 1	c.1960s	Low	The Mexican Cypress were planted within the wings of the Divisional Headquarters' building (1) in the late 1960s and contribute to the overall historic landscape value under criterion e).
Canary Island Palm *(Pinus canariensis)*		Planted around Building Group 1.	Planted prior to 1920	Moderate	The Canary Island palm plantings are associated with Westbourne woods and the early scientific research by AFS students and the Forest Research Institute. The trees represent a significant genetic resource to Australia and contribute to the overall historic landscape value under criterion a), c) and e).
Aleppo Pine *(Pinus halepensis)*		Planted around Building Group 1	Planted prior to 1920, some scattered plantings in 1950s	Moderate	The Aleppo pine plantings are associated with Westbourne woods and the early scientific research by AFS students and the Forest Research Institute. The trees represent a significant genetic resource to Australia and contribute to the overall historic landscape value under criterion a), c) and e).

Item	Photo	Location	Key Dates	Ranking	Heritage Contribution
Calabrian Pine *(Pinus brutia)*		Planted around Building Group 1, scattered within larger planting groups	c.1950s	Moderate	The Calabrian pine groupings are associated with the Forest Research Institute plantings. The trees represent a significant genetic resource to Australia and contribute to the overall historic landscape value under criterion a), c) and e).
Michocan Pine *Pinus michoacana*		Planted west of Building Group 1, scattered with larger planting groups	c.1950s	Moderate	The Michocan pine groupings are associated with the Forest Research Institute plantings. The trees represent a significant genetic resource to Australia and contribute to the overall historic landscape value under criterion a), c) and e).

Item	Photo	Location	Key Dates	Ranking	Heritage Contribution
Douglas Pine *Pinus douglasiana*		Planted west of Building Group 1, scattered within larger planting groups	c.1950s	Moderate	The Douglas pine groupings are associated with the Forest Research Institute plantings. The trees represent a significant genetic resource to Australia and contribute to the overall historic landscape value under criterion a), c) and e).
Shortleaf Pine *(Pinus echinata)* Yunnan Pine *(Pinus yunnanensis*) Virginia Pine *(Pinus virginiana*) Coulter Pine *(Pinus coulteri*) Austrian Pine *(Pinus nigra*)		Planted around Building 1 Group, scattered within larger planting groups	Prior to 1920s to c.1950s	Moderate	The various pine plantings are associated with Westbourne woods and the early scientific research by AFS students and the Forest Research Institute. The trees represent a significant genetic resource to Australia and contribute to the overall historic landscape value under criterion a), c) and e).

Item	Photo	Location	Key Dates	Ranking	Heritage Contribution
Monterey Pine *(Pinus radiata)*		Planted around Building 1 Group, scattered within larger planting groups	c.1950s, some planted prior to 1920	Moderate	The Monterey pine plantings are associated with Westbourne woods and the early scientific research by AFS students and the Forest Research Institute, including pioneering research by Dr Jacobs and later by Mr. Jack Fielding on *Pinus radiata* propagation in Australia. The trees represent a significant genetic resource to Australia and contribute to the overall historic landscape value under criterion a), c) and e).
Giant Sequoia *(Sequoiadendron giganteum)*		East façade of Building 1	Planted prior to 1920s or earlier	Moderate	The Giant sequoia plantings are associated with Westbourne woods and contribute to the overall historic landscape value under criterion a) and e).
Ponderosa Pine *(Pinus ponderosa)*		East of Building 1 Group and either side of AFS building	Planted c.1920s or earlier	Moderate	The Ponderosa pine plantings are associated with Westbourne woods and the establishment of the AFS and contribute to the overall historic landscape value under criterion a) and e).

Item	Photo	Location	Key Dates	Ranking	Heritage Contribution
Stone Pine (*Pinus pinea*)		North of Building 4 Group and near Westridge House southern boundary	c.1920s to 1950s	Moderate	The Stone pine plantings are associated with Westbourne woods and early scientific research by AFS students and the Forest Research Institute and contribute to the overall historic landscape value under criterion a), c) and e).
Pine Oak *(Quercus palustrus)*		West of the Caretaker's Residence	c.1950s	Moderate	The Pine oak grouping is associated with the Forest Research Institute tree growing trials during the 1950s. The trees represent a significant genetic resource to Australia and contribute to the overall historic landscape value under criterion a), c) and e).


Royal Canberra Golf Club
Nursery
Service Yard
Non CSIRO Telecommunication Tower
Wilf Crane Crescent
Banks Street
Bentham Street
26
13
12a
12c
12b
14b
16
22
14
29
14a
18
30
17
9
8
10
2
5a
5
4h
4
4a
4c
4d
4e
4b
3
1
1a
1b
Legend
Building
CSIRO Forestry Precinct CHL Boundary
Significance Planting
High
Moderate
Low
Source:
Nearmap Imagery Jan 2020
Inset: Esri OpenStreetMap 2019
Areas of Significant Plantings
F5.6
Drawing No: 0502267s_YHA_G006_R1.mxd
Date: 03/06/2020
Drawing Size: A4
Drawn By: VN
Reviewed By: KD
Coordinate System: GDA 1994 MGA Zone 55
0
50
100m
N
CSIRO Yarralumla Heritage Assessment
Client: CSIRO
This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.
ERM

5.3.5 Assessment against the ACT Significance Criteria

An assessment of the Yarralumla Forestry Precinct against the ACT Heritage Significance criteria was prepared for the 2018 HMP (refer to *ACT Heritage Act 2004, Part 2; Section 10* for significance criteria). *Table 5.12* provides the previous assessment with either validation or additional comments by ERM. An assessment against the ACT Significance criteria is important to establish local heritage values for the Site. In the event CSIRO Yarralumla is removed from Commonwealth Management its nomination to the ACT Heritage Register would be recommended and likely sought after by local community groups and the ACT Heritage Council.

Table 5.12 Assessment of Yarralumla Forestry Precinct against ACT heritage criteria

Criteria	ERM Assessment 2018	Validation/further comments
Criterion a) importance to the course or pattern of the ACT's cultural or natural history	The Australian Forestry School was designed and built as part of the Federal Capital Commission's building program, and was one of a few institutions established by the Commonwealth. It reflects the Commonwealth's effort to establish a national forestry school in the new National Capital to produce professional foresters for Federal and State services and forestry research workers. The establishment of a national forestry school was part of the national approach to many issues that followed Federation in 1901 and the international growth of forestry and forest industry. The CSIRO has continuously used the site as one of several agricultural facilities located throughout Australia. Although the site is part of CSIRO's ongoing contribution to agricultural research, it has not been noted as providing significant breakthroughs that have influenced the ACT's or Australia's agricultural industry. **Does meet this criterion**	**ERM concurs with this assessment.** **Does meet this criterion.**

Criteria	ERM Assessment 2018	Validation/further comments
Criterion b) has uncommon, rare or endangered aspects of the ACT's cultural or natural history	Comparative analysis has found that there are currently several CSIRO research facilities within the ACT and the study area is therefore not rare as an example of this type. **Does not meet this criterion**	**ERM does not concur with this assessment, and instead proposes:** The Australian Forestry School and associated precinct was the first and only national forestry school in the country endorsed by the country's leading foresters who ensured the School's funding by the Commonwealth Government. The Site, with its purpose built forestry structures, extensive plantings and associated scientific research was integral in establishing plantings and afforestation throughout Canberra since 1913 and ensured the training of some of Australia's most notable Foresters **Does meet this criterion.**
Criterion c) potential to yield information that will contribute to an understanding of the ACT's cultural or natural history	The site contributed to the development of Australian Government research into forestry practices with the establishment of the Australian Forestry School at the Yarralumla site as a response to Federation to provide a national forestry school and national forest research centre within the ACT. The Yarralumla site can also contribute to an understanding of the development of the CSIRO within the ACT and the changing nature and technological requirements of its scientific research. The study area c was designed and built as part of the Federal Capital Commission's building program, and was one of a few institutions established by the Commonwealth at this time. However, as CSIRO no longer occupies the site, information pertaining to the development of research and technology can no longer be obtained from the study area. **Does meet this criterion**	**ERM concurs with this assessment and adds:** The arboretum, which comprises areas of tree-growing trials throughout the site, and the Nursery to the north, both identified suitable trees for Canberra, and provided public park amenity for the Canberra community. **Does meet this criterion.**

Criteria	ERM Assessment 2018	Validation/further comments
Criterion d) importance in demonstrating the principal characteristics of a class of cultural or natural places or objects	The Australian Forestry School is a fine example of the Inter-War Stripped Classical style of architecture, being symmetrically composed, divided into vertical bays, with a central entrance and roundels suggestive of classical entablature. Other features are stepped parapets, round arched openings at the entrance and projecting bay ends, and a hipped tiled roof (CHL Place ID 105426). **Does meet this criterion**	**ERM concurs with this assessment and adds:** CSIRO Yarralumla in its entirety, comprises elements that together demonstrate the principal characteristics of a national forestry school. The AFS building and its former classrooms, former Industrial Museum and Seeds Store, workshops, glasshouses and groupings of various tree plantings demonstrate the Site's national importance as a place of forestry training and clearly demonstrates its former use as a forestry school. **Does meet this criterion.**
Criterion e) importance in exhibiting particular aesthetic characteristics valued by the ACT community or a cultural group in the ACT	The School including its formal landscaped frontage, in its setting of mature pine forest plantings has aesthetic value for its historic character. As the terminal feature of the Schlich Street axial vista, it creates a major landmark feature in Yarralumla (Freeman 2008). **Does meet this criterion**	**ERM concurs with this assessment and adds:** The School building with its classical symmetrical design and subtle entablature forms a striking termination to Schlich Street. This significant view is one of many in Canberra where buildings, roads and trees work together to make a picturesque and liveable city. This view is a demonstration of Walter Burley Griffin's artistic grasp on town planning and the consideration of his plan in the design process for the Australian Forestry School. **Does meet this criterion.**
Criterion f) importance in demonstrating a high degree of creative or technical achievement for a particular period	The precinct, as a complete small-scale research and learning institution with classical style architecture and recreation grounds, reflects the design concepts that were held in the early 20th century for such places. Within the precinct, the former Australian Forestry School is significant as a fine example of early twentieth-century architecture (Freeman 2008). **Does meet this criterion**	**ERM concurs with this assessment.** **Does meet this criterion.**

Criteria	ERM Assessment 2018	Validation/further comments
Criterion g) has a strong or special association with the ACT community, or a cultural group in the ACT for social, cultural or spiritual reasons	The study area has an association with the former students educated at the place. **Does meet this criterion**	**ERM concurs with this assessment and adds:** It should also be noted that CSIRO Yarralumla is also important as the site of three memorials, though these would likely only be significant to immediate friends and family rather than a particular community or group. On 5 May 1960, the ashes of A.B. (Brian) Patton, a forester who died following a tree fall accident at Jervis Bay, were scattered under the Pine Oaks on the southern side of the AFS. The Tennis Courts include a timber seat, erected by CSIRO staff in memory of a colleague, Jeanette Thomas, who died in 1988. Wilf Crane Crescent was also named after Senior Research Scientist for CSIRO's Forestry Division, who died in 1991 of a heart attack. **Does meet this criterion.**
Criterion h) has a special association with the life or work of a person, or people, important to the history of the ACT	The School has a strong association with its principals who were also pioneers of forestry research in Australian, Charles T Lane Poole and Dr Maxwell Jacobs (CHL Place ID 105426). **Does meet this criterion**	**ERM concurs with this assessment and adds:** The Site was also formally known as Westbourne Woods, an arboretum and nursery established by Charles Weston in 1913. The CSIRO Yarralumla site once played an important role in the afforestation of Canberra. **Does meet this criterion.**
Conclusion: CSIRO Yarralumla has been assessed as reaching the threshold for entry on the ACT Heritage Register under all criteria.		

5.3.6 Statement of Significance

The following Statements of Significance have been reproduced from the CHL official Summary Statement of Significance. The Statement of Significance for the ACT heritage register has been extracted from the 2018 HMP (ERM). Any addition or alterations by ERM have been provided in **bold**.

Commonwealth Heritage List

The CSIRO Forestry Precinct, located within the larger Forestry Precinct (RNE No. 102273), is the Commonwealth's centre for forestry and timber research. It is a complex of buildings, arboretum, nursery, and tennis courts forming an important national scientific institution, established as a response to Federation to provide a national forestry school and national forest research centre. It demonstrates both the Commonwealth's interest in scientific endeavour and a vision for Canberra as the location for science as well as general government administration. **The Australian Forestry School and associated precinct is rare as the first and only national forestry school in the country**. **The Site, with its purpose built forestry structures, extensive plantings and associated scientific research was integral in establishing plantings and afforestation throughout Canberra since 1913 and ensured the training of some of Australia's most notable Foresters. The closing of the two schools of forestry in New Zealand (Auckland and Canterbury) during the 1930s also left the AFS as the only school in the Southern Hemisphere at the time engaged in training foresters of professional status.**

The AFS building and its former classrooms, former Industrial Museum and Seeds Store, workshops, glasshouses student housing (Forestry House) and groupings of various scientific and groupings of various tree plantings demonstrate the Site's national importance as a place of forestry training and clearly demonstrates its former use as a forestry school.

The precinct is associated with the international interest in forestry and is important for an array of scientific achievements, such as *Pinus radiata* propagation and breeding and the Australian Tree Seed program. **The Site is also significant for scientific research that was shared internationally, such as the work undertaken by Dr Jacobs who in 1968 was invited by the then Emperor of Ethiopia to visit that country and report on the situation with respect to eucalypt planting, which resulted in aid from Australia to Ethiopia, for example the supply of eucalypt seeds.**

The precinct is important as a component of the arboretum and nursery landscape of Yarralumla. The tree-growing trials which constitute the arboretum, identified trees suitable for the urban forests of Canberra and at the same time provided public park amenity for the Canberra community.

~~Yarralumla Nursery to the north of the arboretum has supplied planting stock for Canberra's parks, streets and residential blocks since 1914~~. Within the precinct, the former Australian Forestry School reflects the successful outcome of efforts to establish a national forestry school in the new National Capital to produce professional foresters for Federal and State services, and forestry research workers. **During the post-war years, large numbers of students were being trained in forestry at the AFS, not only from Australia but from New Zealand, Asia and Africa. Schooling of international students continued throughout the post-war years up until the 1970s with students and teachers sharing their knowledge internationally. Ongoing research also continued at CSIRO Yarralumla throughout the 1970s and 1980s and into the 1990s with CSIRO's research into bushfire behaviour through the Pyrotron.**

The CSIRO Forestry Precinct is important for its array of features from different phases of development linked to the scientific and educational purpose of the site. These features include the former Australian Forestry School (9) the former Offices of the Forestry and Timber Bureau (10), the former Seed Storage Building (17) and early Lavatory/Changeroom (18) and former Forestry School Store (13) Forestry House (2) and Caretakers Cottage (5), the CSIRO Divisional Headquarters (1), Controlled Environment Laboratory (3), the Glasshouse complex

(including glasshouses 4a, 4b, 4c, 4d and Workshop 4) tennis courts (30), arboretum plantings and moveable objects of furniture, collections and historic timber hauling vehicles.

The arboretum is an important reference site containing experimental plantings and a significant genetic resource for Australia. The precinct has aesthetic quality based on the historic character of the former Australian Forestry School building, the former Office of the Forestry and Timber Bureau, Forestry House and the modern Headquarters building all set in the mature forest plantings of Westbourne Woods arboretum. **The School building with its classical symmetrical design and subtle entablature forms a striking termination to Schlich Street and is a landmark feature of Yarralumla. This significant view is one of many in Canberra where buildings, roads and trees work together to make a picturesque and liveable city. This view is a demonstration of Walter Burley Griffin's artistic grasp on town planning and the consideration of his plan in the design process for the Australian Forestry School. The timbers used in the panelling, flooring and joinery of School, including all concealed timbers, were carefully selected for each room in order to demonstrate the varied uses and aesthetic values of Australian hardwood and softwoods and are evidence a high degree of creative and artistic achievement. The School, with its 'dignity of architectural design' (Lane-Poole 1927) was thought to challenge the comparison with any other buildings in Canberra at the time. It was also said to be the first building to be erected in the new Capital of Australia in which the structural and joinery timbers were purely Australian grown.**

The landscaped frontage of both the Australian Forestry School with its neatly manicured façade gardens and Roman Cypress Pines framing the entrance from Schlich Street and the landscaped frontage of Forestry House also contribute to the CSIRO Yarralumla's overall aesthetic value.

The precinct, as a complete small-scale research and learning institution with classical style architecture and recreation grounds, reflects the design concepts that were held in the early 20th century for such places. Within the precinct, the former Australian Forestry School is significant as a fine example of early twentieth-century architecture.

It is likely that CSIRO Yarralumla holds social importance to former students and forestry scientists who conducted research there, and also the wider national forestry community for the Site's overall contribution to forestry research in Australia. The Australian Forestry School has a strong association with pioneers of forestry research in Australia, Charles E. Lane Poole and Dr Maxwell R. Jacobs. The arboretum is important for its association with T.C.G. Weston who directed the major plantings in the 1910s and 1920s.

It should also be noted that CSIRO Yarralumla is also important as the site of three memorials, though these would likely only be significant to immediate friends and family rather than a particular community or group. On 5 May 1960, the ashes of A.B. (Brian) Patton, a forester who died following a tree fall accident at Jervis Bay, were scattered under the Pine Oaks on the southern side of the AFS. The Tennis Courts include a timber seat, erected by CSIRO staff in memory of a colleague, Jeanette Thomas, who died in 1988. Wilf Crane Crescent was also named after Senior Research Scientist for CSIRO's Forestry Division, who died in 1991 of a heart attack.

6. CONCLUSIONS AND RECOMMENDATIONS

This HA has been prepared to address and validate the historic heritage values for CSIRO Yarralumla as well as assess potential for natural heritage values. The preparation of this HA will assist in the understanding of both the historic and natural heritage significance of CSIRO Yarralumla to ensure these values are considered and protected within the planned development for CSIRO Yarralumla.

The HA has provided a comprehensive contextual history that has informed both a detailed understanding of the history of CSIRO Yarralumla and also a detailed understanding of significant fabric through the discovery of (previously unrecorded) architectural plans. The HA has validated the previous historic heritage assessment and through detailed historical research and thorough assessment of values, has identified that CSIRO Yarralumla meets an additional two CHL criteria, b) for rarity as the first and only national forestry school in the country and its importance in establishing plantings and afforestation throughout Canberra since 1913 and d) for its representative values, as the AFS building and its former classrooms, former Industrial Museum and Seeds Store, workshops, Glasshouses, student housing (Forestry House) and groupings of various scientific tree plantings demonstrate the Site's national importance as a place of forestry training and clearly demonstrates its former use as a forestry school. CSIRO Yarralumla has been found to now meet criterion a), b), c), d), e), f), g) h) of the CHL.

This HA has also found CSIRO Yarralumla to have a number of significant views and sight lines, with the most notable being the AFS eastern façade and landscaped frontage as the termination of Schlich Street. Important view lines also include the spatial and visual relationship between buildings 9, 10 and 17, the view from Wilf Crane Crescent overlooking the oval and Forestry House and from Forestry House looking onto the landscaped frontage, mature trees and manicured oval.

The HA was also able to validate the strong associations with two pioneers of forestry research and policy; Charles Edward Lane-Poole and Dr Maxwell Ralph Jacobs. Further information on these individuals has been provided in the Historical Background for the site, to provide further context on their association with CSIRO Yarralumla and their standing in the forestry community. The Site has also been found likely to hold social significance to the former students and scientists associated with the site and is also the site of three memorials.

While the HMP (2018) for CSIRO Yarralumla provides rankings for individual site elements, this HA has provided a detailed assessment of contributory elements with individual justification for previous rankings of both built assets, features and plantings within CSIRO Yarralumla. The assessment of contributory elements was able to validate the previous rankings, though the Nursery ranking has been upgraded from low to moderate, and the two Cypress pines location north of the AFS building have been downgraded from high to moderate. Significant fabric mapping has also been provided for the high significance buildings (2, 9 and 10). This mapping has not been developed in previous assessments and will assist in plans for future development associated with these high significance buildings. The mapping provides a detailed understanding of original and early fabric and uses in order to inform acceptable adaptive reuse proposals for these buildings. The assessment of significant historic trees from the previous Constraints Analysis (ERM 2019) has also been reviewed and the mapping updated to provide areas of low, moderate and high trees of heritage significance. Recommendations have been provided below in Section 6.2 that address what these values mean and considerations for the future of these significant trees.

The natural heritage assessment concluded that CSIRO Yarralumla does not possess natural heritage values as defined by the Australian Natural Heritage Charter. While the Site has potential for scientific values as it contains 'experimental plantings and a significant genetic resource for Australia'. It is noted that the various tree species within CSIRO Yarralumla are not rare and it is unlikely that the Site could contribute further substantial information. It is also noted to have potential for aesthetic values through its mature pine forest setting, however it does not provide a sensory perception or the form, scale, colour, texture or landscape that is considered of natural aesthetic value.

6.1 Opportunities

Places of cultural significance, such as CSIRO Yarralumla, are an important expression of the history of forestry in Australia and must be conserved for present and future generations in accordance with the principal of inter-generational equity (Burra Charter 2013:1). In general, any changes to the CSIRO Yarralumla site and its significant buildings, views and landscape elements should refer to the HMP (ERM 2018) for the site, in association with the significance assessment and significance mapping provided within this HA. The conservation of heritage values and associated contributory elements should be guided by the Australia ICOMOS Burra Charter Conservation Principals (2013) and the ICOMOS Practice Note for Heritage and Sustainability for Built Heritage (ICOMOS 2019), including:

Article 3: Cautious Approach

- Conservation is based on respect for the existing fabric, use, associations and meanings. It requires a cautious approach of changing as much as necessary but as little as possible

Article 7: Use

- Where the use of a place is of cultural significance it should be retained
- A place should have a compatible use

Article 8: Setting

- Conservation requires the retention of an appropriate setting. This includes retention of the visual and sensory setting, as well as the retention of spiritual and other cultural relationships that contribute significance of the place

Article 9: Location

- The physical location of a place is part of its cultural significance. A building, work or other element of a place should remain in its historical location. Relocation is generally unacceptable unless this is the sole practical means of ensuring its survival.

Article 21: Adaptation

- Adaptation is acceptable only where the adaptation has minimal impact on the cultural significance of the place.

6.1.1 Adaptive Reuse Considerations

Heritage conservation practice and sustainable development can have very similar objectives and the pursuit of one goal should not be at the expense of the other. Conserving and adapting heritage places can contribute to energy conservation and also reduces carbon emissions by minimising demolition and construction waste and the need for production and transportation of new materials (ICOMOS 2019). A fundamental question that should be answered in assessing the sustainability benefits of retaining an existing building, structure or heritage place is “what would be wasted if this place were to be demolished”? There are many opportunities to enhance the heritage significance of CSIRO Yarralumla through the adaptive reuse of its buildings.

Any adaptive reuse strategies should be sympathetic to the original use of the building and its original fabric. Buildings ranked of high significance should not be altered in any way that detracts from the heritage significance of that building. For instance, any changes that alter the external form, layout of fabric or obscure the original use of the AFS (9) could result in a significant impact to heritage values which would trigger the EPBC referral process. As the AFS was originally a school building and later offices, its continued use as offices would be most appropriate and low impact future use (provided no major internal configuration changes occur).

The former Industrial Museum and Offices (10) and Forestry House (2) have more adaptive reuse opportunities as they have undergone moderate internal modifications. However, original fabric, form, layout and use should still be conserved to ensure minimal impact of the heritage significance of these buildings.

The accommodation wings of Forestry House were converted to offices in the 1990s, a continuation of this use would be appropriate. Internally there is very little original fabric within this double storey wing and internal modifications would be both necessary and appropriate as long as the original window fabric, timber skirting, balustrading and picture railing details are retained on both levels. The former Industrial Museum was converted into an Administration building for the Forestry and Timber Bureau in 1946 and much of its internal fabric is associated with this era of use, early and original fabric is largely noted to have survived within the main entrance vestibule (including flooring and main door), the window fabric and timber skirting. Opportunities for the could include its adaptive re-use as an art space or studio, reinstatement of one of the former museum rooms as a permanent display related to the history of CSIRO Yarralumla or its re-use as an office space.

6.1.2 Interpretation

Interpretation assists with conservation through building awareness of the heritage significance of the buildings at CSIRO Yarralumla. The purpose of interpretation of heritage places is to reveal and explain their significance and to enable that significance to be understood by the people that manage the place and the public that access the place. A heritage interpretation strategy can be developed where there is a public access and/or interest in the place. A number of interpretive signs have been developed by the Canberra Tracks Initiative through the ACT Government Heritage Grants Program. These signs are placed around CSIRO Yarralumla and assist in the understanding of individual site elements such as the AFS, former Industrial Museum and Forestry House. A broader Interpretation Strategy could assist in developing interpretive content that communicates the overall heritage values of CSIRO Yarralumla by tying in each element of heritage significance, including its significant plantings and landscape elements. The intention for the Tennis Courts and Meteorological Plot to be integrated into Open Public Space is a good opportunity for future heritage interpretation signage of other devises. Further opportunities for interpretation could include content for within each high significance building, to communicate is history, former layout and uses to enhance the understanding of these buildings to management, tenants and visitors.

6.2 Recommendations

The following recommendations are relevant to CSIRO Yarralumla's significant buildings, landscape elements and significant views and provide practical guidance for moving forward with the Master Planning for the Site's redevelopment based on the best practice heritage conservation principles described in *Section 6.1*. The following recommendations are a detailed expansion on the recommendations provided in the Preliminary Master Plan Heritage Review (ERM 2019) which is provided in *Appendix G*.

6.2.1 Conservation Management Plan

A Conservation Management Pan (CMP) is an important document to help owners and managers understand the heritage values of a place in detail, and how those values can be best conserved given particular management context of the place. It helps to manage change, and is a widely used tool. A CMP explains why a place is considered to be significant and then investigates the constraints and opportunities that arise or impact on that place. These, with the detailed understanding of the significance of the place, are then used to developed detailed policies specific to places to guide the conservation of the place in the real-world management context. A CMP should also include a record of moveable heritage items within CSIRO Yarralumla that outlines provenance and any recommendations for ongoing conservation.

A CMP may be required for Yarralumla once the Site passes out of Commonwealth agency management (current CSIRO lease arrangements), and is no longer National Land. This HA has provided a detailed contextual history, it provides descriptions of site elements (with a focus on the high significance buildings) and significant fabric mapping for each of the high significance buildings. As such, this HA will form a strong foundation for the development of an up-to-date CMP for Yarralumla.

Recommendation 1
Consideration should be given to the development of a CMP (with this HA as the foundation) in the event that CSIRO Yarralumla is no longer subject to the EPBC Act requirement for a HMP.

6.2.2 Significant Buildings

6.2.2.1 Buildings of high heritage significance

ERM understands that all three buildings ranked of high heritage significance (2, 9 and 10) are to be retained and adaptively reused as part of the redevelopment of CSIRO Yarralumla. Adaptive reuse of these buildings should consider both the Burra Charter Principles for the conservation of heritage places, and the ICOMOS Practice Note for Heritage and Sustainability for Built Heritage, as identified above in *Section 6.1*. In addition to the adaptive reuse opportunities identified in *Section 6.1.1* above, further recommendations are provided below:

Recommendation 2
If appropriate and practical, remove the intrusive office within the former museum room within the AFS building.
Recommendation 3
Any further conversions or adaptations to Forestry House should retain original and early fabric. Specifically, all original level 1 fabric and original window and timber fabric from level 2.
Recommendation 4
The ideal reuse of the former Industrial Museum and Offices building (10) would be sympathetic to its original use as a museum, and later 1946 conversion to Administration Offices and retain all original and early fabric.

6.2.2.2 Buildings/Assets of moderate heritage significance

ERM understands that buildings and assets ranked of moderate heritage value will be retained and re-used or re-purposed. The previous assessment for the Site (ERM 2018) ranked both the 1930s Tennis Courts (30) and the c.1930s former Seeds Store (17) as having moderate significance. This HA has validated that assessment, and also increased the significance of the Nursery from low to moderate. The Nursery is associated with the earliest uses of the site as Charles Weston's nursery and arboretum and contributes to the overall heritage value of the Site through criterion a). It is understood the Tennis Courts are to be integrated into Public Open Space, which will extend across other areas of heritage interest including the adjacent Meteorological Plot (8).

The retention and re-use of these moderate significance assets in their current locations is an acceptable outcome for their conservation. It should be noted the former Seeds Store (17) in its original position behind both the AFS and the former Industrial Museum is spatially and visually linked to both of the high significance buildings and should not be moved from this location.

Recommendation 5

The building and assets ranked as having moderate heritage significance should be retained and re-used where appropriate. This includes; the Nursery, Tennis Courts (30) and former Seeds Store (17).

Recommendation 6

The former Seeds Store (17) spatially and visually linked to both of the AFS and former Industrial Museum buildings and should not be moved from this location.

6.2.2.3 Buildings/Assets of low heritage significance

It is understood that the majority of buildings and assets ranked as having low heritage significance are proposed for future removal as part of the Yarralumla development. Buildings and assets of low heritage significance do not demonstrate the key defining qualities of the CH values, but may still hold contributory values. While the loss of these low significance buildings and assets may not diminish the CH values of the place overall, the impact of their removal should be considered in a Heritage Impact Assessment (as guided by the Burra Charter Article 27), which would consider measures to reduce impacts and the sustainable development implications of their retention. Possible measures may include recording prior to removal or changes to the building or asset and recording when change of ownership occurs.

Consideration may also be given to other options, including the retention and re-use of a particularly representative building type (sample), for instance one of Glasshouses (Building 4 Group). While these Glasshouses have been given a low ranking, they contribute to the overall understanding of the Site as a former forestry school and are associated with the post-war history of the Site which saw a number of site developments. The particular location of the Glasshouses is not what is important in this case, it's the early Glasshouse design and use, and its association with the AFS. One of these Glasshouses could be retained, possibly relocated elsewhere on site, as a representative example for interpretation purposes, or integrated into a residential shared gardening program.

Recommendation 7

The impact of the removal of low significance buildings should be considered in a Heritage Impact Assessment (as guided by the Burra Charter Article 27), which would consider measures to reduce impacts and the sustainable development implications of their retention.

Recommendation 8

One of the Glasshouses could be retained as a representative example for interpretation purposes, and / or integrated into a residential shared gardening program.

6.2.3 Significant Views

This HA has identified a number of significant views and site lines that contribute to the overall setting and significance of CSIRO Yarralumla which have been provided in *Figure 5.1*. These views are listed below:

- The AFS and its formal landscaped frontage;

- The AFS as the termination of the Schlich Street vista;
- The spatial and visual relationship between buildings 9, 10 and 17;
- The view from Wilf Crane Crescent overlooking the oval and Forestry House; and
- The view from Forestry House to the manicured oval and landscaped frontage.

No changes should occur that will impact these significant views and site lines, they should be integrated into the Master Planning for the Site.

Recommendation 9

Integrate significant views into Master Planning for the Site.

6.2.4 Significant Trees

6.2.4.1 Tree Care

An arborist should be engaged to assess general tree health and stability throughout the site, this assessment should be integrated into the Heritage Impact Assessment for the property. The significant trees will also need to be guarded against weeds or invasive pests. It is important that regular inspections of the trees are undertaken to determine if there are any invasive plant or animals species present. If invasive species are located, they should be dealt with according to species-specific pesticide measures. This could involve routine spraying of the trees and surrounding areas, as well as mechanical removal of invasive weeds. Chemical insecticides and fungicides may also be necessary. Other measures that may be important to consider is the regular up keep of trees. This may come in the form of pruning landscape shrubs to ensure new shoots are allowed to grow. Additionally pruning, or thinning, can also be another measure of defence against pests. Care must also be taken to ensure plants are given sufficient nutrients and water. This is especially the case for drier seasons like autumn and spring. Again, the nutrients and water amounts will be species-specific, so it is important that attention to detail is maintained.

Recommendation 10

Ensure to maintain overall tree care with the assistance of and arborist and regular inspections of trees as required by Policy 28 of the HMP (ERM 2018).

6.2.4.2 Significant Trees and Plantings of high heritage value

The retention of high heritage value plantings is in accordance with Burra Charter and Heritage Management Principles. ERM understands that the Client will retain any trees of high significance as part of site development. This assessment has determined the only trees of high significance are the two Roman Cypresses framing the entrance to the AFS. Landscape and garden plantings around both the AFS, former Industrial Museum and Forestry House are also of high significance and should be retained and maintained.

Recommendation 11

Ensure to retain and maintain the significant trees and plantings of high heritage value.

6.2.4.3 Significant Trees and Plantings of low to moderate heritage value

ERM understands that some trees within the groupings ranked of low to moderate heritage value will require removal as part of future site redevelopment. Some consideration has already been given to retention of strands of mature plantings around high and moderate-ranked heritage buildings, as well as boundary plantings. It is also understood the Client intends on the retention of the Atlas Cedar grove adjacent to Bentham Street and the Stone Pines along the Westridge House property boundary as these groupings are appropriate in terms of green screening and setting retention (site lines and views).

While the removal of some low to moderate value trees is acceptable from a heritage conservation perspective, consideration should be given to their individual contributory value and an offsetting strategy put in place. An offsetting strategy could form part of the impact assessment process which would be required for the removal of any of these significant trees. An offsetting strategy will ensure the loss of significant historic plantings does not detract from the overall understanding of the Site as a former Forestry School Precinct. This offsetting strategy would involve either retaining a sample of tree species within the groupings of low to moderate significance and providing interpretive content to communicate the historical significance of these groupings, or alternatively, would involve removing and then replanting groupings of the same mature species as areas of landscape amenity. This option would require a detailed arborists assessment to assess the tree age and likelihood of its survival if relocated, which is generally very low. An alternative approach would involve tree removal and replacement with a sapling of the same species.

Recommendation 12

Ensure the retention of the moderate significance Atlas Cedar grove adjacent to Bentham Street and the moderate significance Stone pines along the boundary to Westridge House.

Recommendation 13

Consider the contributory value of low to moderate significance trees and prepare an offsetting strategy as part of the impact assessment process, prior to their removal.

Recommendation 14

Strategies should be investigated that retain the mature character, including possible transplanting, as the planting of saplings as an offset is not the preferred option.

6.2.5 ACT Heritage Register

In 2013 the former Australian Forestry School was nominated for entry on the ACT Heritage Register. However it was decided by the ACT Heritage Council that the duplication of listing both on the CHL and ACT Heritage Register would provide no additional legal protection for the place, nor would it provide additional information to the public. In the event that CSIRO Yarralumla is no longer afforded the protection of the EPBC Act, a nomination for entry onto the ACT Heritage Register should be prepared. The information in this HA will assist in this nomination process.

Recommendation 14

In the event that CSIRO Yarralumla is no longer applicable for entry on the CHL, a nomination for entry onto the ACT Heritage Register should be prepared.

7. REFERENCES

ACT Government (nd) 'Canberra Tracks' initiative via The Institute of Foresters of Australia (sign located outside Meteorological Plot)

Australian Capital Authority (2020) The Early History of the ACT [online] available: https://www.nca.gov.au/early-history-act

Australian Dictionary of Biography (2020) Charles Edward Lane-Poole [online] available: http://adb.anu.edu.au/biography/lane-poole-charles-edward-7026

Barwick, D. E (1984) 'Mapping the Past: An Atlas of Victorian Clans 1835 – 1904', Aboriginal History, 8 pp. 100-132.

Bennett (1834) Wanderings in New South Wales; Batavia, Pedir Coast, Singapore, and China; being the Journal of a Naturalist in those Countries, during 1832, 1833, and 1834, Adelaide: South Australian Library Board, 1967. London: Richard Bentley, 1834

Boden, R (nd) 'Flight of Architectural Fancy', Canberra Times, CSIRO Black Mountain Library

Boden, R (1993) "Elegant testimony to native timber". Canberra Times, 13 January 1993

Canberra Historical Journal No.5 (1980) Growing the Capital

Canopy Tree Experts (May 2020) Arboricultural Assessment – Block 7, Section 4 Yarralumla Act. Unpublished report prepared on behalf of Oakstand for the Shepherd Foundation

Capital Ecology (January 2020) Block 7, Section 4, Yarralumla ACT – Targeted Golden Moth Survey; Unpublished report prepared on behalf of Oakstand for the Shepherd Foundation

Carron, L.T (1977) "The Golden Jubilee of Professional Forestry Education in Canberra". In Australian Forestry, 1977, 40(2). 101-107.

Carron, L.T (1985) "A History of Forestry in Australia". ANU Press, Canberra, ACT.

Carron, L.T (2000) A Brief History of the Australian Forestry School, Australian National University.

Charlton, K., Garnett, R. and Fowler, M (1984). "Federal Capital Architecture". National Trust of Australia (ACT), Canberra, ACT, 1984

Cooke, H (1988) An Interpretation of the Prehistory of Blue Water Holes and Cooleman Plain, New South Wales, BA (Hons) thesis. Australian National University, Canberra.

Cosgrove, C (1999) Interim Heritage Places Register Citation for the Australian Forestry School. National Trust of Australia (ACT).

CSIRO (1974/75) Twenty Seventh Annual Report, papers held by the CSIRO Black Mountain Library

CSIRO Black Mountain Library – transcript of talk with Mr. Heath of the National Capital Development Commission (nd)

CSIRO 27th Annual Report 1974/75

Department of Agriculture, Water and the Environment (2004) Commonwealth Heritage List (Place ID: 105426) *Australian Forestry school (former) Banks Street, Yarralumla, ACT* [online] available: https://www.environment.gov.au/cgi-bin/ahdb/search.pl?mode=place_detail;search=state%3DACT%3Blist_code%3DCHL%3Blegal_status%3D35%3Bkeyword_PD%3D0%3Bkeyword_SS%3D0%3Bkeyword_PH%3D0;place_id=105426

Department of Agriculture, Water and the Environment (2004) Commonwealth Heritage List (Place ID: 105595) *CSIRO Forestry Precinct, Banks Street, Yarralumla, ACT* [online] available: https://www.environment.gov.au/cgi-

bin/ahdb/search.pl?mode=place_detail;search=state%3DACT%3Blist_code%3DCHL%3Blegal_status%3D35%3Bkeyword_PD%3D0%3Bkeyword_SS%3D0%3Bkeyword_PH%3D0;place_id=105595

Environmental Resources Management Pty Ltd Australia (2018) CSIRO Yarralumla Heritage Management Plan, unpublished report on behalf of CSIRO

Evans, S (2020) Hail smashes glasshouse crop research at CSIRO Black Mountain, Canberra Times [online] available: https://www.canberratimes.com.au/story/6589588/hail-smashes-csiro-glasshouse-crop-research/

Federal Capital Commission, Annual Reports (1920-1930), National Library of Australia.

Federal Capital Commission map (c.1928), ACT Heritage Library

Forestry and Timber Bureau, Annual Reports (1930-1970), Commonwealth Government Printer, Canberra.

Forestry and Timber Bureau (1979) Obituary: Dr Jacobs, Australian Forestry Journal, Vol 42. No 3 pp 138-141

Forestry and Timber Bureau (1934) Calendar, CSIRO Black Mountain Library

Forestry and Timber Bureau (1963) Calendar, CSIRO Black Mountain Library

Forestry and Timber Bureau (1939) Bulletin No.25, CSIRO Black Mountain Library

Flood, J (1980) The Moth Hunters: Aboriginal Prehistory of the Australian Alps. Australian Institute of Aboriginal Studies, Canberra.

Flood, J (1995) Archaeology of the Dreamtime: the story of prehistoric Australia and its people. (2nd edition) Angus & Robertson, Pymble, N.S.W.

Gibbney, J (1986) "Calthorpe's Canberra, the town and community in 1927". Canberra Publishing and Printing, Canberra.

Gibbney, J (1988) "Canberra 1913-1953". AGPS, Canberra, ACT.

Gillespie, L (1991) Canberra 1820-1913, Australian Government Publishing Service, Canberra.

Gray, J (1999) 'Charles Weston: Pioneer of Afforestation and Conservation at the Federal Capital,' in Canberra Historical Journal, No. 44, September 1999.

Gray, J (1999) TC G Weston (1866-1935), Horticulturist and Aboriculturist: A Critical Review of his Contribution to the Establishment of the Landscape Foundations of Australia's National Capital, University of Canberra, PHD Thesis, July 1999.

Gray, M (2004) Geodiversity – valuing and conserving abiotic nature. Wiley, Chichester

Grose, S (1993) Scientist recalled with affection, Canberra Times 8 March 1993

International Council on Monuments and Sites (2019) Practice Note1 –Heritage and Sustainability – Built Heritage [online] available: https://australia.icomos.org/wp-content/uploads/Practice-Note_Heritage-and-Sustainability-1-Built-Heritage.pdf

Jacobs, M.R (1963) Forests and Forestry in the Australian Capital Territory, unpublished address held by the ACT Heritage Library

Jacobs M.R (1963) History of the Australian Forestry School, CSIRO Black Mountain Library (collection ID: RC 634.0 (94) Au)

Jacobs, M.R (nd) Forestry and Timber Bureau, Historical Background, papers held by the CSIRO Black Mountain Library (collection ID: RC 634.0 (94) Au)

Lambert, T (2019) An early history of Canberra [online] available: http://www.localhistories.org/canberra.html

Lane-Poole, C.E (1926) Forestry Programme of the Commonwealth Government, CPP 29, Melbourne, Government Printer

Lane-Poole, C.E (1927-28) 'The Australian Forestry School,' in CSIR Journal, Vol. 11 1927-28.

Lane-Poole C.E (1937) The Commonwealth Forestry Bureau, photocopy of paper held by the CSIRO Black Mountain Library

Lane Poole, C.E (1934) The Australian Forestry School - A paper prepared by C.E. Lane-Poole for presentation to the conference heads of State and Commonwealth Forestry Services, CSIRO Black Mountain Library History Collection

Lane-Poole, C.E (1975) Lecture Notes, National Archives of Australia 1975/142.

Lane-Poole, C.E., Manuscripts, National Library of Australia.

Meyer, A (1985) The Foresters, Institute of Foresters of Australia

Murphy G.P (1963) Parks and Gardens in Canberra. Origins and Foundations, 1911-1920. Paper to Canberra District &Historical Society, Nov 1963

National Archives of Australia - A. Bancroft' Superintendent Building Construction Department memo to the Federal Capital Commission 16 Aug 1927 (Series: B346/1/3 Part 2 Series A461)

National Archives of Australia - Letter to J.T. Lang by W.F. Dunn 18 June 1931 (Series Number: A431/1 1946/2288 #68272)

National Archives of Australia - Letter to the Victorian Premier from the Prime Minster 28 May 1926 (Series: B346/1/3 Part 2 Series A461

National Archives of Australia - Letter from Secretary H.C. Brown 18 Dec 1934 (Series Number: A431/1 1946/2288 #68272)

National Archives of Australia - House of Representatives response to enquiry re: AFS closure 1 May 1936 (Series Number A431/1 1946/2288 #68272)

National Archives of Australia - Letter to the Prime Minister 7 June 1937 (Series Number A431/1 1946/2288 #68272)

National Archives of Australia - Extract from Hansard – Senate, 30 June 1937 (National Archives of Australia)

National Archives of Australia - Letter to respective tender application, Federal Capital Commission 23 November 1928 (Series: A431/1 1946/2288 #68272)

National Archives of Australia - Letter, Department of Home Affairs to the Federal Capital Commission 17 April 1930 (A431/1 1946/2288 #68272)

National Archives of Australia - New Museum and Store at the Australian Forestry School (Series Number: A295/1 #62705)

National Archives of Australia - AFS application to use the prefix Royal (Item Number: 1030489)

National Archives of Australia – [Correspondence relating to the construction of the Forestry School in Canberra] Forestry School Extras and amendments on original estimate (Item Number: 8899181)

National Capital Development Commission (1988) "Sites of Significance in the ACT, Vol. 2, Inner Canberra". NCDC, Canberra, ACT.

National Archives of Australia - Australian Forestry School, Canberra (Series #B346/1/3 Part 2 Series A461)

National Archives of Australia - Letter to the Premier of Victoria 17 Sep 1942 (Series #B346/1/3 Part 2 Series A461)

National Archives of Australia - Premiers Department Perth 21 Sep 1942 (Series #B346/1/3 Part 3 Series A461)

National Archives of Australia - Premiers Department Perth 21 Sep 1942 (Series #B346/1/3 Part 3 Series A461)

National Archives of Australia - memo from the Prime Minster 2 Dec 1942 (Series #B346/1/3 Part 3 Series A461)

National Archives of Australia - Specifications for the new Museum, Works and Services Branch 19 July 1938 (Series Number: A295/1 B535005)

National Archives of Australia - Letter from R.G. Kappler to the Department of the Interior 15 Aug 1946 (Series #B346/1/3 Part 3 Series A461)

National Archives of Australia - Commonwealth of Australia Minute Paper, 1970 (Series #B346/1/3 Part 3 Series A461)

National Archives of Australia - Commonwealth Department of Works – Works Requisition (Series #B346/1/3 Part 3 Series A461)

National Capital Plan (2020) The Consolidated National Capital Plan [online] available: https://www.nca.gov.au/consolidated-national-capital-plan

National Trust (1999) Heritage In Trust: Charles Weston at Yarralumla

National Trust of Australia (ACT), 'Australian Forestry School' file.

Obituary – Dr Wilf Crane, photocopy of paper held at CSIRO Black Mountain Library

Peter Freemen Pty Ltd Conservation Architects & Planners (2001) The Lodge Heritage Management Plan. An unpublished report for the Department of Finance.

Peter Freemen Pty Ltd Conservation Architects & Planners (2008) CSIRO Yarralumla Campus Heritage Management Plan Volume 1 of 3 – The Plan. An unpublished report for the CSIRO.

Peter Freemen Pty Ltd Conservation Architects & Planners (2008) CSIRO Yarralumla Campus Heritage Management Plan Volume 2 of 3 – CSIRO Yarralumla CMP (2001) An unpublished report for the CSIRO.

Quickstats Census data (2016) 2016 Quickstats: Yarralumla [online] available: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/SSC80131

Ramsey, J (2000) Forestry Precinct, (Consideration for) Register of the National Estate.

Tindale, N. B (1974) Aboriginal Tribes of Australia: Their Terrain, Environment Controls, Distribution, Limits and Proper Names. University of California Press.

The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance, 2013

West Australian, 11 June 1930 (cited in ERM 2018)

Yarralumla Residence Association (2020) History of Yarralumla [online] available: https://www.yarralumlaresidents.org.au/about-yarralumla/history-of-yarralumla/

APPENDIX A CHL LISTINGS

Place Details

Send Feedback

The CSIRO Forestry Precinct, Banks St, Yarralumla, ACT, Australia

Photographs	None
List	Commonwealth Heritage List
Class	Historic
Legal Status	Listed place (22/06/2004)
Place ID	105595
Place File No	8/01/000/0115

Summary Statement of Significance

The CSIRO Forestry Precinct, located within the larger Forestry Precinct (RNE No. 102273), is the Commonwealth's centre for forestry and timber research. It is a complex of buildings, arboretum, nursery, and tennis courts forming an important national scientific institution, established as a response to Federation to provide a national forestry school and national forest research centre. It demonstrates both the Commonwealth's interest in scientific endeavour and a vision for Canberra as the location for science as well as general government administration.

The precinct is associated with the international interest in forestry and is important for an array of scientific achievements, such as PINUS RADIATA propagation and breeding and the Australian Tree Seed program.

The precinct is important as a component of the arboretum and nursery landscape of Yarralumla. The tree-growing trials which constitute the arboretum, identified trees suitable for the urban forests of Canberra and at the same time provided public park amenity for the Canberra community. Yarralumla Nursery to the north of the arboretum has supplied planting stock for Canberra's parks, streets and residential blocks since 1914.

Within the precinct, the former Australian Forestry School (RNE: 013338) reflects the successful outcome of efforts to establish a national forestry school in the new National Capital to produce professional foresters for Federal and State services, and forestry research workers. (Criterion A 4, Australian Historic Theme 8.10: Pursuing excellence in the arts and sciences, advancing knowledge in science and technology)

The precinct is important for its array of features from different phases of development linked to the scientific and educational purpose of the site. These features include the former Australian Forestry School, the former Offices of the Forestry and Timber Bureau, the former Seed Storage Building, Forestry House and Caretakers Cottage, the CSIRO Divisional Headquarters, Controlled Environment Laboratory, tennis courts, arboretum plantings and moveable objects of furniture, collections and historic timber hauling vehicles. (Criterion A3)

The arboretum is an important reference site containing experimental plantings and a significant genetic resource for Australia. (Criterion C2)

The precinct has aesthetic quality based on the historic character of the former Australian Forestry School building, the former Office of the Forestry and Timber Bureau, Forestry House and the modern Headquarters building all set in the mature forest plantings of Westbourne Woods arboretum. The School, including its formal landscaped frontage and with its arboretum setting, is the terminal feature of the Schlich Street axial vista, and a major landmark feature of Yarralumla. (Criterion E1)

The precinct, as a complete small-scale research and learning institution with classical style architecture and recreation grounds, reflects the design concepts that were held in the early 20th century for such places. Within the precinct, the former Australian Forestry School is significant as a fine example of early twentieth-century architecture. The timbers used in panelling, flooring and joinery of the School, particularly the octagonal entrance foyer, evidence a high degree of creative and artistic achievement. (Criterion F1)

The precinct has social importance to the former students educated at the place and the forestry scientists who have conducted research there. (Criterion G)

The Australian Forestry School has a strong association with pioneers of forestry research in Australia, Charles E. Lane Poole and Dr Maxwell R. Jacobs. The arboretum is important for its association with T.C.G. Weston who directed the major plantings in the 1910s and 1920s. (Criterion H)

Official Values

Criterion A Processes

The CSIRO Forestry Precinct, located within the larger Forestry Precinct, is the Commonwealth's centre for forestry and timber research. It is a complex of buildings, arboretum, nursery, and tennis courts forming an important national scientific institution, established as a response to Federation to provide a national forestry school and national forest research centre. It demonstrates both the Commonwealth's interest in scientific endeavour and a vision for Canberra as the location for science as well as general government administration.

The precinct is associated with the international interest in forestry and is important for an array of scientific achievements, such as PINUS RADIATA propagation and breeding and the Australian Tree Seed program.

The precinct is important as a component of the arboretum and nursery landscape of Yarralumla. The tree-growing trials which constitute the arboretum, identified trees suitable for the urban forests of Canberra and at the same time provided public park amenity for the Canberra community. Yarralumla Nursery to the north of the arboretum has supplied planting stock for Canberra's parks, streets and residential blocks since 1914.

Within the precinct, the former Australian Forestry School reflects the successful outcome of efforts to establish a national forestry school in the new National Capital to produce professional foresters for Federal and State services, and forestry research workers.

The precinct is important for its array of features from different phases of development linked to the scientific and educational purpose of the site. These features include the former Australian Forestry School, the former Offices of the Forestry and Timber Bureau, the former Seed Storage Building, Forestry House and Caretakers Cottage, the CSIRO Divisional Headquarters, Controlled Environment Laboratory, tennis courts, arboretum plantings and moveable objects of furniture, collections and historic timber hauling vehicles.

Attributes
The whole precinct including the former Australian Forestry School, the former Offices of the Forestry and Timber Bureau, the former Seed Storage Building, Forestry House and Caretaker's Cottage, the CSIRO Divisional Headquarters, Controlled Environment Laboratory, tennis courts, arboretum plantings and moveable objects of furniture, collections and historic timber hauling vehicles.

Criterion C Research

The arboretum is an important reference site containing experimental plantings and a significant genetic resource for Australia.

Attributes
Experimental plantings and genetic resources held within the arboretum.

Criterion E Aesthetic characteristics

The precinct has aesthetic quality based on the historic character of the former Australian Forestry School building, the former Office of the Forestry and Timber Bureau, Forestry House and the modern Headquarters building all set in the mature forest plantings of Westbourne Woods arboretum. The School, including its formal landscaped frontage and with its arboretum setting, is the terminal feature of the Schlich Street axial vista, and a major landmark feature of Yarralumla.

Attributes
The buildings and their setting within the mature forest plantings of the Westbourne Woods arboretum, plus the School, its landscaped frontage and its prominence at the end of the Schlich Street vista.

Criterion F Technical achievement

The precinct, as a complete small-scale research and learning institution with classical style architecture and recreation grounds, reflects the design concepts that were held in the early 20th century for such places. Within the precinct, the former Australian Forestry School is significant as a fine example of early twentieth-century architecture. The timbers used in panelling, flooring and joinery of the School, particularly the octagonal entrance foyer, evidence a high degree of creative and artistic achievement.

Attributes
The classically styled buildings set within designed landscape, integrated with recreation areas, plus the school, its octagonal foyer and the timbers used in its paneling, flooring and joinery.

Criterion G Social value

The precinct has social importance to the former students educated at the place and the forestry scientists who have conducted research there.

Attributes
Not clarified

Criterion H Significant people

The Australian Forestry School has a strong association with pioneers of forestry research in Australia, Charles E. Lane Poole and Dr Maxwell R. Jacobs. The arboretum is important for its association with T.C.G. Weston who directed the major plantings in the 1910s and 1920s.

Attributes
The Australian Forestry School and the arboretum.

Description

History

Federal Capital to World War II

Canberra experienced its first major phase of development as the National Capital in the 1920s when there was a focus on the completion of the Provisional Parliament House and the relocation of the Parliament to Canberra. This phase also had the intention to relocate Commonwealth Government departments and some national institutions to the new city. One of the national institutions, created in 1925 by Commonwealth legislation, was the Australian Forestry School.

A single forestry school for Australia had been proposed in November 1911 at the first Interstate Forestry Conference, attended by heads of forest services of NSW, Victoria, South Australia and Queensland and the Government Botanist of Tasmania. Charles Edward Lane Poole, Conservator of Forests of Western Australia from 1916 until 1921, advocated the establishment of a Commonwealth forestry research organisation together with the school to research forest entomology, botany, silviculture and forest management (CSIRO 1976).

Plans for a 'Federal Forestry Bureau' were submitted to the Bruce-Page Government in 1924, and staff were appointed before the Forestry Bureau Act of 1930 was passed (Jacobs 1961). In 1925, when Lane Poole returned from a three-year assignment in Papua New Guinea, he was appointed forestry adviser to the Commonwealth Government and persuaded Prime Minister Bruce to include a commitment to establish a national forestry school in Canberra in his election policy speech of 1925 (Boden 1993). The Minister for Home and Territories, the Right Honourable Sir George F. Pearce, approached the States with an offer that the Commonwealth would build, equip, staff and maintain the school if the States would send the students. All States agreed, except for South Australia, which had been running its own forestry course in association with the University of Adelaide since 1910.

The Australian School of Forestry was temporarily housed at the University of Adelaide in March 1926, with Professor Norman W. Jolly as Principal, while a suitable building was constructed in Canberra. At the end of that year Jolly was appointed Chief Commissioner of Forests of New South Wales and Lane Poole, then Inspector-General of Forests for the Commonwealth, was appointed acting Principal of the Forestry School as well as Inspector-General of Forests (CSIRO 1976).

The establishment of the School was followed by the creation of the Commonwealth Forestry Bureau in 1927. Lane Poole saw the Forestry School as a branch of the Commonwealth Forestry Bureau, the main task of the latter being to develop a national forest policy and to bring Australia's forest resources under national control. Although the School had gone ahead, the Forestry Bureau existed in name only for many years and in this period most of the research undertaken, other than that of Lane-Poole, was done by the staff of the School.

The School was established in the suburb of Westridge, now Yarralumla, then the western suburb of the Federal Capital, so as to be near the arboretum (Westbourne Woods) and the nursery established in 1913 by Charles Weston, Officer in Charge, Afforestation Branch, Department of Home Affairs. The School building was designed as part of the Federal Capital Commission's (FCC's) building program by J.H. Kirkpatrick, working with H.M. Rolland, Principal Architect of the FCC. The FCC's building program was essentially to provide accommodation and office space for the transfer of the Federal Government from Melbourne to the new Capital, and the School, being an institution, was included in this program. Other institutions supported by the Commonwealth at this time were the Commonwealth Solar Observatory, the Australian War Memorial and the Museum of Zoology (later the Institute of Anatomy). The school was officially opened on 11 April 1927, with 16 students and three permanent lecturing staff, as well as Lane Poole. The staff members were Messrs C.E. Carter, H.R. Gray and A. Rule.

The School building incorporated hardwoods and softwoods from all States. Tasmania, Victoria and New South Wales donated floor timber and South Australia donated timber for internal fittings. New South Wales and Queensland refused to give any timber without payment. Although the School had opened in April 1927, the building was not completed until June that year. The formal opening was held on 24 November 1927. The only rooms completed when school work commenced were the Principal's room and the drafting room.

A carpenter's shop, requested by Lane Poole, was built apart from the main educational block as he had specified, in August 1927. He also requested a stove house and frames (a heated glasshouse), to be used for raising seedlings, and this was completed in March 1929. T.R. Casboulte, an architect of the FCC, drew the plan of the approach to the Forestry School building in August 1927.

A residence for the Principal, 'Westridge House' (RNE 8/01/000/370) (not included within this record), later known as 'Tudor House', designed by the Melbourne architect Harold Desbrowe Annear, was built next to the school in 1928. Students initially had no accommodation and had to occupy the old printers' quarters at Kingston and a camp on the site. In 1928, 27 spruce cubicles were built at the rear of three houses in Solander Place, near the school, for the student accommodation. Each student had his own cubicle, supplied with electric light, wardrobe, table and chair. Of the houses, one was used for amenities, one for dining/kitchen and the third for ablutions. Student occupancy of the cubicles ceased at the end of 1951, and students were subsequently located elsewhere.

Shortly before WWII, the Government funded a building for an industrial museum and the work of the research sections of the Bureau. After the war the museum was temporarily abandoned and the building used for other purposes. The collected exhibits were stored in a wooden building which was later destroyed by fire, along with most of the exhibits (Jacobs 1961).

A meteorological station located near the tennis courts was run by the Forestry Bureau. Facilities included wind vanes, anemometers, a Stevenson screen and a pit to house thermometers for measuring air and soil temperature. A second station with a tall wooden tower and pit was located in a plot of radiata pine (the 'Tower Plot') to the west of the precinct. An anemometer was also installed on a tall mast above the Forestry School. Weather recordings were taken every day from 1927 to 1981. It was the only meterological station in Canberra from 1927 to 1939. (Eldridge 2000).

During the Depression years, the numbers of students decreased to around four a year. In 1936 Lane Poole put the staff on half-time lecturing to the four second-year students, and half-time on research. This action stimulated the States to provide more students and the situation improved during the late 1930s. Numbers went down again during the Second World War, as many potential students enlisted.

In the years before and after World War II, the Forestry students and Duntroon cadets vied for social honours, holding dances and other functions. The Forestry students emptied the museum at the Forestry School and turned it into a ballroom. These functions were supported by Lane Poole and his wife. Lane Poole was also a founding member of the Alpine Club at Mount Franklin in the Brindabella Mountains, and became its president. Every student who attended the Forestry School was required to make himself a set of wooden skis under the instruction of Lane Poole.

Research was conducted at the site by the School staff and students on behalf of the Commonwealth. Early research concentrated on growth rates and the effects of thinning (CSIRO 1976). Westbourne Woods, established by T.C.G. Weston, was the first arboretum established in the ACT (1914-18). The Commonwealth Forestry Bureau established Laurel Camp at Pierces Creek in 1928. Dr Maxwell Ralph Jacobs was appointed research officer in the Bureau, in 1937, and undertook research on growth stresses in eucalypt stems and genetic variation in PINUS RADIATA for plantation improvement.

Lane Poole held the two positions of Principal of the Australian Forestry School and Inspector-General of Forests, Commonwealth Forestry Bureau until his retirement in 1944.

Post-War Phase

Dr Jacobs was the next Principal of the School, and held the position from 1945 to the end of 1959 when he became Director-General of the Forestry and Timber Bureau.

After the War the number of students increased to 80 in 1950 before declining in the 1950s and rising again to 60 in 1961. From 1949, students from New Zealand, Asia (including Malaysia and Burma) and Ethiopia, attended the school. In the immediate post-war years, a number of Army disposal buildings were acquired to supplement the original spruce cubes in Solander Place (Jacobs 1961). Not long after Jacob's appointment as Principal, plans were made to build a permanent residence for the students, and thus Forestry House, designed by the Commonwealth Department of Works and Housing, was constructed and occupied at the commencement of the 1952 academic year.

Better accommodation was also required after the War for the Research and Administrative Sections of the Bureau, and many proposals were considered. These were outlined for the National Capital Development Commission by Jacobs (Jacobs 1961). The building at the rear of the Forestry School, originally built for the industrial museum, was occupied by the Director General and his staff as the office of the Forestry and Timber Bureau (re-designated by the Forestry and Timber Bureau Act of 1946) from 1946 until 1961.

Kelvin P. McGrath became Acting Principal of the Forestry School when Jacobs was appointed Director-General of the Forestry and Timber Bureau (1959). McGrath retained that position until the responsibility for forestry education was transferred to the Australian National University early in 1965, when a Department of Forestry was established within the School of General Studies. The Duke of Edinburgh opened a new building for the Forestry Department of the ANU on 15 May 1968. Until then, the Department had continued to function in the Forestry School buildings at Yarralumla.

When the Forestry School building was vacated, senior officers of the Forestry and Timber Bureau moved in from Westridge House, to where they had moved in 1961 when Jacobs was confirmed in the position of Director General and transferred his residence to Forrest. The former industrial museum building was used by the School staff from 1961 until 1968.

After a hesitant start in the 1930s, research at the site expanded after the war. In 1946 the Commonwealth Timber Control and Commonwealth Forestry Bureau were amalgamated to form the Forestry and Timber Bureau with the Central Research Station at Canberra concentrating on silviculture (CSIRO 1976). Over twenty-five arboreta were established in rural locations at various altitudes between 1929 and 1954 (Chapman 1984). A nursery for propagating PINUS RADIATA was expanded at Yarralumla in the 1940s, following earlier use of a nursery at Pierces Creek for raising the first pines from cuttings in Australia. Later work in the nursery included important investigations of pollination and seed production of EUCALYPTUS GRANDIS, E. NITENS and E. GLOBULUS (Eldridge 2000).

In the 1950s, research was expanded into fire behaviour and effects of wildfire and control burning in native forests; and into forest resources, botany and nutrition. In the 1960s work started on entomology, pathology, watershed management and logging. In 1961 Jacobs established the nucleus of the Australian Tree Seed Centre as a contribution to the United Nation's Freedom from Hunger Campaign (Vercoe 2000).

In 1963 research was given significant impetus with the formation of the Forest Research Institute within the Bureau. In 1964 the Forestry and Timber Bureau was transferred from the Department of the Interior to the Department of National Development, and in 1972 to the Department of Primary Industry. In 1970, Jacobs retired and was succeeded by Dr D.A.N. (Neil) Cromer as Director-General, a role he held until retiring in 1975. Alan McArthur directed the Forest Research Institute in those five years.

In 1975 the CSIRO acquired the whole site as it exists now, apart from the oval, and established a Division of Forest Research to carry out the functions of the Forest Research Institute and the harvesting and management groups of the Forestry and Timber Bureau (CSIRO 1976). The unit became the Division of Forestry and Forest Products in 1988, the Division of Forestry in 1991 and in 1996 the Division of Forestry and Forest Products.

CSIRO Forestry and Forest Products currently (in 2000) carries out collaborative research with State and other institutions and the headquarters of the Division are located at Yarralumla. The research includes tree improvement and genetic resources, native forest management, plantations and farm forestry, wood processing and products, and pulp and paper products.

One example of current activity is provided by the Australian Tree Seed Centre, which supplies authenticated representative seed samples and advice on species selection, silviculture, and tree improvement strategies. The Centre has made a unique contribution to world forestry and agriculture by providing effective access to Australian forest genetic resources. It supplies seedlots to growers and researchers both overseas and within Australia, and advice to over one hundred countries. The Centre maintains the national collection of tree seed from 1300 species (CSIRO 1997).

The site was sold and leased back to the CSIRO in 2002.

(History notes have been compiled from the sources cited and from the National Trust citation for the Australian Forestry School).

Description

The CSIRO Forestry Precinct is a research centre and former campus, located in Yarraluma within the heritage-listed

Westbourne Woods (RNE No. 13337). The heritage place covers Block 7 of Section 4; it includes groups of buildings clustered around the adjacent oval, nursery, arboretum, and tennis courts. It also includes the former Australian Forestry School (RNE No. 13338).

The Australian Forestry School

The School was designed in the Inter-War Stripped Classical Style by J.H. Kirkpatrick, of the Federal Capital Commission (FCC), assisted by H.M. Rolland, principal architect of the FCC, and the building was completed in 1927. It is a single-storey rendered brick building with a parapet and a hipped tiled roof. The front or eastern entrance leads through a short hallway into a large octagonal domed hall, approximately 8 metres high, located in the centre of the building and panelled in Australian timbers. At the centre of the hall is a parquetry floor, with a central circular design patterned with of jarrah, mountain ash and tallowwood. A laboratory at the north-western corner of the building is still close to its original condition, including its blackboards with stained timber edging. At the southern end of the building, the area formerly used for the museum retains built-in timber cupboards used for herbarium specimens. This area was being occupied by the National Aeronautical and Space Adminstration (NASA) in 2000. A kitchen occupies the space of the former cloakroom, which was later a darkroom. (Refer to RNE 13338 for detailed information on the School)

Offices of the Forestry and Timber Bureau

A small rendered brick building located behind the main School building, initially used as an industrial museum and later as offices for the Forestry and Timber Bureau, was constructed around 1938 in a style similar to that of the main school but with subtle differences in details such as in the roundels, rainwater heads and downpipes. The building has a tallowwood floor. It is now used for storage by AMSAT (Australian Marine Science and Technology).

Former Seed Storage Building

A small timber-framed and clad building with a hipped tiled roof, located behind the Forestry School was constructed around 1935 -40, next to the former Forestry and Timber Bureau offices. It was used as a laboratory and store for seeds. It is now used for storage by AMSAT.

Tennis Courts

Two tennis courts, established for staff and students, are located to the west of the main school building.

Meteorological Station

Associated with the school at the eastern edge of the nursery are the remains of the meteorological station (1927 -1981) with footings on which several meteorological instruments were located.

Nursery

West of the tennis courts is the research nursery used among other things for propagating PINUS RADIATA from cuttings from the 1940s-80s. A small weatherboard potting shed was removed c 1998. Currently a shade house and plots of pines and eucalypts remain.

Forestry House

The precinct underwent major development during the early post-war years, with the construction of Forestry House, the Caretakers Residence and later the glass houses and potting shed complex.

Forestry House is a two-storeyed rendered brick building, designed by the Commonwealth Department of Works and Housing and completed at the end of 1951. The long axis facing the oval contains the former lounge, billiard, library and dining rooms and is single storey with timber-framed windows and a high-pitched tiled gabled roof. The design reflects the Post-War American Colonial style. A feature of the roof is the bronze and timber turret. The building was designed to provide accommodation for students. The lounge room, now converted to a conference room, is large with timber ceilings, exposed timber trusses, timber framed doors and windows. The lounge room was used as the site library for some years prior to 1976. Since being vacated by students in the late 1960s, the building has undergone several rounds of alterations to convert accommodation into offices and laboratories.

The caretaker's cottage was constructed at the same time as Forestry House and although of a modest scale the building reflects the design style of Forestry House. The building is a single storey rendered masonry building with a stepped

terracotta tile gabled roof. The cottage has a small garden area with mixed species including agaves. After completion in 1951, it was used for around 10 years as offices.

Glasshouses and Workshop

The glasshouses were built in 1949, and the complex consists of a number of glasshouses and small structures as well as a single-storey red brick building with flat roof and highlight windows located to the western end of the complex. The glasshouses have a single space with a glazed and steel upper portion supported by a face brick lower wall.

The Divisional Headquarters

During the 1960s-80s period, development was focused on establishing modern research facilities. In 1967 a new headquarters for the Forest Research Institute (Building No. 1) was completed, a large split-level brick building of reinforced concrete columns and slabs, with brick curtain walls. The functional design has enabled substantial internal modification when needed. The library was added in 1975-76. A refurbishment c 1996 included an addition on the east end. The various sections are linked by enclosed walkways.

Controlled Environment Laboratory

In 1969 the controlled environment laboratory used for tissue culture and growing plants was constructed beside the existing glasshouse complex.
The building is located on an elevated site overlooking the Glasshouse complex. It is two stories, of face brick with concrete floors, a flat roof and aluminium framed windows. A glasshouse wing extends from the masonry mass to the north.

Industrial Facilities

During the 1970s a complex of new carpenter's and engineer's workshops, several storage sheds and offices was constructed to the north-west of the Forestry School. To enable this work to proceed the original carpentry shop, and a lecture room and a drafting room added in 1948, were demolished.

Recycled Buildings

A number of buildings have been relocated to the site and utilised. The former Nurses Home, now occupied by Greening Australia, was brought to the site from Acton Peninsula in 1963 to augment the student accommodation in Forestry House. In 1973 two timber-clad buildings were brought to the site, the Photography Hut located beside Westridge House and the Recreation Hut behind Forestry House. The latter contains the original billiard table from Forestry House.

Arboretum

A significant part of the site contains trees planted by TC Weston in the development of Westbourne Woods before 1920. Other plantings on the site are linked with the establishment of the Australian Forestry School opened in 1927. In about 1945-55 other plantings were made by Dr Lindsay Pryor as part of the landscaping around Forestry House, the residential accommodation for AFS students. A small number of trees were planted when the CSIRO forest research laboratories were built in 1975. The most recent plantings were established in 1998 either side of Wilf Crane Drive near its junction with Banks Street. These are rare and threatened acacias and eucalypts. Throughout the site there are small experimental plantings resulting from research trials. (Peter Freeman 2001)

Around the Divisional Headquarters Building (Building No.1) are large groups of PINUS CANARIENSIS, P. RADIATA and P. HALEPENSIS planted before 1920. Interspersed with these are scattered plantings from the 1950s: PINUS YUNNANENSIS, P. HALEPENSIS V. BRUTIA, P. ECHINATA and P. VIRGINIANA, and within the wings of Building No.1 are two TAXODIUM MUCRONATUM. Towards Bentham Street is a group of PINUS RADIATA also from 1953 and a large plantation of CEDRUS ATLANTICA before 1920. In front of the headquarters building are four SEQUOIADENDRON GIGANTEUM. Closer to the oval are a PINUS COULTERI, P. PONDEROSA and rows of PINUS NIGRA all from around the 1920s or earlier.

Near the Controlled Environment Laboratory is a small group of PINUS ROXBURGHII from the original plantings, a group of EUCALYPTUS GRANDIS, planted in 1979, the product of the early tissue-culture experiments and three E. MACULATA. To the west of the nursery area is a group of BRACHYCHITON POPULNEUS. To the north-west of the nursery area is the large PINUS RADIATA group known as the Tower Plot. To the north of the nursery is a large group of P. PINEA. On either side of the former Forestry School are groups of PINUS PONDEROSA. Around Westridge House is a group of PINUS PONDEROSA and a group of PINUS PINEA.

Throughout these groups are numerous other landscape plantings including pin oaks, elms, poplars and cherry plums. Flanking the main entrance to the former Forestry School and also the drive from the school to Westridge House are two large CUPPRESSUS SEMPERVIRENS. Behind the former Forestry School are single specimens of ARAUCARIA BIDWILLII, EUCALYPTUS GRANDIS, E. GLOBULUS and a single A. CUNNINGHAMII is located near the industrial area.

Movable Objects

There are numerous objects of heritage significance within the complex. In the former Forestry School is a Dines Anemograph, used to record wind velocity. Records of rainfall, relative humidity, temperature, wind velocity and hours of sunshine are pinned to a board on the wall nearby. Significant furniture within the School are several original notice boards, an original timber light fitting, built in timber cupboards, timber desk, table and chairs, blackboards and clock. A mountain ash coffer decorated with scrolls and acanthus leaves, a mountain ash settle, and a refectory table are believed to have been purchased for the School from C F Rojo & Sons Pty Ltd, Melbourne in September 1928.

Within the recreation hut is a full size snooker table.

Forestry House contains two kidney shaped coffee tables, a log table, two mounted propeller blades, several chairs (part of a set designed by Derek Wrigley), a museum table from the AFS museum, an original Forestry House student's chair, a display cabinet, a red cedar lectern with light, and a large table originally from the Forestry School Reading Room.

A collection of historic timber hauling vehicles from different parts of Australia has been set up as an outdoor exhibit beside Forestry House. These consist of two tandem axle bogies from the Erica district of Victoria, a log buggy used at Koondrook Victoria and a logging whim donated by George Smith of George Smith Lumber Co. Greenbushes, WA.

Within the library of Divisional Headquarters Building are several leather chairs originally from the AFS library, a lectern, a secretaire, several student desks from Forestry House, and a polished table with fluted decoration. The Max Jacobs Room has heritage furniture pieces consisting of a conference table, two Queensland timber chairs, Max Jacob's office chair and the Max Jacobs historical collection of books, along with other memorabilia.

Valuable books are located in the library collection, and located within the complex is the Australian Tree Seed Centre's scientific collection.

The precinct has aesthetic quality based on the historic character of the former Australian Forestry School building, the former Office of the Forestry and Timber Bureau and to a lesser degree, Forestry House, all set in the mature forest plantings of Westbourne Woods arboretum. The School building, as a terminal feature of the Schlich Street axial vista, is a major landmark feature of Yarralumla.

History Not Available

Condition and Integrity

June 2002:
Well maintained.

Location

About 11ha, Banks and Bentham Streets, Yarralumla, comprising Block 7 of Section 4.

Bibliography

Boden, R.W. 1993. "Elegant Testimony to Native Timbers" in the Canberra Times, 13 January 1993.

Brown, A.G. 2000. Information provided by Alan Brown, former Division Chief of CSIRO Forestry and former Australian Forestry School student. (Editing the indicative RNE place report).

Carron, L.T. 1985. "A History of Forestry in Australia". ANU Press, Canberra. P.355 .

Carron, L.T. 2000. "A Brief History of the Australian Forestry School". AFS Reunion 2000 Inc., Canberra. 24 p.

Charlton, Ken, 1984. "Federal Capital Architecture". National Trust of Australia (ACT).

Commonwealth Scientific and Industrial Research Organisation 1976. Annual Report 1975-1976.

Commonwealth Scientific and Industrial Research Organisation 1978.Division of Forest Research Annual Report 1977 -78.

Commonwealth Scientific and Industrial Research Organisation 1997. Forestry and Forest Products Annual Report 1996-1997.

Cosgrove, C. 1999. Heritage Citation for the Australian Forestry School. Prepared for the National Trust of Australia (ACT).

Department of Home and Territories 1925. Memorandum: Construction of Buildings in the Federal Capital Territory (copy CSIRO F& FP library).

Eldridge, K.G. 2000 Personal communication.

Peter Freeman Pty Ltd 2001 CSIRO Yarralumla Precinct ACT. Conservation Management Plan, prepared for CSIRO.

Jacobs, M.R. 1961. Talk with Mr Heath of the National Capital Development Commission (copy CSIRO F&FP Library).

Lane Poole, C.E. 1926. Letter to the Secretary Home and Territories Department (copy CSIRO F&FP Library).

Meyer, A. 1985. "The Foresters". Institute of Foresters Australia (Inc.).

Rout, T and Eldridge, K. 1983. "Westbourne Woods". The Conservation Council of South-East Region and Canberra Incorporated.

Vercoe, T.K. 2000. CSIRO Tree Seed Centre. Personal communication.

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Place Details

Send Feedback

Australian Forestry School (former), Banks St, Yarralumla, ACT, Australia

Photographs





List	Commonwealth Heritage List
Class	Historic
Legal Status	Listed place (22/06/2004)
Place ID	105426
Place File No	8/01/000/0369

Summary Statement of Significance

The Australian Forestry School, consisting of the former School building, the former Museum building and the formal landscaping surrounds, has strong associations with the early development of the Federal Capital. It was designed and built as part of the Federal Capital Commission's building program, and was one of a few institutions established by the Commonwealth. It reflects the Commonwealth's effort to establish a national forestry school in the new National Capital to produce professional foresters for Federal and State services and forestry research workers. The establishment of a national forestry school was part of the national approach to many issues that followed Federation in 1901 and the international growth of forestry and forest industry. (Criterion A 4, Australian Historic Theme 8.10: Pursuing excellence in the arts and sciences, advancing knowledge in science and technology)

The Australian Forestry School is a fine example of the Inter-War Stripped Classical style of architecture, being symmetrically composed, divided into vertical bays, with a central entrance and roundels suggestive of classical entablature. Other features are stepped parapets, round arched openings at the entrance and projecting bay ends, and a hipped tiled roof. (Criterion D)

The School including its formal landscaped frontage, in its setting of mature pine forest plantings has aesthetic value for its historic character. As the terminal feature of the Schlich Street axial vista, it creates a major landmark feature in Yarralumla (Criterion E1)

Central to the building is a magnificent domed hall which features the use of superbly crafted Australian timbers from various States of Australia in panelling, flooring, ribs for the dome and light fittings.
(Criterion F1)

The School has social importance to the former students educated at the place (Criterion G).

The School has a strong association with its principals who were also pioneers of forestry research in Australian, Charles T Lane Poole and Dr Maxwell Jacobs (Criterion H)

Official Values

Criterion A Processes

The Australian Forestry School, consisting of the former School building, the former Museum building and the formal landscaping surrounds, has strong associations with the early development of the Federal Capital. It was designed and built as part of the Federal Capital Commission's building program, and was one of a few institutions established by the Commonwealth. It reflects the Commonwealth's effort to establish a national forestry school in the new National Capital to produce professional foresters for Federal and State services and forestry research workers. The establishment of a national forestry school was part of the national approach to many issues that followed Federation in 1901 and the international growth of forestry and forest industry.

Attributes
The former School building, the former Museum building and the formal landscaped surrounds.

Criterion D Characteristic values

The Australian Forestry School is a fine example of the Inter-War Stripped Classical style of architecture, being symmetrically composed, divided into vertical bays, with a central entrance and roundels suggestive of classical entablature. Other features are stepped parapets, round arched openings at the entrance and projecting bay ends, and a hipped tiled roof.

Attributes
The building's Inter-War Stripped Classical style of architecture demonstrated by the features noted above.

Criterion E Aesthetic characteristics

The School including its formal landscaped frontage, in its setting of mature pine forest plantings has aesthetic value for its historic character. As the terminal feature of the Schlich Street axial vista, it creates a major landmark feature in Yarralumla.

Attributes
The School, including its formal landscaped frontage, plus its setting of mature pine forest, plus the building as the termination of the Schlich Street vista.

Criterion F Technical achievement

Central to the building is a magnificent domed hall which features the use of superbly crafted Australian timbers from various States of Australia in panelling, flooring, ribs for the dome and light fittings.

Attributes
The domed entry hall in the school building, with all of the features noted above.

Criterion G Social value

The School has social importance to the former students educated at the place.

Attributes
The whole of the school.

Criterion H Significant people

The School has a strong association with its principals who were also pioneers of forestry research in Australian, Charles T Lane Poole and Dr Maxwell Jacobs.

Attributes
Not clarified.

Description

History

The first Interstate Forestry Conference, held in November 1911 and attended by heads of State forestry services of NSW, Victoria, South Australia and Queensland and the government botanist of Tasmania, resolved that a single forestry school be established to fulfil the urgent need for well-trained foresters. However, there was no further action until in 1920 a Premier's Conference agreed to establish the school in NSW. The site of the proposed school was in the Bago State Forest, in the Tumut-Tumbarumba District. The Commonwealth would provide one-sixth of the cost of the school, with the States to pay the remainder, the amount payable by each State to be computed according to its relative population. This agreement was due largely to the efforts of Charles Edward Lane Poole, Conservator of Forests of Western Australia from

1916 until 1921.

When Lane Poole returned from a three-year assignment in Papua New Guinea and was appointed forestry adviser to the Commonwealth Government in 1925, he found little had been done to implement the 1920 resolution. He persuaded Prime Minister Bruce to include a commitment to establish a national forestry school in Canberra in his election policy speech of 1925. Although Bruce won the election, there were differences of opinion among the States as to the location of the school and their agreement to provide students was necessary for implementation of the proposal. The Minister for Home and Territories, the Right Honourable Sir George F. Pearce, approached the States with an offer that the Commonwealth would build, equip, staff and maintain the school if the States would send the students. All States agreed, except for South Australia, which had been running its own forestry course in association with the University of Adelaide since 1910.

Adelaide University offered to forego its school and to house the new national School until a suitable building was constructed in Canberra. The School was established at the University of Adelaide in March 1926, with Professor Norman Jolly as Principal. At the end of that year Jolly was appointed Chief Commissioner of Forests of New south Wales and Lane Poole, then Inspector General of Forests for the Commonwealth, was appointed acting Principal of the Forestry School (Lane-Poole, 1927-28, 202, Boden, 1993).

Lane Poole saw the Forestry School as a branch of the Federal Forestry Bureau, the establishment of which had been agreed by the Federal Government. The Bureau's main task was to develop a national forest policy, which he believed was necessary to bring Australia's forest resources under national control. He was not keen to become principal of the School, as he was not a teacher and found teaching distasteful (Carron, 1985, 251). However, he was persuaded by the government to accept the position, along with the role of Inspector General of the proposed Forestry Bureau. Although the School had gone ahead, the Bureau existed in name only for many years and in its early years much of the research, other than that of Lane Poole, was done by the staff of the School (Carron, 1985, 253).

The School building was designed as part of the Federal Capital Commission's (FCC's) building program by J.H. Kirkpatrick, working with HM Rolland, Principal Architect of the FCC. The FCC's building program was essentially to provide accommodation and office space for the transfer of the Federal Government from Melbourne to the new Capital, and the School, being an institution, was included in this program. Construction of the school commenced in July 1926 and it was officially opened on 11 April 1927, with 16 students and three permanent lecturing staff, as well as Lane Poole. The staff members were Messrs C.E Carter, H.R Gray and A. Rule. The School was situated in the suburb of Westridge, now Yarralumla, then the western suburb of the Federal Capital, so as to be near the arboretum (Westbourne Woods) and the nursery established by Charles Weston in 1913.

Although the School had opened in April 1927, the building was not completed until June that year and the formal opening was not until 24 November 1927. The only rooms completed when school work commenced were the Principal's room and the drafting room (AA Series A1/15, Item 1929/1875).

Tasmania, Victoria and NSW donated floor timber and South Australia donated timber for internal fittings. NSW and Queensland refused to give any timber without payment. A carpenter's shop, requested by Lane Poole was built apart from the main educational block in August 1927 (Australian Archives, Series A1/15, Item 1929/1875). He also requested a stove house and frames (a heated glasshouse), to be used for raising seedlings, and this was completed in March 1929 (AA Series A1/15, Item 1929/1875). The plan of the approach to the Forestry School building was drawn in August 1927 by T.R. Casboulte, an architect of the FCC.

A residence for the Principal, 'Westridge House', later known as 'Tudor House', was built next to the school in 1928. Although Lane Poole also planned to house his students nearby, the tightened financial circumstances occurring in late 1927 meant that the students initially had to occupy the old printers quarters at Kingston and a camp on the site. In 1928, 27 spruce cubicles, of a style widely used on construction sites in the city, were built near the school for the students. Each student had their own cubicle, supplied with electric light, wardrobe, table and chair (Gugler, 1994, 106-107). They were located at the rear of three houses in Solander Street, one of which was used for amenities, one for dining/kitchen and the third for ablutions. The cubicles have since been located elsewhere.

The School had difficulty maintaining the number of students during the Depression years, as the States could not afford to pay the living costs for the students they were to send. The numbers were only around four students a year. In 1936 only one student enrolled; he was not accepted by Lane Poole, who put the staff on half-time lecturing to the four second year students and half-time on research (Carron, 1977, 103). This action stimulated the States to provide more students and the situation improved during the late 1930s. Numbers went down again during the Second World War, as many potential students enlisted. After the War the number of students increased to 80 in 1950 before declining in the 1950s and rising again to 60 in 1961. From 1949 students from New Zealand attended the School, until a forestry school opened in Christchurch. Many Asian students also attended the School.

Shortly before WWII, the Government funded a building for an industrial museum and the work of the research sections of the Bureau. After the war the museum was temporarily abandoned and the building used for other purposes. The collected exhibits were stored in a wooden building which was later destroyed by fire, along with most of the exhibits (Jacobs 1961).

In the years before and after World War 2, the Forestry students and Duntroon cadets vied for social honours, holding dances and other functions. At that time the Albert Hall was considered to be the only venue for functions. However, the Forestry students emptied the museum at the Forestry School and turned it into a ballroom. The museum contained artefacts from around the world as well as local items (mainly timber), including local birds and a complete section of local eucalypt timbers, cut into specimen size. Moving the heavy timber artefacts from the museum for these social occasions was an arduous task (Carron, pers. comm. 1999). The dances were supported by Lane Poole and his wife. Lane Poole was also a founding member of the Alpine Club at Mount Franklin in the Brindabella Mountains, and became its president. Every student who attended the Forestry School was required to make himself a set of (wooden) skis. This work was carried out on the premises (Carron, pers. comm., 1999).

Lane Poole held the position of Principal of the School until his retirement in 1944. Dr Maxwell Ralph Jacobs was the next Principal of the School and held the position from 1945 to the end of 1959. Jacobs was one of three students who had been on overseas scholarships in 1928-29 to become future research officers of the Forestry Bureau. Jacobs was followed by K.P. McGrath as acting Principal until responsibility for forestry education was transferred to the Australian National University early in 1965 (Boden, 1993). There are several reasons for the move, one of which was the need to provide more opportunities for postgraduate training such as the MSc and PhD available at the University.

The new building for the Forestry Department of the ANU was opened in May 1968 by the Duke of Edinburgh. Until then, the Department had continued to function in the Forestry School buildings at Yarralumla (Carron, 1977, 106). When the main building was vacated, the senior officers of the Forestry and Timber Bureau moved in from Westridge House, to which they had moved in 1961 when Max Jacobs was confirmed in the position of Director General and transferred his residence to Forrest. The smaller rendered brick building at the rear of the Forestry School was occupied by the Director General and his staff from 1946 until 1961; it was used again by the School staff from 1961 until 1968. In 1975 the CSIRO acquired the whole site as it exists now and the new CSIRO Division of Forest Research, incorporating much of the former Bureau, came into operation. Currently NASA (National Aeronautical and Space Administration) is occupying the southern end of the Forestry School building and the northern end is vacant. CSIRO has plans to occupy the northern end of the building.

The site was sold and leased back to CSIRO in 2002.

The ashes of A.B. (Brian) Patton, a forester who died following a tree fall accident at Jervis Bay, were scattered under the Pin Oaks on the southern side of the School on 5 May 1960. A reunion of former students of the School was held in April 2000.

Description

The Australian School of Forestry is located at Banks Street, Yarralumla, where it intersects with Schlich Street. The School was designed in the Inter-War Stripped Classical Style by J.H. Kirkpatrick, of the Federal Capital Commission (FCC), assisted by HM Rolland, Principal Architect of the FCC, and the building was completed in 1927. It is a single storey rendered brick building with a parapet and a hipped tiled roof. Key features of the style displayed by the building include a symmetrical facade, division into vertical bays, simple wall surfaces, roundels suggesting classical entablature.

Paved steps lead up to the entrance, which is formed by round arched openings.Paved steps lead up to the entrance, which is formed by round arched openings. Mature CUPPRESSUS SEMPERVIRENS (Roman Cypresses) flank the steps leading to the main entrance. The parapet over the entrance, encompassing projecting bays with vertical openings, diagonally patterned in wrought iron. Plain roundels decorate the exterior walls of the building and the two roundels on either side of the arched entrance display a floral design. Above the entrance doorway is the School crest of a veteran eucalypt above the motto 'Mihi Cura Futuri' ('I serve posterity'). The doors at the front and rear entrances, as well as all the interior doors throughout the building, are of Queensland maple.

The walls of the hall are panelled in wood to a height of approximately two and a half metres, interrupted by engaged columns at each of the eight corners. There are wide ribs of Queensland maple in the ceiling dome and the light fitting, suspended some distance below the centre of the dome by four heavy brass chains, is of Blackwood. The brass chains hang from a bronze ceiling panel. Australian timbers from various States, including Queensland Maple and Walnut, Red Cedar, Red Mahogany, Hoop Pine and Mountain Ash, are used throughout the building in floors, doors, wall panelling, ceilings and trimmings. Originally, the interior included the octagonal hall, a museum, a library, two lecture rooms, a laboratory, a

drafting room, principal's room and lecturers' rooms, offices, a cloak room and toilets. Another lecture room was created near the library by the 1950s. Some structural changes were made in the late 1960s when some of the larger rooms were partitioned for office accommodation. Further alterations occurred in 1983 when the CSIRO refurbished the building.

The original boiler room is located under the main building on the southwestern side and is still in operation. Water, originally heated by coal fire, is now heated by natural gas.

Three pieces of furniture in the hall, a rug chest, a table and a settee, all made of mountain ash, were purchased for the School from C F Rojo & Sons Pty Ltd, Melbourne in September 1928.

The two lecture rooms were on the north eastern side of the building. The room on the north western end of the building was the laboratory and is still close to its original condition, including its blackboards with stained timber edging. The room at the opposite (southern) end of the building was the museum and still retains built-in timber cupboards, used for herbarium specimens. A shower recess has been added to the toilets, which have been separated into male and female (originally all male), and the tiles have been replaced. A kitchen now occupies the space where the cloakroom (later a darkroom) was located.

A small rendered brick building located behind the main School building, previously used as a museum and later as offices for the Forestry and Timber Bureau, was built in a similar style. However, there are differences such as the design of the roundels, the downpipes on the small building are of steel while the Forestry School building has cast iron downpipes, and the rain water heads are a different design. Next to the former museum, is a timber, framed timber clad building used as a laboratory and for storing seeds and tools. It is now used as an archive store for the CSIRO.

Both the main building and the two smaller buildings at the rear were repainted in 1998 and are in very good condition. The terracotta tiles on the main building have been replaced. The former museum building was refurbished in 1991 in a manner sympathetic to the main building and is leased to AMSAT (Australian Marine Science and Technology) by the CSIRO.

The School with its formal landscaped frontage is on a rise within a setting mature pine forest plantings and has aesthetic value for its historic character. As the terminal vista feature of the Schlich Street axis, it creates a major landmark feature in Yarralumla

History Not Available

Condition and Integrity

The building is generally intact and in fair to good condition. Both buildings have been internally modified by the introduction of some new walls to create new rooms. The external paint finish on the main building is very deteriorated. (September 1995)

June 1999
Both the main building and the two smaller buildings at the rear were repainted in 1998 and are in very good condition. The terracotta tiles on the main building have been replaced. The small rendered brick building was refurbished in 1991 in a sympathetic manner to the main building and is leased to AMSAT (Australian Marine Science and Technology) by the CSIRO.

Location

Banks Street, Yarralumla.

Bibliography

Carron, L.T., 1977. " The Golden Jubilee of Professional Forestry Education in Canberra". In Australian Forestry, 1977, 40(2). 101-107.

Carron, L.T., 1985. "A History of Forestry in Australia". ANU Press, Canberra, ACT.

Charlton, K., Garnett, R. and Fowler, M., 1984. " Federal Capital Architecture". National Trust of Australia (ACT), Canberra, ACT, 1984

Cosgrove, C. 1999. Interim Heritage Places Register Citation for the Australian Forestry School. National Trust of Australia (ACT).

Gibbney, J., 1986. "Calthorpe's Canberra, the town and community in 1927". Canberra Publishing and Printing, Canberra.

Gibbney, J., 1988. " Canberra 1913-1953". AGPS, Canberra, ACT.

Garnett, Rodney and Hyndes, Danielle, 1992. The Heritage of the Australian Capital Territory, National Trust of Australia (ACT) and others.

Gugler, A., 1954. "The Builders of Canberra, 1909-1929". CPN Publications Pty Ltd, Fyshwick, ACT.

Higgins, M., 1994. "Skis On The Brindabellas". Tabletop Press, O'Connor, ACT.

Marion Mahony Griffin Measured Drawing Competition, Tim Leslie and Jennifer Dudgeon (Honorarium), 1995

National Capital Development Commission, 1988. "Sites of Significance in the ACT, Vol. 2, Inner Canberra". NCDC, Canberra, ACT.

Articles

Boden, R., 1993. "Elegant testimony to native timber". Canberra Times, 13 January 1993

Lane Poole, C. E., 1928. " The Australian Forestry School". C.S.I.R. Journal, Vol.1, 1927-28.

Unpublished

Australian Heritage Commission, Australian School of Forestry (former), Yarralumla ACT, Register of the National Estate Database, Database No. 013338, File No. 8/01/000/0369

National Trust of Australia (ACT), 'Australian Forestry School' file

Interview with Dr Leslie Carron, former student of the School, and acting principal in the absence of K.P. McGrath, 7 April 1999; notes on National Trust file.

Information provided by Alan Brown, former Division Chief of CSIRO Forestry and former Australian Forestry School student.

Archives References

Australian Archives, Series A1/15, Item 1929/1875, Australian Forestry School Canberra, Construction of Buildings; includes original plans of main Forestry School Building (a copy is now on the National Trust files).

Australian Archives, Series A 6269/1, Item E1/29/454, School of forestry general construction.

Australian Archives, Series A6269/1, Item E1/27/2495, Forestry School - donated timber.

Australian Archives, Series A1/15, Item 1927/709, Equipment for Forestry School.

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APPENDIX B HISTORICAL BACKGROUND

B1. HISTORICAL BACKGROUND

The following section provides a detailed contextual history of CSIRO Yarralumla. The section includes brief summary of Aboriginal history surrounding CSIRO Yarralumla (to be expanded within the ACHA prepared concurrently by ERM with this HA). A contextual history has been prepared previously by Peter Freeman Pty Ltd and was reproduced in the most current HMP (ERM 2018). As such, this section is also based on, and largely extracts this previous history. To supplement this history and provide additional historical data, ERM undertook a detailed analysis of previous historical information and archival research at the National Archives, CSIRO Black Mountain Library, the ACT Heritage Library and Trove (National Library of Australia). Additional information has been referenced accordingly.

B1.1 Application of the Australian Historic Themes Framework

The Australian Historic Themes Framework was developed by the Australian Heritage Commission in 2001. The framework provides a research tool for developing a wider recognition of nuanced heritage values. The application of historic themes (ATHs) can be used at national, state or local level to ensure that heritage objects, sites and events can be understood, assessed and presented within the context of a broad theme, rather than as singular items of interest. AHTs relevant to the site and its history have been identified and are used to guide the summary of history in this section. A copy of the AHT is located in *Appendix E*.

B1.1.1 Pre European Ethno History

AHT 2.1 Peopling Australia - Living as Australia's earliest inhabitants

Aboriginal people have been visiting the Canberra region for at least 21,000 years, as evidenced through the archaeological recordings of hundreds of sites associated with Aboriginal cultural in the Canberra region. The vast majority of these represent campsites, many of which have been destroyed by the development of Canberra's city and suburbs since the early 20th century.

As far as can be ascertained, the Aboriginal groups living permanently in the Canberra region spoke different, but related languages (all most likely associated with the dominant Ngarigo) (Cooke 1988; Flood 1980) (*Figure B1.1*).The local Aboriginal people were referred to by early white writers as the 'Kamberra', 'Kghambury', 'Nganbra' and 'Gnabra', all of which share some resemblance to 'Canberra' – the name of the capital announced at the Foundation Stone Ceremony by Lady Denman on 12 March 1913.The name 'Canberra' is believed to be an anglicised version of the Aboriginal words, meaning 'meeting place' (Gillespie 1991). Aboriginal people in the broader Canberra district are associated collectively within the Ngunawal boundaries. The Ngunawal people are thought to have lived in small, highly mobile, kin-based groups. Individual groups came together regularly to participate in trade, marriage and ceremonial gatherings. An early ethnographic account from Bennett (1834) records their diet as including flying squirrel, kangaroo, wallaby, wombat, koala, possum, emu, duck, swan, snake, goanna, platypus, any eggs, insects, fish, mussels, yabbies, plant tubers, berries and seeds.

Currently, four Aboriginal groups are representative of the Australian Capital Territory region. These groups are:

- Buru Ngunawal Aboriginal Corporation;
- King Brown Tribal Group;
- Mirrabee; and
- Ngarigu Currawong Clan.

Figure B1.1 Tribal boundaries of Canberra and wider region, Canberra region indicated by ERM in red (Tindale 1974)

B1.1.2 European Settlement

The following section on the history of Canberra has been extracted from the Australian Government's National Capital Authority website (NCA, 2020) and supplemented by additional archival research undertaken by ERM.

The first documented report of Europeans visiting the Canberra/Queanbeyan region is from 1820, when Charles Throsby passed through the area in search of the Murrumbidgee River. In locating the Murrumbidgee River, Throsby and his party followed the river to the Queanbeyan River and further into the eastern part of the Canberra region. The first European settlement of the area, later known as the Limestone Plains (or 'Manarro' as it was called by the local Aboriginal people), occurred when Joshua John Moore established a station at what is now Acton in 1823 (current site of the National Museum of Australia, 2.4 km from Yarralumla). When he sought to purchase the land in December 1826, he referred to the location as 'Canbery', a name later used with various spellings for all the surrounding areas.

Robert Campbell's Station was the second to be established in the Canberra district. Campbell, a wealthy Scottish merchant, was promised a 4000-acres (1618 hectares) grant as compensation for the loss of one of his ships. A site was chosen at Pialligo, where Campbell eventually had a substantial residence erected, which he named Duntroon. Duntroon became an important grazing property and remained with the Campbell family until it was taken over by the Commonwealth in 1910 as the site of the Royal Military College. Blundells Cottage, built in the 1860s, is one of the few remaining stone worker's dwellings, part of the Duntroon estate.

Further settlement occurred near the Murrumbidgee River in 1834 on a property named Lanyon, after John Lanyon the joint owner. His partner James Wright ran sheep and cattle, relying mainly on convict labour. Financial difficulties forced Wright to sell Lanyon to Andrew Cunningham in 1848 and move to Cuppacumbalong across the Murrumbidgee River. Andrew Cunningham erected a large, new residence at Lanyon and continued to develop the property, adding to it with the purchase of other grants, including Tuggeranong. Today, Lanyon is still a working property. Both Lanyon and Tuggeranong Homesteads are open to the public.

Early settlers in the region were met with open grassy plains and woodland which were useful for their flocks, though disliked the hunting fires of the local Aboriginal people as the fires destroyed grass too early in the dry season, endangering their flocks (Jacobs 1963:2). The earliest European settlers did not at first appear to heavily deplete or abuse the surrounding woodland. However, in the middle of the 19th century, similar to the rest of the country, settlers found grazing and prospecting easer in burnt-out forests. In Canberra, as large amount of woodland trees were also ringbarked by the settlers to provide more room for grass. The ringbarked trees then served a useful purpose, providing a major source of dry firewood during winter. The earlier settlers also made use of the native forests for much of their needs, such as durable poles for farm structures and later telephone lines. They utilised black cypress pine found along the Murrumbidge Gorge and Black Mountain and cypress pine (Jacobs 1963:2).

Around this period, in the same area, William Farrer engaged in the experimental development of strains of rustproof wheat at Lambrigg station. Farrer made a singular contribution to the Australian wheat industry and is recognised worldwide. He and his wife are buried on a hill behind Lambrigg, their graves being marked by a monument. Another station which contributed greatly to the development of the district was Yarralumla. Frederick Campbell (a relative of the Campbell family at Duntroon) purchased the property in 1881 and had a new residence built, which has since become Government House, residence of the Governor-General of Australia.

The 1860s and 1870s witnessed a new wave of European settlement. The Robertson Land Act of 1861 allowed Crown land to be purchased in much smaller lots. This heralded a rush by poorer settlers to purchase small areas, where they often eked out an existence in difficult circumstances.

Opportunities for recreation and sport had been very limited in the early years of settlement but, as the population increased, woolshed dances, balls, concerts, athletic sports and cricket were organised. The best cricketer in the area in the 1850s-60s was an Aboriginal man, Johnny Taylor. By the 1870s itinerant entertainers and circuses began to visit the district.

By the turn of the century, the district which is now the Australian Capital Territory was an established wool and grain producing area, with some stations well known for breeding horses and cattle.

B1.1.3 Canberra: The Nation's Capital

AHT 3.2 Constructing capital city economies

In 1908, the Yass-Canberra district was selected as the site of the future capital of Australia. The government declared that the new capital would be 'the finest capital city in the world' and announced an international competition for the design of the city. More than 130 architects and town planners from Australia, North America and Europe submitted plans. In May 1912, the government announced that Walter Burley Griffin, a young American architect and landscape architect, had prepared the winning design. Griffin was born in Chicago on 24 November 1876. He studied architecture at the University of Illinois and worked for some time in the office of Frank Lloyd Wright, America's most famous architect of the time. In 1911, soon after he started work on his plans for Canberra, Griffin married Marion Mahony, another architect and a gifted artist in Wright's office. Marion worked with Walter on the design of Canberra and presented his designs in a series of vivid drawings showing a capital city nestled into the hills and valleys of Canberra.

Griffin's winning design showed a chain of lakes along the Molonglo Valley and a triangular framework for a central national area laid out along major vistas from Mount Ainslie and Black Mountain. On the southern side of the central lake, Griffin proposed a terraced group of government offices leading to the 'Capitol', his place of the people (now the site of Parliament House). Lower hills in the valley were reserved for other government and national institutions, a university, military college and municipal buildings, including a city hall.

Griffin came to Australia in 1913. He was appointed as Federal Capital Director of Design and Construction in order to supervise the detailed planning of his modern city (*Figure B1.2*). But lack of money, the intervention of the First World War and bureaucratic obstacles made it difficult to realise his plan. Many of his main avenues and parks were laid out on the ground at that time but there are no buildings in Canberra designed by Griffin. Due to many differences with the administration and his own uncompromising vision, Griffin left Canberra at the end of 1920 to work as an architect in Melbourne.

Figure B1.2 Walter Burley Griffin's plan for Canberra (1918) with Westbourne Woods (current site of AFS) indicated by ERM (NAA #1145962)

After WWI, and under the guidance of the Federal Capital Advisory Committee, the construction of Canberra progressed. Road and sewerage development continued, tree plantings were carried out, and a temporary Parliament House was constructed. Shops were built at Civic, Manuka and Kingston, and offices, hostels, and houses were completed for 1,100 public servants (Lambert 2019). The temporary Parliament House (now old Parliament house, the Museum of Australian Democracy) was completed in 1926.

In 1924 the government gazetted the Griffin plan for Canberra so that no changes could be made without the approval of the Commonwealth Parliament. This protection has ensured that Canberra remains essentially as Griffin intended it to be — a logical expression of the site, and a city which fulfils a national capital's primary function as the Seat of Government.

The strength of Griffin's design is also shown by the ability of the plan to adapt to growth and change without the loss of its character and meaning (*Figure B1.3*

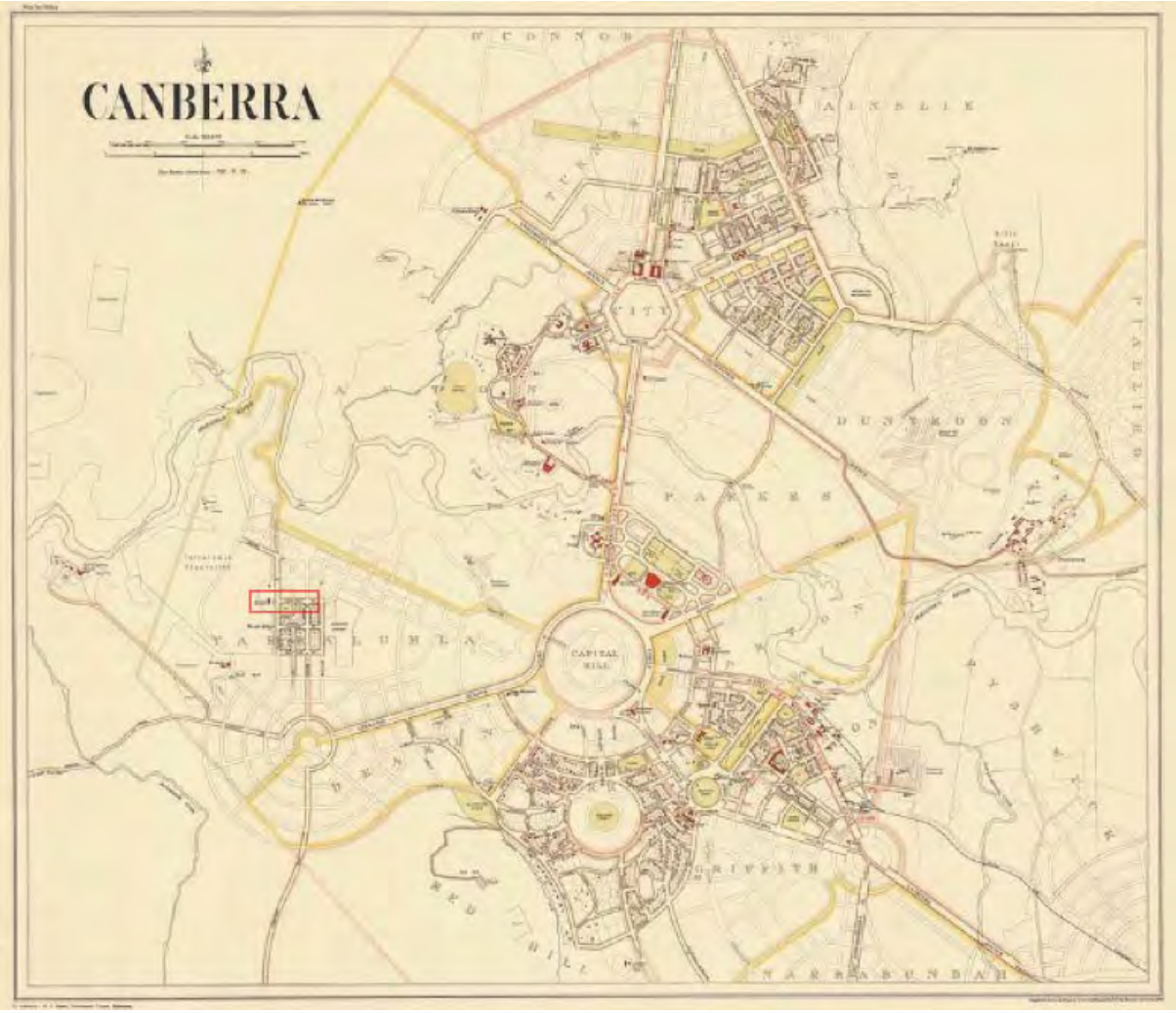


Figure B1.3 Plan of Canberra 1933 (based on Walter Burley Griffin's original plan) AFS site and Schlich Street indicated by ERM (https://pixels.com/featured/plan-of-canberra-1933-walter-burley-griffin.html)

B1.1.4 Early Forestry in Australia

AHT 3.4.4 Making forests into a saleable resource

In the early history of forestry in Australia, forests were generally seen as an inexhaustible source of wood for local or export needs. Successive governors and governments during the 19th century produced a series of orders, rules and regulations regarding the cutting of trees and on crown lands. It is unknown how much forest cover was removed during this period. Understandably, by 1870 the was sufficient concern in some influential circles that the poorly controlled cutting of trees on crown lands and the indiscriminate removal of forests on crown lands would soon leave no land for permanent production of wood. Moves were then made in Parliament towards the establishment of permanent reservations in states across the country, with M.R Jacobs stating 'forestry can be said to start in a country when the people make a deliberate effort to conserve, regenerate or plant forests' (Carron 1985: 5). During the mid-19th century state governments began to pass regulations that included the start of the system of licences, permits and concessions which was to become a feature of forestry across the country (Carron 1985:64).

It was South Australia that steered the way for forestry in Australia, with Surveyor-General G.W. Goyder playing a large role in the conservation of forests in the state in the latter half of the 19th century. Reacting to the alarming rate at which the already limited tree cover was being removed, Goyder was instrumental in having member of the South Australian House of Assembly F.E.H.W. Krickauff move a Return to Order in the House of Assembly in September 1870:

> *[…] as to what is the best size of reserves for forest purposes, and where they are to be made, to recommend the best and most economical means of preserving the native timber theron, and of planting or replanting the reserves as permanent state forests'* (Carron 1985:232 via Lewis 1975:14)

Under this order, one report was presented by Goyder with recommendations on the size and location of reserves, and another report was presented by Dr. R. Schomburgk, Director of the Adelaide Botanic Gardens, which included recommendations on species and planting locations, on a scheme to encourage landholders to plant trees, on the establishment of forest reserves and the appointment of two or three men 'who have a knowledge of forest culture' (Carron 1985:232 via Lewis 1975:14). As a result, the government passed the *Forest Trees Act No. 26* which was then followed by *Forest Board Act No. 8* in November 1875 following recommendations from Goyder pressing the necessity for reserves and recommending the establishment of nurseries, nominated planting regimes and the appointment of 'Conservator of Forests'. The Act provided for the appointment of a Forest Board, the establishment of reserves, and the appointment of a Conservator.

At the time, the State forest services in four states were administered by other departments, and personnel were generally forest rangers. Senior men held positions by Conservators or Directors of Forests, assisted by botanists. These people were continually urging the need for a specialised training for foresters. At the Interstate Forestry Conference in 1911 the Conservator of Forests of Victoria announced that his State had founded a Forest School at Creswick. However, due to the difficulty of getting teachers and the necessity of keeping down expenses, the Conservator utilised the services of lecturers 10 miles away at the Ballarat School of Mines. The Conservator of South Australia described at the same conference how it was proposed to train probationers in South Australia. Boys of age 18, with Senior Public examinations for their credit, would be accepted in February 1911 by South Australia's University of Forestry course. Those who pursued the study at the University and underwent a practical course of works in the State Forest Reserve, and who finally satisfied examiners, would be grated a diploma. The Conservator of Forests of New South Wales and the Government Botanist of Tasmania noted how there was no training of foresters in their states, but NSW had, under a committee of the Public Service Board, gone into the question and advised the appointment of a technical and experience forester to lecture on the subject at the Sydney University.

An important figure of this conference was Queensland's Director of Forests, Mr N.W. Jolly, though he did not attend in person. Jolly had been South Australia's first Rhodes Scholar, and had studied forestry under Sir William Schlich at Oxford (whom Schlich Street, Yarralumla is named after). His advice to the Conference was of such weight, Charles Edward Lane-Poole (Conservator of Forests for Western Australia 1916-1921) later repeated it in full in his paper on the History of the AFS (1934) stating 'here we have the genesis of one forestry school for all Australia':

> *I consider that the training of students for the State Forestry Department is a matter of very great importance, to which we should turn our attention first of all. Especially in connection with the treatment and regeneration of our natural forests, and their systematic management on a conservative basis, is a high standard of training essential […] I consider that no new Forest School should be established except in close proximity to a natural forest in which all the various operations and systems in vogue could be practised and studied* (N.W Jolly via C.E Lane-Poole 1934)

The University of Adelaide started training in Forestry to graduate level in 1911, with Mr N.W. Jolly as the first lecturer. As the need for a sound forest policy developed through Australia the need for trained foresters was recognised, but the number considered essential was very limited.

Because of the small number of graduates likely to be required, the Vice Chancellors of the Australian Universities resolved that the School of Forestry at the University of Adelaide should be the Australian centre of training in Forestry to graduate level. However, this view was not accepted by the State Forest Services, and most of the forests of Australia were owned by State Governments. Interstate Forestry Conferences agreed that there should be only one School of University standard in Australia, but there was a difference in opinion as to its location and its relationship to universities. There was a unanimous desire that the School should have the support of the Commonwealth Government (Jacobs via AFS History CSIRO Black Mountain Library).

Another Interstate Conference was held in 1912, though no reference was made to education and the next one was held in 1916, when the Minister for Forests of New South Wales read a paper on "The establishment of a Forest Training School", and the Minister of Forests of South Australia read another on "Provision by all states of facilities for students to attend the existing Forestry School". These papers, including one read by the Minister of Forests Victoria "Forestry Education and Training" 'raised some lively discussions' (C.E Lane Poole 1934). At the 1917 the Interstate Forestry Conference met in Perth, and Mr. Jolly read a paper on "Forestry Education and Forestry Research" in which he advocated that the Commonwealth Government establish both branches under one organisation. Despite this recommendation and resolution by the Conference attendees, it was not until 1920 that action was again taken to establish a national Forestry School.

B1.1.5 Charles Weston in Canberra

AHT 2.2 Adapting to diverse environments

It is well known that the trees which give Canberra much of its character and make it a garden city were due to the hard work and dedication of horticulture by T.C.G (Charles) Weston, Canberra's first Officer-in-Charge, Afforestation Branch and first Superintendent, Parks and Gardens. Weston was heavily involved in the conservation and afforestation of the Territory's natural resources and, from 1921, the landscape planting of the city itself.

After 1911, when Walter Burley Griffin won the international design competition for the design of the new Capital, rapid progress was made towards establishment of the new city. The new Federal Government acquired a site at Acton in 1912 and then acquired Yarralumla Station in 1913 where the temporary Canberra Brickworks was constructed that year. The Government building works were soon under way and before long, imposing public buildings were erected.

Griffin's vision for the Federal Capital included specific landscape designs. Whilst he studied architecture at the University of Illinois at Urbana, Griffin chose electives in horticulture, forestry and landscape gardening (Gillespie 1991). Colonial David Miller, the Administrator of the Department of Home Affairs selected Thomas Charles George Weston (1866-1935) to begin the task of testing and selecting the species of trees and plants suitable for the climate and soils of the Canberra region.

Weston was a well-educated and respected horticulturalist who had been trained in his native England though had worked for some time in Australia (*Photograph B1.1*). Weston worked for two years on a private garden in Pymble and in 1898, became head gardener at Admiralty House, Kirribilli. Weston's immediate supervisor Joseph Maiden, who was head of the Sydney Botanic Gardens. Prior to moving to Canberra, Weston became head gardener of Government House in Macquarie Street, then still under Maiden. Government House was then the Sydney residence of the Governor-General, which seemingly meant that, Weston for the Commonwealth (Gillespie 1991).

Photograph B1.1 Thomas Charles George Weston c.1926 (National Trust of Australia 1999)

Weston arrived in Canberra on 5 May 1913 to take up the permanent appointment of Officer-in-Charge Afforestation Branch of the Department of Home Affairs, Canberra. One of his first responsibilities was the grounds of the Yarralumla Homestead (Government House), taken over by his offices on 14 May 1913 (National Trust 1999).

Weston tending the gardens with the help of John Hobday whilst the Homestead was used as a guest house and under close public eye, the grounds continued this pattern until the 1920s when decisions on the permanent use of the building as Government house were taken. The Major refurbishment of the gardens, consistent with the new role of the old homestead as Government House, was designed by Weston, utilising his experience at Kirribilli House (*Photograph B1.2)*.

Photograph B1.2 Weston's design for Government House Garden, including the formal circular lawn c.1950 (National Trust via Government House 1999)

At the time of Weston's arrival, Canberra was a largely a treeless landscape, and Weston soon set about his task of transforming it. Within a few days he was inspecting potential sites for a permanent nursery (*Photograph B1.3*).

Charles Weston in Yarralumla

Weston chose the suburb of Yarralumla for the site of permanent nursery. A site known as 'Sheedy's paddock in Yarralumla' (originally called Westridge) was chosen to establish his tree and shrub nursery. Walter Burley Griffin probably named the area, as the same town plan shows his proposed names for the major roads, one of which was to be Westbourne Circuit (Canberra Historical Journal No.5 1980: 25).

Weston preferred the Yarralumla site as it was of sufficient size to facilitate extensions for testing and experimentation, its soil was 'on the whole good in quality' (National Trust 1999 via T.C.G Weston). The site was sheltered, and the water supply from Molonglo River was permanent and capable of being reticulated. The areas chosen for Weston's afforestation plan, both Shale ridge and the slopes of Mount Stromlo and '[…] elevated points on both sides of the Molonglo [River] (Canberra Historical Journal No.5 1980: 12) was to provide both soil retention and wind protection, with a view to reducing 'the force of westerly gales' (1980:12).

In addition, the Shale ridge site was on the fringe of the future city and fronting a main avenue envisaged in the then adopted Departmental Board plan for Canberra. Weston saw the site as the point from which the city's parks and gardens 'could be easily worked and superintended'. In addition, it was on value to the public, and those technically interested, as a place of 'beauty, interest [and] instruction' (National Trust 1999 via T.C.G Weston). The only critic of Weston's choice was Walter Burley Griffin, who saw the nursery site as inconsistent with his own plan for Canberra (National Trust 1999).

Photograph B1.3 View from Shale Hill looking north towards Black Mountain before 1914, looking across the present Westbourne Woods area (Canberra Historical Journal No. 5 1980)

Weston's design for the 160 hectare area was completed within a month and submitted to the Administrator on 10 June 1913. In the design, Weston laid down his approach to site development, which divided the land into four parts of equal size – Division A for the nursery (a 40 ha nursery/experimental area), Division B for Australian trees and shrubs. Weston was determined to redress a perceived lack of interest in Australian trees, particularly eucalypts of which Burley Griffin and Government botanist J H Maiden were also captivated, calling them a 'poets tree' (National Trust 1999). Division C was designated for an arboretum devoted exclusively to exotic trees species, and Division D for a pinetum (Canberra Historical Journal No.5 1980: 25 & Gray 1999). Weston envisaged Division B becoming 'an exclusive area to the cultivation of our Australian trees etc. and to demonstrate the tractability of such to cultivation' (Murphy 1963). Division C seemed to reflect Weston's English upbringing and also suggest that it was his background which would strongly influence his choice of trees for Canberra for he stated the Division should contain:

> *' […] trees that create the glorious Spring and Autumn effects for which the cool temperate countries of the world are justly noted and I predict that the chief ornamental charms of the future Federal City's surroundings will be in these same Spring and Autumn features'* (Weston, 1913 via Murphy 1963).

Division D was designed to 'bring together a magnificent collection of trees which are included under the name of conifers or cone bearers' (Murphy 1963). Weston's proposal received Ministerial approval in the same month, and with no alterations (Canberra Historical Journal No. 5 1980: 27). The south-eastern corner of this block was called Shale Hill Reserve and is now the site of CSIRO Yarralumla.

Work at the nursery began on the 20 October 1913, prior to Ministerial approval, with the removal of stumps. On 23 June 1914, the administrator formally approved:

> *'[…] the reafforestation of the reserve at Yarralumla embracing the western Slopes and the summit of the ridge at the brickworks including the shale Trig station, at a cost not exceeding 530 pounds'* (Gray 1999).

On 13 July 1914, Weston remarked that 'shooting of holes commenced' referring to the use of gelignite to blast planting holes (Canberra Historical Journal No. 5 1980). Over 12,400 planting positions were prepared on Shale Hill with the first trees planted 1 September. Planting then continued for the next three weeks when Weston noted in his diary that 'plans at Shale Hill for the present complete' (Murphy 1963). Half of the forty-one plots planted on Shale Hill contained four species which were already proven shade and shelter trees in the region – *Pinus radiata* (then called *P.insignis*), *P. pinea*, *P. halepensis*, *P. nigra* (then called *P. laricio*) (Murphy 1963). Weston also planted a number of Cypress pines (two of which remain and are located north of the AFS). These first plantings occupy what is now the CSIRO Yarralumla site, and the grounds of the entrance club house of the Royal Canberra Golf Club (Canberra Historical Journal No.5 1980). By 1917, the following plants were known to be growing on the grounds of what is now CSIRO Yarralumla:

- *Pinus canariensis;*
- *Pinus radiate;*
- *Pinus halepensis;*
- *Sequoadendron giganteum;*
- *Acacia baileyana;*
- *Quercus robur;*
- *Quercus palustris;* and
- *Pinus pinea* (Canberra Historical Journal No.5 1980:25).

Weston was an established and competent horticulturist and his achievements in Canberra are testimony to this. In 1918, Burley Griffin, as Director of Design and Construction, ordered Weston to plant Civic Square with native trees that were not appropriate for the climate and conditions despite their decorative qualities. It is documented that Weston knew the trees were incredibly susceptible to frost and appealed to the secretary of the department who sought a second opinion from Joseph Maiden. Weston's judgement was correct. The secretary was aware of Griffin's failing career and therefore deferred a final decision until the Federal Capital Advisory Committee had been created without him, and subsequently gave Weston sole control of horticultural planting (Gibbney 1986).

Charles Weston's nursery facilities successfully serviced the ever increasing demand for plants in Canberra. Between 1912 and 1920, 820,000 trees and shrubs were planted under Weston's expert direction (Gray 1999). By 1919, Weston had developed such a productive propagation facility that he was able to plant out approximately 193,000 plants per season (Gibbney 1988). Some 44,900 trees had been planted in Westbourne Woods in one decade of planting; 1914 to 1924 including a wide variety of eucalypts, acacias and conifers (*Photograph B1.4* to *Photograph B1.7*).

At the time, Weston reported 'present condition highly satisfactory' (National Trust 1999). In July 1921, the nursery was connected to the town's water supply after many years of pumping water from the Molonglo River, creating a much more efficient working environment.

Photograph B1.4 *Eucalyptus cinerea* Westbourne Woods (NAA #11658723)

Photograph B1.5 False Acacia Westbourne Woods (NAA:11658726)

Photograph B1.6 Red Stringy Bark Westbourne Woods (NAA 11658732)

Photograph B1.7 Single Seed Juniper Westbourne Woods (NAA 11658729)

Weston established the area as a trial ground and used a wide range of species, some of which have grown better than others over the years. Little to Weston's knowledge, Westbourne Woods provided the ideal setting and study area for the AFS, with C.E Lane Poole (key to the establishment of the AFS and first Principal) commending Weston for his dedication. Westbourne Woods Arboretum was placed on the Register of the National Estate (RNE) in 1987 as a historically important arboretum. Today many of Weston's plantings survive, including extensive radiata pine areas. Weston's Nursery would also play an important role in the next 86 years in creating and maintaining the city landscape of Canberra, and Westbourne Woods was to play a fundamental role in the establishment of the Australian Forestry School, Canberra, and become an essential tool for educating Australia's future foresters.

Weston retired in 1926 and was succeeded by Alexander Bruce who had worked as Weston's principal assistant since 1925. Weston received an MBE in 1927, notably for transforming Canberra into the garden city it is today. Weston died in 1935. Thirty species of pine; twenty-six species of conifers; sixty-three exotic hardwoods; fifty-one eucalypts; and ten other Australian trees have been recorded in the arboretum (Gray 1999). Most of Westbourne Woods is now occupied by the Royal Canberra Golf Club, which has greatly developed the pre-existing rudiments of a course since the old Club course was removed in 1962, during the construction of Lake Burley Griffin.

B1.1.6 C.E. Lane-Poole and the Australian Forestry School

AHT 6.2 Establishing schools

AHT 6.4 Building a system of higher education

AHT 8.10 Pursuing excellence in the arts and sciences – 8.10.5 Advancing knowledge in science and technology

When C.E Lane-Poole first arrived in Western Australia in 1916 to take up the position of Conservator of Forests, he was faced with the problem of Forestry Education (*Photograph B1.8*). At the time in Australia, there was only one technically qualified and professionally experienced forester, one Bachelor of Science teaching forestry, while there were four young men, recently qualified, serving during WWI. Despite the 1917 Interstate Conference resolution to establish a national Forestry School, by 1920 nothing had been done. Lane-Poole was getting increasingly frustrated at the lack of motivation and commitment to the establishment of national school, stating:

> '*I, in Western Australia, was in a desperate plight, and, faute de mieux, I was sending men to the Adelaide School […] South Australia is unfortunately situated as regards to forestry, for her area of indigenous forest is very limited […] the course is inadequate and the site a bad one* (C.E Lane-Poole 1934)

Lane-Poole presented at the 1920 Interstate Conference in Hobart. He stated at least 400 highly trained men were required in Australia, while at the time there appeared to be only four (excluding the heads of departments), all Adelaide men. In his paper, Lane-Poole outlined the syllabus of the school required and emphasised the advantage of a forest site away from a University. Lane-Poole recommended that the 1917 findings be adhered to, and that New South Wales be chosen and proposed the States should contribute to the maintenance cost of the School, and the Commonwealth Government should find the capital cost of buildings and equipment. The following resolutions were passed by the Premier's Conference in May 1920:

1. *That there shall be established an Australian School of Forestry for the training of officers in the profession of forestry; and that this school will be established in New South Wales.*
2. *That the control of the school be vested in a Council constituted by the appointment of an equal number of representatives of each State and the Commonwealth provided that the cost of the establishment be met by contributions from the States on a population basis, and a subsidy from the Commonwealth on the basis of one-sixth of the gross total contributions from the States* (C.E Lane-Poole 1934).

Photograph B1.8 Charles Lane-Poole c.1926 (NAA # 4994313)

The Council of Control, consisting of representatives of each of the States (except Tasmania) and the Commonwealth, was subsequently appointed, and met in Sydney on the 27th and 28th January 1921. It was agreed during these meetings that the success of the school relied on a guarantee by each state on a fixed number of nominated students bi-annually. Each state was able to provided nominated students, except for South Australia and Victoria.

While these recommendations were agreed to, and a resolution made, it was again a slow process with no state department or the Commonwealth taking up the challenge. Various states expressed concerns and proposed alternate ideas for forestry education, halting the process for a central school. In 1924, at the last Interstate Forestry Conference held in Sydney, a resolution was made that called for a central forestry school to be associated with a university within the Commonwealth. Lane-Poole commented on this resolution 'so was killed, for the time being, the idea of a central school' (Lane-Poole 1934).

When Lane-Poole returned to Australia in 1925 after a three-year assignment in Papua New Guinea, he was appointed forestry advisor to the Commonwealth Government and found that again, little had been done to progress the establishment of a national forestry school. In his new position, he was able to be more actively involved in the push for establishing an AFS. Lane-Poole brought the ACT Territory's afforestation issue to a head in April 1925. In a report to the Federal Parliament, he canvassed the possibilities for afforestation in various parts of the Territory including '[…] 1500 acres per year within the [Cotter] catchment' (Lane-Poole 1925:6). Lane-Poole was also clearly impressed with Weston's pioneering afforestation works in Canberra.

In August 1925, Lane-Poole wrote to the Commonwealth Government, urging them to actively work towards obtaining the co-operation of all States for the establishment of a school, and that the school should be a branch of a Federal Forestry Bureau and also emphasised the advantages that Canberra possessed as the ideal site for the AFS stating:

> *'[…] the Federal Capital Territory has a sufficiently wide range of forestry conditions to make a satisfactory site for the proposed school' and that '… students can acquire from Mr Weston's work much valuable knowledge […]*' (Gray 1999).

Lane-Poole also advised that the whole of the revenue of the forests should be reinvested in the forests and that a Commonwealth Forestry Products Laboratory should be established. A report in The Courier of 1 May 1925 was strongly supportive of Lane-Poole's proposals, claiming that they: '…should have been adopted years ago. One really efficient forestry school would be preferable to half a dozen inefficient schools' (The Courier, 1 May 1925).

The Commonwealth Government was now prepared not only to co-operate with the states, but to lead them. Lane-Poole credits the Commonwealth Government's sudden active participation to Western Australian Politian Sir George Pearce, who realised the national importance of the School. As a result of Lane-Poole's advice and the Pearce's encouragement, Prime Minister Bruce addressed a memorandum to the State Premiers informing them that the Federal Government proposed to establish a forestry school in Canberra, providing funds for equipment maintenance, staff salaries and incidental expenses, and to cover student fees, on the condition the States would nominate a certain number of students who would finance their own board and residence.

> *[…] This government proposed, provided the State Governments are agreeable to co-operate on the lines set out hereunder, to now establish a National Forestry School. The School will be situated in the Federal Capital Territory, in which area, the Government is advised by Mr Lane-Poole, the conditions are quite satisfactory […]* (Lane-Poole 1934).

The Vice-Chancellors of all the Universities were also advised of the proposal. While the University of Adelaide and the University in Western Australia were happy to provide students, New South Wales and Victoria were not as enthusiastic believing the new school would encroach on their existing schools.

Prime Minister Bruce was obliged to explain the nature of the new school; it was to be an institution of higher forestry training, as distinct from the lower schools that would accept youths whose education was not as high and could enrol after completing thorough schooling. The lower schools would simply train the students for the general work of the forests. It was documented that the higher school was to be in:

> '[…] *the nature of a post-graduate course, and students must be well-educated before they could gain admittance to this school […]. The school the Federal Ministry proposed to establish at Canberra would supply this training. It would not, however, do away with the necessity of the lower training. On the contrary, it was hoped that as a result of its establishment the other States would see the importance of setting up institutions of the Creswick (a lower training school) type*' (The Argus, 16 June 1925).

N.W. Jolly was suggested as the School's first principal, having been one of the Commissioners of Forests of New South Wales and was considered an acceptable appointment. Support of the School was secured with the undertaking to nominate three students annually for ten years. By this time, August 1925, the estimates for the School were closed and sketches and plans were being prepared.

It seemed unlikely that the School could be started by 1926 as only two of the six States were in agreement with Victoria calling for another Interstate Conference. Enthusiastic support was received by Queensland University, South Australia was urged to decide and while it agreed to the proposal, would not nominate students. The disapproval of remaining states was a serious problem, as the School could not function without the support of each State. Sir George Pearce decided to force the States to comply, deciding the establish the School without all initial State agreements and so forcing the States to send students, as there was nowhere else imparting higher forestry training in the country.

In March 1926 Prime Minister Bruce commented that the absence of Victorian students was an intentional response by the Victorian Government which, although previously agreeing to nominate three students annually, was dissatisfied with the temporary location of the school at the university of a sister State. Prime Minister Bruce appealed to the Victorian Government when he stated that:

> *'[…] it was hoped that better counsels would prevail, and that no question of State jealousy would be allowed to bar the road when the question at issue was the education of Australia's future foresters'* (The Age, 26 March 1926).

All States agreed to the proposal except for South Australia, which finally relented and also offered to house the national school until the building planned for Canberra could be constructed (Carron 1977). The Australian Forestry School began its operations at Adelaide University in April 1926, with N.W. Jolly as Professor. By the start of the school year, the AFS had the following sixteen students attending the school:

- 4 freelance students;
- 2 nominated by Western Australian Government;
- 3 nominated by New South Wales Government;
- 5 nominated by Queensland Government;
- 1 nominated by South Australian Government; and
- 1 Departmental Officer from South Australia.

Although Victoria had yet to nominate any students, the Prime Minister wrote to the Premier of Victoria, noting that the State had decided to send two students to the Adelaide School and asked when it proposed to nominate them officially to the AFS (NAA: Letter to the Victorian Premier from the Prime Minster 28 May 1926). These two Victorian students soon joined the original sixteen (*Photograph B1.9*).

Photograph B1.9 The first AFS class, Adelaide University c.1926 (LT Carron 2000)

The Establishment of the Australian Forestry School, Yarralumla

The AFS operated at the Adelaide University for one full school year whilst the school building at Yarralumla was designed and constructed. N.W. Jolly, took the role of principal of the AFS at the Adelaide University while the school was being constructed.

A major factor in the 1925 decision to locate the forestry school at the Westridge site was the proximity to Thomas Weston's arboretum, Westbourne Woods, providing an epicentre for training and forest experimentation. In Lane-Poole's 1925 report to the Commonwealth he praised Weston's work:

> *'…His arboreta to-day represent the labour of many years, and in them may be seen specimens of all the trees that can possibly be grown in that climate. His pinetum is of particular value, containing as it does a fine collection of conifers. This alone will save the forester who starts planting for timber ten years of tiresome and, with many species, disappointing experimental work'* (Gray 1999).

An article in The Australian Forestry Journal of 15 May 1927 also praised the benefits of the Canberra location, claiming that Westbourne Woods:

> *'[…] will prove invaluable for field demonstration in conjunction with lectures. Students therefore […] will be able to study the growth and habits of the various timber species represented in the arboreta'* (The Australian Forestry Journal, 15 May 1927).

The Australian Forestry School building was designed by architect J.H. Kirkpatrick, assisted by Principal Architect of the FCC, H.M. Rolland (*Figure B1.4*). The Federal Capital Commission (FCC) had been established as the body responsible for providing accommodation and office space for the transfer of Federal Government from Melbourne to the new capital.

The Australian Forestry School, however, was one of only two institutions (the other being the Commonwealth Solar Observatory at Mount Stromlo) provided by the FCC that were not related to the transfer of government (Charlton et. al 1984).

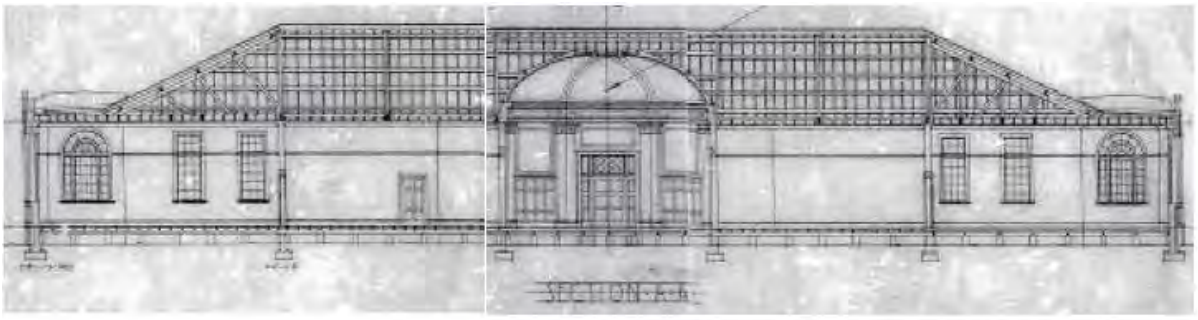


Figure B1.4 Amended section of the AFS building (NAA via 2018 HMP)

The plan of the building included an entrance opening into an octagonal domed hall and also allowed for a vestibule with two offices on either side, two lecture rooms, a laboratory, typist's room, office, drafting room, a large museum, library, store, cloak room, switch room and lavatory (*Figure B1.5*)

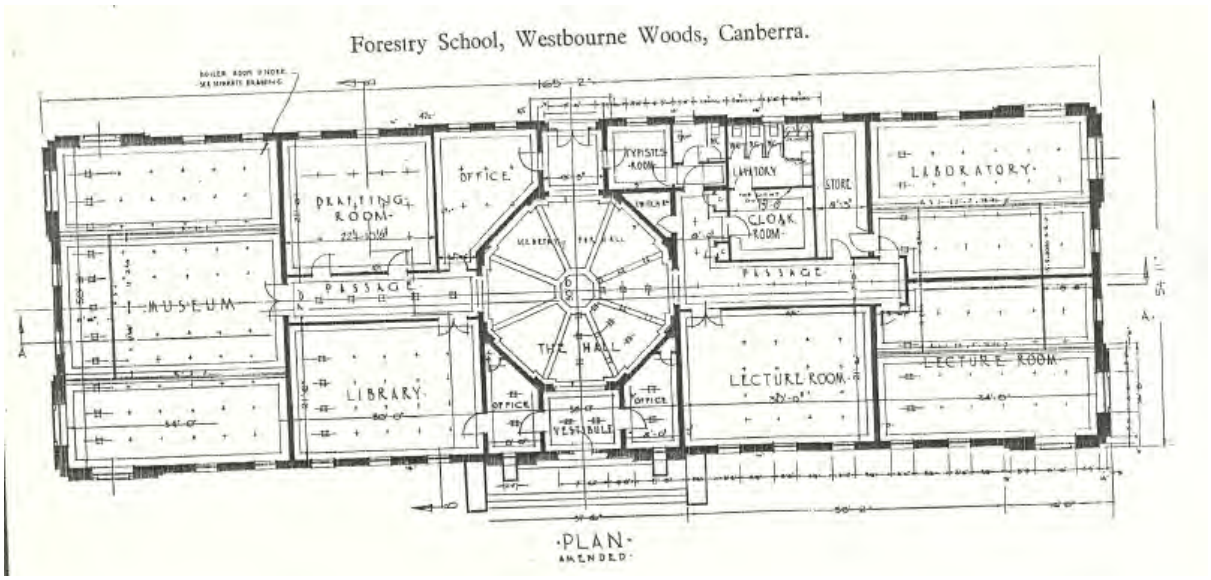


Figure B1.5 Amended floor plan of the AFS building (CSIRO Black Mountain Library)

Charles Lane-Poole suggested it would be fitting for a national forestry school to be constructed entirely of Australian timbers and requested donations from the various States. Construction commenced on the 1 July 1926, with the building to be completed by 11 April 1927, in time for the start of the teaching term. While the AFS was being constructed, the workers were put in pre-fabricated Worker's Huts. These huts were demolished when the building was completed (ERM 2018) (*Photograph B1.10*).

Photograph B1.10 The worker's huts, 1927, these were demolished when the AFS was completed (ANU archive via 2018 HMP)

At the same time the AFS was being constructed, a residence for the Acting Principal Lane-Poole was also being constructed. The house, called Westridge House, was completed in January 1928 at a considerable cost of £4880 (*Photograph B1.11*). The house was constructed close to the AFS, within a short walk 100 metres to the north and along Banks Street. Lane-Poole had gained permission from the Commonwealth to engage an architect of his choosing, for a total of £3000. Lane-Poole's wife Ruth was an interior designer engaged to redecorate the suite at Yarralumla (Government House) to be used by the Duke and Dutches of York in 1927, and is believed to have influenced the choice of the artistic architect Harold Desbrowe Annear to design Westridge House (Boden 1983).

Photograph B1.11 Westridge House c.1930s (NAA #3167296)

Charles Lane-Poole visited the site on 7 October 1926 and wrote to the Secretary of the Home and Territories Department to report on the progress of the School buildings. He was very impressed with the location of the buildings writing:

> *'[…] The eastern or front walls are about six feet high now. At the rate of progress that has been shown, the building should easily be completed before March'*.
>
> *'[…] The school buildings situated as they are on the Eastern fall of Westridge, and within the arboretum, have a very fine outlook to the East over the plain towards the civic centre… The fact that there are clumps of pine trees behind both sites [Australian Forestry School and Westridge House] makes the situation a very desirable one both educationally and aesthetically […]*'

Lane-Poole was particularly proud of the use of Australian timber within the main Forestry School building:

> *'[…] I think this is the first building to be erected in the new Capital of Australia in which the structural and joinery timbers are purely Australian grown.'*

By October 1926, Tasmania had donated a myrtle floor, Victoria a mountain ash floor, Western Australia a jarrah floor and South Australia 3000 feet of Insignis pine wood for internal fittings. Lane-Poole documented that both New South Wales and Queensland 'refuse to give us any', demanding payment for their timbers. Timbers which had been purchased included:

> '*Spotted gum for the floor of the laboratory, and one lecture room; black butt for the drafting room; cypress pine for the cloak room, and small offices; forest mahogany for one of the front offices; Queensland walnut for the Principal's Office. This office will be half panelled in cedar. The museum, which is a very large room will be floored in tallow wood. Six of the doors will be Queensland maple. The panelling of the octagon hall will be in Blackwood and Queensland walnut. All the structural timbers are also Australian, New South Wales hardwoods being the principal ones used for joists, etc. The rafters are of hoop pine.*'

Lane-Poole commented on the building in the CSIR Journal:

> '*The building itself, both as regards site and dignity of architectural design, may well challenge comparison with any others in Australia's capital. In the interior construction, Australian timbers have been used throughout, and the handsome effect obtained should provide a most salutary object lesson to a public mind, which is obsessed with the idea that only exotic timbers are suitable for building construction*.' (Lane-Poole 1927- 28).

Completion of the building by March 1927 was not as easily achieved as Lane-Poole had envisaged in October 1926 (*Photograph B1.12*). Distressed on the works still remaining to be undertaken three weeks before its scheduled opening, Lane-Poole wrote to the Federal Capital Commission on 14 March 1927:

> '… *I visited Canberra […] and saw the secretary. It is fortunate I made the visit for I found that the progress of the school is so slow that I have grave doubts as to the completion of the building by (31 March) the date promised by Mr Butters* (Chief Commissioner of FCC)' (Lane-Poole 1927).

Photograph B1.12 The AFS during construction prior to landscaping, 1927 (NAA #3050165)

Despite being behind schedule, the AFS opened on the intended date, 11 April 1927 with its first students also beginning the first school term (*Photograph B1.13*). Although only two rooms were completed at this time; the Principal's Room and the Drafting Room. Lane-Poole, as newly appointed Commonwealth Inspector-General of Forests, wrote to the Secretary of the Home and Territories Department expressing his disappointment with the state of the building and the absence of furniture, which was to have arrived in time for the commencement of the school. He claimed lectures were being delivered, however, 'in a partly finished lecture room, with borrowed furniture' and that he could make no estimate of the date the workmen would be out of the building, 'Nor do I place any reliance on the Commission's promises in this matter' (Lane-Poole 1927). Although the AFS had not yet completed construction, it was an eye-catching element in the landscape, surrounded by Weston's mature pine forests (*Photograph B1.14* and *Photograph B1.15*).

Photograph B1.13 First AFS class at the new School, Yarralumla (NAA # 3086146)

Photograph B1.14 AFS facing north, soon after construction (NAA #1991225)

Photograph B1.15 The AFS soon after construction and landscaping, c.1927 (NAA # A3560, 6626)

When the School opened its doors on 11 April 1927, it was the first tertiary institution in the Federal Capital. There were sixteen students, representing all the Australian States, and three permanent lecturing staff: C.E. Carter, H.R. Gray, and A. Rule. Charles Lane- Poole, who was appointed the Commonwealth Inspector-General of Forests on 29 March 1927, became Acting Principal until a permanent principal could be engaged (The Melbourne Sun, 30 March 1927).

N.W. Jolly, the principal at the Adelaide University (hosting the AFS at the time) had retired late in 1926 to become the Chief Commissioner of the New South Wales Forestry Service (Carron 1977). Following Jolly's retirement from teaching, Lane-Poole then took over as Principal of the AFS. The official AFS building was completed on 20 June 1927 at a cost of £22,022 and formally opened by the Governor-General Lord Stonehaven on 24 November 1927, in the presence of the Prime Minister, Stanley Bruce; Mr Marr, Minister for Home and Territories; Sir George Pearce, Vice President of the Executive Council; Members of Parliament and Canberra residents (Sydney Mail, 30 November 1927).

The completion of the AFS required a large amount of additional expenditure. The layout plan and a large portion of the external detail was altered considerably from the original plan, on which only an estimate was based. Also, the final internal finishes were generally more expensive than anticipated. The additional cost was attributed to the lack of time the architect had to prepare the drawings before the Commission. A further contributing factor was that, prior to construction, the site had also not been defined, leaving excavation costs out of the original estimate. It was also noted that the use of all Australian timbers from every state increased the expenditure:

> *The fact that sample timbers were used in almost every room, and were obtained from practically all over the Commonwealth added considerably to the expenditure and to the labour* ('A. Bancroft' Superintendent Building Construction Department memo to the Federal Capital Commission 16 Aug 1927).

The Forestry School building is a Stripped Classical design, rectangular in shape and measuring 50 metres by 17 metres, without excessive ornamentation. Round arched openings form the entrance and accentuate the projecting end bays, whilst the parapet rises in subtle steps over the entrance, encompassing projecting bays with vertical openings. The entrance opens into an octagonal domed hall, panelled in Australian timbers and featuring a remarkable parquetry floor (*Photograph B1.16)* providing:

> '… *A perfect demonstration of the handsome pattern effect obtainable with our different coloured hardwoods*' (Sydney Mail, 30 November 1927)

Photograph B1.16 Main entrance hall to AFS (facing north) c.1927 (NAA #3097919)

A crest, with the school motto, 'Mihi Cura Futuri', translated as 'to us is entrusted the future' (devised by N.W. Jolly, first Principal of the School) is located above the front entrance (*Photograph B1.17* and *Figure B1.6)*. The flagpole, also above the main entrance, flew the Australian Forestry School flag.

Photograph B1.17 AFS emblem above main entrance door (ERM 2020)

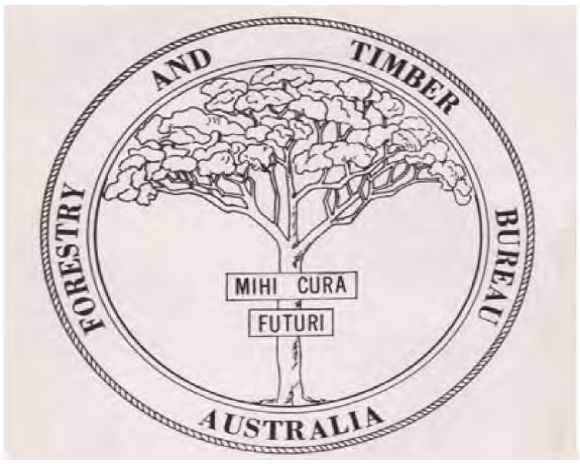


Figure B1.6 AFS Emblem (NAA #7827675)

The roof of the AFS cost a considerable amount more than anticipated, due to the use of Hoop Pine roofing timbers throughout in lieu of the more generic hardwood, including exclusive ribs to the domed ceiling and groined ceilings. This cost an additional £356. The front entrance was framed in Maple and glazed with Luxfer in lieu of a steel frame and specified glazed muffled glass. The panelling in the Principals Office was of Cedar, also not included in the original specifications. Additional hall and vestibule panelling was of Walnut panels with Blackwood framing in lieu of the allowed Maple. Additional costs were also involved in the firring[1] and plastering of Oregon timber joists and encased with metal lathing over the Laboratory and Museum (A. Bancroft' Superintendent Building Construction Department memo to the Federal Capital Commission 16 Aug 1927).

The hardwood flooring of the AFS was also carefully selected by Lane-Poole as noted above, with some minor changes to the final construction details. In the Museum, the flooring was of Tallowood and the corridor Ash (*Photograph B1.18* and *Photograph B1.19*). The Typists was also Ash (donated) and the Lecture Room A was Victorian Ash, Lecture Room B, Spotted Gum, and Lecture Room C, Blackbutt (*Photograph B1.20*). The Offices and entrance was Red Mahogany and the Principals Office; Crows Ash (with Cedar wall panelling). The Cloak Room and Switchery; Remarkable Pine and the Library; donated Tasmanian Myrtle (*Photograph B1.21*). The Laboratory flooring; Jarrah (a portion of which was donated). The ceilings in each room were painted 'Stag White'.

[1] "**Firring**" is a U.K. term for wood strips which are usually 50 mm wide, tapered and fixed above wood roof joists to provide drainage falls below roof boarding

Photograph B1.18 AFS Museum c.1927 (NAA #3097920)

Photograph B1.19 AFS Museum (NAA via 2018 HMP)

Photograph B1.20 Lecture Room, AFS, c.1927 (NAA #3097921)

Photograph B1.21 AFS Library c,1927 (NAA #3097918)

By the end of 1927 and early 1928, the landscaping was completed. Key plantings included the Ponderosa Pine and Roman Cypress. On either side of the east façade of the School's front entrance driveway, even groupings of *Pinus ponderosa* were planted, on the south-east side, a row of *Betula pendula* or silver birch (then called *Betula alba*) was planted to frame the Ponderosa (*Photograph B1.22*) (Federal Capital Commission map c.1928 via ACT Heritage Library). A number of Pinus nigra, likely part Weston's plantings, were saved from excavation and can be seen to the north of the AFS (*Photograph B1.23*).

Photograph B1.22 The AFS following completion, the first trees are established c.1928 (NAA #11777550)

Photograph B1.23 AFS c.1927 (NAA #3155231)

In November 1927, the Public Service Board approved the advertisement for vacancy at the AFS, calling for suitable applications for role of the School's Principal to take over from the acting Principal Lane-Poole. While five candidates applied for the position, only one was deemed suitable and came with a recommendation from Lane-Poole. Dr J.M. Cowan, then living in England, was considered by both N.W. Jolly (NSW Forestry Service) and Lane-Poole to be the most suitable candidate. A yearly salary of £1,100 was negotiated, which at the time was the maximum salary for a position by the Public Service Board, £320 was also required to cover Dr. Cowan's relocation from England (Department of Home Affairs letter to the Treasury 13 Sep 1929). Despite this correspondence and Lane-Poole's recommendation, Mr. Cowan was never appointed Principal. Lane-Poole remained Principal of the AFS up until 1944, when Dr. Maxwell Ralph Jacobs was appointed Principal and Lecturer in Silviculture in December that year (AFS Journal Vol 42 No. 3 pp: 138-141).

B1.1.7 The Depression and World War 11

The school is documented to have struggled throughout the Depression, barely surviving due to the obvious financial difficulties of the period and a lack of support from the States. Victoria for instance, which had previously expressed jealously over the decision to locate the national school in Canberra, did not send students after 1932, preferring to send its nominees to the forestry school at Creswick, leaving a small remaining number of staff and students. In 1932, the AFS was low on numbers. With only 22 staff and students attending the school (*Photograph B1.24*.

Photograph B1.24 The Staff and students of the AFS, 1932 (AFS History Files ANU via 2018 HMP)

The only recorded changes to the AFS in the early years of the Depression was the installation of a Stove House. The installation of a Stove House was first requested by the Inspector General of Forests in 1928, however in each instance of tenders being released, the applications each came back too costly. The Federal Capital Commission decided instead to undertake the work by Departmental labour (Letter to respective tender application, Federal Capital Commission 23 November 1928).

The Stove was designed as a series of frames fastened to the AFS in the fashion of a lean-to (*Figure B1.7*). The total cost for the Stove House was to be £75. Work was requested by the Department of Home Affairs 17 April 1930, with requests made for the work to be completed before 30 June 1931 (Letter, Department of Home Affairs to the Federal Capital Commission 17 April 1930).

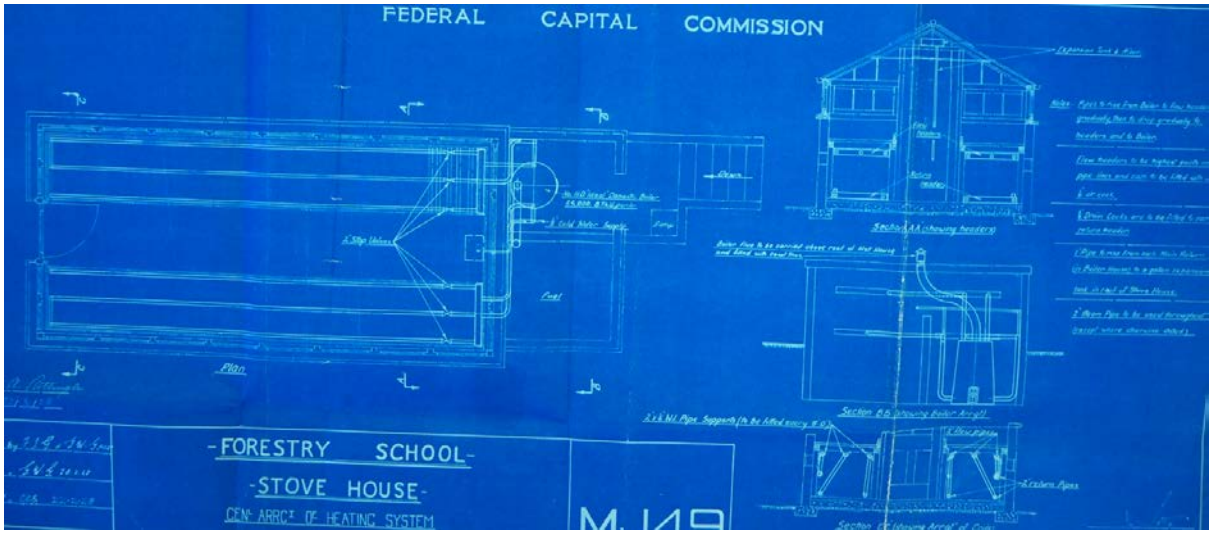


Figure B1.7 Forestry School Stove House plans, 1928 (NAA series A292/1 #329312)

In 1931, both Victoria and South Australia made concerted effort to have the AFS closed. W.F. Dunn, Minister for Forests, wrote to Premier and Colonial Treasurer J.T. Lang on 18 June 1931 arguing for the protection of the AFS by the Commonwealth:

> *I hope therefore, that you will make a very strong protest to the Prime Minister against the proposed closing of the School* (Letter to J.T. Lang by W.F. Dunn 18 June 1931).

During this tumultuous time for the AFS in 1934 the national importance of the School was recognised by the Commonwealth Forestry Bureau through an application to the Department of Interior to use the prefix 'Royal' in conjunction with the AFS (NAA #1030489). The Secretary of the Commonwealth Forestry Bureau R.G. Kappler argued that the closing of the two schools of forestry in New Zealand (Auckland and Canterbury) left the AFS as the only school in the Southern Hemisphere engaged in training foresters of professional status (NAA #1030489) and that the educational standard of the AFS was deserving of the 'Royal' prefix. While it was noted that the AFS was indeed the only remaining forestry school of higher education, the Prime Minister decided the school, in the short period since its establishment, had 'not yet reached a standing sufficiently high to justify the Government in asking that the distinction, mentioned above, be granted by His Majesty (Letter from Secretary H.C. Brown 18 Dec 1934).

It was from 1934 that Dr Maxwell Ralph Jacobs began to work under Lane-Poole (as Inspector General of Forests) as a Research Officer for the Forestry Bureau and a lecturer at the Australian Forestry School (*Photograph B1.25* and *Photograph B1.26*). Dr Jacobs had previously been the Chief Forester of the Federal Territory and having received the Australian Scholarship in Forest Management he finished his post-graduate studies at the Imperial Forestry Institute, Oxford and the Forestry School at Tharandt in Saxony where he received his Doctorate. At this time, the AFS was limited to the area around the School and Westridge House (*Figure B1.8)*.

Photograph B1.25 Dr. Jacobs and officials at the AFS, c.1955 (NAA #5281163)

Photograph B1.26 Dr. Jacobs at the AFS, c.1955 (NAA #5281164)

In 1936, only one student was nominated for the School, and as a consequence, Charles Lane-Poole accepted none for that year; second year numbers were down to four. The school continued to function, as a result of lobbying by the newly formed Institute of Foresters, but the lecturers and research staff were put on 'half-time', teaching those students who were already enrolled and completing second-year studies (Carron 2000; Meyer 1985).

Figure B1.8 Plan of Canberra, 1933 with the AFS indicated by red outline (Government Printer Plan/NAA via 2018 HMP)

The AFS, desperately suffering from a lack of support, and not being attended by a sufficient number of students, was facing the possibility of closure. The Prime Minister announced that, if sufficient student numbers were presented the AFS would open as usual the following years, however if this did not happen, the AFS would close and the Government would accept a proposal to develop a research side for the Commonwealth Forestry Bureau (House of Representatives response to enquiry re: AFS closure 1 May 1936).

The lack of students and Commonwealth funding resulted in there being no requirement to construct additional buildings. The only addition to the site during the Depression was the commissioning of two tennis courts, completed in 1930 and located to the west of school. It is documented that Charles Lane-Poole had recognised the need for students to have a recreational facility available to them, and requested two tennis courts be constructed for use by staff and students. Approval was given, but with a limited budget much of the work was carried out by the students themselves (AFS 1929).

The school experienced some relief during the last four years of the 1930s. Student numbers improved slightly and money became available for construction following the Annual General Meeting of the Institute of Foresters of Australia held in Perth in June 1937. The central discussion of the General Meeting was the national importance of the AFS and great need for maintenance:

> '*Members of the Institute are unanimously of the opinion that the maintenance in the Commonwealth of adequate facilities for high training in Forestry is a national question of major importance*' (Letter to the Prime Minister 7 June 1937).

Support and further funding soon became available from the Commonwealth, guided largely by Senator Sir George Pearce:

> '*I frequently discuss the Forestry School with the Minister for Interior (Mr. Paterson) and my recollection of the last conversation is that the outlook is much more hopeful than it was previously, and that one or two states, which previously had indicated they did not intend to send students to the school, had altered that decision. The Government […] believes that the school plays a very valuable part in our national economy*' (Extract from Hansard – Senate, 30 June 1937)

A continuing small student intake and the developing World War II situation prompted Lane-Poole to consider closing the school in 1940 for the duration of the war. Lane-Poole was hoping to join up himself to command an Australian Army Forestry Company but was unsuccessful, the command going to another forester, Cyril Cole (Meyer 1985). During this time, despite uncertainty, the research Nursery was developed. Dr. Jacobs began his early experiments on *Pinus radiata* around this time from 1939, releasing his first paper on the topic 'Experiments with cuttings of *Pinus radiata* (Bureau Bulletin No. 25 1939). The Nursery was in continued use from the 1940s to the 1980s for propagating *Pinus radiata* (AFS 1929).

In early September 1942, the Vice-Chancellor of the Melbourne University (Mr. JGD Medley) moved that the University withdraw from the arrangement to recognise the AFS as the only school of higher forestry education and proposed to set up a course for the Bachelor of Science in Forestry at Melbourne University, based on the Diploma at the Forestry School at Creswick, Victoria (NAA #B346/1/3 Part 2 Series A461). This caused further tensions between states, and again between the AFS and Melbourne University as they had still failed to send any students since 1932. The Premier of Victoria was reminded on 17 September 1942 that the State of Victoria gave support to a series of resolutions on the 1928 British Empire Forestry Conference, the principal one being:

> '*That the higher training of Australian forest officers be recognised as a matter for the Canberra school only and that the training of overseers, foreman and similar grades is a matter for each state*' (Letter to the Premier of Victoria 17 Sep 1942).

In September 1942, the Minister for the Interior announced the decision to close to AFS upon the completion of the academic year, and not to accept new students until after the termination of the war. At the time, seven students were attending the school who were to finish out the school year. In addition, seven new students had been nominated, six from NSW and one from Tasmania though these numbers had been reduced due to enlistment of four students in the Australian Infantry Forces (AIF). With the lack of students enrolled and the unlikelihood that any more would be nominated, the AFS was seen as an economic burden, and the continuance of the AFS could not be justified (NAA #B346/1/3 Part 2 Series A461). On 2 September 1942 the Premiers Department of Perth wrote to the Prime Minister (individual unknown) imploring the decision to close the AFS to be overturned.

It was argued that for any post-war reconstruction, Forestry would play an important role. Australian forests were greatly depleted by the demand of the war effort, timber that was normally imported was instead taken from Australian forest reserves (NAA #B346/1/3 Part 2 Series A461). It was argued that the AFS was not a school that could be shut down at will, periodically. The AFS, as represented by the teaching staff at the time, was regarded as an institute of continuous research, and that any interruption would be 'distinctly detrimental to its vital functions' (Premiers Department Perth 21 Sep 1942). The letter states in conclusion:

> '*The Commonwealth Government, in conducting the Australian Forestry School, is performing a function which is vital to the well-being of the Nation. The value of the service it has already rendered in this connection requires no comment. The present position in Australia is such that any discontinuance of the service, leading to a shortage of trained foresters in the future, might react disastrously on the forest policy of the Commonwealth'* (Premiers Department Perth 21 Sep 1942)

By the 2 December 1942, the Minister of the Interior had decided to rescind his decision to close the AFS for the duration of the war (memo from the Prime Minster 2 Dec 1942). The School continued to function as normal, with post WWII years seen as a period of growth for the AFS. The Board of Higher Forestry Education, established in 1930 by the State university representatives, to act as link between the universities and the school and to advise on curriculum and examinations, agreed it was best to keep the school open despite a small fluctuating intake for each of the war years. Students who would have otherwise enrolled at the school enlisted in the armed forces. In 1946, the Australian Forestry School became the Division of Education of the new Bureau (Carron 1977).

The Forestry and Timber Bureau Museum (10)

On 19 July 1938 the Department of the Interior released invitation of tenders for the construction of the 'New Museum and Store and Forestry School' with plans and specifications to be supplied by the Works & Services Brach, Acton (NAA: A295/1 B535005). The new museum building was to be situated behind the AFS to the west, and south of the existing Workshop (today the former 'Seeds Store (17)) (*Figure B1.9*). According to the specifications for the new Museum, the building was to be:

> *[…] one storey only, with reinforced concrete foundations, brick walls, concrete and wooden floors, tiled roof, box frame windows, timber and glazed doors, fibrous plaster ceilings, electric light and power, heating, drainage and stormwater services – as well as timber shelving, cupboards, bins etc*. (Specifications for the new Museum, Works and Services Branch 19 July 1938).

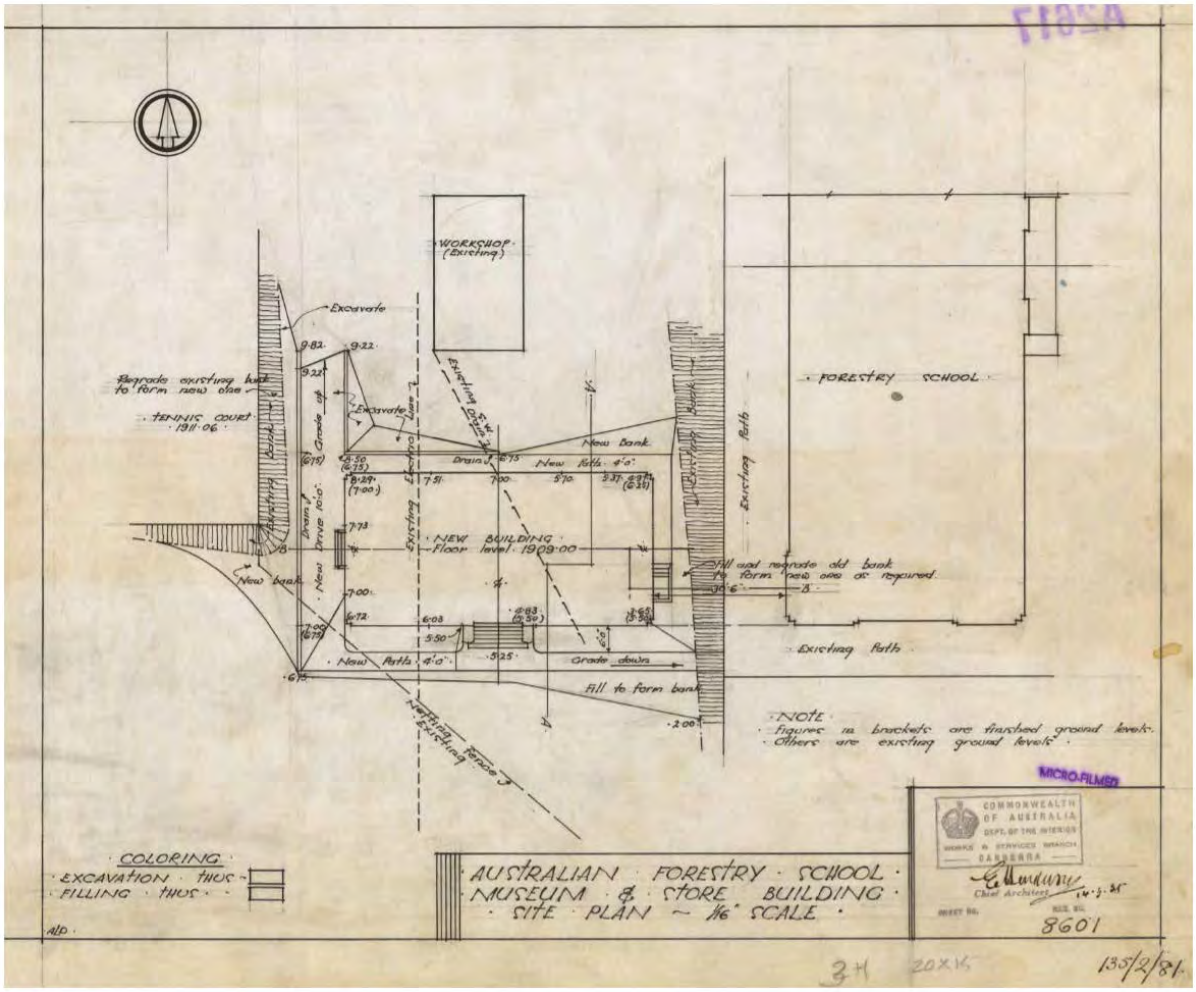


Figure B1.9 Site layout of Museum and Store, 1938 (NAA #7689914)

All materials were required to be of Australian origin, specifically, hardwood for framing, tallowwood flooring, and for joinery, linings, and finishing Alpine Ash and Queensland Maple were to be used. The roof was to be clad in Marseilles tiles to match the AFS building. All glazing was to be clear glass. The new driveway was to be filled with red gravel obtained from the Department's Red Hill quarry (approx 2.4 km from the site). Bricks were carefully selected with brick faces to be of even size, clean arises, good even colour and well burnt. Sound, well burnt, common bricks were to be used for all parts not exposed at finish all bricks purchased from the Department's brickworks.

The building originally housed an entrance hall, a Carpenter's Shop; a general museum in the centre; a Soils Room; a Seeds Room; a Papers Room; and a Woods Room. The Soils Room originally had an electrical refrigerator, and a wall of the best quality white glazed tiles, all set in sand and cement, with round edge tiles at the top and rounded corner tiles at the corners. White glazed tile soap holders were also installed in this room, one behind each sink. Each room also had timber racks and continuous pigeon holes for storing samples (*Figure B1.10)*. Hoop Pine was used for all bench tops, shelving, pigeon holes, benches and bins and Tallowwood was used for the floor to entrance hall, window sills and external door frames. The doors to the Museum were to be Queensland Maple. The floors to the Carpenter's Shop, Wood and Paper rooms were tongue and groove Cypress Pine (Specifications for the new Museum, Works and Services Branch 19 July 1938). The museum was designed in a similar style to the main school building, in an attempt to maintain continuity, but some subtle differences can be detected in the roundels, rainwater heads and downpipes (refer to *Figure B1.11* for building plan).

The Museum contained a botanical collection of Australian species including a herbarium, fruits, seeds and timbers. Material of the more important oversees trees, a collection of forest insects, fungi and geological specimens were also displayed. Other museum exhibits included manufactured articles of timber and other forest produce donated by representatives of various forest industries. Of special note, was a wooden model, complete in all details, of a five-roomed weatherboard house (Forestry and Timber Bureau Calendar, 1935).

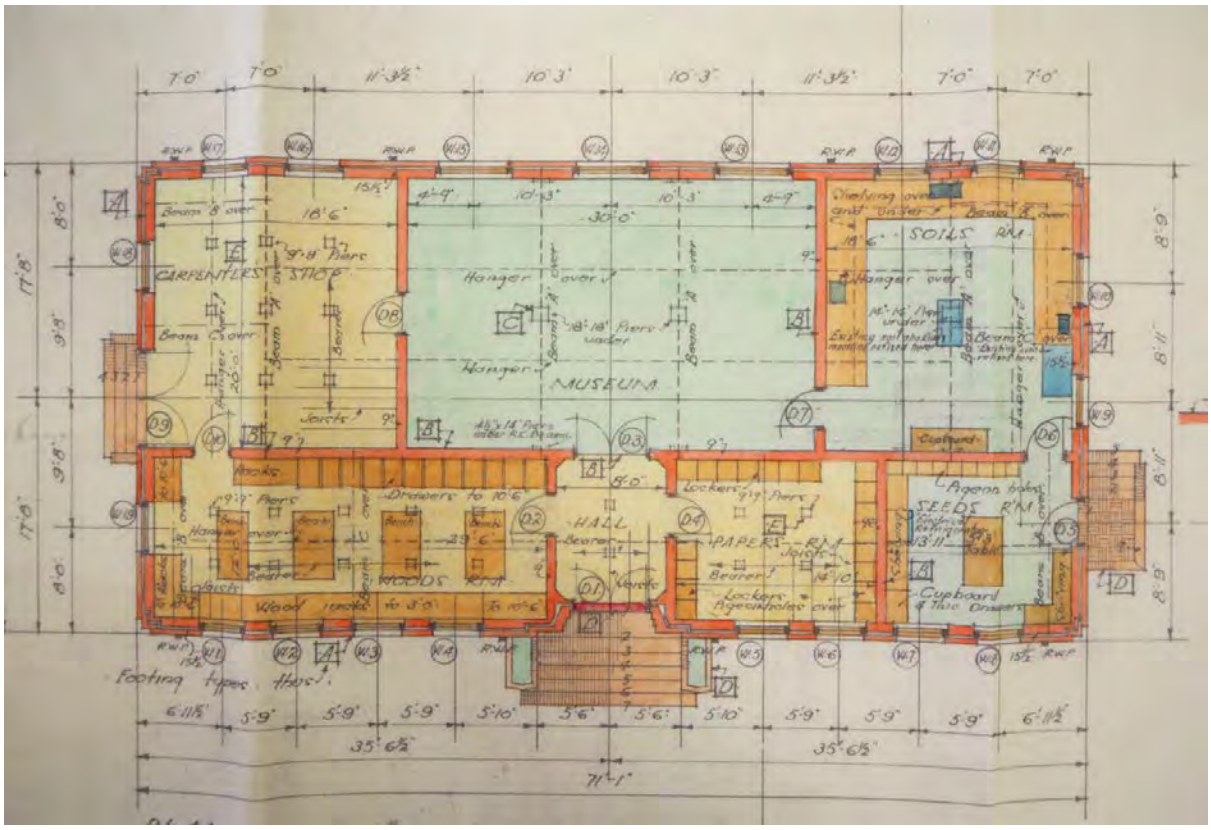


Figure B1.10 Museum building floor plan, details of Wood, Seeds and Papers Rooms (NAA #7689917)

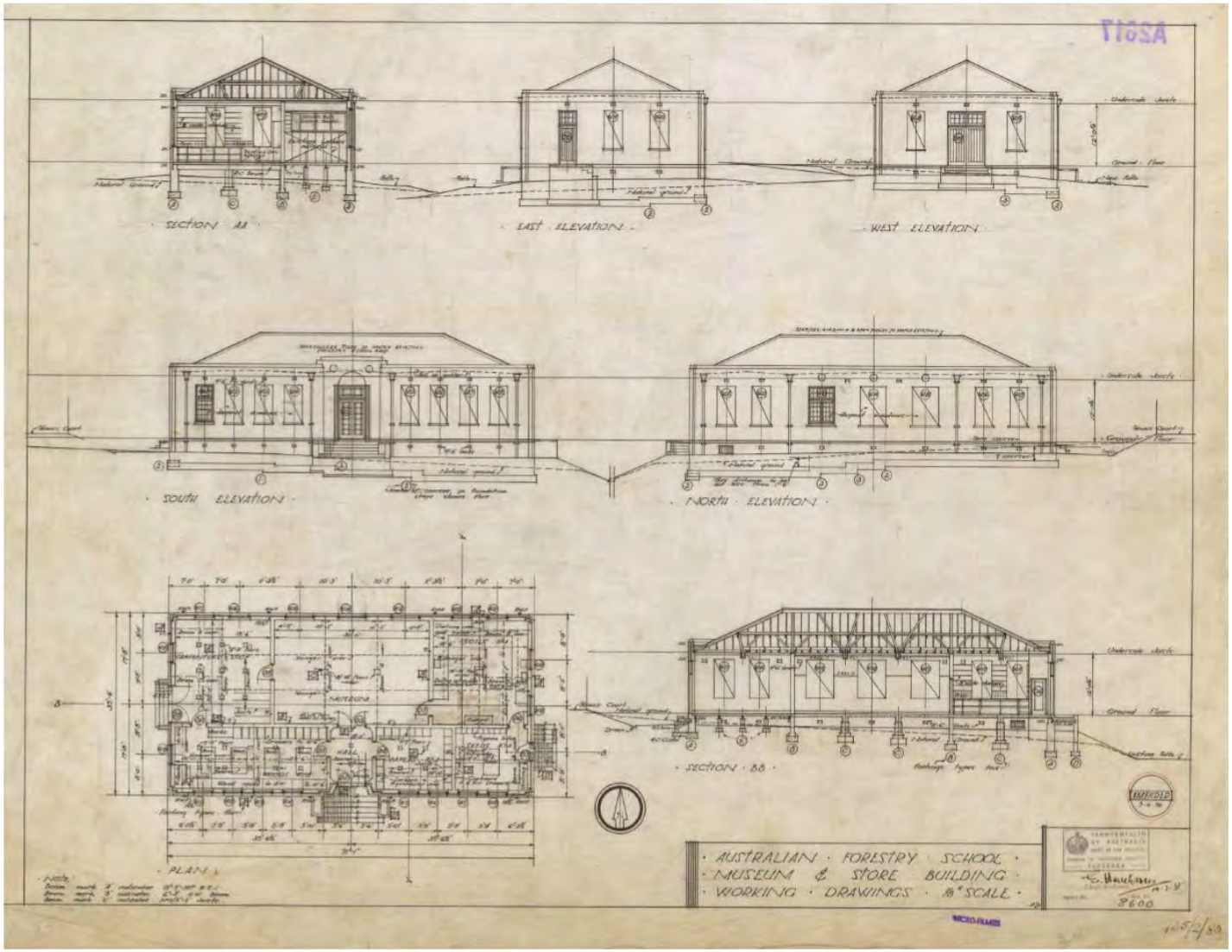


Figure B1.11 Museum and Store Building plan 1935 (NAA #7689917)

Carpenter's Shop converted to Seeds Store and Laboratory (17)

The Carpenter's Shop (currently Store building 17) was constructed sometime prior to 1938. The Workshop is a small timber-framed and clad building with a hipped tile roof located behind the AFS. The building was converted into a Laboratory and Seeds Storage facility sometime during the late 1930s or early 1940s. Proposed plans for the conversion of the Workshop were developed by the Department of Works and Housing and included the removal of existing doors and a timber partition, shelving existing sliding doors and tracks. New laboratory sinks were installed and a Seeds room.

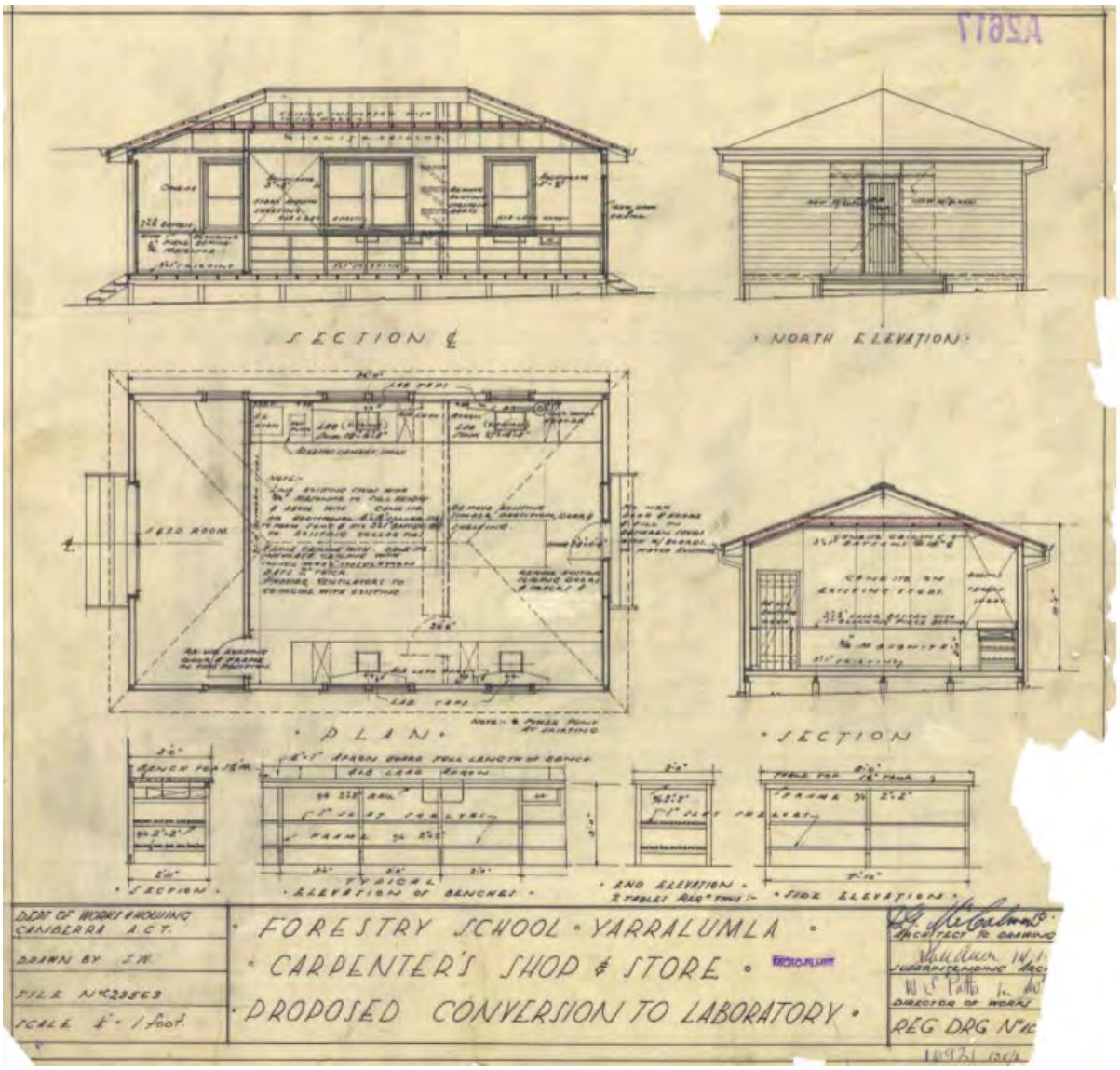


Figure B1.12 Proposed plans for conversion of Carpenter's Shop into Seed Store and Laboratory (nd) (NAA # 7499489)

B1.1.8 Years Post World War II

Although the first twenty years was documented to be a problematic period for the Australian Forestry School, the subsequent twenty-year period was one of growth and prosperity. The post-World War II years saw a significant increase in student numbers, due to the war-lag and ex-servicemen undertaking rehabilitation courses at the universities. In 1947, the Commonwealth Forestry Scholarship scheme began, with students on the scheme being obliged to serve forestry in some way anywhere in Australia for three years after graduation.

It is also interesting to note, that in August 1946 R.G. Kappler (Secretary to the Commonwealth Forestry Bureau) requested the blue print of the AFS to be supplied to the Forestry Service of the Dominion of New Zealand. New Zealand had, at the time, been considering the question of forestry education in which the construction suitable buildings would be required. The New Zealand authorities requested the AFS blue prints 'showing the arrangement of rooms, with dimensions' (NAA: Letter from R.G. Kappler to the Department of the Interior 15 Aug 1946). It is unknown whether the Forestry Service of New Zealand constructed a school building of similar design to the AFS, it is more likely the building constructed would have utilised the floor layout rather than external features.

In 1948, the first Asian student was enrolled at the school and in 1949, the first of approximately forty New Zealand Forest Services nominees began an association that would continue for twenty years until a school of forestry was opened at Christchurch. A number of Filippino, Thai, Malaysian, Burmese and Ethiopian students also attended the school (Carron 1977). This sudden and unforeseen increase in student numbers put pressure upon the school's 'temporary' accommodation facilities, located off-site in what is now Solander Place, Yarralumla.

Although the AFS was a Federal Government initiative, the Commonwealth had not accepted responsibility for student accommodation. When the School opened in 1927, the students lived off-site at the former Government Printery at Kingston, occupying the staff quarters, and were 'bused' to the site each day. Twenty-seven temporary huts, called 'cubes', were constructed in 1928 and used for student accommodation for 25 years (*Photograph B1.27* and *Photograph B1.28*). Each student had his own cubicle with it documented that:

> *'[…] these cubicles contain a bed with mattress, sheets and blankets, a small folding table, a wardrobe and a small mirror. In front of the cubicles are three brick cottages, the first is a dining room and kitchen, the second is a reading and recreation room, which is sometimes used for dances, while the third contains basins, troughs, showers, baths and exercise rooms'* (West Australian, 11 June 1930).

The brick cottages remain and are now Nos 2, 4 and 6 Solander Place, Yarralumla (*Photograph B1.29*). In the post-war years, as student numbers increased, the old mess was enlarged by the provision of a number of huts and cubicles from Army disposals. The Army hut known as "The Waldorf" (now 16 Solander Place) was also built following WWII and two additional temporary wooden lecture rooms were established – one at the eastern and one at the western end of the wooden buildings established for workshop purposes. A storeroom was built between the eastern lecture room and workshops, partly to deaden the noise from workshops. In 1961, this storeroom was used as an office by Mr. Hamilton, the lecturer in Dendrology. The western lecture room was used as a combined lecture room and drafting room. Three additional rooms were established in the block of wooden temporary rooms (now demolished) (CSIRO Black Mountain Library).

Despite the increase in structures suitable for students to live, still further accommodation was required to meet the growing number of students.

Photograph B1.27 The cubicles in 1927 (ERM 2018 via AFS History Files ANU)

Photograph B1.29 The cubicles in 1938 (ERM 2018 via AFS History Files, ANU)

Photograph B1.29 Brick cottages in 1927, now Nos 2, 4 and 6 at Solander Place (AFS History Files ANU via ERM 2018)

Forestry House

It had been the intention of the Government to establish more or less permanent residential housing for the Forestry students, and two or three drawings for this house were prepared. The drawings up until about 1948 proposed a residential house between the present garages and the Principal's residence (Westridge House). The building of a new residential college (referred to as the 'hostel' in early plans), Forestry House, was designed by the Commonwealth Department of Works with construction commencing during 1949. The original proposed design was a two-storey 'T' shaped floor plan, with a central recreation hall and dining, kitchen, staff lavatories and showers left of the T junction, with also a court and laundry entrance. To the right of the T junction was to be the student quarters, including 15 separate rooms, with the inside rooms facing west and looking out onto an open air recreation 'Assembly Court' (*Photograph B1.13*). The Department of Interior had a number of plans drafted for the proposed hostel, a number of which differed slightly with the main entrance accessed to the right of a central two-storey vestibule (*Figure B1.13* and *Figure B1.14*).

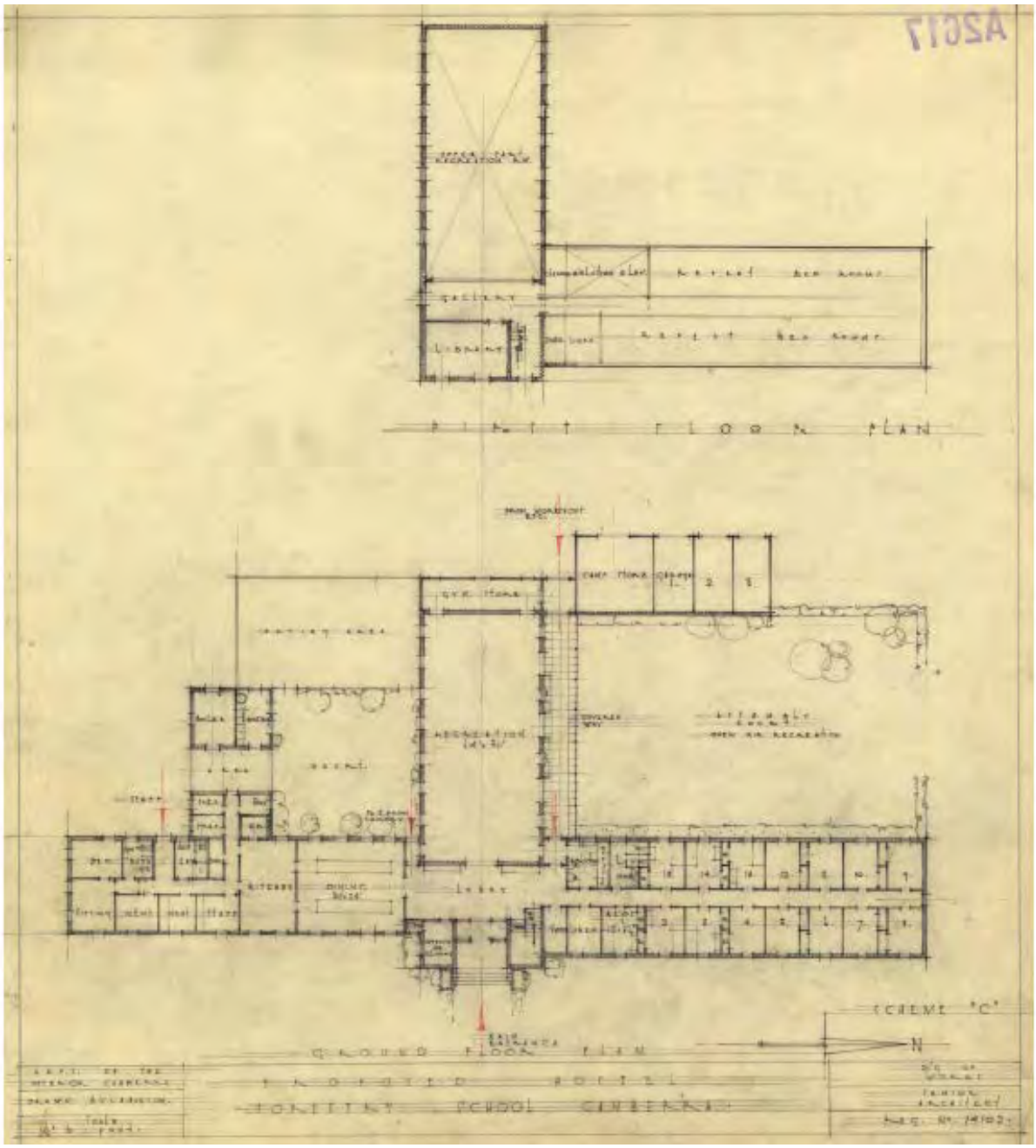


Figure B1.13 Original proposed architectural plan for the AFS students hostel (later called Forestry House) c.1949 (NAA #7689904)

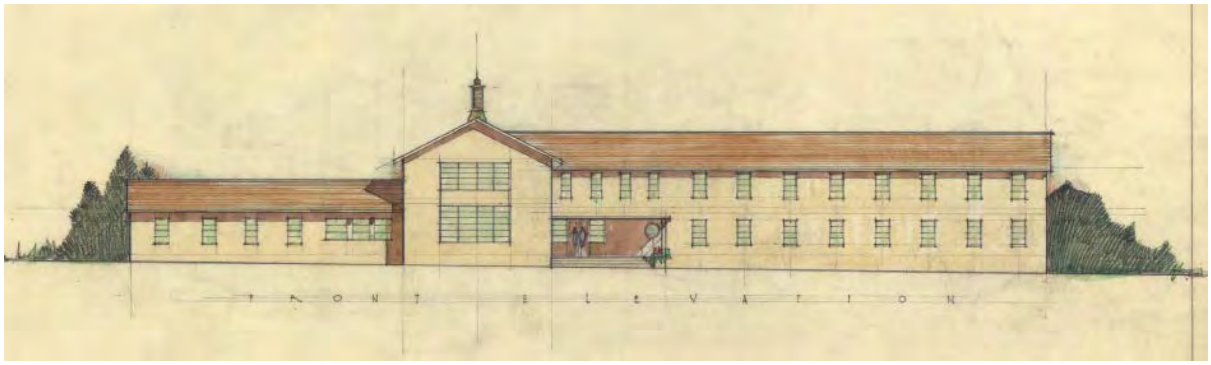


Figure B1.14 Proposed east façade of the new hostel accommodation by A. Hanson for the Department of Interior (NAA #7689904)

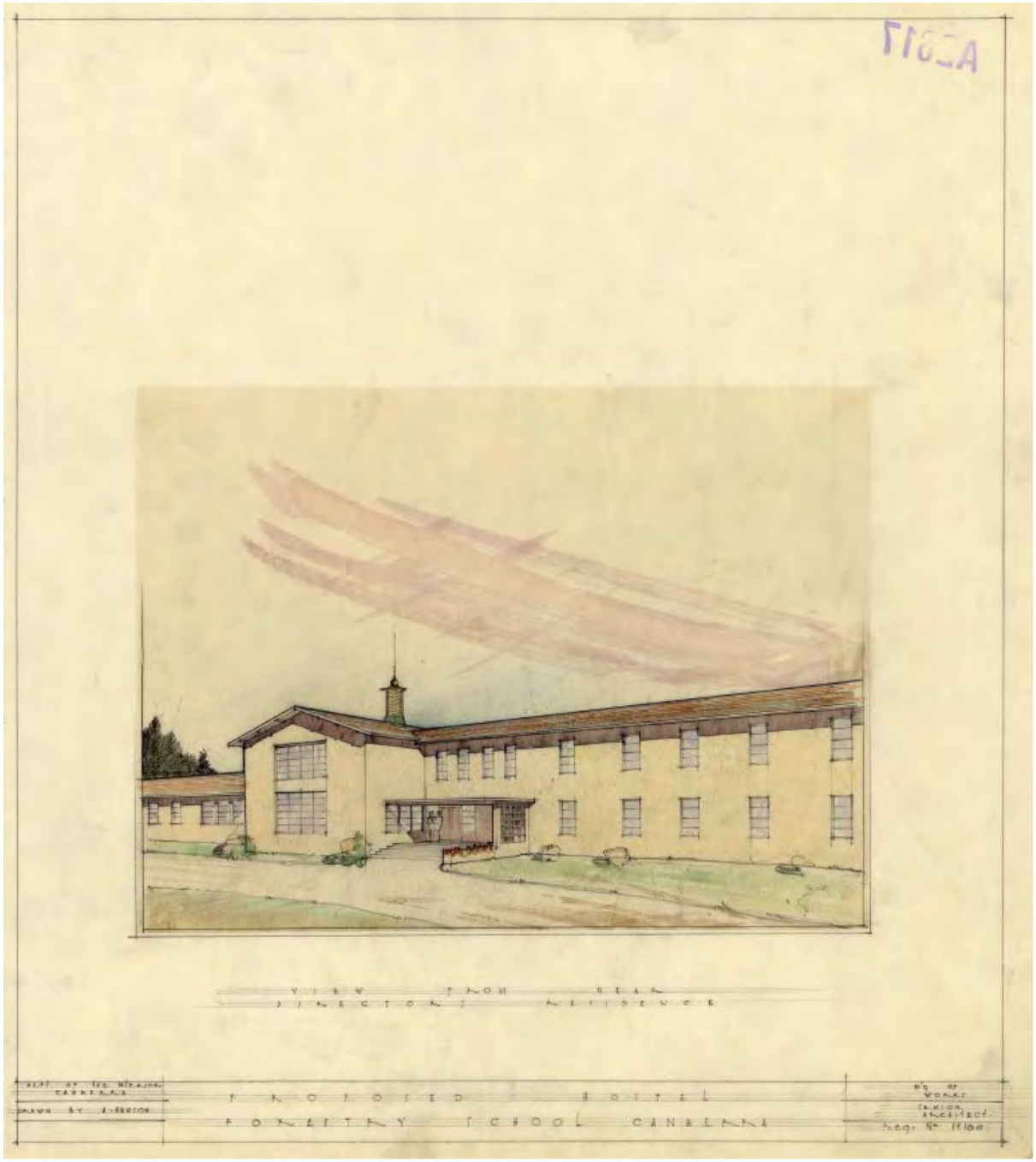


Figure B1.15 Proposed east elevation of the new hostel A. Hanson for the Department of Interior (NAA 7689908)

Forestry House was completed and occupied early in 1952. The ground floor had a large lounge connected to a library and billiards room with 21 bedrooms, a dining room kitchen and facilities. The upper level was an 'L' shaped corridor with another 21 rooms (*Figure B1.16* and *Figure B1.17*).The Bureau's 1952 Annual Report describes the building as:

> *'[…] A modern residential building designed to accommodate 40 students in single rooms, with a library, lounge room, billiard room, dining room and well-appointed kitchen'*
> (Commonwealth Forestry and Timber Bureau 1952).

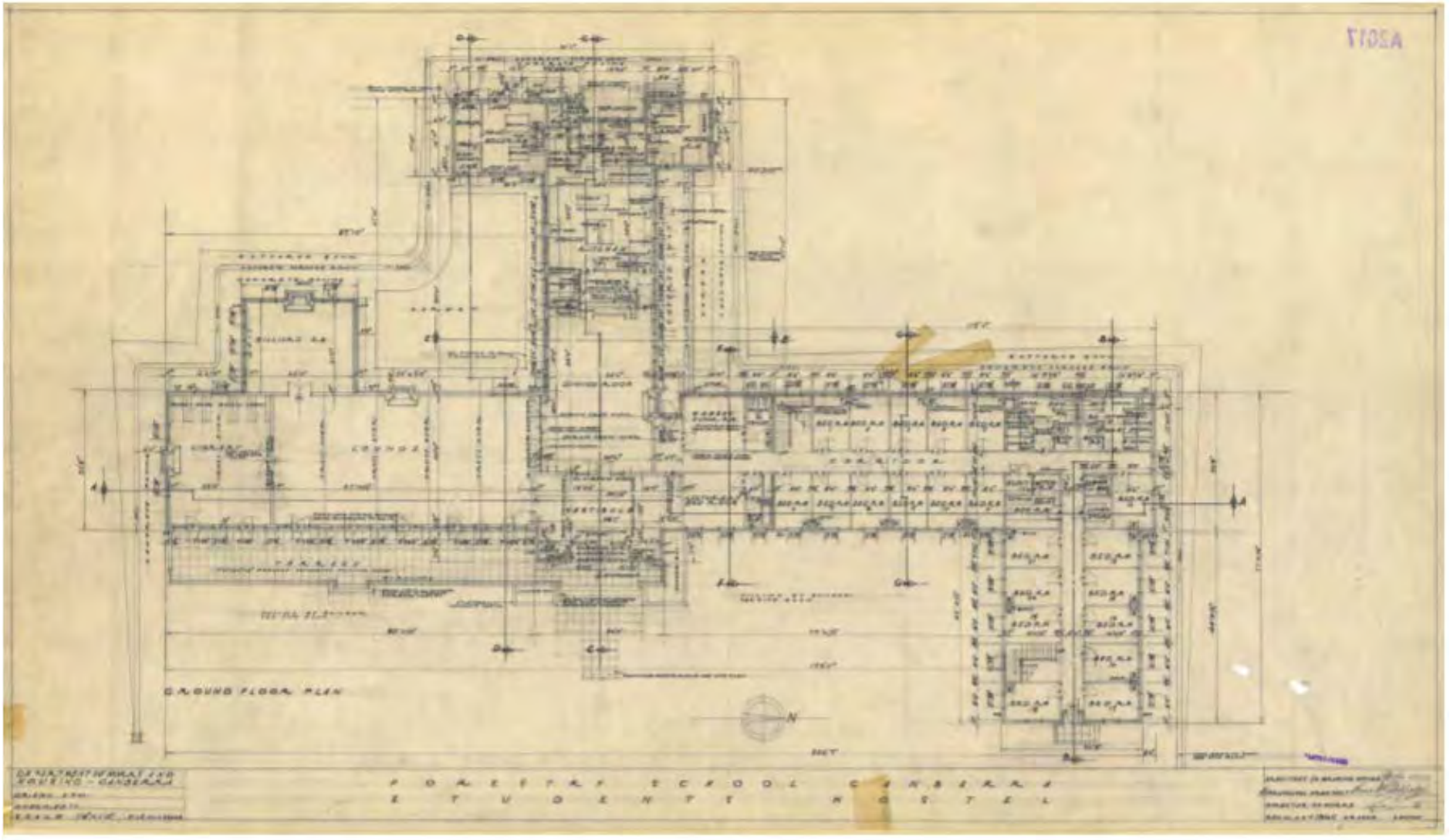


Figure B1.16 Final ground floor plan for the Forestry School Student Hostel c.1950 (NAA #7689885)

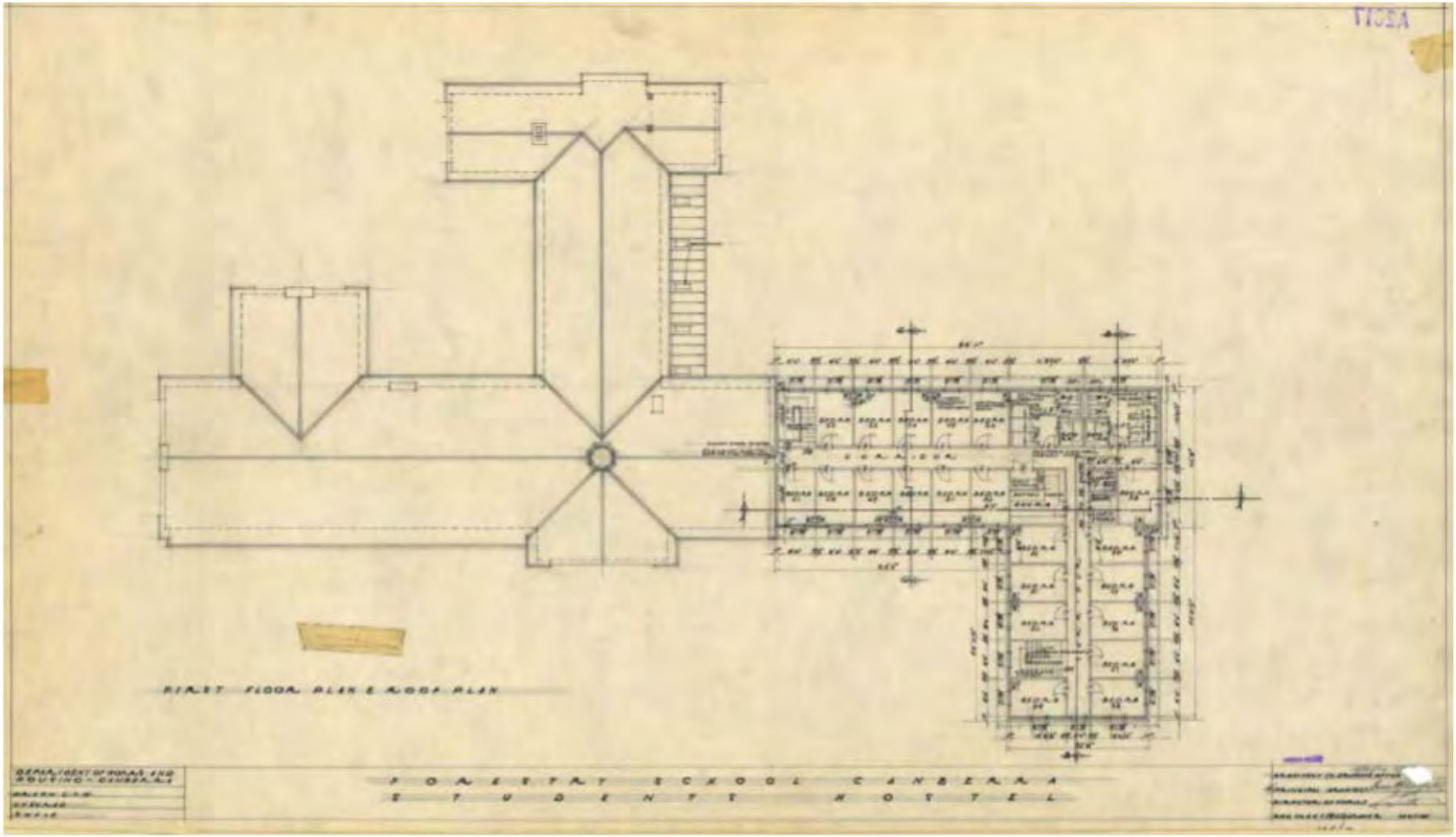


Figure B1.17 Final level 1 plan for the Forestry School Student Hostel c.1950 (NAA #7689886)

Forestry House is a rendered brick building with a long axis fronting the oval. The design reflects the post-War American Colonial style; a feature being the bronze and timber turret roof, and exposed ceiling timbers in the lounge room (originally planned to be the dining room) (*Figure B1.18* and *Photograph B1.30*).

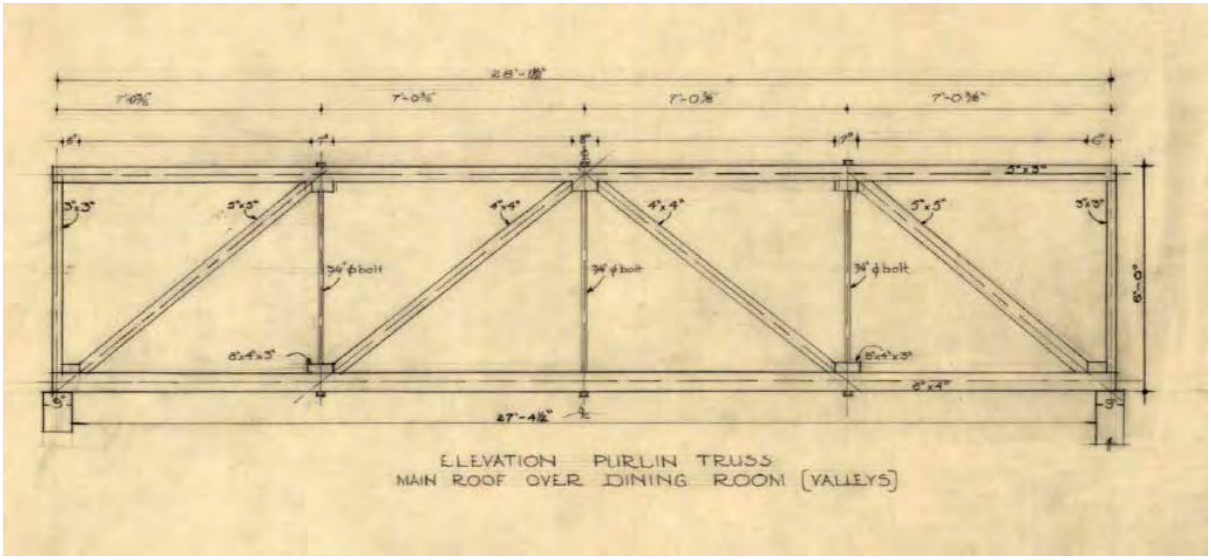


Figure B1.18 Detail of exposed purlin truss system (originally planned to be the dining hall ceiling, then the lounge in final plans, and later conference room) 1950 (NAA #7689987)

Photograph B1.30 The Lounge room of the newly completed Hostel (Forestry House) c.1952 (CSIRO Black Mountain Library)

The Forestry and Timber Bureau was impressed with new living quarters as the building was equipped for purposes other than the accommodation of students. In 1952, shortly after its completion, the building was used for the initial week of the FAO Eucalyptus Study Tour and documented to have been '[...] very suitable for the purpose' (Commonwealth Forestry and Timber Bureau 1952).

The Bureau again documented the building's versatility in 1953, as student numbers declined and it began using a section of the building as offices and the Lounge space as a conference room (*Photograph B1.31*): The Bureau stating that the building:

> *'[...] has improved study facilities and is useful in accommodating visiting foresters and for holding meetings. A portion of the building has had to be used as offices for the staff of the Central Experimentation station*' (Commonwealth Forestry and Timber Bureau 1953).

Photograph B1.31 Mr. Fairhall from the Forestry and Timber Bureau opening the Forestry Conference at Forestry House (NAA #117114534)

The building was first referred to as 'Forestry House' in 1956. The building has since undergone several stages of alterations to convert it into offices, laboratories and conference space (*Photograph B1.32* and *Photograph B1.33)*

Photograph B1.32 Forestry House c.1956 (NAA A3087 Photographic Prints, items 67-73)

Photograph B1.33 Delegates of the 1958 Forestry Conference outside Forestry House (NAA #64627)

Further post-war site development

Immediately after WWII it was realised that the number of students attending the School would rapidly increase, and the industrial museum was temporarily abandoned, the collection of exhibits within the Museum were temporarily stored in a wooden building which was later destroyed by a fire, including most of the exhibits (Mr. Heath of the National Capital Development Commission, CSIRO).

In January 1946, plans were drawn for the conversion of the Industrial Museum into Administration offices for use by the Forestry and Timber Bureau, the body which administered the school. The Commonwealth Forestry Bureau had only recently been amalgamated with the Commonwealth Timber Control to form the Forestry and Timber Bureau (Ramsey 2000). The plans were released by the Department of Works and Housing, Canberra. The conversion involved the installation of three partitions to create six new office spaces, the removal of the west elevation doors and installation of windows and conversion of the western half of the woods room into rest rooms (*Figure B1.19*).

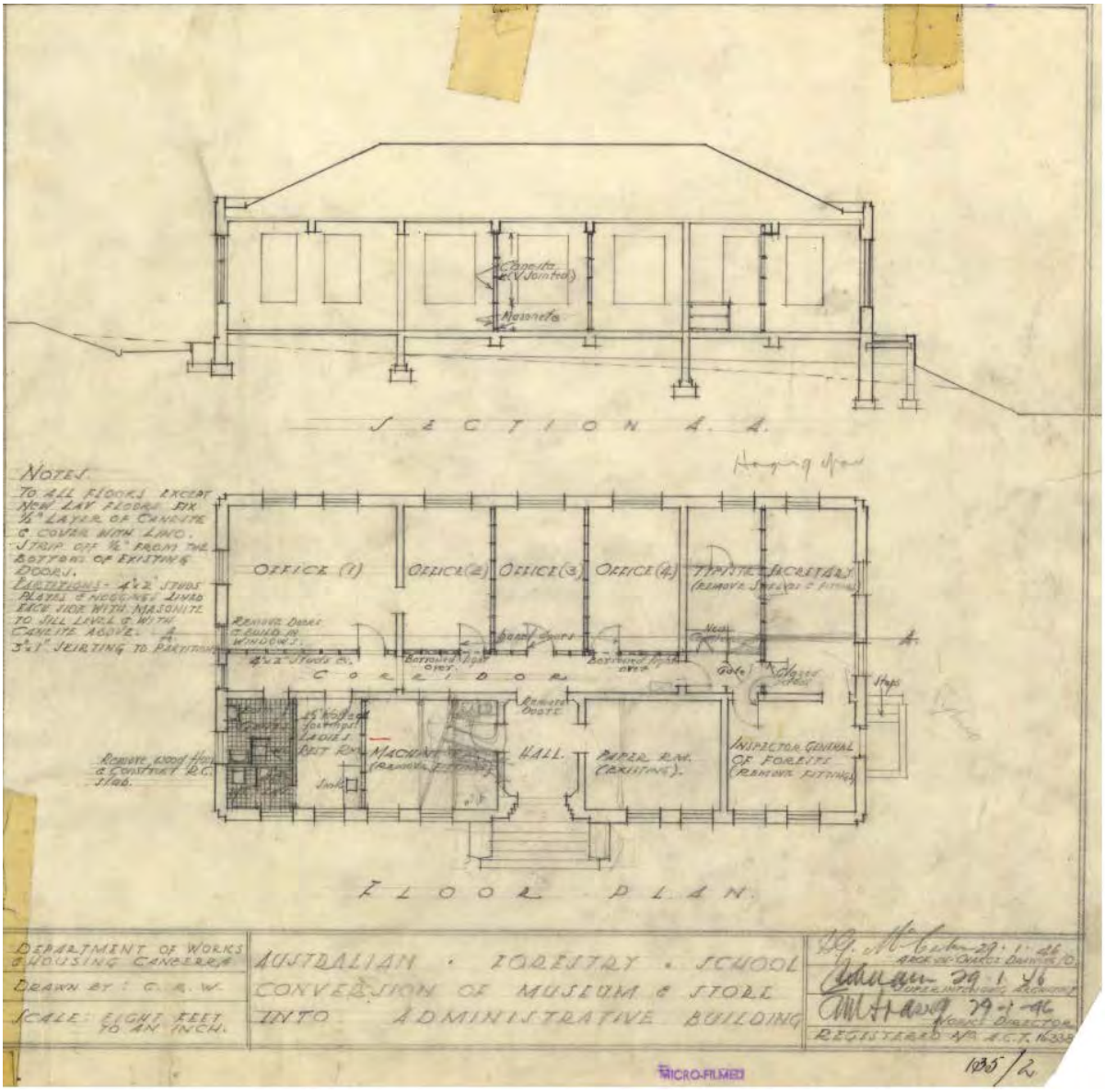


Figure B1.19 Conversion of Museum and Store in Admin Building plan 1946 (NAA #7689906)

The large oval located at the centre of the precinct was completed in 1953 (*Photograph B1.34)*. The oval is now an ACT Government asset and doesn't form part of the forestry precinct heritage listing. The Forestry and Timber Bureau first document the oval in the Annual Report of 1950:

> *'… A sports oval suitable for Australian Rules football and other games occupying less space, is being constructed near the residential college, and, it is hoped that this also will be available for use in 1952'* (Forestry and Timber Bureau 1950).

The Caretaker's Cottage was completed in 1952 (*Photograph B1.34*). The cottage's design was similar to that of Forestry House. The cottage featured a small garden with mixed species including agaves.

Photograph B1.34 Aerial view of the AFS c.1953 with newly completed cottage outlined by ERM (NAA #7827663)

Student numbers declined in the 1950s, only to rise again in 1961. This new influx of students to the AFS necessitated yet another accommodation building as Forestry House was simply unable to house the required number of students. The Former Nurse's Quarters building had been built during the war on the Canberra Hospital site at Acton where it was used for over fifteen years as a residence for nurses (Forestry and Timber Bureau 1950). When a new multi-storey accommodation block was built at the hospital site there was no longer a need for the building and it was relocated to the Forestry Precinct in 1963. It was documented that this 'temporary' building would: '[…] solve the problem for several years until permanent residential provision is made' (Commonwealth of Australia, Department of National Development 1964).

Further permanent residential provision was not made, however, as educational responsibilities moved to the ANU in 1968. The former Nurse's Quarters provided student accommodation for only five years before being converted into offices. This building was demolished in 2011.

Glass House Construction

In 1947, plans for a new Plant House were drawn up which was likely construction soon after. The design had a gabled glass roof, asbestos cement lining on an existing brick and cement foundations with air holes for airflow. This Plant House replaced the previously demolished Glass House and re-used the same materials (*Figure B1.20*). Yarralumla Nursery also has a number similar plant houses, with gabled glass roof and brick walls supported by a concrete foundation (*Photograph B1.35).*

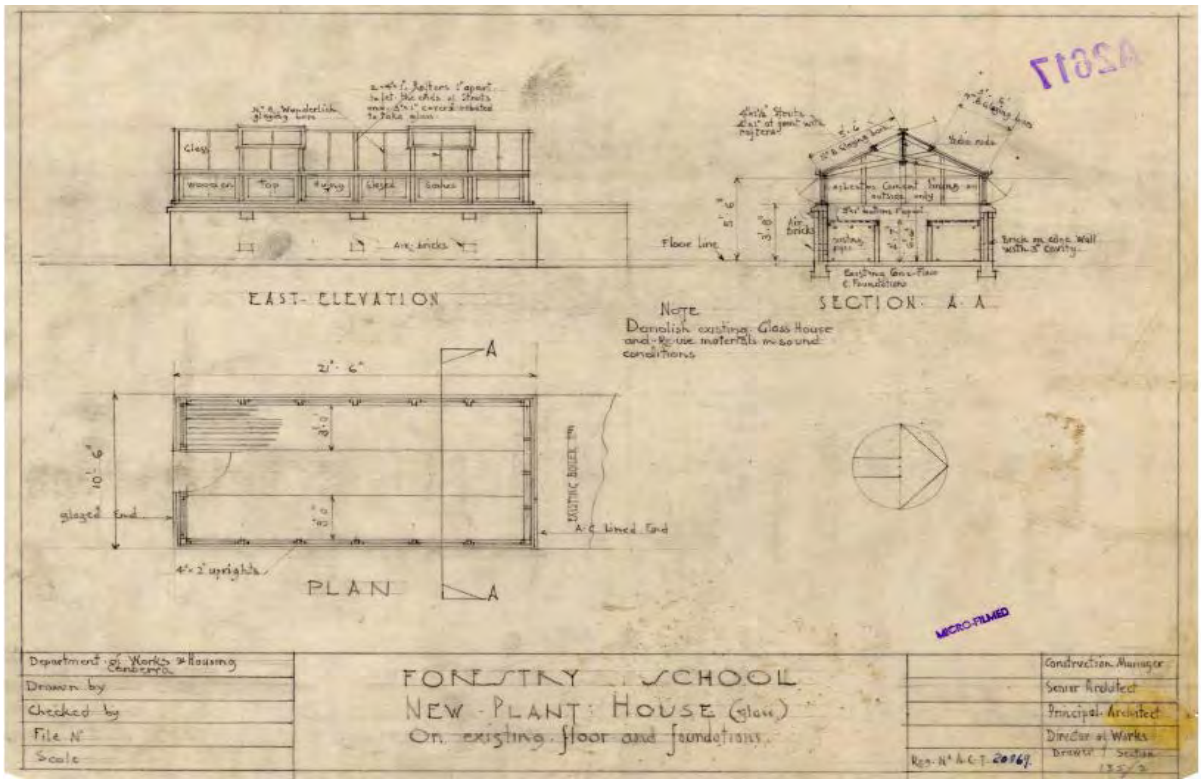
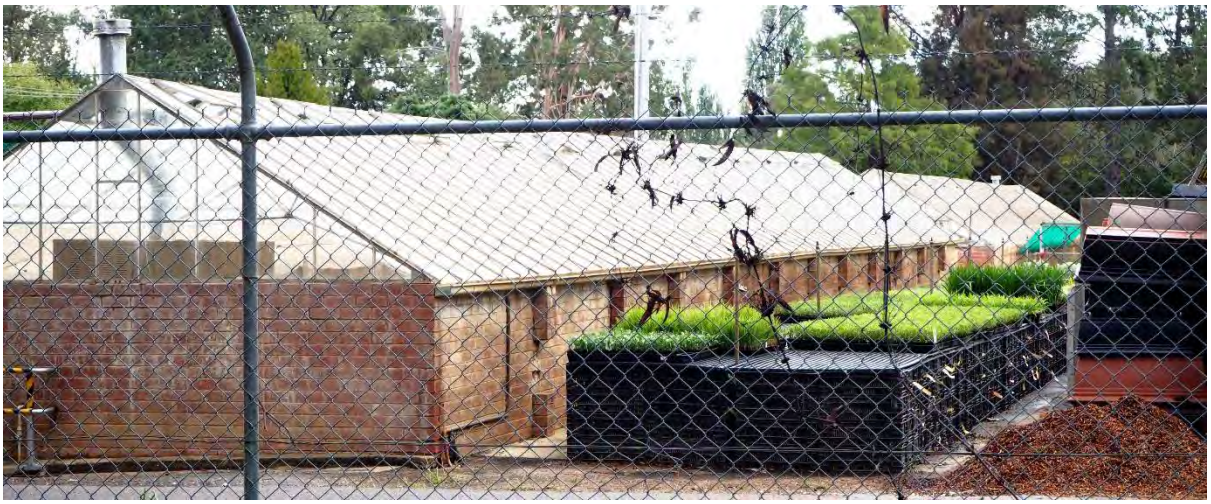
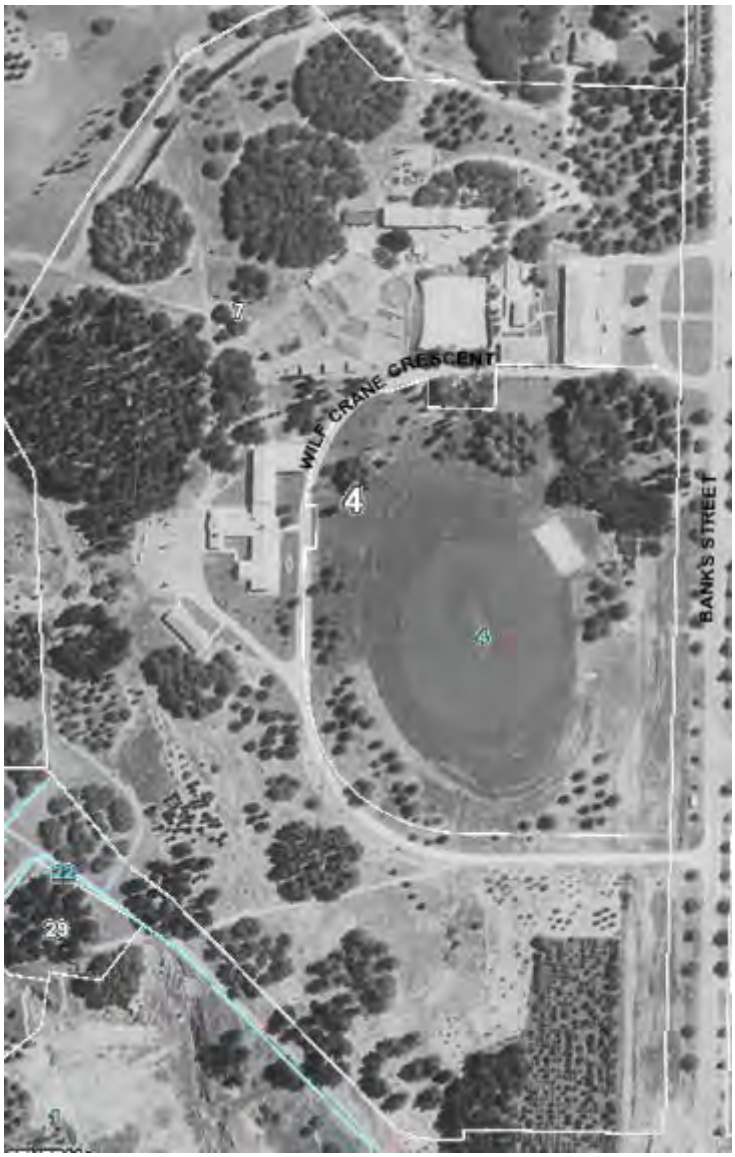


Figure B1.20 Forestry School New Plant House c.1947 on existing floor and foundations (NAA # 7499492)



Photograph B1.35 Plant house located at the Yarralumla Nursery of similar design to the plant house constructed in 1937 at CSIRO Yarralumla (ERM 2020)

Though it was thought a series of new Glass Houses were constructed in 1949, the Glasshouses which remain today (4a, 4b, 4c) did not appear on aerial mapping until 1958, and were therefore likely constructed between 1955 and 1958 (ACTMapi Aerial Imagery 1955) (*Photograph B1.36*). The Glasshouse Complex was another addition to the Forestry Precinct in the post-war years. The complex consists of a number of glasshouses and small structures which were built over the course of a decade including the Glass House Workshop (4), Soil Preparation Shed (4e) and Shadehouse (4h). The construction of Forestry House, the Caretaker's Cottage, the Glasshouse Complex and the oval were all major on-site developments post WWII. The Forestry Precinct dramatically increased in size as more land was acquired to the south-west of the main forestry school building to accommodate these new buildings.



Photograph B1.36 1955 Aerial Imagery showing Glasshouse not yet constructed

Between 1947 and 1957, in addition to the changes to the built features within the precinct, a number of trees were planted by the Research Division of the Forestry and Timber Bureau. Two areas were designated for planting, Area A which was south of Forestry House (west of the later constructed Forestry Research Institute building (3) 1967) and Area B, which was between Forestry House and the Forestry and Timber Bureau Offices and former Museum, north-east of Forestry House. The known species within Area A and Area B have been provided below in *Table B1.1.*

Table B1.1 List of Species known to have been planted at CSIRO Yarralumla between 1947 and 1957

Location	Common name/species	Year planted
Area A - South of Forestry House	Douglas pine (*Pinus douglasiana)*	1953
	Douglas pine (*Pinus douglasiana)*	1954
	Douglas pine (*Pinus douglasiana)*	1953
	Mexican pinyon (*Pinus cembroides)*	1953
	Montezuma bald cypress (*Taxodium mucronatum)*	1953
	Coulter pine (*Pinus coulteri*) and Torrey pine *(Pinus torreyana)*	1956
	Douglas Pine (*Pinus douglasiana)*	1955
	Aleppo Pine (*Pinus halepensis*) and Calabrian pine (*Pinus brutia*)	1954
	Shortleaf pine (*Pinus ehinata*)	1953
	Virginia pine (*Pinus virginiana*)	1953
	China fir (*Cunninghamia lanceolata*)	1953
NE of Forestry House	Dawn redwood (*Metasequoia glyptostroboides*)	N/A
	Hybrid poplar (*Populus androscoggin*)	1947
	Hybrid aspen (*Pinus tremulax tremuloides*)	1957

On 5 May 1960, the ashes of A.B. (Brian) Patton, a forester who died following a tree fall accident at Jervis Bay, were scattered under the Pine Oaks on the southern side of the AFS (CHL Listing #105426).

B1.1.9 The Administration Period: 1965 – 1975

By 1964, the AFS was a respected tertiary institution which had produced more than 500 graduates. During the post-WWII years, the School's staff, the forest services and graduates

began the push for wider post-graduate opportunities in forestry, which were not then offered in Australia at the AFS.

The students of the School lacked association with students of other disciplines and were not offered the extra-curricular activities that are typical on a university campus. The staff were also finding the combined roles of public servant, professional practitioner and university academic difficult. These problems pointed to the desirability of the Australian Forestry School forming a much closer relationship with a university or being incorporated within a university (Carron 1977).

After a three-year period of negotiations, ANU was the university of choice with it documented that:

> '*There has been a general desire in recent years for the school to become associated with the Australian National University and for this university to give the degree in Forestry. During 1963 the Australian National University advised the Commonwealth Government that the university would be prepared to take over the function of the Forestry School in a Department of Forestry of the school of General Studies in the university'* (Commonwealth Forestry and Timber Bureau 1963).

The beginning of the 1965 academic year marked the opening of the new Department of Forestry at the ANU, assuming the functions of the Australian Forestry School from the Forestry and Timber Bureau. Professor J.D. Overton was appointed head of the department, with an increased lecturing and support staff and a revised curriculum (Carron 1977). Planning commenced for a new building on the ANU university campus with funds specially provided by the Commonwealth Government; the Department of Forestry continued to occupy the buildings of the Australian Forestry School until the building was completed. Students continued to enjoy the oval and tennis courts holding local and interstate friendly competitions (*Photograph B1.37).*

The new building was opened in May 1968, by the Duke of Edinburgh, after which time the Forestry Precinct at Yarralumla continued to function as an administration and research centre for national forestry, under the auspices of the Forestry and Timber Bureau.

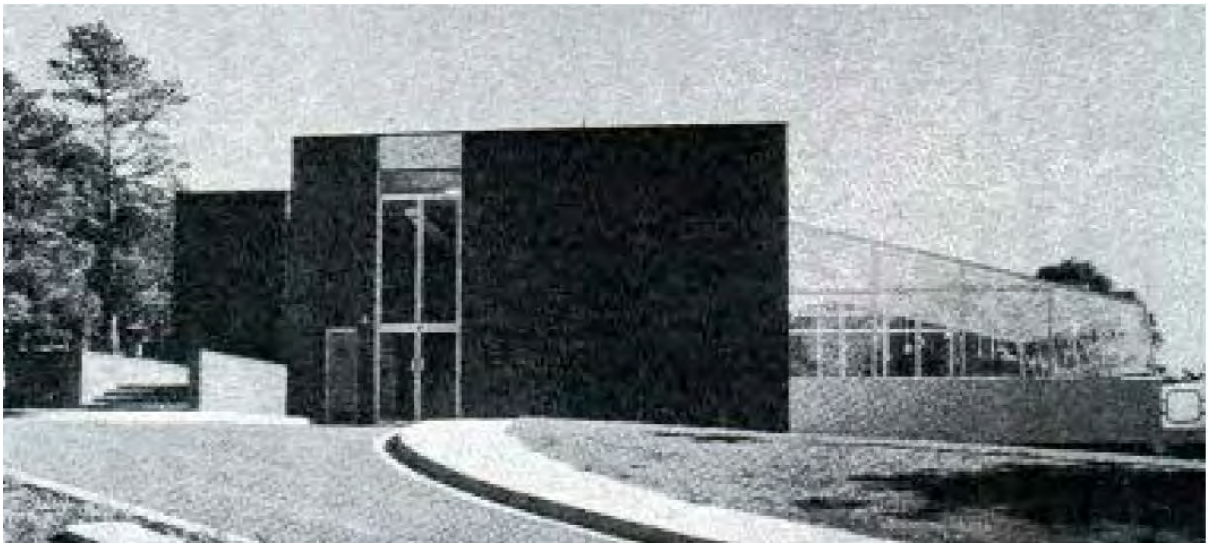
The Bureau had occupied Westridge House since 1963, and in 1968 staff moved into the main school building. Westridge House was then occupied by the Training Group of the Department of National Development.

During 1963, it is documented that research was given significant impetus with the formation of the Forest Research Institute within the Bureau, but the precinct lacked the required modern research facilities; a new building was needed. Construction of the Forest Research Institute Headquarters began in 1965 and the building was opened in May 1967 (*Photograph B1.38*). The building is a large split-level brick building of reinforced concrete columns and slabs, with brick curtain walls. The functional design has enabled substantial internal modification when needed. Between 1975 and 1986, the CSIRO added a library and a 1996 refurbishment included an addition to the eastern end (Ramsey 2000).

Photograph B1.37 AFS Students posing with tennis rackets outside Forestry House 1967 (NAA # 11718145)

Photograph B1.38 the new Forest Research Institute Headquarters, May 1967 (The Forestry and Timber Bureau Annual Report 1967, cited in ERM 2018)

A number of other research facilities were constructed during this period. In 1969, the Controlled Environment Laboratory was built beside the existing glasshouse complex and is used for tissue culture and growing plants (*Photograph B1.39)*. Also during the late 1960s, J.M. (Jack) Fielding was working on the improvement of *Pinus radiata* growth at Yarralumla. The growth of the tree had been an issue for foresters in Australia and New Zealand since the species was identified as the best for softwood production over south east Australian and much of New Zealand (ACT Government 'Canberra Tracks' signage). The Forestry and Timber Bureau and the Forest Research Institute at Yarralumla were instrumental in achieving improvement to growing *Pinus radiata* through growing the trees from cuttings. Dr. Jacobs had started the work at Yarralumla and Jack Fielding continued that work into the late 1960s, writing many papers on the topic, including 'Factors affecting the rooting and growth of Pinus radiata cuttings in the open nursery' (Timber Bureau Bulletin No.45 1969).

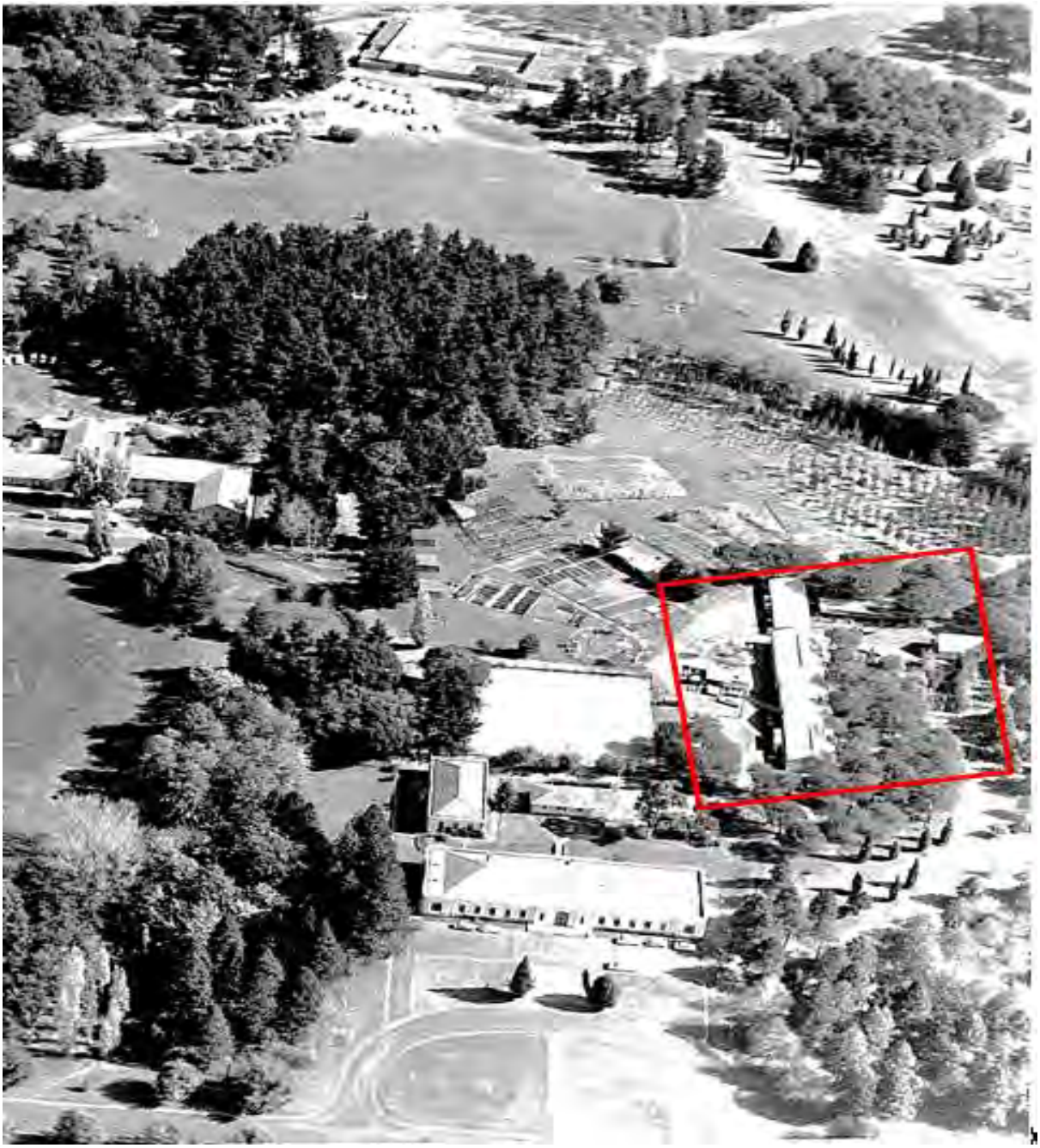


Photograph B1.39 The Controlled Environment Laboratory 1971 (ERM 2018 via The Forestry and Timber Bureau 1971-72)

In 1971, moves were made by CSIRO personnel for the construction of an 'early Australian sawmill' to house the early sawbench equipment and early steam engine. The structure was to be 'an open sided roofed-over structure to accommodate and shelter antique saw milling equipment' (Commonwealth of Australia Minute Paper, 1970). This work was completed 10 August 1971 at a total cost of $3,500 (Commonwealth Department of Works – Works Requisition). The replica sawmill was designed based on information gathered from a property owned by 'Mr. Johnson' who owned an early sawmill replica, used in 'the Ned Kelly film'. Today the antique saw milling equipment (specifically the two wood hauling vehicles) has been housed in an open, fenced area south of Forestry House, it is unknown what happened to this replica sawmill structure.

In 1973, two timber-clad ex-army buildings were moved to the site. The Photography Hut was located beside Westridge House and the Recreation Hut behind Forestry House.

The Industrial Facilities, a complex of carpenter's and engineer's workshops, including several storage sheds and offices were constructed to the north-west of the Forestry School, together with an access driveway created by extending the drive of Westridge House (Ramsey 2000). These buildings replaced a weatherboard carpenter's shop (1927), two classrooms (1948) and temporary garages, (*Photograph B1.40)*. It is not documented when the complex was built, but aerial photographs show that it was completed sometime in the 1970s (*Photograph B1.41*).



Photograph B1.40 CSIRO Yarralumla c.1960s, prior to the removal of the Carpenter's Shop, two classrooms and temporary garages (as indicated by ERM) (CSIRO Black Mountain Library)

Photograph B1.41 Aerial view of CSIRO Yarralumla c.1970s, The Industrial Facilities have been completed north-west of the AFS (as indicated by ERM) (CSIRO Black Mountain Library)

B1.1.10 The CSIRO Period: 1975 – 2018

In March 1975, the Minister for Agriculture, Senator K.S. Wriedt, and the Ministor for Science, Mr W.L. Morrison, released a joint statement announcing that agreement had been reached on the establishment of a CSIRO Division of Forest Research with headquarters in Canberra. The new Division, which would come into being on 1 July 1975, would include the research activities previously carried out by the Forest Research Institute and the harvesting and mensuration research groups of the Forestry and Timber Bureau. The change, which affected about 200 officers of the Forestry and Timber Bureau located in Canberra and at field stations in the States and Northern Territory, was aimed at achieving better coordination of Australian Government scientific research into forestry. The Ministers said that the CSIROs role would be to concentrate on long-term strategic research to complement the research undertaken by State forestry authorities. The move had the support of the Australian Forestry Council and industry. Area of research for the new Division included ecology, management and harvesting of forests, forest pests and tree physiology, health and nutrition. The Division was concerned with the whole forest ecosystem in relation to timber production and other uses of forests (CSIRO 27th Annual Report 1974/75)

The CSIRO acquired the entire Forestry Precinct (excluding the oval) in 1975. The unit became the Division of Forestry and Forest Products in 1988, the Division of Forestry in 1991 and in 1996, the Division of Forestry and Forest Products (Ramsey 2000). In the early to mid-2000s the CSIRO's forestry researchers were relocated to the CSIRO Black Mountain site.

The CSIRO Information Management & Technology Section more recently (2000s) occupied buildings 001; 001A and 001B and CSIRO's Ocean and Atmosphere groups are temporarily housed in the Forestry House whilst a new building is being constructed at the Black Mountain site.

During the 1970s, plans were prepared for the refurbishment and internal alteration of the original Forestry School building, in an effort to make the building more suitable for office use. Most notably, the former northern Lecture Room was divided, forming three separate rooms, and the original museum was divided into two rooms. Presently, CSIRO's Ocean and Atmosphere group occupy the southern end of the building whilst the northern end remains vacant. The library within the Forest Research Institute was constructed in 1975-76.

In 1993, the main drive of CSIRO Yarralumla was named Wilf Crane Crescent. The name was given in honour of Dr. Wilf Crane, who had a heart attack at the controls of his homemade plan on 7 march 1991. Wilf originated as a forestry student at the AFS and later became a senior research scientist for the CSIROs Forestry Division. Dr Crane was made a fellow of the Institute of Foresters of Australia in1987 and was known for his work in siviculture and was known as the driving force behind the 300 hectare demonstration agriforest near Tallagana, New South Wales (Obituary, CSIRO Black Mountain). Dr Crane was remembered in the Canberra Times in 1993 and noted as saying 'the need for trees cannot wait for the research' (Grose 8 march 1993) (*Photograph B1.42*).

Photograph B1.42 Dr Wilf Crane and the then Governor Ninlan Stevens (CSIRO Black Mountain Library)

In 1996, there was an addition to the eastern end of the building (Ramsey 2000). No major structures have been added to the precinct during the CSIRO occupation of the site, although it is worth noting two Storage Sheds were erected in 1979 and the Garage at the Caretaker's Cottage was established in 1998.In the early 2000s' the AFS building was occupied by NASA and the former Forestry and Timber Bureau Offices/former Museum were occupied by AMSAT. The Museum replica Sawmill was also survived this period. A Conservation Management Plan was prepared for the CSIRO Yarralumla precinct, in preparation for the sale and leasing of the precinct in 2002.

The CSIRO Yarralumla site was entered on the Commonwealth Heritage List in June 2004. The CSIRO Heritage Strategy was completed in 2006 in accordance with the EPBC Act provisions. The 2001 Conservation Management Plan and the 2008 Heritage Management Plan were prepared for the CSIRO Yarralumla campus, in accordance with the Commonwealth Heritage List requirements. The CSIRO Forest Biosciences Division (the successor to the CSIRO Forest Research) was in the process of being disbanded in 2008 with staff being relocated to both Black Mountain and Gungahlin sites.

In 2018 ERM finalised an updated HMP for CSIRO Yarralumla that covers the redevelopment since the 2008 HMP such as the removal of buildings.

B1.1.11 Site Management Today

Today the CSIRO Yarralumla site has been largely vacant since the exodus of the CSIRO personnel. Building 1 group, Building 3, and Building 4 group, along with Forestry House and the former Bureau Offices/Museum are all vacant. The AFS building is privately leased through Oakstand.

B1.2 Key Associations

The following section provides a brief summary of two important individuals associated with the AFS. This section will assist in determining associational significance under criterion h) of the CHL criteria. Both of these summaries have been largely reproduced from the Australian Dictionary of Biography. The Forestry Bureau released a detailed obituary for Dr Jacobs in Australian Forestry Journal (Vol 42. No 3: 138-141 1979) which has also been utilised for this summary.

B1.2.1 Charles Edward Lane-Poole

Charles Edward Lane-Poole was born on 16 August 1885 at Eastbourne, Sussex, England, youngest son of Stanley Edward Lane-Poole, Egyptologist and professor of Arabic at Trinity College, Dublin, and his wife Charlotte Bell, née Wilson. He was educated at St Columba's College, Dublin, and at the Ecole Forestière, Nancy, France. After a year at the South African Forest School in 1906-07 he served until 1910 as district forest officer in the Transvaal. In 1911-16 he was conservator of forests, Sierra Leone, and a member of the Legislative Council. On the recommendation of Sir David Hutchins, who had reported on forestry in Australia, Lane-Poole was appointed conservator of forests for Western Australia in 1916 and vigorously set about providing a sound forest policy and a school to train foremen and rangers. The Forests Act (1919) which he formulated was regarded as a model in professional circles, but lack of support and opposition to its implementation prompted his resignation in 1921.

In 1922 he was commissioned by the Commonwealth government to report on the forest resources of Papua and New Guinea and recommend a programme for their development. In 1925-27 he was forest adviser to the Commonwealth government. At his prompting, the States and the Commonwealth finally agreed to establish an Australian Forestry School which was set up temporarily in Adelaide in 1926.

In 1927 Lane-Poole became inspector-general of forests and acting principal of the Australian Forestry School (1927-44) in Canberra. He was also the administrator of the Forestry Bureau which he had proposed to co-ordinate education, research and policy (not formally established until 1930). The research section which he first promoted in Western Australia to include research into making paper from eucalypts was developed in Melbourne as the division of forest products, Council for Scientific and Industrial Research. The forestry research section of the bureau eventually developed as the division of forest research, C.S.I.R., in Canberra.

Lane-Poole represented the Commonwealth government at the Empire Forestry conferences of 1920, 1923 and 1928. At the first conference (London) he proposed the resolution which led to the formation of the Empire Forestry Association. He was one of the great pioneers of forestry in Australia, working tirelessly to promote a national policy. Of strong personal and professional principles, he exerted considerable influence through his teaching and administration and as the author of over fifty papers covering both scientific and general aspects of forestry. He was a foundation member of the Royal Society of Australia (Royal Society of Canberra).

After he passed on his role as Principal of the Australian Forestry School to successor Dr. Jacobs in 1944 he also retired as inspector-general in 1945. Though he carried out consulting work in Sydney. Lane-Poole died on 22 November 1970 in Sydney.

B1.2.2 Dr Maxwell Ralph Jacobs

Dr Maxwell Ralph Jacobs was born in Adelaide South Australia in 1905 and received his early education in that State, graduating as a Bachelor of Science in Forestry from the University of Adelaide in 1925. On graduation he received the Lowry Agricultural Scholarship to study forest soils and was one of the first post-graduate students at the Waite Agricultural Research Institute in the University of Adelaide. Late in 1926 he was appointed Forest Assessor in the Australian Federal Capital Territory under Mr. G. J. Rodger, later Conservator of Forests in South Australia and Director-General, Australian Forestry and Timber Bureau, with whom he collaborated for many years. In 1928 Dr Jacobs became Chief Forester of the Federal Territory and in 1929 received a Commonwealth of Australia Scholarship in Forest Management which enabled him to undertake post-graduate studies at the Imperial Forestry Institute, Oxford, and the Forestry School at Tharandt in Saxony. As a result of this work he received the Diploma of Forestry from Oxford and a Doctorate in Forest Science from Tharandt.

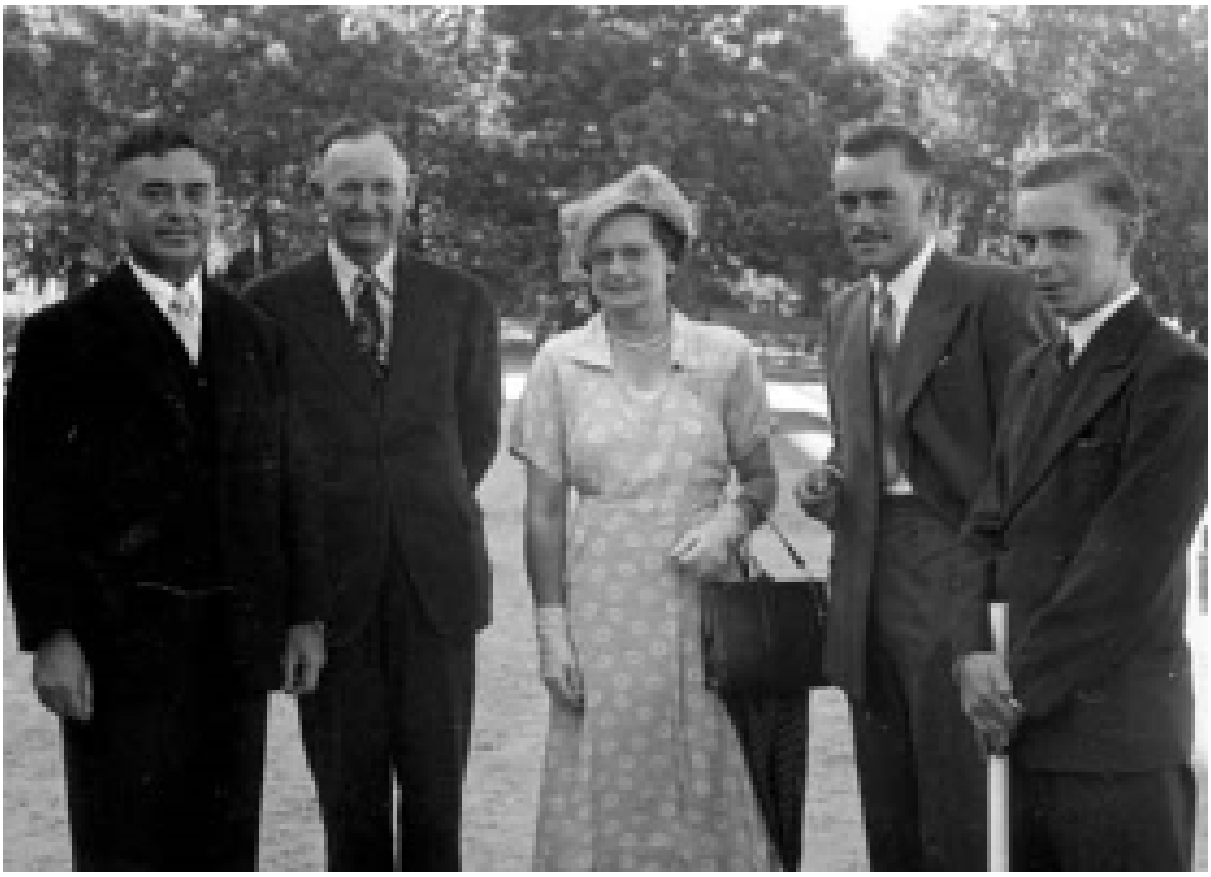
Returning to Australia at the end of his work in Europe, Dr Jacobs carried out a reconnaissance of the timber resources of the Northern Territory of Australia in 1933. This resulted in the discovery of some new species of eucalypts and the extension of the known range of others. A bulletin published by the Forestry Bureau (No. 17) “A Survey of the Genus Eucalyptus in the Northern Territory” described that work. From 1934 to 1939 Dr Jacobs worked under Mr. C. E. Lane Poole, Inspector General of Forests, as a Research Officer for the Forestry Bureau and a lecturer at the Australian Forestry School. One of his research projects was the growth stresses found in trees. A pioneer in this field, he produced several papers published by the Forestry Bureau on the subject. Another field of his research was on the effect of wind sway on trees. These studies were undertaken to see if the movement of trees in wind might explain certain anomalies in diameter growth found in rapidly growing pine plantations thinned to different spacings.

Dr Jacobs was one of the early workers to use cuttings as a means of multiplying selected trees of *Pinus radiata* on a field scale. An early paper on this, “Experiments with Cuttings of *Pinus radiata*” (Bureau Bulletin No. 25, 1939), described tests which have yielded field trials with trees which are now well over 30 metres high. Dr Jacobs also studied the anatomy, bud

systems and behaviour of eucalypt trees in the forest and this work led to several papers in scientific journals. In 1955 much of this work was consolidated in a book

The Growth Habits of the Eucalypts published by the Commonwealth Government Printer, which became a standard text not only in Australia but for countries growing eucalypts throughout the world. In 1939 Dr Jacobs received a Commonwealth Fund of New York Fellowship and studied at Yale University under Dean Samuel Record and Professor Edmund Sinnott. His subject was the growth stresses of growing trees and he received the degree of Ph.D in 1941.

From December 1941 to December 1944 Dr Jacobs served with the Royal Australian Engineers. In December 1944 he was appointed Principal and Lecturer in Silviculture of the Australian Forestry School, holding this post until 1959 except for a short F.A.O. Mission in Argentina in 1958 (*Photograph B1.43*). In December 1959 he became Acting Director-General and then Director-General of the Forestry and Timber Bureau. In this capacity he assisted the Federal Government in its collaboration with the States and with timber industries.



Photograph B1.43 Dr. Jacobs with his wife (centre), an official (far left) and two AFS students (far right) 1955 (NAA # 5281162)

During his service as Director-General, Dr Jacobs collaborated with State Heads of Forest Services and Commonwealth and State Ministers in the formation of the Australian Forestry 140 Council. He was Chairman of the Standing Committee of the Council from 1964 and Chairman of the Timber Industries Committee of the Standards Association of Australia from 1966 until 1970 (*Photograph B1.44*). Dr Jacobs was awarded the Jolly Medal of the Institute of Foresters of Australia in 1962 and was made an Honorary Member of the New Zealand Institute of Foresters and the Society of American Foresters. He travelled widely and represented Australia at several international conferences, including the Fifth and Sixth World

Forestry Congresses, Seattle and Madrid, and the Ninth Commonwealth Forestry Conference, New Delhi (*Photograph B1.45*). He was awarded the Imperial Service Order in 1966.

Photograph B1.44 Dr Jacobs, c.1960s (CSIRO Division of Forest Research)

Photograph B1.45 Dr Jacobs, leader of the Australian delegation, plants a commemorative tree in Seattle, USA, Fifth World Forestry Congress, 1960 (CSIRO Division of Forest Research)

Early in 1968 Dr Jacobs was invited to deliver the H. R. MacMillan Lecture at the University of British Columbia in Canada. His subject was “Federal-Provincial Forestry Problems with special reference to the Commonwealth of Australia”. Also in 1968 he was invited by the then Emperor of Ethiopia to visit that country and report on the situation with respect to eucalypt planting, which resulted in aid from Australia to Ethiopia, for example the supply of eucalypt seeds.

Dr Jacobs was Principal of the Australian Forestry School during the post-war years when large numbers of students were being trained in forestry, not only from Australia but from New Zealand, Asia and Africa. Dr Jacobs was easily able to establish rapport with his students and followed their careers with great interest. He was much admired by them and was warmly welcomed whenever he visited forest districts in which ex-students were serving. Australian forestry has suffered a great loss in the passing of one who led the way in putting forestry and forestry education on a scientific basis.

APPENDIX C PMST RESULTS

Australian Government
Department of the Environment and Energy

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

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This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

Coordinates
Buffer: 10.0Km

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Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	4
Wetlands of International Importance:	4
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	41
Listed Migratory Species:	14

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	21
Commonwealth Heritage Places:	76
Listed Marine Species:	21
Whales and Other Cetaceans:	None
Critical Habitats:	1
Commonwealth Reserves Terrestrial:	1
Australian Marine Parks:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	26
Regional Forest Agreements:	None
Invasive Species:	35
Nationally Important Wetlands:	1
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

National Heritage Properties [Resource Information]

Name	State	Status
Historic		
Australian Academy of Science Building	ACT	Listed place
Australian War Memorial and the Memorial Parade	ACT	Listed place
High Court - National Gallery Precinct	ACT	Listed place
Old Parliament House and Curtilage	ACT	Listed place

Wetlands of International Importance (Ramsar) [Resource Information]

Name	Proximity
Banrock station wetland complex	800 - 900km upstream
Hattah-kulkyne lakes	500 - 600km upstream
Riverland	700 - 800km upstream
The coorong, and lakes alexandrina and albert wetland	800 - 900km upstream

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Name	Status	Type of Presence
Natural Temperate Grassland of the South Eastern Highlands	Critically Endangered	Community likely to occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area
Limosa lapponica baueri Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat may occur within area

Name	Status	Type of Presence
Limosa lapponica menzbieri		
Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Polytelis swainsonii		
Superb Parrot [738]	Vulnerable	Species or species habitat known to occur within area
Rostratula australis		
Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area
Fish		
Maccullochella peelii		
Murray Cod [66633]	Vulnerable	Species or species habitat known to occur within area
Macquaria australasica		
Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area
Frogs		
Litoria aurea		
Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat may occur within area
Litoria booroolongensis		
Booroolong Frog [1844]	Endangered	Species or species habitat may occur within area
Litoria castanea		
Yellow-spotted Tree Frog, Yellow-spotted Bell Frog [1848]	Critically Endangered	Species or species habitat may occur within area
Insects		
Synemon plana		
Golden Sun Moth [25234]	Critically Endangered	Species or species habitat known to occur within area
Mammals		
Chalinolobus dwyeri		
Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus maculatus maculatus (SE mainland population)		
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area
Petauroides volans		
Greater Glider [254]	Vulnerable	Species or species habitat may occur within area
Petrogale penicillata		
Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)		
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Pteropus poliocephalus		
Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area
Plants		
Ammobium craspedioides		
Yass Daisy [20758]	Vulnerable	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Amphibromus fluitans		
River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat may occur within area
Caladenia actensis		
Canberra Spider Orchid [76138]	Critically Endangered	Species or species habitat known to occur within area
Cupaniopsis tomentella		
Boonah Tuckeroo [3322]	Vulnerable	Species or species habitat known to occur within area
Dodonaea procumbens		
Trailing Hop-bush [12149]	Vulnerable	Species or species habitat may occur within area
Eucalyptus aggregata		
Black Gum [20890]	Vulnerable	Species or species habitat likely to occur within area
Lepidium ginninderrense		
Ginninderra Peppercress [78474]	Vulnerable	Species or species habitat known to occur within area
Lepidium hyssopifolium		
Basalt Pepper-cress, Peppercress, Rubble Pepper-cress, Pepperweed [16542]	Endangered	Species or species habitat may occur within area
Leucochrysum albicans var. tricolor		
Hoary Sunray, Grassland Paper-daisy [56204]	Endangered	Species or species habitat known to occur within area
Pomaderris cotoneaster		
Cotoneaster Pomaderris [2043]	Endangered	Species or species habitat may occur within area
Pomaderris pallida		
Pale Pomaderris [13684]	Vulnerable	Species or species habitat known to occur within area
Prasophyllum petilum		
Tarengo Leek Orchid [55144]	Endangered	Species or species habitat may occur within area
Rutidosis leptorrhynchoides		
Button Wrinklewort [7384]	Endangered	Species or species habitat known to occur within area
Swainsona recta		
Small Purple-pea, Mountain Swainson-pea, Small Purple Pea [7580]	Endangered	Species or species habitat known to occur within area
Thesium australe		
Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
Reptiles		
Aprasia parapulchella		
Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat known to occur within area
Delma impar		
Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat known to occur within area
Tympanocryptis pinguicolla		
Grassland Earless Dragon [66727]	Endangered	Species or species habitat known to occur within area

Listed Migratory Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Name
Defence - 10 WHYALLA ST - FYSHWICK
Defence - 139 CANBERRA AVE - FYSHWICK
Defence - ADC / JSSC - WESTON
Defence - ADFA MARINE FACILITY - YARRALUMLA
Defence - AIDAB Building
Defence - AUSTRALIAN DEFENCE FORCE ACADEMY
Defence - BELCONNEN RADIO STATION ; BELCONNEN COMMUNICATIONS STATION
Defence - CAMPBELL PARK
Defence - DEAKIN OFFICES
Defence - DEFENCE RECRUITING UNIT - GIO BUILDING
Defence - HEWLETT PACKARD BUILDING - FERNHILL PARK
Defence - MAWSON OFFICE ACCOMM
Defence - NAVAL COMBAT DATA SYSTEM CENTRE - FYSHWICK
Defence - NCC BUILDING - CANBERRA CITY
Defence - NORTHBOURNE HOUSE
Defence - NORTHCOTT DRIVE PLAYING FIELDS (Addison Rd)
Defence - PHYSICS FIELD TESTING STATION - CANBERRA
Defence - RAAF BASE FAIRBAIRN
Defence - ROYAL MILITARY COLLEGE - DUNTROON
Defence - RUSSELL HILL COMPLEX
Defence - WERRIWA DEPOT

Commonwealth Heritage Places [Resource Information]

Name	State	Status
Natural		
State Circle Cutting	ACT	Listed place
Synemon Plana Moth Habitat	ACT	Listed place
Indigenous		
Aboriginal Embassy Site	ACT	Within listed place
Historic		
Acton Conservation Area	ACT	Listed place
Acton Peninsula Building 1	ACT	Listed place
Acton Peninsula Building 15	ACT	Listed place
Acton Peninsula Building 2	ACT	Listed place
Acton Peninsula Limestone Outcrops	ACT	Listed place
Anzac Memorial Chapel of St Paul	ACT	Listed place
Apostolic Nunciature	ACT	Listed place
Apple Shed Asset C58	ACT	Listed place
Australian American Memorial and Sir Thomas Blamey Square	ACT	Listed place
Australian Forestry School (former)	ACT	Listed place
Australian National Botanic Gardens (part)	ACT	Listed place
Australian War Memorial	ACT	Listed place
Blundells Farmhouse, Slab Outbuilding and Surrounds	ACT	Listed place
CSIRO Main Entomology Building	ACT	Listed place
Cameron Offices (Wings 3, 4 and 5, and Bridge)	ACT	Listed place
Canberra School of Art	ACT	Listed place
Canberra School of Music	ACT	Listed place
Captains Quarters Assets B1 to B4	ACT	Listed place
Carillon	ACT	Listed place
Casey House and Garden	ACT	Listed place
Changi Chapel	ACT	Listed place
Commandants House Asset B9	ACT	Listed place
Commencement Column Monument	ACT	Listed place
Communications Centre	ACT	Listed place
Drill Hall Gallery	ACT	Listed place
Duntroon House and Garden	ACT	Listed place
East Block Government Offices	ACT	Listed place
Edmund Barton Offices	ACT	Listed place
General Bridges Grave	ACT	Listed place

Name	State	Status
Gungahlin Complex	ACT	Listed place
Gungahlin Homestead and Landscape	ACT	Listed place
High Court - National Gallery Precinct	ACT	Listed place
High Court of Australia	ACT	Listed place
Institute of Anatomy (former)	ACT	Listed place
John Gorton Building	ACT	Listed place
King George V Memorial	ACT	Listed place
Lennox House Complex	ACT	Listed place
Mount Stromlo Observatory Precinct	ACT	Listed place
National Gallery of Australia	ACT	Listed place
National Library of Australia and Surrounds	ACT	Listed place
National Rose Gardens	ACT	Listed place
Old Parliament House Gardens	ACT	Listed place
Old Parliament House and Curtilage	ACT	Listed place
Parade Ground and Associated Buildings Group	ACT	Listed place
Parliament House Vista	ACT	Listed place
Parliament House Vista Extension - Portal Buildings	ACT	Listed place
Patent Office (former)	ACT	Listed place
Phytotron	ACT	Listed place
R G Menzies Building ANU	ACT	Listed place
RMC Duntroon Conservation Area	ACT	Listed place
Reserve Bank of Australia	ACT	Listed place
Residence Asset B5	ACT	Listed place
Residence Asset B7	ACT	Listed place
Residence Asset C12	ACT	Listed place
Residence Asset C13	ACT	Listed place
Residence Asset C14	ACT	Listed place
Residence Asset C15	ACT	Listed place
Residence Asset C7	ACT	Listed place
Residence Asset C8	ACT	Listed place
Royal Australian Naval Transmitting Station	ACT	Listed place
Russell Precinct Heritage Area	ACT	Listed place
Sculpture Garden National Gallery of Australia	ACT	Listed place
The CSIRO Forestry Precinct	ACT	Listed place
The Lodge	ACT	Listed place
The Royal Australian Mint	ACT	Listed place
The Surveyors Hut	ACT	Listed place
Toad Hall ANU	ACT	Listed place
University House and Garden	ACT	Listed place
West Block and the Dugout	ACT	Listed place
Westridge House & Grounds	ACT	Listed place
Yarralumla and Surrounds	ACT	Listed place
York Park North Tree Plantation	ACT	Listed place
Russell Cafeteria	ACT	Within listed place

Listed Marine Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur

Name	Threatened	Type of Presence within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat known to occur within area

Critical Habitats	[Resource Information]
Name	Type of Presence
Lepidium ginninderrense (Ginninderra Peppercress) - Northwest corner Belconnen Naval Transmission Station, ACT	Listed Critical Habitat

Commonwealth ReservesTerrestrial		[Resource Information]
Name	State	Type
Australian National	ACT	Botanic Gardens

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Aranda Bushland	ACT
Black Mountain	ACT
Bruce Ridge	ACT
Callum Brae	ACT
Cooleman Ridge	ACT
Crace	ACT
Farrer Ridge	ACT
Gossan Hill	ACT
Gungaderra Grassland	ACT
Isaacs Ridge	ACT
Jerrabomberra Wetlands	ACT
Kama	ACT
Lower Molonglo River Corridor	ACT
Mt Ainslie	ACT
Mt Majura	ACT
Mt Mugga Mugga	ACT
Mt Painter	ACT
Mt Pleasant	ACT
Mt Taylor	ACT
O'Connor Ridge	ACT
Oakey Hill	ACT
Red Hill	ACT
The Pinnacle	ACT
Unnamed	ACT
Wanniassa Hills	ACT
West Jerrabomberra	ACT

Invasive Species	[Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Alauda arvensis Skylark [656]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Carduelis chloris European Greenfinch [404]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Plants		
Alternanthera philoxeroides Alligator Weed [11620]		Species or species habitat likely to occur within area
Cytisus scoparius Broom, English Broom, Scotch Broom, Common Broom, Scottish Broom, Spanish Broom [5934]		Species or species habitat likely to occur within area
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Nassella neesiana Chilean Needle grass [67699]		Species or species habitat likely to occur within area
Nassella trichotoma Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ) [18884]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Sagittaria platyphylla Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area
Ulex europaeus Gorse, Furze [7693]		Species or species habitat likely to occur within area

Nationally Important Wetlands	[Resource Information]
Name	State
Jerrabomberra Wetlands	ACT

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-35.30479 149.09347

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

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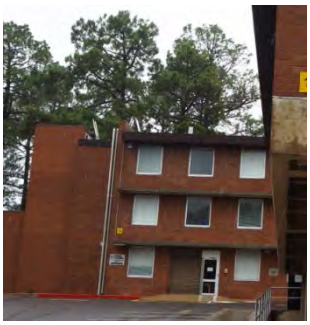
APPENDIX D LIST OF ASSETS WITH NO HERITAGE VALUE

Table 7.1 List of assets with no heritage values

Asset Number	Name/use	Photograph
Northern Section		
12a	Workshop	
12b	Workshop	
12c	Workshop	
14	Nursery/Poisons/Machinery Store	
14a	Workshop	
14b	Workshop	

Asset Number	Name/use	Photograph
16	Open Shed	
22	Storage Shed	
29	Shed	
Western Section		
5a	Shed	
4e	Soil Preparation Shed	
4h	Shadehouse	

Asset Number	Name/use	Photograph
24	Storage Shed	
Southern Section		
1	Offices	
1a	Offices	
1b	Laboratory Block	

APPENDIX E AUSTRALIAN HISTORIC THEMES FRAMEWORK

Australian Historic Themes Framework

KEY

Theme Groups (1–9)

This theme group recognises the pre-colonial occupations of Indigenous people, as well as the ongoing history of human occupation from diverse areas.

Themes (2.1, 2.2, ...)

2.1 **Living as Australia's earliest inhabitants**

2.2 **Adapting to diverse environments**

2.3 **Coming to Australia as a punishment**

2.4 **Migrating**

- 2.4.1 Migrating to save or preserve a way of life
- 2.4.2 Migrating to seek opportunity
- 2.4.3 Migrating to escape oppression
- 2.4.4 Migrating through organised colonisation
- 2.4.5 Changing the face of rural and urban Australia through migration

Examples of sub-themes. Others may be added to suit particular regions

1

Tracing the evolution of the Australian environment

The environment exists apart from being a construct of human consciousness. However, a thematic approach recognises the human factor in the natural environment, and how our understanding and appreciation of the environment has changed over time.

- 1.1 Tracing climatic and topographical change
- 1.2 Tracing the emergence of Australian plants and animals
- 1.3 Assessing scientifically diverse environments
- 1.4 Appreciating the natural wonders of Australia

2

Peopling Australia

This theme group recognises the pre-colonial occupations of Indigenous people, as well as the ongoing history of human occupation from diverse areas.

- 2.1 Living as Australia's earliest inhabitants
- 2.2 Adapting to diverse environments
- 2.3 Coming to Australia as a punishment
- 2.4 Migrating
  - 2.4.1 Migrating to save or preserve a way of life
  - 2.4.2 Migrating to seek opportunity
  - 2.4.3 Migrating to escape oppression
  - 2.4.4 Migrating through organised colonisation
  - 2.4.5 Changing the face of rural and urban Australia through migration
- 2.5 Promoting settlement
- 2.6 Fighting for land
  - 2.6.1 Resisting the advent of Europeans and their animals
  - 2.6.2 Displacing Indigenous people

3

Developing local, regional and national economies

While Geoffrey Blainey conceived of Australian history as dominated by the 'tyranny of distance' this concept is alien to Indigenous Australians. Eighteenth and nineteenth century developments in technology made it possible to link the continent to distant marketplaces, and the incentive for almost every expedition by the first European 'explorers' was the search for valuable resources. Much subsequent Australian history has revolved around the search for a staple on which to base regional economic development.

- 3.1 Exploring the coastline
- 3.2 Constructing capital city economies
- 3.3 Surveying the continent
  - 3.3.1 Looking for inland seas and waterways
  - 3.3.2 Looking for overland stock routes
  - 3.3.3 Prospecting for precious metals
  - 3.3.4 Looking for land with agricultural potential
  - 3.3.5 Laying out boundaries
- 3.4 Utilising natural resources
  - 3.4.1 Hunting
  - 3.4.2 Fishing and whaling
  - 3.4.3 Mining
  - 3.4.4 Making forests into a saleable resource
  - 3.4.5 Tapping natural energy sources
- 3.5 Developing primary production
  - 3.5.1 Grazing stock
  - 3.5.2 Breeding animals
  - 3.5.3 Developing agricultural industries
- 3.6 Recruiting labour
- 3.7 Establishing communications
  - 3.7.1 Establishing postal services
  - 3.7.2 Developing electric means of communication
- 3.8 Moving goods and people
  - 3.8.1 Shipping to and from Australian ports
  - 3.8.2 Safeguarding Australian products for long journeys
  - 3.8.3 Developing harbour facilities
  - 3.8.4 Making economic use of inland waterways
  - 3.8.5 Moving goods and people on land
  - 3.8.6 Building and maintaining railways
  - 3.8.7 Building and maintaining roads
  - 3.8.8 Getting fuel to engines
  - 3.8.9 Moving goods and people by air
- 3.9 Farming for commercial profit
- 3.10 Integrating people into the cash economy
  - 3.10.1 Assisting Indigenous people into the cash economy
  - 3.10.2 Encouraging women into employment
  - 3.10.3 Encouraging fringe and alternative businesses
- 3.11 Altering the environment
  - 3.11.1 Regulating waterways
  - 3.11.2 Reclaiming land
  - 3.11.3 Irrigating land
  - 3.11.4 Clearing vegetation
  - 3.11.5 Establishing water supplies
- 3.12 Feeding people
  - 3.12.1 Using indigenous foodstuffs
  - 3.12.2 Developing sources of fresh local produce
  - 3.12.3 Importing foodstuffs
  - 3.12.4 Preserving food and beverages
  - 3.12.5 Retailing foods and beverages
- 3.13 Developing an Australian manufacturing capacity
- 3.14 Developing an Australian engineering and construction industry
  - 3.14.1 Building to suit Australian conditions
  - 3.14.2 Using Australian materials in construction
- 3.15 Developing economic links outside Australia
- 3.16 Struggling with remoteness, hardship and failure
  - 3.16.1 Dealing with hazards and disasters
- 3.17 Inventing devices
- 3.18 Financing Australia
  - 3.18.1 Raising capital
  - 3.18.2 Banking and lending
  - 3.18.3 Insuring against risk
  - 3.18.4 Cooperating to raise capital (co-ops, building societies, etc.)
- 3.19 Marketing and retailing
- 3.20 Informing Australians
  - 3.20.1 Making, printing and distributing newspapers
  - 3.20.2 Broadcasting
- 3.21 Entertaining for profit
- 3.22 Lodging people
- 3.23 Catering for tourists
- 3.24 Selling companionship and sexual services
- 3.25 Adorning Australians
  - 3.25.1 Dressing up Australians
- 3.26 Providing health services
  - 3.26.1 Providing medical and dental services
  - 3.26.2 Providing hospital services
  - 3.26.3 Developing alternative approaches to good health
  - 3.26.4 Providing care for people with disabilities

4

Building settlements, towns and cities

Although many people came to Australia in search of personal gain, they realised the need to co-operate in the building of safe, pleasant urban environments. Australian urbanisation and suburbanisation have special characteristics which set them apart from similar phenomena elsewhere in the world.

- 4.1 Planning urban settlements
  - 4.1.1 Selecting township sites
  - 4.1.2 Making suburbs
  - 4.1.3 Learning to live with property booms and busts
  - 4.1.4 Creating capital cities
  - 4.1.5 Developing city centres
- 4.2 Supplying urban services (power, transport, fire prevention, roads, water, light and sewerage)
- 4.3 Developing institutions
- 4.4 Living with slums, outcasts and homelessness
- 4.5 Making settlements to serve rural Australia
- 4.6 Remembering significant phases in the development of settlements, towns and cities

5 Working

Although a lot of what we call work is related to the economy, most of it is not undertaken for profit. A great deal of the work done in the home is neither paid nor counted as part of the national economy. Some of the most interesting recent social history written about Australia concerns work and workplaces.

- 5.1 Working in harsh conditions
  - 5.1.1 Coping with unemployment
  - 5.1.2 Coping with dangerous jobs and workplaces
- 5.2 Organising workers and work places
- 5.3 Caring for workers' dependent children
- 5.4 Working in offices
- 5.5 Trying to make crime pay
- 5.6 Working in the home
- 5.7 Surviving as Indigenous people in a white-dominated economy
- 5.8 Working on the land

6 Educating

Every society educates its young. While European education places a great emphasis on the formal schooling system, education encompasses much more.

- 6.1 Forming associations, libraries and institutes for self-education
- 6.2 Establishing schools
- 6.3 Training people for the workplace
- 6.4 Building a system of higher education
- 6.5 Educating people in remote places
- 6.6 Educating Indigenous people in two cultures

7 Governing

This theme group is as much about self-government as it is about being governed. It includes all the business of politics, including hostility to acts of government.

- 7.1 Governing Australia as a province of the British Empire
- 7.2 Developing institutions of self-government and democracy
  - 7.2.1 Protesting
  - 7.2.2 Struggling for inclusion in the political process
  - 7.2.3 Working to promote civil liberties
  - 7.2.4 Forming political associations
- 7.3 Making City-States
- 7.4 Federating Australia
- 7.5 Governing Australia's colonial possessions
- 7.6 Administering Australia
  - 7.6.1 Developing local government authorities
  - 7.6.2 Controlling entry of persons and disease
  - 7.6.3 Policing Australia
  - 7.6.4 Dispensing justice
  - 7.6.5 Incarcerating people
  - 7.6.6 Providing services and welfare
  - 7.6.7 Enforcing discriminatory legislation
  - 7.6.8 Administering Indigenous Affairs
  - 7.6.9 Conserving Australian resources
  - 7.6.10 Conserving fragile environments
  - 7.6.11 Conserving economically valuable resources
  - 7.6.12 Conserving Australia's heritage
- 7.7 Defending Australia
  - 7.7.1 Providing for the common defence
  - 7.7.2 Preparing to face invasion
  - 7.7.3 Going to war
- 7.8 Establishing regional and local identity

8 Developing Australia's cultural life

Australians are more likely to express their sense of identity in terms of a way of life rather than allegiance to an abstract patriotic ideal. One of the achievements of this society has been the creation of a rich existence away from the workplace. While some of the activities encompassed in this theme are pursued for profit - horse racing and cinema, for instance - their reason for being is the sheer enjoyment of spectators. While many people could not pursue careers in art, literature, science, entertainment or the church without being paid, those activities do not fit easily into the categories of economy or workplace.

- 8.1 Organising recreation
  - 8.1.1 Playing and watching organised sports
  - 8.1.2 Betting
  - 8.1.3 Developing public parks and gardens
  - 8.1.4 Enjoying the natural environment
- 8.2 Going to the beach
- 8.3 Going on holiday
- 8.4 Eating and drinking
- 8.5 Forming associations
  - 8.5.1 Preserving traditions and group memories
  - 8.5.2 Helping other people
  - 8.5.3 Associating for mutual aid
  - 8.5.4 Pursuing common leisure interests
- 8.6 Worshipping
  - 8.6.1 Worshipping together
  - 8.6.2 Maintaining religious traditions and ceremonies
  - 8.6.3 Founding Australian religious institutions
  - 8.6.4 Making places for worship
  - 8.6.5 Evangelising
  - 8.6.6 Running city missions
  - 8.6.7 Running missions to Australia's indigenous people
- 8.7 Honouring achievement
- 8.8 Remembering the fallen
- 8.9 Commemorating significant events
  - 8.9.1 Remembering disasters
  - 8.9.2 Remembering public spectacles
- 8.10 Pursuing excellence in the arts and sciences
  - 8.10.1 Making music
  - 8.10.2 Creating visual arts
  - 8.10.3 Creating literature
  - 8.10.4 Designing and building fine buildings
  - 8.10.5 Advancing knowledge in science and technology
- 8.11 Making Australian folklore
  - 8.11.1 Celebrating folk heroes
  - 8.11.2 Myth making and story-telling
- 8.12 Living in and around Australian homes
- 8.13 Living in cities and suburbs
- 8.14 Living in the country and rural settlements
- 8.15 Being homeless

9 Marking the phases of life

Although much of the experience of growing up and growing old does not readily relate to particular heritage sites, there are places that can illustrate this important theme. Most of the phases of life set out below are universal experiences.

- 9.1 Bringing babies into the world
  - 9.1.1 Providing maternity clinics and hospitals
  - 9.1.2 Promoting mothers' and babies' health
- 9.2 Growing up
  - 9.2.1 Being children
  - 9.2.2 Joining youth organisations
  - 9.2.3 Being teenagers
  - 9.2.4 Courting
- 9.3 Forming families and partnerships
  - 9.3.1 Establishing partnerships
  - 9.3.2 Bringing up children
- 9.4 Being an adult
- 9.5 Living outside a family/partnership
- 9.6 Growing old
  - 9.6.1 Retiring
  - 9.6.2 Looking after the infirm and the aged
- 9.7 Dying
  - 9.7.1 Dealing with human remains
  - 9.7.2 Mourning the dead
  - 9.7.3 Remembering the dead

APPENDIX F SIGNIFICANCE RANKING SYSTEM

Significance Ranking For Commonwealth Heritage Listed Properties

Ranking significance assists with identifying management priorities in the first instance. Ranking also assists with determining if a property meets the threshold for inclusion on the Commonwealth Heritage List (CHL). The criteria state that a place needs to have "significant" value in order to meet one or more criterion.

Ranking of significance is also a tool to be used in the development of management recommendations, maintenance priorities and long term planning decisions. Secondarily, they can be used in support of funding and resource allocations.

Therefore, ranking is a critical component underpinning specific management planning development.

The significance rankings described here are divided into three categories – Item, Precinct/Group and Intangible. These categories are based on our experience with large and complex sites and with managing European, Indigenous and Natural values. This allows a more meaningful use of ranking when:

a) Comparing of individual items and precincts within the site itself (ie multiple items which may have varying degrees of significance based on their context, integrity and condition);

b) Comparing a property with other similar sites (eg two buildings of comparable significance at 2 different sites may have settings of differing significance, thereby allowing a clearer comparison and more informed and secure basis for the overall ranking);

c) Identifying CH values across the site and making management recommendations specific to those defining qualities;

d) Providing a context to the ranking where an element may be contributory rather than significant as an individual item. This underpins management of the item as a part of a larger context and assists in prioritising maintenance resources.

The values identified can then either be managed under the CH provisions or broader environmental requirements of the *Environment Protection and Biodiversity Conservation Act* (EPBC Act) depending on whether the CH threshold has been met. We find that this system allows us to be more

specific about why a place has value, which in turn helps us to develop more targeted management methods.

The ranking system has been developed in reference to the ICOMOS, Burra Charter, World Heritage Guidelines, Ask First Guideline for Indigenous places and the Natural Heritage Charter. We have included "universal" level ranking for identifying potential national or World Heritage values.

The tables below outline the categories and ranking levels for built and Indigenous values (Table 1) and natural values (Table 2).

Table 1 Summary of Significance Rankings for Built and Indigenous Heritage

Ranking	Justification – Item	Justification – Precinct/Group	Justification – Intangible
Universal (only to be used for World Heritage Sites)	**Monuments:** architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of outstanding universal value from the point of view of history, art or science;	**Groups of buildings:** groups of separate or connected buildings which, because of their architecture, their homogeneity or their place in the landscape, are of outstanding universal value from the point of view of history, art or science;	**Sites:** works of man or the combined works of nature and man, and areas including archaeological sites which are of outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view.
Exceptional	The item is a demonstrably rare, outstanding and / or an irreplaceable example of its type. It has a high degree of intact and original fabric that is readily interpreted. Loss or alteration would substantively undermine the Commonwealth heritage values of the place overall.	The precinct/group demonstrates collective characteristics that are rare or unique in Australia Precinct/group is intact and readily interpreted Loss, alteration or removal of component elements would substantially undermine the CH values of the place overall	The site represents significant social, cultural, natural and/or mythological values that may not be embodied in any physical item but which demonstrate unique, iconic markers in Australia's past or ongoing dynamic histories and / or processes.
High	The item demonstrates a rare example of its type Is largely intact and interpretable Loss or unsympathetic alteration may diminish the Commonwealth Heritage values of the item and of the place overall	The precinct/group demonstrates a rare example of collective characteristics or features physically linking or defining the space Precinct/group is largely intact and interpretable Loss, unsympathetic alteration or removal of component elements or defining qualities may detract from the CH values of the precinct/group and of the site overall	The site represents important social, cultural, natural and/or mythological values that may not be embodied in any physical item but which demonstrate rare points in Australia's past or ongoing dynamic histories and / or processes.
Moderate	The item may have altered or modified elements Item is intact enough to be partially interpretable as a single item or as part of the site in its entirety Loss or unsympathetic alteration is likely to diminish the	Precinct/group demonstrates valuable (although modified) collective characteristics and linking/defining spatial qualities Precinct/group intact enough to be interpreted as a discrete space or as part of the site overall Loss, unsympathetic alteration or	The site represents social, cultural, natural and/or mythological values that may not be embodied in any physical item but which demonstrate points in Australia's past or ongoing dynamic histories and / or

	Commonwealth Heritage values of the item and potentially the place if inappropriately managed	removal of component elements or defining qualities may detract from the CH values of the precinct/group and potentially of the site overall if inappropriately managed	processes.
Low	The item may be largely altered Does not demonstrate the key defining qualities of the CH values, but may be contributory Alteration and / or modification may make it difficult to interpret the item depending on the existing integrity of the item Loss may not diminish the Commonwealth Heritage values of the place overall.	Precinct/group demonstrates some (but possibly largely altered) collective characteristics and/or linking/defining spatial qualities Precinct/group not easily interpreted and represents unclear spatial definition in relation to the rest of the site Loss, alteration or removal of component elements may not detract from the CH values of the place overall	The site represents some social, cultural, natural and/or mythological values that may not be embodied in any physical item but which demonstrate points in the site's history, associative values and/or historical themes.
None (Does not meet CHL criteria)	Item does not reflect or demonstrate any Commonwealth heritage values	Precinct/group does not reflect or demonstrate any CH values	The site represents no social, cultural, natural or methodological themes or values
Intrusive	Potentially detracts from the overall Commonwealth heritage values of the place as an intrusive element. Loss may actually contribute to the Commonwealth Heritage values of the place. The item is an intrusive element in the heritage values of the place in its entirety	Precinct/group potentially detracts from the interpretation and understanding of the site overall Loss, alteration or removal of component elements actually contribute to the CH values of the place overall	N/A

Table 2 Summary of Significance Ranking for Natural Heritage Values

Significance Ranking	Justification – Natural
Universal (only to be used for World Heritage Sites)	**Natural features** consisting of physical and biological formations or groups of such formations, which are of outstanding universal value from the aesthetic or scientific point of view; **Geological and physiographical formations** and precisely delineated areas which constitute the habitat of threatened species of animals and plants of outstanding universal value from the point of view of science or conservation; **Natural sites** or precisely delineated natural areas of outstanding universal value from the point of view of science, conservation or natural beauty.
Exceptional	The species, area or ecosystem demonstrates individual or collective characteristics that are rare or unique in Australia Species, area or ecosystem is in high level of health, condition and integrity Loss, alteration or removal of component elements would substantially undermine the CH values of the place overall
High	The species, area or ecosystem demonstrates a rare example of individual or collective characteristics or features physically linking or defining space Species, area or ecosystem is largely intact and in good state of health Loss, damage or removal of components or defining qualities may detract from the CH values of the area or ecosystem and of the site overall
Moderate	Area or ecosystem demonstrates valuable (although modified) qualities Intact enough to be interpreted as a discrete space or as part of the site overall with ability to be regenerated Loss, damage or removal of component elements or defining qualities may detract from the CH values of the area or ecosystem and potentially of the site overall if inappropriately managed
Low	Species, area or ecosystem demonstrates some (but possibly largely altered) defining qualities Area or ecosystem not in a good state of health and regeneration in doubt Loss, alteration or removal of component elements may not detract from the CH values of the place overall
None (Does not meet CHL criteria)	Species, area or ecosystem does not reflect or demonstrate any CH values
Intrusive	Loss, alteration or removal of component elements actually contribute to the CH values of the place overall

APPENDIX G PRELIMINARY MASTER PLAN HERITAGE REVIEW – CSIRO YARRALUMLA (ERM 2019)

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25 November 2019

Reference: 0502267

Subject: CSIRO Yarralumla – Preliminary Master Plan Heritage Review

1. PROJECT BACKGROUND

Oakstand Pty Ltd., on behalf of The Shepherd Foundation (the Client), is currently investigating the development feasibility of Commonwealth Scientific and Industrial Research Organisation (CSIRO) Yarralumla ('the property'), located in the suburb of Yarralumla, Australian Capital Territory (ACT). The property is recognised as being of Commonwealth heritage significance for its association with the CSIRO Forestry Precinct and as the site of the Former Australian Forestry School [Commonwealth Heritage List (CHL) Place ID 105426 and Place ID 105595].

CSIRO disposed of the property in 2002, however retained control through a twenty-year lease which placed the responsibility for managing and maintaining the property with CSIRO, a Commonwealth agency. The property has therefore been required to be managed in accordance with the provisions of the Commonwealth legislation *Environment Protection and Biodiversity Conservation Act 1999* (EBPC Act).

Environmental Resources Management Australia Pty Ltd (ERM) was engaged by CSIRO to prepare a Heritage Management Plan (HMP) for CSIRO Yarralumla, which was finalised in 2018. The HMP sets out policies that directly relate to the divestment of the property from Commonwealth control and its future use and development.

Current Direction

ERM was recently engaged by the Client to prepare a Heritage Constraints Analysis to inform the assessment of development options beyond CSIRO Yarralumla's current scientific research use. The analysis was limited to a review of historic heritage values, including significant trees and plantings. ERM understands that Oakstand has progressed the design of a Preliminary Master Plan for the property based largely on the recommendations in this report.

With respect to the feasibility process associated with this CHL-listed property development project, Oakstand is seeking a lease change of use amendment to the National Capital Plan (NCP) through a submission to the National Capital Authority (NCA). As such, a range of discipline studies have been commissioned to assess permissible use of CSIRO Yarralumla, including: town planning, economic, traffic, infrastructure/serviceability, Ecologically Sustainable Development, ecology and heritage. ERM has been engaged to review the Preliminary Master Plan for CSIRO Yarralumla and provide advice from a heritage perspective as part of this submission.

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2. SITE LOCATION AND DESCRIPTION

CSIRO Yarralumla is situated in a suburban residential area, abutted by the Royal Canberra Golf Club to the west and north. It is bounded to the north by Banks Street, and its western cadastral boundary follows a general arc south towards Bentham Street. The site comprises approximately 12.85 hectares of land that includes groups of buildings mainly comprising the former Australian Forestry School that are clustered around an oval, plant nursery and arboretum. The oval was originally part of the Forestry School, but no longer forms part of the Site and is now ACT Government land (and responsibility).

3. STATUTORY OVERVIEW

During the lease period, CSIRO has had operational control of the property and the site has been subject to and managed pursuant to Commonwealth legislation, namely the EPBC Act. Under Sections 26 and 28 of the Act, CSIRO is required to avoid, minimise or manage potentially significant impacts on the environment. Section 341ZE of the EPBC Act applies if CSIRO (as a Commonwealth Agency) sells or leases a Commonwealth area that is or includes part of a Commonwealth Heritage place. CSIRO must notify the Minister for the Environment of such intent, 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.

The CSIRO also employs a practice of complying with State and Territory environmental policies, initiatives and legislation (where these do not conflict with Commonwealth legislation). In addition, this provision takes in the broader suite of issues listed under the EPBC Act and can include State/Territory listed species and heritage values.

3.1 Heritage and Development under the ACT Heritage Act 2004

The ACT *Heritage Act 2004* would apply to the Site in the event that the property leaves Commonwealth control. Guidance on managing this type of change is provided in the HMP (ERM 2018). The ordinary definition of 'development' under the *Planning and Land Management Act 1988* is broadened where the land to be developed is in an urban lease area and is registered or nominated for registration under the ACT Heritage Register. In this circumstance, any works that would affect the landscape of the land are considered to be 'development' and therefore must be considered for approval by the ACT Environment and Planning Directorate and the ACT Heritage Council, as appropriate.

3.2 Planning Framework: Approvals under National Capital Plan

The National Capital Plan (NCP) is administered by the National Capital Authority (NCA) and outlines planning principles and policies, standards for the maintenance and enhancement of the national capital and general aesthetic principles. The Commonwealth and ACT governments must not undertake an activity that is inconsistent with the NCP. The Site is directly adjacent to the Diplomatic Precinct and falls within the Lake Burley Griffin and Foreshores Precinct.

Any buildings or structures, demolition, landscaping or excavation works in designated areas as defined by the NCP require the prior written approval of the NCA. The NCA's role is to assist applicants through a process of negotiation and design development to achieve outcomes appropriate to those areas which embody the special characteristics of the national capital, including development proposals on:

- Commonwealth land;
- Designated areas;

- Sites that may have endangered and protected species of flora and fauna, or some other environmental value (including heritage); and
- Development that has a significant impact on the heritage values of a place entered in the CHL or National Heritage List.

4. HERITAGE STATUS AND SUMMARY OF VALUES

CSIRO Yarralumla comprises two heritage items, which are listed on the CHL for historic, aesthetic, representative, technical, social and associative values, these are:

- the Australian Forestry School (former) (Place ID 105426); and
- the CSIRO Forestry Precinct (Place ID 105595).

The CSIRO Forestry Precinct comprises the majority of the Site; the Australian Forestry School sits entirely within the CSIRO Forestry Precinct boundary. The overall historic heritage values at the property are associated with its historically significant role in the Commonwealth's interest in scientific endeavour and a vision for Canberra as the location for science as well as general government administration. General heritage values and the Commonwealth Heritage criteria which they meet, are summarised below.

The former Australian Forestry School consists of the former School building, the former Museum building and the formal landscaping surrounds. It was one of the few institutions established by the Commonwealth and reflects the successful outcome of efforts to establish a national forestry school in the new national capital to produce professional foresters for Federal and State services, and forestry research worker. The precinct is associated with the international interest in forestry and is important for an array of scientific achievements, such as *Pinus Radiata* propagation and breeding and the Australian Tree Seed program. The precinct is important as a component of the arboretum and nursery landscape of Yarralumla. The tree-growing trials which constitute the arboretum, identified trees suitable for the urban forests of Canberra and at the same time provided public park amenity for the Canberra community. Yarralumla Nursery to the north of the arboretum has supplied planting stock for Canberra's parks, streets and residential blocks (*Criterion A - Historical*).

The arboretum is an important reference site containing experimental plantings and a significant genetic resource for Australia (*Criterion C – Research value*).

The precinct, as a complete small-scale research and learning institution with classical style architecture and recreation grounds, reflects the design concepts that were held in the early 20th century for such places. Within the precinct, the former Australian Forestry School is significant as a fine example of early twentieth-century Inter-War Stripped Classical style of architecture (*Criterion D – Characteristic values / Representativeness*).

The recognised aesthetic qualities are exemplified in the former Australian Forestry School building (Building 009), the former Office of the Forestry and Timber Bureau (Building 010); Forestry House (Building 002) - all set within mature forest plantings of Westbourne Woods arboretum. Building 009 including its formal landscaped frontage and with its arboretum setting, is the terminal feature of the Schlich Street axial vista, and a major landmark feature of Yarralumla (*Criterion E – Aesthetic value*). Central to the building is a magnificent domed hall which features the use of superbly crafted Australian timbers used in panelling, flooring and joinery of the School, particularly the octagonal entrance foyer, evidence of a high degree of creative and artistic achievement (*Criterion F – Technical achievement*).

The property has social significance to the former students educated at the place and the forestry scientists who have conducted research there, and community significance as one of the early national institutions in the Federal Capital (*Criterion G - Social*). The Australian Forestry School has a strong association with Charles Edward Lane-Poole and Dr Maxwell R Jacobs, principals of the

Australian Forestry School who were both notable contributors to the science and study of forestry in Australia. The arboretum is also important for its association with T C G Weston who directed the major plantings in Canberra during the 1910s and 1920's (*Criterion H – Associational*).

5. KEY HERITAGE ELEMENTS AND ASSOCIATED CONSTRAINTS (ERM 2019)

The following is a summary of the Heritage Constraints Analysis prepared by ERM in April 2019.

5.1 Built Environment

The subject property contains buildings that range in date from the late 1920s to the 1980s, with further refurbishments undertaken in the 1990s. The site contains 34 buildings and assets that were assessed for their heritage significance against the CHL criteria in the HMP (ERM 2018). Three buildings were assessed as having high heritage value, two are of moderate heritage value as follows:

High significance

- Building 002 – Forestry House;
- Building 009 – Former Forestry School; and
- Building 010 – Former Museum; Former Forestry and Timber Bureau.

Moderate significance

- Building 017 – Store; and
- Asset 030 - Tennis Courts.

Eleven further buildings and assets were ranked as being of low heritage value; with 18 assessed as having no heritage value. The low heritage value assets included 1940s period buildings such as stores and toilets blocks, the caretaker's residence, a 'meteorological plot', greenhouses, and a laboratory.

5.2 Significant Trees and Plantings

ERM undertook a preliminary assessment of presence and planning (landscape design) of significant trees across the property in March 2019. Tree health was not assessed at this time. Plantings have occurred at each development stage as part of experimental studies and property beautification. The key phases and significant contributors to the heritage values at the property are:

- trees planted by Thomas Charles Weston in the development of Westbourne Woods before 1920;
- plantings associated with the establishment of the Australian Forestry School (Building 009) setting (c1927), including the Roman Cypress that visually flank the east entrance; and
- plantings made by Dr Lindsay Pryor as part of the landscaping around Forestry House (Building 002) (c1945-55).

These trees and plantings are direct evidence of precinct planning character / representativeness and association, meeting Criteria D and H of the Commonwealth heritage assessment criteria.

A small number of trees were also planted when the CSIRO forest research laboratories were built in 1975. The most recent plantings were established in 1998 to either side of Wilf Crane Drive near its junction with Banks Street. These plantings, while less significant from a heritage perspective, are rare and threatened acacias and eucalypts which may hold natural heritage values. Throughout the site there are also small experimental plantings resulting from research trials.

In the large areas of planted trees, the majority of trees were assessed as having moderate heritage significance, however some trees throughout these areas were also noted to have low heritage significance, as a result these areas are identified as Low to Moderate Significance. Generally, the trees included:

- *Cedrus Atlantica* (Atlas Cedar) grove south of Building group near Bentham Street (c 1940s);
- *Pinus Pinea* (Stone pine) grove north of Building 4 and near Westridge House Boundary (c1920s-1950s?);
- Examples of *Pinus Radiata* (Monterey Pine); and
- Example of *Sequoiadendron Giganteum* (Giant Sequoia), *Pinus Ponderosa* (Ponderosa Pine), *Araucaria Bidwillii* (Bunya Pine), and *Eucalyptus Globulous* (Tasmania Blue Gum) and various other pines to the east of Building 001 and around Building 009.

5.3 Sight Lines

The following significant aesthetic attributes in terms of view corridors or 'sight lights' at the property were also identified:

- The view towards the former Forestry School building (Building 009) as the termination of the Schlich Street vista; and
- Views of the mature pine forest setting.

6. PRELIMINARY MASTER PLAN ASSESSMENT

An assessment of the Preliminary Master Plan for CSIRO Yarralumla (Oakstand 2019) from a historic heritage perspective is presented in Table 1 below.

Table 1 Heritage Assessment of the Preliminary Master Plan for CSIRO Yarralumla

Key Heritage Issue - CSIRO Yarralumla property	Addressed by Preliminary Master Plan (Oakstand 2019)	ERM Commentary
Buildings of high heritage significance	All three buildings ranked of high heritage significance (Buildings 002, 009 and 010) are to be retained and adaptively re-used as part of site redevelopment.	Retention and re-use of high heritage value buildings follows best practice conservation principles (e.g. Australian ICOMOS Burra Charter [1] ; Commonwealth Heritage Management Principles[2]).
Buildings and Assets of moderate heritage significance	ERM understands that buildings and assets ranked of moderate heritage value, namely Building 17 and the Tennis Courts, will be retained and re-used or repurposed.	Retention and re-use of moderate heritage value buildings follows best practice conservation principles. The Tennis Courts are to be integrated into Public Open Space, which extends across other areas of heritage interest including the adjacent meteorological plot (008). This location presents a good opportunity for future heritage interpretation signage or other devices.
Buildings/Assets of low Heritage Significance	The majority of buildings and assets ranked as having low	Recommendations for managing change to heritage places are outlined in the Burra

[1] Australia ICOMOS Incorporated (2013) *The Burra Charter: The Australia ICOMOS Charter for places of Cultural Significance*.

[2] Department of the Environment and Water Resources (former) (2007) *Heritage Management Principles*

Key Heritage Issue - CSIRO Yarralumla property	Addressed by Preliminary Master Plan (Oakstand 2019)	ERM Commentary
	heritage value will be removed during development.	Charter Article 27, including assessment of the impacts on the heritage values of the place, the preparation of a Heritage Impact Assessment, and measures to reduce impacts. Suggested measures include recording prior to changes to the place, recording when change of ownership occurs, and recording prior to the removal of important evidence. Consideration may be given to other options including the retention and re-use of a building type, such as one of the glasshouses, for either interpretation purposes or integration into a residential sustainable garden program. Heritage conservation practice and sustainable development can have very similar objectives, discussed further in Section 6.1 below.[3]
Significant Trees and Plantings of High heritage value	Plantings identified as being of high heritage value will be retained as part of site development.	Retention of high heritage value plantings is in accordance with Burra Charter and Heritage Management Principles.
Significant Trees and Plantings of Low to Moderate heritage value	ERM understands that some trees within the groupings ranked of moderate, and low to moderate heritage value will require removal as part of future site redevelopment.	Some consideration has already been given to retention of stands of mature plantings around high and moderate-ranked heritage buildings, as well as boundary plantings. The retention of the Atlas Cedar groves adjacent to Bentham Street and the Stone Pines along the Westridge House property boundary are appropriate in terms of green screening and setting retention (sight lines, views and vistas). Further study by an arboriculturalist will be required to inform on tree health, which should be considered and integrated into the Heritage Impact Assessment for the property. The Client should continue to work closely with both the arboriculturalist and heritage specialist towards the development of a sensitive conservation approach during the next stages of planning, to mitigate adverse impact to the aesthetic qualities of setting.
Aboriginal Cultural Heritage Values	Aboriginal Cultural Heritage Values have not been addressed in the Preliminary Master Plan.	Client will be engaging ERM to undertake an Aboriginal Cultural Heritage Assessment, including consultation with the ACT's Representative Aboriginal Organisations (RAOs), to determine if any values are present and how these should be managed.

[3] Australia ICOMOS Practice Note 'Heritage and Sustainability 1 – Built Heritage'. August 2019.

6.1 Discussion: Heritage Property Development

The essential, fundamental difference in the heritage / property development interface, compared to non-heritage development scenarios, is that statutory heritage protection by its very nature, seeks to retain and conserve inherent heritage significance in nominated built environment places.[4] This factor has the potential to place considerable constraints on the developer's normally-accepted scope for freedom of action and operation.

Astute and knowledgeable developers may reap considerable economic and reputational benefits from a successful heritage-listed project. CSIRO Yarralumla should be seen as an opportunity to showcase exemplary design practices, to align and make contribution to the UNESCO Sustainable Development Goals[5], all the while reactivating the property through sympathetic use, and safeguarding listed heritage values through the recognition of the place's history and significance.

By necessity, this research and identification process must constitute the very first steps in the development feasibility process, if development risk is to be successfully managed and minimised. Through the engagement of heritage and other specialists in advisory roles over the course of the potential redevelopment process, the likelihood of a successful result is high. The Client has already demonstrated a sensitive approach to heritage matters across the property, and willingness to work within the parameters of site constraints.

Heritage listings do not translate into 'frozen' or unalterable places. Heritage property development involves changing the state of land - together with any retained existing improvements on the land - in a way which improves its economic performance and, in a wider sense, also the economic benefits to the community.[6] ERM strongly supports adaptive re-use of heritage properties when executed sensitively, and guided by a place's identified heritage values.[7] It is understood that the Client is considering a range of adaptive re-use options for buildings of high and moderate heritage significance including commercial, aged care, or corporate offices associated with the Client charity operations or similar organisations.[8] Adaptive re-use is also central to the Australia ICOMOS recently released *Practice Note on Heritage and Sustainability 1: Built Heritage* (2019), which recognises the important relationship between heritage conservation and sustainability underpinning the maintenance of liveable places that communities identify with, and provides positive and continuing economic, cultural and social benefits for communities.

7. CONCLUSIONS

CSIRO Yarraluma's historic heritage values are recognised in the historic, aesthetic, representative, technical, social and associative aspects of the place. These attributes are represented through the numerous historic buildings, assets, historic plantings, views and landscape design. ERM confirms that the Client has been previously provided with 'next step' heritage planning advice and that they

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[4] Dominy, Colin, (2004) Feasibility Guidelines for Heritage Development Applications Final Report. A Report Prepared on Behalf of The Property Research Centre, University of Western Sydney, for the NSW Heritage Office, p 10.

[5] In particular SDG 11 - Making cities and human settlements inclusive, safe, resilient and sustainable; and SDG 12 - Ensuring sustainable consumption and production patterns.

[6] Dominy 2004.

[7] As guided by, but not limited to, the following adaptive re-use best practice policies and guidelines: Commonwealth of Australia (2004) *Adaptive Reuse Preserving our past, building our future;* NSW Office of Environment and Heritage (2012) Adaptive Reuse of Heritage Places Policy; and Heritage Office, NSW Department of Planning, 2008. *New Uses for Heritage Places: Guidelines for the Adaptation of Historic Buildings and Sites*. Heritage Office, NSW Department of Planning and the Royal Australian Institute of Architects NSW Chapter New Uses for Heritage Places Working Party.

[8] The Shepherd Foundation provides grants for research into primary prevention in Primary Care and Occupational Health settings.

are aware of their obligations in terms of statutory requirements. ERM understands that the property would be subject to further heritage research, confirmation of Aboriginal cultural heritage values, and arboricultural advice. The Client is aware of a range of studies required to progress this project including:

- Heritage Assessment (including gaps analysis and anticipated in-depth historical research);
- Aboriginal Cultural Heritage Assessment;
- Comprehensive Heritage Impact Assessment;
- Heritage Interpretation Strategy; and
- Adaptive Re-use Study and likely building-specific Conservation Management Plans.

In conclusion, in terms of overall vision and approach the Preliminary Master Plan for a lease change of use to residential (for uses to be confirmed for heritage building adaptive re-use) for CSIRO Yarralumla is considered acceptable from a heritage perspective. Further effort is required to refine the proposal as outlined in this advice letter.

Yours sincerely,

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