The Mount Stromlo Observatory Precinct

Heritage Management Plan—Volume 1

Report prepared for the Australian National University (ANU)

July 2015
Report Register

The following report register documents the development and issue of the report entitled The Mount Stromlo Observatory Precinct—Heritage Management Plan Volume 1, undertaken by GML Heritage Pty Ltd in accordance with its quality management system.

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

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Date: 16 July 2015  
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Executive Summary

As one of Canberra’s iconic cultural landscapes, the Mount Stromlo Observatory Precinct is a historic place with outstanding heritage values, recognised at the Commonwealth level. Significant as an academic, research and scientific facility as the headquarters of the Australian National University’s (ANU) Research School of Astronomy and Astrophysics (RSAA), it is also a major visitor attraction for the Canberra region.

Twelve years after the devastation of the 2003 fires which destroyed many of the buildings at the Observatory and left many more in ruins, 2015 is an appropriate time to reflect on the changes to the site and its landscape context and future management. It is timely to assess the impacts of regrowth and rebuilding, to consider the role of its heritage ruins and to reassess its overall heritage values, so that appropriate heritage management policies are integrated within the current site masterplanning processes.

The ridgeline siting of the Mount Stromlo complex with its distinctive white domes, originally located in a dark green forest planted to reduce heat shimmer effects on the Observatory, remains visible across the Limestone Plains—a familiar Canberra landmark now seen within a new context of natural landscape regrowth.

The suite of historic and modern telescope domes, the administration and workshop buildings, residential housing and visitor facilities are set within a scientifically planned campus, with a delineated precinct layout that today provides layered evidence of each of the Observatory’s development phases from site selection in 1910 to the present day.

The extraordinary scientific achievements of Australia’s most important astronomers and astrophysicists in stellar and galactic astronomy happened here. Dating from Walter Duffield’s 1905 steadfast promotion of the potential for Australia to fill the West Pacific gap in the world network for the continuous observation of the sun, to the work of Nobel Laureate Professor Brian Schmidt on the accelerating expansion of the universe; the Mount Stromlo Observatory Precinct reflects both the Commonwealth Government’s commitment to science and a vision for Canberra as the location for Australia’s major scientific institutions, as well as government administration.
The role of the ANU in the development and conservation of the site and the evolution of its scientific achievements is a nationally significant story, and its stewardship of this iconic place has led to the commissioning of GML Heritage to prepare this Heritage Management Plan (HMP), which reassesses the heritage values of the site holistically and provides detailed policies which provide direction to guide the ANU in the future conservation and development of the Observatory.

This HMP follows the Australian benchmark standards in its preparation, reflected throughout the principles and philosophy of The Burra Charter, the Australia ICOMOS Charter for Places of Cultural Significance 2013 (the Burra Charter). Building on the 2004 Conservation Management Plan prepared by Tanner Architects, this HMP provides an updated history (Section 2) and description (Sections 3–5) of the Observatory site.

Twelve years on, the scars of the physical devastation of the fires remain within a regenerated site, a new cultural landscape has emerged and a national scientific institution continues to evolve. The site has also emerged as a commemorative emblem of community resilience and recovery. The HMP therefore provides a new assessment of its heritage significance (Section 6).

Reassessing heritage significance/values is an important part of understanding and responsibly managing the heritage values of a place. The Mount Stromlo Observatory vividly demonstrates how heritage values evolve over time. Assessing the site in light of the changes since the 2003 fires, with particular attention to the site’s heritage ruins and cultural landscape, is vital to understanding its present significance and in telling the many stories which explain the site’s importance to visitors and broader interpretation audiences.

The Mount Stromlo Observatory Precinct has been assessed in this HMP as being significant for its historic, rarity, potential to yield information, characteristic, aesthetic, creative/technical, social and associational values, at an exceptional level.

As stewards for an exceptional site with potential national significance, the ANU site managers balance the operational requirements of an active scientific precinct with visitor/public engagement and conservation responsibilities for the care and interpretation of the heritage elements and values on a daily basis.

This HMP sets out the operational and management context for development decisions in Section 7 and provides succinct conservation policies (Section 8) for the ANU to use as it protects and manages the heritage values of the site; while also sustaining the ongoing evolution of the operation of the RSAA functions for
astronomical research, advancements in technology and instrumentation development. Each element and area is assessed to establish its tolerance for change, providing clear advice about how much change can happen before heritage values are adversely impacted.

Key ANU commitments are identified in this HMP that are important to the future site management and conservation as a heritage precinct. They include the active implementation of this HMP; the preparation and implementation of a Landscape Management Plan; and the development of a site wide Interpretation Strategy.

The integration of the findings and policies of this HMP with the site Master Plan 2030 will ensure a coordinated approach to managing future development. The recommendations of the HMP are thus very timely, to ensure that the Observatory's heritage values inform and engage with site management planning as a key consideration.

Section 9 of the HMP provides a framework for the interpretation of the site, identifying key audiences and messages to be conveyed, together with recommended interpretation initiatives. Interpretation is a key conservation process, assisting community understanding and appreciation of the heritage and work of the observatory.

To assist decision-making for each of the key heritage elements of the Observatory, individual heritage inventory sheets will be prepared by ANU as a separate Volume 2 of the HMP. The first of these sheets has been prepared by GML for the Director’s Residence, and will provide a template to be used for the assessment of each element of heritage value. The inventory sheets will provide individual descriptions, historical information, and specific management policies for conservation and development of the element, additional to the overarching policies of the main HMP. These inventory sheets will be an important management tool for the ANU, facilitating a detailed, measured approach to managing change at the site with full consideration of the heritage values.

Unique to this HMP is the inclusion of the following Heritage Snapshot, which provides a succinct visual analysis of the evolution of the site, its heritage significance and the key policies which will guide its future management. The following ten fold-out pages set out the key overarching management messages from the report within its historical timeline, identifying the key conservation policies to be actioned by ANU, intertwined with highlights of identified heritage values. It
provides a snapshot of the HMP, an introduction and summary of the Observatory’s significance and of the stewardship activity ahead for managing this iconic heritage place, the Mount Stromlo Observatory.
Mount Stromlo Observatory Precinct
Heritage Management Plan
Snapshot

Report prepared for the Australian National University (ANU)
July 2015
The landscape was an open woodland savannah of eucalypts devoid of a shrub layer with well-developed grasses, a picturesque open, park-like character.

First European settlement by stockmen in the Mount Stromlo area.

On 22nd December, the first known mention of "Stromlo" was in the diary of Richard Vest, overseer at the Yarralumla property.

The view over Molonglo Valley, 1832. (Source: NLA pic-vn3289506-v Robert Hoddle)

The newly constructed Oddie Dome in 1911. (Source: MSO Archives)

The Oddie Telescope Dome, constructed in 1911 to house the first telescope on site, is one of the earliest purpose built Commonwealth buildings in the ACT.

On 22nd December, the first known mention of "Stromlo" was in the diary of Richard Vest, overseer at the Yarralumla property.

The National Library of Australia holds the Vest family papers.

The Great Melbourne Telescope being erected in 1869 after it was shipped in pieces from Dublin. (Source: The Age newspaper)

First Telescope

The Great Melbourne Telescope, a 46 inch diameter reflector, was built in Ireland. It was the largest equatorial reflecting telescope in the world.

The telescope was shipped in pieces from the workshop of Howard Grubb, Dublin. Once erected in Melbourne, a house with a roll-off roof was built around the telescope.

The initial concept for an observatory in Australia was presented to the International Solar Research Union in Oxford, UK, by Australian born solar astronomer Walter Geoffrey Duffield.

Duffield recognised the potential for Australia to fill the West Pacific gap in the world network for the continuous observation of the sun.

The Australian Solar Physics Committee recommended the Mount Stromlo site in 1910 and it came under government control as the Federal Capital Territory in 1911.

Walter Duffield travelled to Australia looking for support of the Commonwealth Observatory.

The Australian Solar Physics Committee recommended the Mount Stromlo site in 1910 and it came under government control as the Federal Capital Territory in 1911.

The Second Conference of the International Union for Co-operation in Solar Research, Oxford, 1905. (Source: Cambridge University Library GP_4)

The newly constructed Oddie Dome in 1911. (Source: MSO Archives)

Commonwealth Heritage Value

Phase 1—Pre-1923

1905

The initial concept for an observatory in Australia was presented to the International Solar Research Union in Oxford, UK, by Australian born solar astronomer Walter Geoffrey Duffield.

Duffield recognised the potential for Australia to fill the West Pacific gap in world network for the continuous observation of the sun.

1908

Walter Duffield travelled to Australia looking for support of the Commonwealth Observatory.

The Australian Solar Physics Committee recommended the Mount Stromlo site in 1910 and it came under government control as the Federal Capital Territory in 1911.

1911

The first built element on the ridge was the Oddie cast iron nine inch refractor telescope, donated to the Commonwealth in 1909 by James Oddie. Pietro Barrachi, Victorian Government Astronomer, was instructed to set up a temporary observatory at Mount Stromlo to test the site. Barrachi and his assistants slept in the building when on site.

At Mount Stromlo Barrachi and his associates defined the prime meridian of Australia, the critical reference point of Australia’s longitude. The Oddie Telescope Dome, constructed in 1911 to house the first telescope on site, is one of the earliest purpose built Commonwealth buildings in the ACT.

ABORIGINAL OCCUPATION

Aboriginal people have lived in the Canberra region for 21,000 years. Small groups migrated between seasonal resource zones, and in the summer feasts of Bogong moths brought groups together. The arrival of European settlers to the region in the 1820s disrupted traditional lifestyles and reduced access to food resources and ceremonial sites. Though European diseases decimated the local Aboriginal populations, many families continue to identify with this country. Despite the fact that no specific cultural values have been identified for Mount Stromlo, artefact scatters show the area was consistently occupied by Aboriginal people in the past.

First European settlement by stockmen in the Mount Stromlo area.

On 22nd December, the first known mention of "Stromlo" was in the diary of Richard Vest, overseer at the Yarralumla property.

Walter Duffield (Source: MSO Archives)

Pietro Barrachi (Source: Museum Victoria)

Commonwealth Heritage Value

Avoid impacts on unregistered archaeological sites

Retain significant evidence from all layers of development

HERITAGE MANAGEMENT PLAN

ABORIGINAL OCCUPATION

Pietro Barrachi. (Source: Museum Victoria)

The landscape was an open woodland savannah of eucalypts devoid of a shrub layer with well-developed grasses, a picturesque open, park-like character.

1824

1868

1899

1905

1908

1911
1913

The octagonal Kite House was constructed in 1914 by the Commonwealth Bureau of Meteorology. Investigations into the nature and function of the ionosphere were carried out.

1914

The Kite House at Mount Stromlo. (Source: MSO Archives)

1915

In the winter of 1915, Thomas Charles Weston planted the first conifers on Mount Stromlo:

"The sides of the hill be planted as early as possible with suitable trees in order to protect them from the sunrays, and thus prevent the radiation of heat from the bare ground which would result in quivering of the atmosphere with consequent blurring of the telescope images."

Source: Australian Archive Services Item 1918/6038

1918

Based on model observatories overseas, the arrangement of buildings was around a common park, without dividing fences, to be devoted exclusively to the various scientific institutions with preferably a common library with a distinct staff and reading room situated between the buildings.

Source: Australian Archive Services Item 1918/6038
Phase 2 – 1924-1938

1924

The Commonwealth Solar Observatory was formally instituted in 1924 with Walter Duffield appointed as its first Director. While waiting for the Solar Observatory building to be constructed, a temporary observatory operated from the Hotel Canberra. The observatory’s original research interests lay in solar and atmospheric physics.

1925–1926

The Commonwealth Solar Observatory building (also known as Administration building and Main Observatory building) was constructed to designs by JS Murdoch for the Federal Capital Commission. Murdoch was responsible for the design of many of the early buildings in Canberra including the Provisional Parliament House. This structure reflects Canberra’s Interwar Mediterranean style architecture. Additions to this building took place in 1942 and it was reconstructed following the 2003 bushfires.

1925–1928

Houses for staff accommodation at the observatory were constructed from 1925. House number 20 was the first constructed and remains intact on the site. Houses 7 and 11 were constructed in 1926 and Houses 18 and 19 in 1928.

1928

A residence for the Director of the observatory was finished in 1928 reflecting a time when directors were accommodated at their respective institutions. Duffield and his wife were instrumental in the design of the building.

Complete with croquet lawn, outbuildings and landscaped garden, its style reflected other government institution buildings established during the early development of Canberra. Remnants of Mrs Duffield’s garden plantings remain today.
Phase 2—1924-1938

1926–1951

In 1926 Clabon Walter Allen joined the staff at the newly established Commonwealth Solar Observatory. His work with the Sun Telescope, producing the Solar Atlas, gained the observatory international recognition.

1927–1929

The Reynolds Telescope structure built to house the 76cm Reynolds Telescope was completed and is a significant building from this early period of development at Mount Stromlo. This building was damaged in the 2003 fires, however retains its iconic dome.

1929

On 1 August 1929 Walter Duffield died of pneumonia and was buried on the hill beyond the Oddie Telescope. His wife Doris Duffield had her ashes interred in the grave in 1956, and daughter Joan Duffield had her ashes interred in 2015.

William ‘Bill’ Rimmer was appointed Officer in Charge of the Observatory until 1939.

1931

The Heliostat (Sun Telescope) completed and operational. It was used by Clabon Allen in his study of the solar spectrum.

1938

House number 8 was constructed providing further staff accommodation.
Commonwealth Time Service moves from Melbourne to Mount Stromlo. The time set at the Observatory determined the time standard for Australia until 1968.

1824
Manufacturing optical munitions. (Source: MSO Archives)

Building the dome. (Source: MSO Archives)

1939
Manufacturing optical munitions. (Source: MSO Archives)

Building the dome. (Source: MSO Archives)

Houses and the original bachelor quarters c1939.
(Source: MSO Archives)

1944
The Melbourne Observatory closed and the Great Melbourne Telescope was purchased by the Commonwealth and transferred to Mount Stromlo.

1939–1955
Richard van der Riet Woolley was appointed as the second Director. After the war Woolley steered the observatory in a new direction towards research in stellar and galactic astronomy, in particular the structure and evolution of planets, stars and galaxies, the origin and development of the Universe as a whole, and the physics of the tenuous material between the stars.

1946–1950
The Australian National University (ANU) Act was passed in 1949. Woolley established the first formal connection with the new ANU when he was appointed Professor of Astronomy in 1950.

1950s
The 1950s was the greatest period of telescope acquisition on Mount Stromlo, when Woolley organised the installation of four additional instruments. This enlarged the research capabilities of the observatory allowing it to enter into the new era of stellar astrophysics that was revolutionising the study of astronomy at this time. This development reflects scientific expansion in the post war years.

1952
A major bushfire damaged the west wing of the Commonwealth Solar Observatory building after the 1952 fire. (Source: MSO Archives)
1953–1955
The steel clad structure for the 74 inch 1.9m Reflector Telescope was built. This structure and telescope again reflected the importance given to science in the 1950s.

1954
The Yale-Columbia Dome was constructed to house the Yale-Columbia 66cm Refractor Telescope, which was operational from 1957. It reflects scientific expansion in the post war years.

1952–1955
The dome to house the Great Melbourne 50 inch Telescope was built. In the 1980s this telescope was rebuilt for the MACHO Project. It was transformed into an outstanding computer controlled, wide-field imaging telescope.

Ben and Rosalie Gascoigne were involved with Mount Stromlo for over 40 years, living on the site for many years. Ben worked initially with the military optics program during World War II and later as an astrophotographer working on the Magellanic Clouds. Well known artist Rosalie painted her understanding of the immediate landscape, representing Australia in the Venice Biennale in 1982. They lived in house No. 19.

The building was damaged in the 2003 fires.

This building was damaged in the 2003 fires.

This building was a ruin following the 2003 fires.

This building is a ruin following the 2003 fires.

The building was damaged in the 2003 fires.

The building was destroyed in the 2003 fires.
1957–1966

Dutch astronomer Bart Bok was appointed as the third Director and the Head of the Department of Astronomy at the ANU in 1957. The name of the site was changed to the Mount Stromlo Observatory. Bok was instrumental in the establishment of the Siding Spring Observatory in 1965 as a field station of the Mount Stromlo Observatory.

1957

The Swedish Uppsala Dome was completed to house the Schmidt camera.

1965

Siding Spring Observatory near Coonabarabran in the Warrumbungle Mountain Range opened. It was established to provide a permanent dark-sky site in response to the adverse light pollution from Canberra’s growth. Since its opening, all new telescopes have been located at Siding Spring. The name was changed to the Mount Stromlo and Siding Spring Observatories.

1963–1964

This Duffield building, constructed in 1963-1964, took over the research role of the Commonwealth Solar Observatory building which is located opposite. It contains a lecture theatre, seminar room and office accommodation for scientific staff.

1966–1977

Olin Eggen was appointed as the fourth observatory Director. His focus was on developing a strategy for determining the history of the galaxy and its evolutionary processes. Prior to his appointment at Mount Stromlo, Eggen had co-authored a paper ‘Evidence from the motions of old stars that the Galaxy collapsed’, which has been acclaimed as one of the fifty-odd seminal astronomical contributions in twentieth-century astronomy.
Visitor's Centre. (Source: GML 2014)

1979–1986

Astronomer Donald S Mathewson was appointed fifth Director of the Mount Stromlo and Siding Spring Observatory. He was known for his work with Magellanic Clouds. He was influential in establishing the Australian Space Board.

1986

The two observatories separated from the ANU Research School of Physical Sciences and become an independent centre within the ANU.

A large magellanic cloud monitored by the MACHO project. (Source: http://www.macho.anu.edu.au/Project/Overview/status.html)

1986–1992

Alex Rodgers was appointed as the sixth Director. During his directorship the MACHO Project was established. It was a collaboration between the two observatories, trying to solve the mystery of the missing mass in our universe (the dark matter). This project has been called one of the great physics experiments of the decade and its success is widely acclaimed.

Jeremy Mould. (Source: MSO Archives)

1993–2001

Jeremy Mould was appointed the seventh Director. Mould placed the observatory’s technical skills of instrumentation development on the international market. He was also involved in the construction of the Visitor’s Centre to bring astronomy to the public. Mould’s major cosmological project was measuring the age of the universe using the Hubble Space Telescope.

Jeremy Mould. (Source: MSO Archives)

1995

The Woolley building was constructed as further office accommodation for staff and students.

Woolley Building. (Source: GML 2014)

1996

The ‘Stromlo Exploratory’ with the Red Belly Black Restaurant, Shop and Information Centre was constructed in 1996 to cater to visitors to the observatory. Red Belly B Glück was damaged in the 2003 fires and rebuilt.

Visitor’s Centre. (Source: GML 2014)

1998

Eight prefabricated Riley Newsum pre-fab houses were removed from the site. One was retained as an example of this housing type, however was later destroyed in the 2003 fires.

Riley Newsum pre-fab houses 1956. (Source: MSO Archives)

1998–2002

Professor Penny Sackett was appointed Director of the RSAA. In her role as eighth Director, Sackett was responsible for the management of the Mount Stromlo and Siding Spring Observatories.

Professor Penny Sackett. (Source: MSO Archives)

2002–2007

The Satellite Laser Ranger Observatory was installed near the Oddie Telescope. This building was damaged in the 2003 fires.

The Satellite Laser Ranger Observatory.
2003

The 18th January 2003 bushfires caused extensive damage to the precinct destroying many of the telescopes, the Commonwealth Solar Observatory building (including the library with its historic plans and records), the Director’s Residence and the Workshop.

2004

In the aftermath of the fires the first Conservation Management Plan (CMP) is commissioned.

2007–2013

Astronomer Harvey Raymond Butcher was appointed the ninth Director of the RSAA and as such became the Director of the Mount Stromlo and Siding Springs Observatories. He is recognised for his contributions in observational astronomy and advanced instrumentation.

2003–2011

The Workshop lost in the fires was replaced by the Advanced Instrumentation Technology Centre (AITC), a world-class facility for developing astronomical instrumentation. The AITC is a new national centre for the Australian space community, connecting researchers and industry partners from around the country and across the globe.

Phase 1 opened in 2006 and Phase 2 in 2011.
Phase 6 – 2003-Present

2011

Professor Brian Schmidt, astrophysicist at the Mount Stromlo Observatory, was co-recipient of the Nobel Prize for Physics for the discovery that the universe is expanding at an accelerating rate.

Faulkner Court opened as new student living accommodation on the site of the former Bachelor's Quarters.

A replica of the Oddie Telescope was constructed and launched at Mount Stromlo for the 100 year anniversary of observations at Mount Stromlo.

2011

A new HMP is commissioned to revise the heritage values in light of changes to the site since the previous CMP, and to provide the ANU with clear policy direction to guide future development of the site.

2011

An interactive heritage trail for the Mount Stromlo Observatory is launched including new signage and an augmented reality app.

2012

The Mount Stromlo Observatory was commissioned.

2013

Astronomer Matthew Colless was appointed as the tenth Director of the RSAA Mount Stromlo and Siding Spring Observatories. Colless was a key member of the international team working on the 2dF Galaxy Redshift Survey, measuring the amount of dark matter in the universe. He was also formerly the director of the Anglo-Australian Observatory from 2004.

2014

Today the RSAA has a total staff of approximately 90, most of whom work at Mount Stromlo, where the main workshops and support facilities are located. There are about 45 astronomers on staff, and there are also around 30 graduate students undertaking PhD studies at the school.

2015

The stabilised Director's Residence is opened to the public for the first time ever and includes interpretive, audiovisual installations which tell the many stories of the site's history.
1.0 Introduction

1.1 Background to the HMP

The Australian National University (ANU) commissioned GML Heritage Pty Ltd (GML) in July 2013 to prepare a Heritage Management Plan (HMP) for the Mount Stromlo Observatory Precinct, ACT.

The heritage values of the Mount Stromlo Observatory Precinct (part Block 38, Stromlo) are recognised through its inclusion in the Commonwealth Heritage List (CHL).

The Environment Protection and Biodiversity Conservation Act 1999 (Cwlth) (EPBC Act) requires that a HMP be prepared for Commonwealth Heritage places to conserve, present and transmit their heritage values.

The site is currently heritage listed primarily for its architectural values, however, it has not been assessed against CHL criteria with reference to the natural, cultural landscape, archaeological or Indigenous values of the site (as is required by the EPBC Act) or for its potential for National Heritage values.

This HMP revises and updates the existing Mount Stromlo Observatory Conservation Management Plan (CMP) prepared by Tanner Architects in 2004. Developed immediately following the fires which extensively damaged the site in 2003, the CMP had a strong architectural emphasis to provide guidance for the maintenance and rebuilding of the site and individual buildings in the aftermath. It did not assess the Indigenous, archaeological or natural values of the site.

Twelve years after the fires, this HMP has been prepared to revise the heritage values in light of changes to the site over time, to assess the heritage values of the site holistically and to provide the ANU with clear policy direction to guide future conservation and development of the site.

This HMP complies with the regulations of the EPBC Act, particularly Schedule 7A—Management Plans for Commonwealth Heritage places. It is divided into two volumes: Volume 1 provides the management planning document and Volume 2 includes heritage inventories for individual built elements within the precinct. Volume 2 presently includes the Inventory for the Director’s Residence and over time, inventories for the other components of the site will be developed by the ANU.

1.2 Study Area for the HMP

The Mount Stromlo Observatory Precinct (part Block 38, Stromlo) is located on the summit of Mount Stromlo, west of Canberra in the ACT (Figure 1.1). It is in the vicinity of suburbs in Weston Creek, and neighbours the Stromlo Forest Park and the ACTEW water treatment plant.

The study area for this HMP is the CHL boundary for the Mount Stromlo Observatory Precinct (Figure 1.2).

1.3 Site Management

The Mount Stromlo Observatory is the headquarters of the ANU Research School of Astronomy and Astrophysics (RSAA). The ANU is responsible for the management of the site. Within the ANU, the Facilities and Services Division is responsible for the management of the Mount Stromlo Observatory’s facilities including the buildings, grounds and infrastructure.
1.4 Heritage Listings

The Mount Stromlo Observatory Precinct is listed for its heritage values on several heritage registers, including the following:

Statutory Listings

- **Commonwealth Heritage List (CHL):** The Mount Stromlo Observatory Precinct (Place ID: 105309). The site was entered on the Commonwealth Government's CHL on 22 June 2004 and, as such, has statutory protection under the EPBC Act. The official citation determines that the Mount Stromlo Observatory Precinct meets the threshold for listing on the CHL for six of the nine Commonwealth Heritage criteria. This HMP reassess the heritage values in Section 6.0. The CHL citation is included in Appendix A.

- **The ACT Heritage Register:** This register legally recognises and protects significant heritage places within the Australian Capital Territory. The Mount Stromlo Observatory Precinct was recently rejected for provisional listing (25 July 2013) by the ACT Heritage Council. This is because the site is located on National Land, under the control of the Commonwealth, so the ACT Heritage Register has no statutory legal effect.

Non-Statutory Listings

- **Register of the National Estate (RNE):** The Mount Stromlo Observatory Precinct (Place ID: 13353). The site was registered on the RNE on 11 August 1987. The RNE ceased to have statutory effect in February 2012 and the RNE listing does not provide direct legal protection or prescriptive requirements for management. The RNE is retained by the Commonwealth as an archival database of places. The RNE citation matches the CHL citation.

- **National Trust of Australia (ACT) Register of Significant Places:** This is not a statutory listing. The Mount Stromlo Observatory was classified on 24 November 1980 as well as the Duffield Grave at Mount Stromlo, meaning that the Trust's heritage committee (a group of professionals volunteering their expertise to the organisation) had investigated potential heritage values of the site and conferred the highest level of public community recognition.

- **Australian Institute of Architects (AIA) Register of Significant Twentieth Century Architecture (RSTCA) (ACT Chapter):** Listing by the AIA is non-statutory and provides recognition of their architectural heritage value. Mount Stromlo Administration Building (RTSCA No. R023), referred to in this report as the Commonwealth Solar Observatory Building, was listed in 1984 on the ACT Chapter Register.

- **ANU Heritage Database:** This has been developed by the ANU to meet its obligations under the EPBC Act. It is a register of places under the ANU’s management with either Commonwealth Heritage value or recognised heritage significance to the university’s community. Numerous listings for the Mount Stromlo Observatory and individual buildings are included in the database (MSO0001–MSO0016). This report and its subsequent site inventories provide an update of the previous database.
### 1.5 Methodology

#### 1.5.1 Structure of the Report

This HMP has been prepared in compliance with the EPBC Act and its Regulations. The sections of the report are outlined below with a brief description of their content.

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<td><strong>Section 1.0—Introduction</strong></td>
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<td>Provides a background to the HMP, location and the heritage status of the site, as well as the methodology for the project.</td>
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<td>Discusses the natural and environmental context and the landscape, comprising native vegetation, cultural plantings and the gardens of the site.</td>
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<td>Provides a summary of the Indigenous heritage values assessment for the Mount Stromlo Observatory Precinct, based on the consultation outcomes.</td>
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<td>Provides a statement of the existing official CHL values and a revised assessment of heritage values against the CHL criteria. The condition of the heritage values is described and defined.</td>
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<td>Discusses the opportunities, issues and constraints affecting the future conservation, management and interpretation of the identified heritage values of the Mount Stromlo Observatory Precinct.</td>
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<td><strong>Section 8.0—Conservation Policy</strong></td>
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<td>Provides specific conservation policies and actions for the conservation and management of the Mount Stromlo Observatory Precinct, and includes an implementation framework with priorities, timing and responsibilities. This section also includes brief development control guidelines with an indication of acceptable development areas.</td>
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1.5.2 Relevant Documentation

Several heritage and background documents relevant to the study area have been referenced in the preparation of this report.

- *Mt Stromlo Observatory—From Bush Observatory to the Nobel Prize*, Ragbir Bhathal, Ralph Sutherland and Harvey Butcher, Australian National University, CSIRO Publishing, 2013.

A Campus Master Plan 2030 for the ANU Mount Stromlo Campus was prepared by Tract Consultants. This HMP aims to provide the ANU with heritage input to the management of the site. It is important that the Master Plan and the HMP are complementary to each other and that the Master Plan strategies are aligned with the conservation policies in the HMP.

1.5.3 Consultation

**Stakeholder Consultation**

To inform the preparation of this HMP, the GML project team undertook consultation with staff of the ANU including the Facilities and Services Division, the RSAA, site users and Gardens and Grounds personnel. Issues discussed included the proposed conservation approach and the identification of issues for the overall site and specific buildings/areas, visitor management and consideration of potential future development.

The outcomes of consultation have been incorporated into the HMP to assist its implementation and targeted policy development.

**Indigenous Consultation**

To appropriately assess the potential Indigenous heritage values of the study area under the EPBC Act, consultation was undertaken with the local Aboriginal community. This practice is standard for assessments under the EPBC Act and serves to draw out the intangible heritage values that cannot be readily assessed through research and site inspections. The Indigenous heritage values of a place must be identified by the relevant local Aboriginal community in line with *Ask First: a guide to respecting Indigenous heritage places and values*, published by the Australian Heritage Commission, 2002.

Cultural significance is assessed by the Aboriginal community and relates to the historical and pre-historical land use of an area, along with stories, mythologies and traditions relating to the site and its broader landscape and cultural context.
For land in the ACT, the process of identifying the correct Aboriginal community members for consultation has been addressed through the issuing of an official ‘Representative Aboriginal Organisation’ (RAO) list by ACT Heritage. Consultation for this project included the GML team contacting all four RAOs. Results from the consultation are discussed in relevant sections of this HMP.

1.5.4 Limitations

It was agreed with the ANU in commissioning this report that the history and physical description of the site and individual buildings would be substantially drawn from the 2004 CMP. Additional research has been undertaken complete the understanding of historic development of the site since the preparation of the 2004 CMP.

1.5.5 Terminology

This HMP uses to the definitions outlined in *The Burra Charter, the Australia ICOMOS Charter for Places of Cultural Significance 2013* (the Burra Charter), Article 1.

The names for the buildings and structures on the site have been chosen to be consistent throughout the HMP and are based on current names regularly used on site. Alternative or previous names have been identified in Section 5.0 for reference.

1.6 Authorship

This HMP has been prepared by Sarah Webeck, Consultant; Rachel Jackson, Senior Associate; Martin Rowney, Associate; and Anne Claoue-Long, Associate. Michelle Richmond, Senior Consultant and Stephanie Lax, Research Assistant provided valuable project assistance. The development of the HMP snapshot, direction and review of the HMP was undertaken by Sheridan Burke, Partner. Neil Urwin, Director of Griffin Associates Environment, was engaged as a subconsultant to the GML Heritage team to provide the natural heritage and cultural planting assessment, and policy advice.

All information drawn from previous academic and consulting work has been referenced and GML gratefully acknowledges the extensive work of Tanner Architects in the 2004 CMP for contributing background resource information.

1.7 Acknowledgements

GML would like to thank the following people for their assistance in the preparation of this HMP:

- Amy Jarvis, ANU Heritage Officer, Facilities and Services Division, ANU;
- Wayne Ford, former Associate Director, Facilities Planning, Facilities and Services Division, ANU;
- Professor Matthew Colless, Director, RSAA;
- George Abraham, Grounds Manager, ANU;
- Mike Fowler, former Manager, RSAA, ANU;
- Simone Hunter, Scope Cafe, Mount Stromlo (no longer operational);
- Buru Ngunawal Aboriginal Corporation Representatives, Wally Bell and Tyrone Bell; and
- Ngarigo Currawong Clan Representatives, Tony Boye and James Mundy.
Figure 1.1 Location of the Mount Stromlo Observatory Precinct in relation to Canberra. (Source: GML edit on Google Earth plan)
Figure 1.2 The Mount Stromlo Observatory Precinct, showing key buildings. CHL boundary outlined in red. (Source: GML edit on ANU base plan)
2.0 Site Description and Historical Context

2.1 Introduction

The Mount Stromlo Observatory is a prominent historic place in the Canberra landscape, and continues to be a major visitor attraction for the Canberra region with public stargazing facilities for local and amateur astronomers. Today, there are no working ANU research telescopes at the site (although the Satellite Laser Ranging (SLR) Facility is still operational and run by Electro Optic Systems1); and due to the problems with light pollution and following the 2003 bushfires, the work of the Observatory has shifted primarily to research, technology and astronomical instrumentation development and testing (instead of observing).

2.2 Site Description

2.2.1 The Landscape Setting

This section provides a brief overview of the Mount Stromlo Observatory Precinct in the wider Canberra setting and of the site itself. The natural and environmental context and the landscape, comprising native vegetation, cultural plantings and the gardens of the site, are discussed in detail in Section 3.0.

In 2003 severe fires destroyed many of the buildings on the site, and irreversibly damaged the dense surrounding vegetation (Figure 3.6). Some of the structures remain as ruins and evocative reminders of the 2003 fires, which also severely damaged the eastern edge of Canberra at great community cost. This tragedy has impacted the development of the site since 2003 and its landscape setting.

The Observatory's mountain top setting is scenic with extensive and distant views of the Brindabella Ranges to the west, and of Canberra city to the east. The Observatory on Mount Stromlo is a significant landmark from locations within Canberra and from places within the Canberra 'bowl'. The buildings at the Observatory are prominent features along the ridge which make the mountain easily identifiable when viewed from locations in and around Canberra.

The Observatory structures that can be seen from distant locations are predominantly the white telescope domes, the ruined dome buildings and the Director's Residence. These structures stand apart from each other and are staggered across the western face of the ridge crest with the Oddie Telescope building (now a ruin) and the SLR telescopes located on the northern knoll. Like other observatories, in particular Siding Spring Observatory at Coonabarabran, the domes are distinctive; they appear to emerge from the mountain landscape, creating a dramatic visual effect across the ridge.

The 2004 CMP analysis of aerial photographs spanning a period of twenty years (Illus 2.93, 2.94 & 2.95 in Appendix D) show that the boundary to the north and flowing round to the southwest of the site formerly provided a strong visual barrier of vegetation. The former pine plantation was located hard up against the access road to the site. Periodic felling of areas within the plantation would have created opportunities for views out of the site. The areas of vegetation cleared by the fires have not grown as rapidly as was predicted in the 2004 CMP; therefore, the views remain open rather than concealed. The now dispersed trees and vegetation along the ridge and western slopes are visual reminders of the dramatic change to the site since the fires.
The road network and footpaths to and through the site remains the same; however, since the fires the experience has changed, whereby the thick and dense plantings that once bordered the main approach to the site, along Mount Stromlo Road, are now low and sparse, affording a more open landscape character and experience.

### 2.2.2 Historic Observatory Layout

The Mount Stromlo Observatory Precinct incorporates structures and places which are evidence of all phases of development, predominantly since its development as an observatory from 1911.

The initial layout of the facility was based on the functional design of contemporary model international observatories and it aimed to foster a ‘community spirit’. HA Hunt, Commonwealth Meteorologist, stressed the need for:

>a common park, without dividing fences to be devoted exclusively to the various scientific institutions with preferably a common library with a distinct staff and reading room situated between the other buildings.

Staff housing was located on the southern slopes of the mountain; administration at the southeast area of the ridge; and the telescope buildings were in staggered locations along the western face of the ridge, with the Director’s Residence centrally located as a focal point. Utilitarian buildings were discreetly located beyond the ridge on the western slope. Generally this layout and organisation of buildings into functional groups continues today, though many of the buildings are in ruins.

The first built elements on the ridge included the Oddie Telescope Dome in 1911; the Commonwealth Solar Observatory Building (also known as the Administration Building and the Main Observatory Building), completed in 1926; and the Director’s Residence in 1927–1928. These core buildings were connected in a linear fashion across the north western side of the ridge, forming the distinctive character of the Observatory site.

The siting of the buildings specifically relates to optimising their observational performance and minimising earthworks along the mountain ridge. The presence of the buildings, particularly the bright white telescope domes (ruined or otherwise) reinforces the strong visual presence of the ridge line through the site. They also emphasize the height of the mountain and its steep escarpment setting.

A network of roads and footpaths physically connect the various built and landscape elements across the site. The pattern of the roads leading to the buildings (alongside the formal garden features in front of the Commonwealth Solar Observatory Building) is representative of all the historic phases of the Precinct’s development. The approach to Mount Stromlo along Cotter Road, winding up the Mount Stromlo Road and providing initial views of the site is an important element of the visitor experience.

### 2.2.3 Precincts within the Site

For the purposes of management of the Mount Stromlo Observatory Precinct, this HMP uses the same historic precincts included in the 2004 CMP, with some minor alterations due to changes to the site since then. See Figure 2.1 for the precinct plan for this HMP.

As the built elements of Mount Stromlo developed to accommodate the evolving functions of the site, distinct precincts also developed, generally reflecting the amenity and utility of the different areas. These precincts remain evident today. The precincts representing the initial formation of the site include the Main Observatory Precinct along the ridge; the Telescopes and Workshop Precinct to the northwest of the ridge; and the Residential Precinct to the south of the ridge.
The three historic precincts demonstrate the planning division of the site and how early development responded to its relative remoteness. From the 1960s onwards, as the academic work at the site increased and with the ongoing advancement of technology and requirements for new facilities, the construction of buildings on the southeast side of the ridge began, creating the current RSAA Working Precinct.7

The areas of land, buildings and vegetation which fall outside of these distinct precincts are, for management purposes, part of the broader Mount Stromlo Observatory Precinct.

**Main Observatory Precinct**

The Main Observatory Precinct comprises the earliest buildings on the ridge, including the Oddie Telescope Building, the Commonwealth Solar Observatory Building and the Director’s Residence. Associated with the Commonwealth Solar Observatory Building and the Director’s Residence were the gardens and other cultural landscape features that contributed to the distinct character of the ridge.

The key features of this precinct are the limited built elements, the open spatial and visual connection between the three prominent buildings, and the remnant historic plantings (refer to Section 3.0), all contributing to the historic character of the precinct.

**Telescopes and Workshop Precinct**

The Telescopes and Workshop Precinct is located on the northwest side of the ridge and includes the telescope buildings, former workshops and research buildings. This location of the site was selected to provide the most suitable performance conditions for the instruments, and five telescope domes were constructed in this precinct. The telescopes were located close together to facilitate communication between staff members and ran parallel to the ridge.

The precinct today is characterised by the remains of the domes and the Workshops, and their association with the scientific achievements of the site.

Some of the buildings, including the highly visible 74inch Telescope Dome, can still be observed from many locations around Canberra and continues to form a unique and prominent feature of the Canberra landscape.

**Residential Precinct**

The Residential Precinct is the area located to the south of the main area of the site, set below the ridge. This area is characterised by the dotting of single storey residences that convey similar design characteristics. The single storey detached dwellings were predominantly constructed in the 1920s, with later residential housing to accommodate staff added further to the south of the ridge. The precinct was carefully considered and built below the level of the hill crest to minimise light pollution and limit interference with the observatory work.

More recent additions of houses to the area have been constructed to display similar design attributes as the founding houses. The landscape is dominated by the barren, undeveloped nature of the precinct.

The character of the precinct is maintained with the presence of remnant houses and gardens, the early planning arrangement of the roads, as well as the continued residential function.
Current RSAA Working Precinct

Along the southeast side of the Mount Stromlo ridge, between the Residential Precinct and main area of the Observatory, comprises the Current RSAA Working Precinct. This precinct was established in the 1960s, with the additional construction for research purposes; however, it still adhered to the planning arrangement of the site with the new buildings sited away from the telescopes. Later buildings in this precinct respected the planning principles and were set parallel to, yet below the ridge, following the natural topography of the site.

The precinct today includes structures built since the January 2003 fires to provide for the ongoing function of the site by the RSAA, and comprises the main work area of the Observatory.

As a result of the devastation caused by the fires and the subsequent clearing of pine trees, the buildings in this precinct are now visually prominent items in the approach views to the Observatory.

The Mount Stromlo Master Plan

At the time of preparing this HMP, the Mount Stromlo Master Plan 2030 identified how the key areas of the site have evolved to reflect the site’s contemporary functions. The Master Plan defines slightly different precinct areas, including for Technology/Facilities; Academic/Research; a Residential/Miscellaneous; and Visitor/Outreach.
Figure 2.1 The Mount Stromlo Observatory Precinct showing character precincts. (Source: GML edit on ANU base plan)
2.3 Historic Development of the Site

2.3.1 Introduction

A detailed history was prepared by Don Faulkner in the 2004 CMP and is attached as Appendix D. This section briefly recaps the historic development of the site and includes additional research and information about the changes and development of the site since 2003. A major source of additional research is the book: *Mt Stromlo Observatory: From Bush Observatory to the Nobel Prize* (Ragbir Bhathal, Ralph Sutherland and Harvey Butcher, Australian National University, CSIRO Publishing, 2013).

2.3.2 Phases of Development

This section provides a brief historical summary of the historic development of the site, describing significant achievements and notable events divided into six phases of development; from the early occupation of the region and the initial pre-1923 phase of the Observatory’s history through to the present day. Section 5.0 describes the built structures from each of these developmental phases in more detail.

**Phase 1—Visions of an Observatory (Pre-1923)**

This phase covers the early occupation of the region and the events that led to the official opening of the Commonwealth Solar Observatory.

Aboriginal people have lived in the Canberra region for over 21,000 years. They lived in highly mobile, relatively small groups but had formulated a widespread and complex society with a sophisticated material culture. Clan and tribal groups regularly came together for ceremonial and trading purposes. However, the arrival of European settlers into the Canberra region in the early 1820s resulted in the disruption of traditional lifestyles, resource access and land use by Aboriginal people.

The Mount Stromlo ridge was observed to be an open woodland savannah of Eucalypts, devoid of shrubs and with well-developed native grasses, giving a picturesque, open, park-like character to the area.

The first European settlement by stockmen in the area occurred as early as 1824. The subject area was part of Frederick Campbell’s pastoral station ‘Yarralumla’, which he had purchased from Augustus and Annie Gibbes in 1881 (who had selected it in the early 1870s). While the mountain itself was named Mount Strom, the name Mount Stromlo is first referred to in correspondence in 1899 as a paddock name of the station.

The need for a solar observatory in Australia was first realised in 1905 by Adelaide-born solar astronomer, Walter Geoffrey Duffield. He proposed and lobbied for the establishment of a Commonwealth Solar Observatory, and in 1910 it was formally incorporated into the plans for the new Federal Capital Territory.

The site of the ridge on Mount Stromlo was chosen for the observatory, its main advantages being ‘uninterrupted horizon, clear skies, transparency and steadiness of the atmosphere and freedom from dust, smoke and frequent atmospheric disturbances’.

The Oddie cast iron nine inch refractor telescope was donated to the Commonwealth in 1909 by James Oddie, and was set up in 1911 at Mount Stromlo for initial testing to determine the suitability of
the site as an observatory. The building housing the telescope was one of the earliest Commonwealth buildings constructed in the newly established Federal Capital Territory.

In 1914 Mount Stromlo was selected as the site of a permanent Commonwealth Solar Observatory\(^\text{12}\); however, the formal establishment was deferred due to the outbreak of World War I with plans for the Observatory severely delayed.

![Figure 2.2 Oddie Telescope Dome, 1911. The earliest building constructed on site, it was also one of the first Commonwealth buildings in the newly established ACT. (Source: MSO Archives)](image)

**Phase 2—Commonwealth Solar Observatory (1924–1938)**

This phase covers the early development years following the official opening of the Observatory.

The Commonwealth Solar Observatory was formally established in 1924 with Walter Duffield appointed as its first Director. Duffield oversaw the construction and development of the Observatory from his temporary lodgings at the Hotel Canberra, before moving to Mount Stromlo in 1926.

The planning of the site distinguished areas for different functions, areas which were to remain consistent throughout the following development phases. A park-like setting was created with the buildings and domed telescope structures surrounded by an extensive pine plantation (planted from 1915 under the direction of Thomas Charles Weston).

Architect John Smith Murdoch, who was responsible for many early Canberra buildings, designed the Commonwealth Solar Observatory Building which included the Heliostat and Farnham Telescopes, essential for the commencement of research activities on site.

The Director’s Residence (1928) demonstrates a time when directors were accommodated at their respective government institutions, and Duffield and his wife Doris were instrumental in its design even providing personal funding to the project. In addition, staff housing was constructed on the southern side of the ridge, with the first house constructed in 1925.
The site layout evolved into precincts for residences and research, and a series of roads leading to the formal gardens established in front of the Commonwealth Solar Observatory building.

Walter Duffield died unexpectedly in August 1929, and was buried at Mount Stromlo on a hill to the north of the site. The position of Director remained vacant for 10 years with Bill Rimmer acting as ‘Officer in Charge’. Duffield’s wife Doris was interred with her husband in 1956.

The progress of the Observatory was impeded by the 1930s depression, preventing construction in the latter part of this phase.

Scientific achievements during this phase include the work of Clabon (Cla) Allen and his work with the Sun Telescope (Heliostat), producing an atlas of the solar spectrum. This early work gained the Observatory recognition within the field of astronomy from around the world.

Figure 2.3 Commonwealth Solar Observatory postcard, 1929. (Source: MSO Archives)

**Phase 3—Optical Munitions and Telescope Acquisition (1939–1955)**

This phase comprises the tenure of the second Director, Richard van der Riet Woolley, who was appointed in 1939.

During World War II under Woolley’s directorship, the Observatory greatly expanded its activity and devoted its resources to producing optical munitions for the war effort.

World War II created a pressing need for military optics and the Observatory operated as an optical munitions factory. Modifications were made to the Commonwealth Solar Observatory Building in 1941/1942 to accommodate this activity. The staff expanded from 10 to 70 and the Observatory developed 43 new instrumental systems and over 25,000 items in wartime years.
In 1944, the Observatory also acquired responsibility for the Commonwealth Time Service. The astronomers at Mount Stromlo used a specialised telescope to record the exact moments that recorded stars crossed the ‘zenith’ (an imaginary line pointing directly up from any point on Earth). These measurements were used to keep a series of quartz crystal clocks accurate to a matter of milliseconds. The time set at the Observatory determined the time standard for Australia until 1968.13

After the war, Woolley steered the Observatory in a new direction towards research in stellar and galactic astronomy, in particular the structure and evolution of planets, stars and galaxies; the origin and development of the universe as a whole; and the physics of the tenuous material between the stars. With this change of direction, the name was changed to remove the word ‘Solar’ and become simply ‘the Commonwealth Observatory’ in 1947.

The Australian National University Act passed in 1946, and Woolley established the first formal connection with the new university when he was appointed as its Professor of Astronomy in 1949.

The 1950s was the greatest period of telescope acquisition for the Observatory with four new instruments installed. This enlarged the research capabilities of the observatory, allowing it to enter into the new era of stellar astrophysics that was revolutionising the study of astronomy at this time. This development reflects scientific expansion in the post-war years. The telescopes included the Great Melbourne Telescope (1944, installed 1955) purchased by the Commonwealth from the recently closed Melbourne Observatory—the 74inch Telescope (1955) housed in the largest dome building on site—and the Yale-Columbia Telescope (1954-1955). Woolley also arranged the acquisition of the Schmidt camera from the University of Uppsala in Sweden to be moved to Mount Stromlo (installed later in 1957).

Professor Ben Gascoigne worked at Mount Stromlo during this period, initially with the military optics program during World War II. He lived at the site with his wife Rosalie, who became a celebrated artist. Influenced by the isolation of living at Mount Stromlo, she drew her inspiration from the surrounding landscape.

A major fire in 1952 destroyed the west wing of the Commonwealth Solar Observatory building; a workshop, storage buildings and machine tools were lost. The Commonwealth Solar Observatory building was promptly reconstructed to the original details, along with the construction of a separate Workshop to the north, used for the manufacture of lenses and other astronomical equipment.

In conjunction with the type of work carried out at Mount Stromlo during World War II and the provision of the new Workshop, the observatory began to shift its research focus to the areas of design and instrumentation to assist in the field of astronomical observations.
Phase 4—The Mount Stromlo Observatory (1956–1977)

This phase covers the role of the Mount Stromlo Observatory during the directorship of Bart Bok (1957–1966) and Olin Eggen (1966–1977).

The Observatory was transferred from the Commonwealth to the ANU Research School of Physical Sciences in 1957. Observatory Director Bart Bok was appointed as Head of the Department of Astronomy at the ANU, and the Observatory changed its name to the ‘Mount Stromlo Observatory’.

Little construction took place during this phase, with only the dome for the Swedish Uppsala Telescope (1957) and the Duffield Building completed (1964). The Duffield Building took over the main research role of the Commonwealth Solar Observatory building, located opposite.

Siding Spring Observatory in the Warrumbungle Mountain Range near Coonabarabran opened in 1965 to provide a permanent dark sky site in response to the adverse light pollution from Canberra’s growth. Since its opening, all new research telescopes have been located at Siding Spring Observatory.

During this phase the work at Mount Stromlo began to shift from research and observing, to continue to expand in the design and technology aspects of developing research equipment to assist in the field of observations.

Prior to his appointment of Olin Eggen as Director in 1966 he had co-authored a paper called: *Evidence from the motions of old stars that the Galaxy collapsed*, which has been acclaimed as one of the fifty-odd seminal astronomical contributions in twentieth-century astronomy.
Phase 5—Scientific Discovery and Devastation (1978–2003)

This phase includes the busy scientific period in the lead up to the 2003 fires.

The Mount Stromlo Observatory was granted ANU research school status and named the Research School of Astronomy and Astrophysics (RSAA) in 1998.

The Woolley Building was the major building constructed (1995) associated with the research activities of the Mount Stromlo Observatory; however, other structures built during this time include the Visitors Centre for outreach purposes and the new Satellite Laser Ranger facility run by Electro Optic Systems (EOS) and Geoscience Australia.

The Stromlo ‘Exploratory’ was established in 1996 as a visitor centre to assist in bringing astronomy to the public, showcase the research at the Observatory and explain current developments in astronomy in an interactive way.14

Significant scientific achievements during this phase include the discovery of the Magellanic Stream by the fifth Director, Don Mathewson (Director 1979–1986); and the MACHO Project initiated by the Observatory’s sixth Director, Alex Rodgers (Director 1986–1992). The project was a collaboration between the two ANU observatories concerned with trying to solve the mystery of the missing mass in our universe (i.e. the dark matter). This project has been called one of the great physics experiments of the decade and its success is widely acclaimed.

A key scientific discovery was made during this phase by a team including astrophysicist Brian Schmidt; namely that the universe was expanding at an accelerating rate. This is considered one of the greatest astronomical discoveries of the twentieth century, for which Schmidt and his colleagues were later awarded the Nobel Prize for Physics.

The firestorm of January 2003 devastated the site, destroying most of the buildings and workshops, research telescopes, instruments, important research and records, and the site’s vegetation including the surrounding pine plantation.
Phase 6—Rebuilding for the Future (2003–Present)

This phase follows the events and clean-up immediately after the 2003 fires to the current day.

An initial tidying of the site occurred after the fires to remove the debris, and included demolition of some of the destroyed buildings. This was followed by stabilisation of the structures and the rebuilding process. The Commonwealth Solar Observatory building was carefully reconstructed following original plans, and temporary workshop facilities were constructed to allow for the site to continue functioning.

The telescope domes and buildings have been left as ‘managed ruins’ and none of the individual telescopes have been reinstated. Public donations were received into the Stromlo Redevelopment Fund following the fires, which were used to build three small domes in 2005 to house outreach telescopes, introducing visitors to the night sky through regular stargazing and special events.\(^{15}\)

Some of the workshops lost in the fires were replaced by the Advanced Instrumentation Technology Centre (AITC), a world class facility for developing astronomical instrumentation. It was constructed in two phases and provides design, manufacturing and testing capabilities for precision instruments and opportunities for student participation in technical projects at RSAA. It is also home to a research and development program focusing on the next generation of large optical telescopes.\(^{16}\)

Other buildings constructed during this phase include the replacement EOS SLR facility and new accommodation for staff and visitors at Faulkner Court.
The development and construction of new instrumentation for telescopes to expand the frontiers of astronomy has been undertaken on site since the Mount Stromlo Observatory was established. New instrumentation has allowed the Observatory not only to keep up with international competition but also to make major discoveries.\textsuperscript{17}

The RSAA at Mount Stromlo has continued to receive scientific accomplishments and recognition, including through their involvement in the design and manufacture of technology for the international billion dollar Giant Magellan Telescope Project and the international Gemini Observatory. It is during this phase that Professor Brian Schmidt was co-recipient of the Nobel Prize for Physics in 2011.

Centenary events for the establishment of the Observatory were held in 2011, celebrating the installation of the Oddie Telescope through the construction of a replica telescope and a public event on site. The 10 year anniversary of the 2003 fires was also commemorated on site, with the place still bearing evidence of the destruction of the firestorm.

The future direction of the Observatory will be a place with world class facilities, expanding the RSAA facilities for teaching, research and scientific engineering; and maintaining visitor engagement through public outreach programs and interactive experiences.\textsuperscript{18}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{observatory_view.jpg}
\caption{View of the Observatory from near the EOS SLR Facility. From the left is the Yale-Columbia Telescope building, the Director’s Residence, the 74inch Telescope Dome and the Visitor’s Centre; behind it is the Commonwealth Solar Observatory Building and domes, with the Reynold’s Telescope Dome on the far right. (Source: GML 2014)}
\end{figure}
2.4 Endnotes

5. Department of the Environment 2004, Commonwealth Heritage List—Mount Stromlo Observatory Precinct, Mt Stromlo Rd, Mt Stromlo, ACT, Australia, viewed 15 January <http://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=105309>.
7. ibid, p 46.
11. Tanner Architects, op cit, p 95.
12. Bhathal, Sutherland and Butcher, 2013, Mt Stromlo Observatory: From Bush Observatory to the Nobel Prize, CSIRO Publishing, pp 18–21. (NB Date is different to the Tanner 2004 CMP.)
14. ibid, pp 201–202.
17. Bhathal, Sutherland and Butcher, op cit, p 278.
3.0 Environmental Context

3.1 Natural and Environmental Setting

3.1.1 Natural History of the Site

The first plan survey of the area, Portion 174, Parish of Yarolummla (dated 1884), refers to the area as a steep stony range with no name shown. It was one of the last areas to be occupied in the parish, probably because of its steep stony slopes which were less suitable for grazing.¹

The earliest recorded European descriptions of the future Canberra area refer consistently to the grasslands of the Limestone Plains, passing into open woodland on the surrounding lower slopes with forest on the stony higher ground and ridges. The open woodland lower slopes and hill forest would have been characteristic of the Mount Stromlo area.² By 1884, improvements such as fencing and ringbarking had been carried out, the remaining trees noted as Stringybark, Box, Apple, Gum and Oak, indicating that before this the mountain has been densely timbered with a variety of species.³

Until 1911, the mountain had been used as grazing land, but this was to change with the location of the Federal Capital at Canberra and the choice of Mount Stromlo as the site for the Commonwealth Solar Observatory.⁴

The natural history and landscape change of Mount Stromlo has been described in detail in two recent reports, both following the 2003 fires which changed the site spectacularly and irrevocably. These are the 2004 CMP by Tanner Architects⁵ and the 2004 Mount Stromlo Landscape Plan by Scenic Landscape Architecture.⁶ These reports detail the landscape evolution since European settlement of the site, and key sections of these descriptions will be quoted below to provide the essential natural history background. Since the reports were produced just after the 2003 fires—and, more particularly, as a response to those fires—the fire’s effects and reduction of the site’s landscape dominate the reports. For this HMP, observations on landscape changes in the decade since the fires have been added through site survey and consultation with ANU staff.

3.1.2 Geology and Geomorphology

Mount Stromlo was originally formed as a result of a super-volcano eruption 420 million years ago. Soils on site are reported as shallow, infertile and acidic—posing severe limitations for agriculture. This is exacerbated by low permeability and hardsetting subsoils. Early plantings by Weston on the site and surrounding slopes have many recorded failures. Pine plantations only became successful with deep ripping and moulding which mixed the soil horizons and the top of the weathered bedrock. This practice is beneficial in the production of pines, but its long term effect on soil productivity of this landscape has yet to be determined.⁷

3.1.3 Biodiversity

Native Flora

Pryor⁸ recorded the open woodland-savannah as consisting of a *Eucalyptus melliodora-Eucalyptus blakelyi* alliance within an association consisting of other eucalypts including *E bridgesiana* and *E polyanthemos*. These woodlands were devoid of a shrub layer but had a well-developed native grass layer which gave them the picturesque, open, park-like character prized by European settlers for grazing, particularly for cattle, along with adjoining grasslands. The hilly forest is listed by Pryor as an alliance of *E machrorhyncha-E rossii* within an association including *E maculosa* (now *E mannifera*), *E...
dives, *E* *polyanthemos* and *E* *rubida*. These hillsides, although often stony, were seen as suitable for sheep grazing, albeit not prime grazing land.  

**Vegetation Change and Development**  

*Early period 1915–1940s*

Before Weston’s first conifers were planted on Mount Stromlo in the winter of 1915, the Stromlo slopes and ridge had been used for rough grazing for about 20 years. During this time the area had been partially cleared, with shade trees of mostly *E* *rossii* and *E* *maculosa* (now *E* *mannifera*) retained. The 2004 Landscape Plan states that:

*No individual native plants survive from this period as remnants of the natural vegetation. However native plants exist on site (mainly *E* *mannifera*, *E* *polyanthemos* and *E* *dives*) which are likely to have grown from underground parts or seeds and retained as landscape trees rather than having been specially planted. Though too young to be remnants, their ‘natural’ occurrence is therefore part of the natural heritage of the place.*

This holds for the observatory site, where some indigenous tree species exist among the other landscape plantings (see Table 3.1); but more especially for the areas on the western slopes of Mount Stromlo which were never put down to pine plantations. These areas continued in rough grazing use, with occasional fires and casual clearing, until they became part of the Mount Stromlo Observatory Precinct (refer to Figure 3.4). Natural regrowth has continued in these areas and, following the 2003 fires, has followed a post-fire colonisation by wattles. Today, the areas include pockets of grassland and woodland which show floristic affinities with the pre-settlement vegetation. However, with the possible exception of small pockets, the areas are not representative of endangered ecological communities of grassland or woodland.

For the remaining areas of Mount Stromlo, Gray records that this was Weston’s most successful afforestation project in the district and it evolved eventually into a permanent pine forest reserve. The main species was Monterey Pine (*Pinus insignis* now *P* *radiata*), but many other species were trialled. One tree species planted by Weston to the south of the residential quarter as part of the initial plantations has survived to this day. This is the group of remnant Canary Island Pines (*P* *canariensis*) alongside the entrance road. *Eucalyptus bicostata* was also used by Weston in the 1916/1920/1922 plantings, although no individuals from this original planting group have survived.

There were mutual benefits for the plantings on the hillsides, both in terms of afforestation and for the purposes of a functioning Observatory. As shown in early correspondence between those involved in the establishment of the Observatory, it was recommended that:

*the sides of the hills be planted as early as possible with suitable trees in order to protect them from the sun’s rays, and thus prevent the radiation of heat from the bare ground which would result in quivering of the atmosphere with consequent blurring of the Telescopic images.*

Initial work in the 1920s for the development of the Mount Stromlo Observatory involved the removal of 8000 young pines planted along the summit in the previous decade by Weston. This was followed by the setting out of formal landscaped areas and early gardens centred on the Commonwealth Solar Observatory building and the Director’s Residence.

It was during the Inter-War (1918-1939) period with the establishment of the Observatory that the detailed plantings associated with the first buildings occurred. At no other period in the life of the Observatory has there been the intensity of gardening as seen at this time. Documentation regarding the establishment of the Observatory supports this interpretation:
... no difficulty will be experienced in growing shade and ornamental trees, and this area may be made not only a centre of scientific research, but also a beautiful adjunct to the Federal City.\(^\text{14}\)

The composition of some of the cultural plantings, the Pencil Pines and the Chinese Elms planted by Mrs Doris Duffield, and their symmetrical arrangement may have been influenced by the European City Beautiful and Garden Suburbs movements.\(^\text{15}\)

A split stone edging wall was installed around the carriage loop in front of the Commonwealth Solar Observatory Building. Three Chinese Elms (\textit{Ulmus} sp) were planted in the oval carriage loop in front of the Commonwealth Solar Observatory Building by Mrs Duffield and Pencil Pines were planted around the building and courtyard gates.

The Director’s Residence was landscaped during the same period. Stone retaining walls were built along the Director’s Residence driveway and to enclose garden areas on the northeast side of the house. Birch (\textit{Betula} sp), Poplars and English Oak (\textit{Quercus} sp) plantings were established adjacent to the house. The Duffield family also set out the garden beds and planted the bulbs in the Director’s Residence garden, and developed a productive orchard across the driveway to the northeast of the Residence. The croquet lawn to the northeast of the Residence was also laid out under the guidance of the Duffield family.\(^\text{16}\)

Similarly, the gardens to the first houses built in the period 1925–1928 were also established at this time, with dry stone walls to build up planting beds. Plantings included bulbs, roses, oleander, California poppy and yucca—typical domestic gardens at this stage of Canberra’s development where seeds and cuttings for non-native gardens were swapped among friends and neighbours. The most extensive garden was that of the artist Rosalie Gascoigne (wife of scientist Ben Gascoigne) who lived in House 19 in the 1940s and 1950s.\(^\text{17}\)

The area directly north of the Observatory site, on the western side of the Stromlo ridge, was never planted with pines but remained as rough grazing country with gradual regrowth of native plants. At the time of the first director’s death, Walter Duffield, in 1929, the area was still open country with scattered shrubs and trees (Figure 3.3).

The 2004 Landscape Plan notes that it is not known whether the areas presently dominated by Mountain Oak (\textit{Allocasuarina verticillata}) in this area were always so widespread and dense. Simpson\(^\text{18}\) states that Weston undertook the Mountain Oak plantings on the western slopes in 1915 and that these plantings, together with past fire events, may have influenced their present range; although in the inventory of plantings in Gray’s report, Mountain Oak does not appear.\(^\text{19}\)
Figure 3.4 Areas never used for pine plantation or observatory development, retained in a semi-natural state. (Source: GML on the ANU Mount Stromlo base plan)
Of these early elements, the following survive (shown in Figures 3.8–3.11):

- A small crescent shaped section of the original triangular shaped Canary Island Pines (*P. canariensis*) plantation adjoining the approach road.
- Two of the Chinese Elms in the carriage loop in front of the Commonwealth Solar Observatory Building.
- The English Oak adjacent to the Director's Residence.
- Portions of the stone walls in the Director's Residence gardens, with bulbs in undisturbed soil pockets.
- The flattened area of the croquet lawn.
- Stump remnants of the orchard.
- Remnants of gardens (growing from underground parts or soil seed stores) around the sites of the residential houses in the southwest of the site.
- Garden walls, steps, arbors and remnant garden beds and shrubs associated with House 19.
- Regrowth of *Allocasuarina vericulata* on the ridge approaching Duffields' grave.

1940s–1950s

During the 1940s and 1950s, additional landscape works included the stone retaining walls adjacent to the Commonwealth Solar Observatory Building and the Birch (*Betula* sp) within the courtyards, and a cotoneaster hedge to the rear of the Commonwealth Solar Observatory Building. Towards the end of this period, two English Oak trees were planted between the approach road and House 8. Additionally, a replacement Chinese Elm was planted in the carriage loop in front of the Commonwealth Solar Observatory Building, presumably to replace the southernmost one damaged around the time of the 1952 fire.

![Figure 3.5a](image1.jpg) Carriage loop in front of the Commonwealth Solar Observatory Building in December 1944, showing equal growth of Chinese Elms planted in the late 1920s. (Source: NLA Film No. Map 658–2–12872)

![Figure 3.5b](image2.jpg) Carriage loop in front of the Commonwealth Solar Observatory Building in 1959, showing the significantly reduced canopy of the southernmost tree. (Australian National Library Film No. CAC 158–2–5006)
The 2004 CMP notes that the fires of 1952 constrained the growth of the structural plantings and the development of a mature landscape. Following the fires, the grove of pines to the west of the Commonwealth Solar Observatory Building and the indigenous trees and shrubs to the north and west of the Director’s Residence were removed or reduced. Late in this period, the *Fraxinus* (Ash) tree on the northern curtilage of the Director’s Residence was probably planted (called *Acer* sp in the 2004 CMP).

Of these mid-twentieth century elements, the following survive (shown in Figures 3.8–3.11):

- A self-seeded cotoneaster plant growing among recently planted olive trees at the northern rear of the Commonwealth Solar Observatory Building.
- The replacement Chinese Elm in the carriage loop in front of the Commonwealth Solar Observatory Building.
- The English Oak trees between the approach road and House No. 8.
- The Ash tree on the northern boundary of the Director's Residence.

### 1960–1970s

The period from 1960 to the mid-1970s was one of increased interest in native plants and bush gardens throughout Canberra. The plantings that date from this period include the *Melaleuca* sp and mixed Australian plants. The *E bicostata* stands that exist now at Stromlo date from the 1960s. The *Eucalyptus maidenii* trees on site probably also date from this period (although they may be contemporaneous with *E maidenii* plantings in Canberra in the late 1950s). The new road, car park and plantings associated with the Duffield building were established during this period.

Of these elements, the following survive (shown in Figures 3.8–3.11):

- A number of *E bicostata* plantings across the site.
- A small number of *E maidenii* trees across the site.
- A *Melaleuca (decora?)* in the southern residential area.

### 1980s–Present

The period of the late twentieth and early twenty-first century is marked by the introduction of the *Myoporum* sp to the carriage loop green and the mixed Australian species as plantings associated with the new Visitors Centre (1996).

The fires of January 2003 devastated the site’s plantings (Figure 3.6). Dead conifer forest around the site and the dead trees within the site were progressively cleared over the succeeding few years.

Additionally, a number of site trees (both conifers and eucalypts) which survived the fire were also cleared at this time as a reaction to the devastation and the desire to protect the site from fire in the future. Since the time of these clearings, the ANU Gardens and Grounds staff has been progressively re-populating the formal garden beds and establishing tree avenues and features consistent with the need to minimise fire risk and attain establishment and growth in a relatively inhospitable horticultural environment.
3.1.4 Natural Heritage Vegetation/Cultural Plantings

The complete assemblage of natural heritage elements relating to native vegetation and cultural landscape planting is listed in Table 3.1 and shown in Figures 3.8–3.11.

While the landscape at the Mount Stromlo Observatory Precinct includes native vegetation and cultural plantings, there are no natural heritage elements listed in the EPBC Act as threatened or endangered species.
### Table 3.1 Landscape Elements—Natural Vegetation and Cultural Plantings.

<table>
<thead>
<tr>
<th>ID</th>
<th>2013 Photograph*</th>
<th>Landscape Element Description</th>
<th>Discussion of Natural/Cultural Heritage Value</th>
</tr>
</thead>
</table>
| NH0 | ![NH0 Image](image1.png) | **Natural Heritage Vegetation**  
Areas of western slopes are not used for pine plantations. Currently dominated by wattle and eucalypt regrowth, but with pockets of grassland and woodland. | Natural regrowth has continued in these areas and, following the 2003 fires, has followed a post-fire colonisation by wattles. Today, the areas include pockets of grassland and woodland which show floristic affinities with the pre-settlement vegetation. However, with the possible exception of small pockets, the areas are not representative of endangered ecological communities of grassland or woodland. |
| NH1 | ![NH1 Image](image2.png) | **Natural Heritage Vegetation**  
*Eucalyptus mannifera* in the Observatory area. Representative of the original Mount Stromlo vegetation. | *E. mannifera* on site … 'likely to have grown from underground parts or seeds and retained as landscape trees rather than having been specially planted. Though too young to be remnants, their 'natural' occurrence is therefore part of the natural heritage of the place'. |

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*Note: Images are placeholders and the actual images are not included in this text.*
<table>
<thead>
<tr>
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<th>Discussion of Natural/Cultural Heritage Value</th>
</tr>
</thead>
</table>
| NH2 | ![Photo](#) | **Natural Heritage Vegetation**  
*Eucalyptus mannifera* adjacent to the Director’s Residence. Representative of the original Mount Stromlo vegetation. Very tall individual whose growth form indicates early growth in a forest or competitive environment.  
*E. mannifera* on site … ‘likely to have grown from underground parts or seeds and retained as landscape trees rather than having been specially planted. Though too young to be remnants, their ‘natural’ occurrence is therefore part of the natural heritage of the place’.  

23 |
| NH3 | ![Photo](#) | **Natural Heritage Vegetation**  
*Eucalyptus polyanthemos* in the rockery area adjacent to the Director’s Residence. Representative of the original Mount Stromlo vegetation.  
*E. polyanthemos* on site … ‘likely to have grown from underground parts or seeds and retained as landscape trees rather than having been specially planted. Though too young to be remnants, their ‘natural’ occurrence is therefore part of the natural heritage of the place’.  

24 |
| NH4 | ![Photo](#) | **Natural Heritage Vegetation**  
*Eucalyptus mannifera* in the Observatory area. Representative of the original Mount Stromlo vegetation.  
*E. mannifera* on site … ‘likely to have grown from underground parts or seeds and retained as landscape trees rather than having been specially planted. Though too young to be remnants, their ‘natural’ occurrence is therefore part of the natural heritage of the place’.  

25 |
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<th>Discussion of Natural/Cultural Heritage Value</th>
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</table>
| NH5 | Natural Heritage Vegetation   | E _dives_ on site … likely to have grown from underground parts or seeds and retained as landscape trees rather than having been specially planted. Though too young to be remnants, their ‘natural’ occurrence is therefore part of the natural heritage of the place.
|     | * _Eucalyptus dives_* in the southern residential area. Representative of the original Mount Stromlo vegetation. *identification to be confirmed. |
| NH6 | Natural Heritage Vegetation   | E _mannifera_ on site … likely to have grown from underground parts or seeds and retained as landscape trees rather than having been specially planted. Though too young to be remnants, their ‘natural’ occurrence is therefore part of the natural heritage of the place.
|     | * _Eucalyptus mannifera_ in the southern residential area. Representative of the original Mount Stromlo vegetation. |
| NH7 | Natural Heritage Vegetation   | There is uncertainty whether this is a natural occurrence or arises from a seed store from plantings in 1915. Pryor and Banks refers to the stand on Mount Stromlo as natural.
<p>|     | * <em>Allocasuarina verticillata</em> regrowth on the ridge line leading to Duffield’s grave. Representative of the original Mount Stromlo vegetation. |
| CP1 | Cultural Planting             | A tree species planted by Weston to the south of the residential quarter as part of the initial Mount Stromlo plantations. It is the only part of these original plantations which has survived to this day. |
|     | * Stand of Canary Island Pines (<em>Pinus canariensis</em>) trees on the southern extremity of the site alongside the entrance road, survivors of Weston’s 1916/1920 plantings. |</p>
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<tr>
<td>CP2 &amp; CP3</td>
<td><img src="image1.png" alt="Image" /></td>
<td><strong>Cultural Planting</strong> Two Chinese Elms (<em>Ulmus parvifolia</em>) planted by Mrs Duffield in the late 1920s in the carriage loop of the Commonwealth Solar Observatory building.</td>
<td>Survivors of a group of three Chinese Elms (<em>Ulmus</em> sp) were planted in the oval carriage loop in front of the Commonwealth Solar Observatory building.</td>
</tr>
<tr>
<td>CP4</td>
<td><img src="image2.png" alt="Image" /></td>
<td><strong>Cultural Planting</strong> English Oak (<em>Quercus robur</em>) planted adjacent to the Director’s Residence driveway in the late 1920s.</td>
<td>Part of the original landscaping of the Director’s Residence.</td>
</tr>
<tr>
<td>CP5, CP6, CP7 &amp; CP8</td>
<td><img src="image3.png" alt="Image" /></td>
<td><strong>Landscape Element</strong> Rockery elements from the original gardens constructed around the Director’s Residence. The bulb store retained in the soil from that time includes bluebells, snowdrops and daffodils.</td>
<td>Part of the original landscaping of the Director’s Residence.</td>
</tr>
<tr>
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</tbody>
</table>
| CP9 | ![Image of CP9](image1.png) | **Landscape Element**  
Site of croquet lawn laid out adjacent to the Director's Residence as part of the contemporary landscaping, now with post-2003 eucalypt plantings at the southwestern end. | Part of the original landscaping of the Director's Residence. |
| CP10 | ![Image of CP10](image2.png) | **Cultural Planting**  
Site of the orchard set up by Mrs Doris Duffield as part of the contemporary landscaping. Old cut stumps in rows suggest orchard layout. | Part of the original landscaping of the Director's Residence located at some distance north east from the residence on the high ground adjacent to the Mount Stromlo Road and the Yale Columbia Telescope Building. |
| CP11 & CP12 | ![Image of CP11 & CP12](image3.png) | **Cultural Planting**  
Remnants of gardens (growing from underground parts or soil seed stores) around the sites of the residential houses in the southwest of the site which were destroyed in the 2003 fires. Plants include bulbs, roses, oleander, California poppy, figs and yucca. | Remnants of typical domestic gardens at this stage of Canberra's development (mid-1920s to the late 1950s) where seeds and cuttings for non-native gardens were swapped among friends and neighbours. |
<table>
<thead>
<tr>
<th>ID</th>
<th>2013 Photograph*</th>
<th>Landscape Element Description</th>
<th>Discussion of Natural/Cultural Heritage Value</th>
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<tbody>
<tr>
<td></td>
<td><img src="image1.png" alt="Image" /></td>
<td><strong>Cultural Planting</strong>&lt;br&gt;Remnants of gardens (including remnant shrubs and plants growing from underground parts or soil seed stores) around the sites of the residential House 19 which was destroyed in the 2003 fires. The site includes stone walls, paths, steps and a small arbor. Remnants of plants associated with the house edges (e.g., Acanthus) and rockeries are in evidence.</td>
<td>Remnants of typical domestic gardens at this stage of Canberra’s development (mid-1920s to the late 1950s) where seeds and cuttings for non-native gardens were swapped among friends and neighbours. This was the house occupied by the Canberra artist Rosalie Gascoigne during the 1950s and the garden works mainly date to her occupation.</td>
</tr>
<tr>
<td>ID</td>
<td>2013 Photograph*</td>
<td>Landscape Element Description</td>
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| CP14| ![Cultural Planting](image1.jpg) | **Cultural Planting**  
A self-seeded cotoneaster plant growing among recently planted olive trees (photo below) at the northern rear of the Commonwealth Solar Observatory building. | Link to mid-twentieth century (1940s–1950s) landscaping around the Commonwealth Solar Observatory building. |
| CP15| ![Cultural Planting](image2.jpg) | **Cultural Planting**  
The replacement Chinese Elm (foreground) in the carriage loop in front of the Commonwealth Solar Observatory building. | Presumably planted to replace the southernmost tree of three planted in the 1920s which was damaged or died around the time of the 1952 fires. |
| CP16 & CP17| ![Cultural Planting](image3.jpg) | **Cultural Planting**  
English Oak trees between the approach road and House No. 8. | Landscape plantings dating from the mid-twentieth century (1940s – 1950s) landscaping. |
| CP18| ![Cultural Planting](image4.jpg) | **Cultural Planting**  
Ash tree (*Fraxinus*) on the northern curtilage of the Director’s Residence (called *Acer* sp in the 2004 CMP). | Landscape planting dating from the mid-twentieth century (1940s – 1950s) landscaping. |
<table>
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<tr>
<th>ID</th>
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<th>Landscape Element Description</th>
<th>Discussion of Natural/Cultural Heritage Value</th>
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<tr>
<td>CP19 to CP26</td>
<td><img src="image1.png" alt="Image" /></td>
<td>Cultural Planting&lt;br&gt;Eight <em>Eucalyptus bicostata</em> trees, scattered throughout the Observatory site.</td>
<td>Survivors of extensive 1960s plantings of this species in the Canberra region.</td>
</tr>
<tr>
<td>CP27 &amp; CP28</td>
<td><img src="image2.png" alt="Image" /></td>
<td>Cultural Planting&lt;br&gt;Two <em>Eucalyptus bicostata</em> trees</td>
<td>Located in the residential area and appear to predate the 1960s plantings.</td>
</tr>
<tr>
<td>ID</td>
<td>2013 Photograph*</td>
<td>Landscape Element Description</td>
<td>Discussion of Natural/Cultural Heritage Value</td>
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</tr>
<tr>
<td>CP29</td>
<td><img src="image1" alt="Photo" /></td>
<td><strong>Cultural Planting</strong></td>
<td>Either part of the extensive 1960s plantings of eucalypt species in the Canberra region, or associated with the second wave of <em>E. maidenii</em> use in the area in the late 1950s.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The <em>Eucalyptus maidenii</em> tree north of the Director’s Residence which may have been planted in conjunction with the <em>E. bicostata</em> plantings in the 1960s. Being slower growing, it may predate them.</td>
<td>* identification to be confirmed.</td>
</tr>
</tbody>
</table>

<p>| CP30 &amp; CP31 | <img src="image2" alt="Photo" />  | <strong>Cultural Planting</strong>        | Part of extensive 1960s plantings of eucalypt species in the Canberra region. |
|            | <img src="image3" alt="Photo" />  | Two other <em>Eucalyptus maidenii</em> trees in the south of the site near House 19. |                                                                                      |</p>
<table>
<thead>
<tr>
<th>ID</th>
<th>2013 Photograph*</th>
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</tr>
</thead>
</table>
| CP32 | ![Image](image.jpg) | **Cultural Planting**  
A *Melaleuca* (decora?) tree in the southern residential area. | Remnant of the period of native plants and bush gardens throughout Canberra in the 1960s and 1970s. |
Figure 3.7 Breakdown of maps (below) showing the location of landscape elements—natural heritage vegetation and cultural plantings—at the Mount Stromlo Observatory Precinct, as listed in Table 3.1. (Source: GML, adapted from aerial photography and field inspection)
Figure 3.8 Location of the landscape elements—natural heritage vegetation and cultural plantings—at the Mount Stromlo Observatory Precinct. (Source: GML, adapted from aerial photography and field inspection)
Figure 3.9 Location of the landscape elements—natural heritage vegetation and cultural plantings—at the Mount Stromlo Observatory Precinct. (Source: GML, adapted from aerial photography and field inspection)
Figure 3.10 Location of the landscape elements—natural heritage vegetation and cultural plantings—at the Mount Stromlo Observatory Precinct. (Source: GML, adapted from aerial photography and field inspection)
Figure 3.11 Location of the landscape elements—natural heritage vegetation and cultural plantings—at the Mount Stromlo Observatory Precinct. (Source: GML, adapted from aerial photography and field inspection)
3.2 Endnotes

2 Scenic Landscape Architecture, Mt Stromlo Observatory Landscape Plan, 2004
3 Tanner Architects, op cit.
4 ibid.
5 ibid.
6 Scenic, op cit.
7 Scenic, op cit, quoting Jenkins 2000.
9 Scenic, op cit.
10 ibid.
12 Scenic, op cit.
13 Australian Archives Series A1, Item 1918/6038. Establishment of an Astronomical Observatory at Canberra, as quoted in Tanner Architects, op cit, p 45.
14 ibid.
15 Tanner Architects, op cit, p 45.
16 ibid.
17 As numbered in Tanner Architects, op cit.
18 Simpson C, 2004, Ecological Assessment of Sites Proposed for Redevelopment—Mt Stromlo Observatory, report prepared for ANU Green from the School of Resources, Environment and Society, ANU.
19 Gray, op cit.
20 As numbered in Tanner Architects, op cit.
21 Scenic, op cit.
22 ibid.
23 ibid.
24 ibid.
25 ibid.
26 ibid.
27 ibid.
28 Scenic, op cit; and James, 1999.
4.0 Indigenous Context

4.1 Introduction

This section outlines the cultural and archaeological context for an Indigenous Heritage Values Assessment for the Mount Stromlo Observatory Precinct. It details the background research, community consultation and site surveys which have led to an understanding of the Indigenous heritage values of the site and its surrounding area.

4.2 Methodology

Indigenous heritage conservation and management aims to sustain the relationship between Indigenous people and their heritage places. Best practice requires that assessments of Indigenous heritage values take into consideration the principles outlined in Ask First: A guide to respecting Indigenous heritage places and values, prepared by the Australian Heritage Commission, 2002; in which consultation is a key factor in the process of identifying heritage values:

In recognising the rights and interests of Indigenous peoples in their heritage, all parties concerned with identifying, conserving and managing this heritage should acknowledge, accept and act on the principles that Indigenous people:

- are the primary source of information on the value of their heritage and how this is best conserved;
- must have an active role in any Indigenous heritage planning process;
- must have input into primary decision-making in relation to Indigenous heritage so they can continue to fulfil their obligations towards this heritage; and
- must control intellectual property and other information relating specifically to the heritage, as this may be an integral aspect of its heritage values.

The methodology for the Indigenous heritage assessment for the Mount Stromlo Observatory comprised four main activities:

- Consultation:

  Consultation was undertaken with representatives of the Indigenous community as a means of establishing their views of the heritage values of the site. This practice is standard for assessments under the EPBC Act and serves to draw out the intangible heritage values that cannot be readily assessed through research and site inspections.

- Background Research:

  Background research into the cultural values of the site included discussions with ACT Heritage staff regarding registered and recorded sites in the area, and a review of consultant reports for other projects and studies.

- Site Survey:

  The site survey was informed by the analysis of background research. Parts of the site were targeted for inspection based primarily on ground surface visibility and access. The opportunity for all of the Indigenous community representatives to participate was offered, although not all of the groups were able to attend the site survey.
Recommendations and Policies:

Recommendations and policies were prepared based on the consultation discussions and assessment of the site’s archaeological potential. The recommendations reflect the views of the Indigenous representatives present.

4.3 Consultation

As part of the process of assessing the Indigenous heritage values of a place, the heritage values associated with it must be identified by the relevant local Indigenous community.

The Commonwealth Heritage Management Principle 6 states:

*Indigenous people are the primary source of information on the value of their heritage. The active participation of Indigenous people in identification, assessment and management is integral to the effective protection of Indigenous heritage values.*

The guidelines for managing Commonwealth Heritage values recommend that the local Indigenous community be engaged in accordance with the Ask First guidelines.

These guidelines generally require that the relevant Traditional Owners and any other Indigenous People with rights and interests in the area are identified. Identifying them is a matter of contacting Land Councils, local councils, state authorities (such as ACT Heritage) and any other known group or authority who may provide relevant information. It is not a specifically prescriptive process. Fortunately, the process has been addressed in the ACT through the issuing of an official ‘Representative Aboriginal Organisation’ (RAO) list by ACT Heritage.

Consultation with the local Aboriginal community was conducted for the Mount Stromlo HMP through the ACT’s RAOs in September and October 2013.

The following groups participated in the project:

- Buru Ngunawal Aboriginal Corporation (BNAC), represented by Wally Bell and Tyronne Bell; and
- Ngarigo Currawong Clan (Ngarigo), represented by Tony Boye and James Mundy.

Neither King Brown’s Tribal Group nor the Little Gudgenby River Tribal Council was available to participate in the project.

Consultation included a project briefing with Wally Bell of BNAC by telephone and a similar project briefing in person with Tony Boye of the Ngarigo. Both groups sent a representative to participate in a field survey of the site (Tyronne Bell and James Mundy respectively).

4.4 Aboriginal Cultural Context

Aboriginal people have lived in the Canberra region for over 21,000 years. Both the archaeological record and ethnographic and documentary evidence attest to a widespread and complex society. Information from early settlers’ diaries, letters and other documents are useful in helping to recreate some of the more intangible aspects of the lives of the local Aboriginal population prior to the first contact phase of European settlement. A broad range of material culture items is also described in the early documentation and this is partly reflected in the surviving archaeological record. Spears, tools,
spear throwers, clubs, shields, boomerangs, stone axes, yam sticks, bark vessels, canoes, bark huts, skin clothing and shell and stone scrapers are some of the material the early Europeans observed.5

Prior to European settlement of Australia, Aboriginal groups were delineated by physical boundaries within the landscape, such as watercourses and particular varieties of vegetation. Group members were usually united by common dialect, descent, history, and a shared ‘Dreamtime’ ancestor, with each group led by influential individuals.6

The ethnographic literature records a number of food resources in the area, including possum, bandicoot, reptiles, kangaroos, wombats, birds including emus, fish, yabbies, Bogong moths, yams, berries and other plants.7 The Bogong moth in particular was an important food source known to inhabit the mountainous areas to the south of the Canberra region. These moths were a great source of food for local Aboriginal people and it is believed that people travelled great distances during summer months to exploit this resource and participate in related ceremonial activities.8

Despite the range of food resources documented, the Canberra landscape would have been home to relatively small groups of people. Climatic restrictions and relatively reduced resource availability resulted in smaller population sizes of groups in the uplands areas.9 Smaller groups would have provided greater mobility when migrating between seasonal resource zones and pursuing warmer climates in the colder months. Ethnographic observations note that groups were typically recorded around 20–30 people, coming together in larger groups for meetings and festive occasions. Population estimates from the Canberra area vary from around 50010 people to around 700–80011 people for the total tribal size in the area, although their congregation as a total group was rare. Smaller group estimates vary from ‘family or larger groups’ up to 50 people.12

The arrival of European settlers into the Canberra region in the early 1820s resulted in the disruption of traditional lifestyles, resource access and land use by Aboriginal people. Access to food sources and ceremonial sites became restricted and many people died from European brought diseases like influenza, smallpox and tuberculosis.13 This disruption was so swift that no more than fifty years after the arrival of the first European settlers in the region, most aspects of the traditional way of life of the Aboriginal people had disintegrated.

By the 1850s the traditional Aboriginal economy had largely been replaced by an economy based on European commodities. Aborigines continued to live in the Canberra region, although their numbers were diminished through illness, and their culture and language declined.

By the 1860s the population of the local Aboriginal community around Canberra had been reduced to around 60 people and then reduced further to around 5 or 6 individuals by 1872.14 This was reported in the Goulburn Herald on 9 November 1872. The main culprit was disease and by the 1870s ‘diseases such as measles and smallpox had decimated the Aboriginal population of the Highlands, and only a few survivors remained’.15

The blocks of land around Mount Stromlo were among the later areas of land selection after all of the valley floors, floodplains and lower slopes had been selected. The poorly watered, rocky and hilly environment of the Mount Stromlo area and that to the west of Weston Creek were not selected for pastoral use until the 1870s. According to Faulkner, Mount Stromlo ‘falls within a portion of land owned by Augustus and Annie Gibbes. This area was selected by Gibbes as an extension to his landholdings with the Yarralumla Estate.’16
In 1954, Bluett recorded that Aboriginal people were still occupying and working in their own country in 1927, despite the fact that the land had been incorporated into the Federal Capital Territory. However, the number of Aboriginal people appeared to have been fairly low with the observation that:

*Up to the acquisition of the territory by the Commonwealth there were some ten or twelve purebreds and lighter shades working in their shiftless, spasmodic way on Yarralumla and surrounding stations. These have either died or drifted onto other parts. Canberra knows them no more.*

The presence today of Aboriginal families who still maintain connections to their country indicates that the Aboriginal people may not necessarily have ‘died or drifted onto other parts’, but may have been living in the area as a ‘silent presence’ during the early to mid-twentieth century.

### 4.5 Aboriginal Archaeological Context

In 2004 an archaeological assessment of the Mount Stromlo area was undertaken by archaeologist Patrick Faulkner. This assessment included a pedestrian survey across the study area, traversing the landscape and inspecting areas of visibility for artefacts and sites. The archaeological survey concentrated on the northwestern slopes of the site without paying any particular attention to the ridge area that had been developed for the observatory buildings. Two isolated artefacts were found during that survey.

These artefacts included:

- **MSO001**, an isolated silcrete flake located approximately 5m off a vehicle track running down the steep western side of Mount Stromlo towards the western boundary.
- **MSO002**, a small chert flake located to the south (upslope) of a vehicle track running along the base of the Observatory Precinct.

The presence of only two isolated artefacts led Faulkner to conclude that Mount Stromlo had a low likelihood of containing sites of higher artefact density. Therefore, its overall archaeological potential was assessed as being relatively low.

A search of the ACT Heritage Database of Aboriginal sites and a review of recent consultant reports from assessment projects in the area indicates that approximately 146 sites have been identified since the early 1980s within a five kilometre radius of Mount Stromlo. Despite the reasonably high presence of sites in the general surrounding area, predictive modelling based on these results tends to suggest that Mount Stromlo may indeed have relatively low potential for archaeological sites.

In 1981 Barz and Winston-Gregson undertook a survey of the Murrumbidgee River Corridor. This project reported nine sites on the eastern side of the Murrumbidgee River, approximately 4–5 km to the west of Mount Stromlo. The sites included artefact scatters described as being from minor up to extensive; and artefacts made from black chert, quartz, quartzite and a small outcrop of jasper. They were all recorded on lower slopes within a few hundred metres of the river.

In 1990 Boot and Bulbeck conducted an extensive survey of the Stromlo Forest Management Area. This project saw numerous transects surveyed across the landscape including forest tracks, and the valleys and lower slopes along the Molonglo watershed. It also included some survey along and around the slopes of the Mount Stromlo ridge. A range of sites and artefacts were recorded from the general area around Mount Stromlo including sites up to 3.5km away to the north, within a few hundred metres of the Molonglo River; and also up to 4km to the east, south and west of Mount Stromlo.
Stromlo. A total of 57 sites were recorded comprising 33 artefact scatters and 24 isolated finds. Many of the sites were exposed on forest tracks.

Among these sites recorded by Bulbeck and Boot, three isolated artefacts were found within 1km to the south on the lower slopes of the ridge of Mount Stromlo and five isolated artefacts were recorded to the west of the ridge, also on the lower slopes within 1km of the ridge. Only two of these artefacts were actually found within the boundary of the Mount Stromlo Observatory Precinct. Based on these findings Bulbeck and Boot concluded that sites were most likely to exist on lower and intermediate spurs and slopes overlooking watercourses; and that artefacts and sites were less likely to occur on steep terrain and away from watercourses. This reflects the nature of the Mount Stromlo site.

Navin Officer also conducted an archaeological survey on Mount Stromlo in 1993 for the Stromlo Water Treatment Plant which is located to the south of the Mount Stromlo Observatory site. This assessment did not find any sites or artefacts and concluded that the likelihood of finding any was low.

In 1994 Saunders conducted a survey of the Molonglo River corridor, approximately 3–4 km to the north of Mount Stromlo. This project recorded seven sites of which two were artefacts scatters. All of the sites were within one hundred metres of either the Molonglo River or one of its tributaries.

In 2005 Grinbergs undertook an assessment of block 447, Mount Stromlo. This project recorded 14 artefact scatters and two isolated artefacts. These artefact occurrences were all on the lower, east-facing slopes of the Mount Stromlo ridge, within 1km of the current study area. They were also all within a few hundred metres of Holdens Creek.

Further work by Grinbergs in 2006 saw the reporting on another nine artefact scatters and seven isolated artefacts up to 1.5km to the north, and otherwise within 1km to the east, west and south of Mount Stromlo. This project focused on mountain bike trails in the Stromlo Forest Park. The trails provided exposures in which artefacts were visible.

A recent (2013) assessment of Stromlo Forest Park by Biosis included a literature study which observed that a range of consultancy assessments around the Molonglo Valley generally supported the predictive modelling outlined by Bulbeck and Boot in 1990 that site occurrences would be close to watercourses and generally on the lower and intermediate slopes with lesser occurrences in steep terrain. The Biosis survey results included the identification of 39 previously unrecorded Aboriginal archaeological sites. The study area extended 2.3km to the north and east of Mount Stromlo; and once again found that the lower slopes of the spurs and ridges were the places most likely to contain occupation evidence.

The sites identified were mostly low density artefact scatters or isolated finds which are representative of the background scatter of evidence of the Aboriginal use of the landscape. Several larger camping sites comprising denser scatters of artefacts were also noted including site SPF 3, comprising 35 artefacts of quartz, silcrete, chert, and hornfels; and site SPF36, comprising 42 artefacts almost exclusively made from quartz with some fragments of chert, silcrete and tuff.

Of the artefacts recorded within the Study Area most were constructed on quartz and were primary flakes. Hammer stones and Cores were a minor component of the recorded assemblages. Retouch and usewear occurred on a minority of the artefacts. These findings of the field survey are consistent with the results of other large scale surveys that have taken place in the area for future residential development.
It is likely that some of these sites and artefacts will have been disturbed in the past by ground surface ripping for the plantation of pine forests that occupied large tracts of this area prior to the 2003 fires. Regardless of this potential disturbance, the presence of the number of artefacts in the landscape (as identified by Biosis and other consultants) indicates that the lower slopes of Mount Stromlo and the surrounding areas were consistently occupied by Aboriginal people in the past.

On the whole, despite the numerous sites and isolated artefacts recorded in the surrounding area, these assessments tend to support the notion that the higher and steeper terrain, away from watercourses, is less likely to contain sites. Therefore, the likelihood of there being intact Aboriginal archaeological sites on the ridge of Mount Stromlo is considered to be relatively low.

4.6 Field Survey

On 17 October 2013, a field survey of the Mount Stromlo Observatory Precinct was conducted by GML in conjunction with representatives of the BNAC and the Ngarigu Currawong Clan.

The survey was conducted primarily on foot and sought to cover as many areas of ground surface exposure as possible. Generally there was little or no ground surface visibility across the site with the main areas of visibility on tracks and erosions scars.

Visibility was hampered significantly by a dense cover of native grasses and also substantial stands of wattle regrowth. Significant areas of the site had nil ground surface visibility while some areas adjacent to and including the vehicular tracks had exposures of 100% visibility. Areas of high exposure were also most likely to be areas of high disturbance.

No artefacts or sites were noted during the survey.

4.7 Results and Consultation Outcomes

The absence of any visible artefacts tends to support the conclusions of the predictive model—that there is less likelihood of finding archaeological sites on steep terrain away from watercourses. However, the poor ground surface visibility means that it is difficult to verify these conclusions. Given the broad range of archaeological material in the general area, there still remains some possibility that artefacts may be present on Mount Stromlo.

No specific cultural information was provided during the consultation discussions, although there was some general discussion of the wider picture of Aboriginal people's stories and observations about the stars.

The general navigational value of the ridge and its overall view was also considered likely to have been of some cultural importance.

Other points that were raised during the consultation in regard to the future management of the site included:

1. Both groups were aware of the predictive modelling from previous consultant assessments in the area. Based on the significant number of other sites in the local area, they do not agree that the predictive modelling should negate the need for a proper survey. New works should still require specific impact assessments.

2. The use of tracks and trails around Stromlo Forest Park appear to also include using areas of the Mount Stromlo Observatory Precinct for recreational mountain bike activities. The RAOs
were concerned that this ad hoc use of the site may impact unknown archaeological sites; therefore, this activity should be regulated by the ANU to reduce possible unknown impacts. Suggestions included fencing areas of the eastern and northeastern boundary to reduce access.

3. The Master Plan outlines the possibility of expanding buildings and facilities at Mount Stromlo for interpretive and visitor engagement purposes, including the proposed construction of a new visitor centre/museum. The RAOs were specifically interested in any related opportunities to present information on Aboriginal traditional stories and views of the stars and astronomy.

4. Separate to the idea of publicly presenting information on Aboriginal traditional stories and astronomy, the RAOs discussed the idea of a project opportunity for the Observatory research staff to engage with the Aboriginal community in relation to Aboriginal astronomy and culture. In particular, there is cultural information relating to the observations of the Pleiades. This information was not disclosed during the project consultation meetings. The opportunity would be oriented more towards learning and cultural exchange rather than public interpretation per se. The opportunity to observe the Pleiades at Mount Stromlo and to understand more about it, along with the sharing of some cultural information, was seen by some of the RAO representatives as an interesting, exciting and potentially important engagement and interpretive project opportunity for the university and the community.

5. The Master Plan also outlines the possibility of expanding new power generating technologies for the Mount Stromlo Observatory’s energy sustainability. These possibilities include wind powered electricity generating turbines. Some of the RAO representatives were concerned about the impacts of wind farms on the Bogong moth population and its migration habits. They asked that the ANU determine whether or not this has ever been studied. If not, they asked if it can be studied prior to any decisions being made about the wind farms.

These issues have been included in the future management policies for the site (Section 8.0).

On the whole, there have been no specific Aboriginal cultural values identified relating to the Mount Stromlo site. The archaeological potential of Mount Stromlo is predicted to be low but remains relatively untested. The cultural values relating to Aboriginal engagement with astronomy are important but have not been specifically tied to the use of Mount Stromlo by Aboriginal people in the past.

The ongoing use and research associated with the Mount Stromlo Observatory represents an important collaborative opportunity for the Aboriginal community and the ANU RSAA to engage on research and discussion of traditional Aboriginal astronomy.
4.8 Endnotes


2 ibid.


6 Flood, op cit.

7 Bennett, 1834, as reported by Flood op cit p 8; also Bluett, W, 1954 The Aborigines of the Canberra District at the arrival of the White man, paper read to the Canberra & District Historical Society, 29 May 1954.

8 Flood, op cit, pp 111–112.

9 ibid, p 128.


12 Watson, op cit; and Gillespie, op cit.

13 Flood, op cit, p32.


15 Flood, op cit, p 8.


18 ibid.

19 ibid p 167.

20 Faulkner, op cit.

21 ACT Heritage Database Register search data as provided by ACT Heritage, August 2013.


23 ibid.


25 ACT Heritage Database Register search data as provided by ACT Heritage, August 2013.


27 Grinbergs, A, Aboriginal Heritage Assessment: Proposed Mountain Bike Trails at Mount Stromlo, report prepared for the ACT Chief Ministers Department, 2006.


29 ibid, pp 26–27 and 50–51.

30 ibid, p 65.

31 Tract, Campus Master Plan 2030 Draft, report prepared for the Australian National University, 2013.
5.0 The Built Environment—Analysis

5.1 Introduction

This section provides a discussion of the built environment including a brief description and analysis of the built elements of the site, and a historical archaeological analysis and comparative analysis of other observatories, Commonwealth institutions and architects.

The Mount Stromlo Observatory has evolved as an education, research, academic and technology facility since its establishment.

The site contains evidence from each of the main phases of development: its establishment as an Observatory requiring telescope domes, the addition of administration facilities and residential housing and the site’s change in focus to more research, education and manufacturing activities—each representing a new phase and type of building requirements; with the more recent enhancement of the site as a visitor destination.

The Mount Stromlo Observatory comprises a suite of historic and modern telescope domes, administration and workshops buildings, residential housing and visitor facilities from each of the development phases. Other historic features on the site include the Duffield gravesite, remnant domestic gardens, landscape elements, cultural plantings, as well as ruins of a range of buildings and telescopes destroyed in the 2003 fires.

Following the 2003 fires, the buildings on the site were in varying condition. The 2004 CMP prepared immediately after the fires identified that many of the buildings on the site were ruinous. The appreciation and understanding of the ruins has changed with time, particularly after the site was initially cleaned up following the fires.

To ensure the ongoing functionality of the site was restored after the fires, a site wide clean-up was undertaken to remove debris and burnt trees, make safe damaged buildings and new construction was undertaken quickly.

The Commonwealth Solar Observatory Building was reconstructed and extended shortly after the fires and re-occupied by 2006/7; and the Visitor Centre was repaired and reopened. The Duffield and Woolley buildings only suffered minor damage in the fires. Five residential houses survived the fires and all have been reoccupied. The Director’s Residence was damaged and retained as a managed ruin (stabilised 2014).
All of the telescope domes and buildings were damaged in the fires, and with the exception of the reconstructed Commonwealth Solar Observatory Building with its two domes (although neither has had its telescope replaced), the only telescope to be rebuilt was the EOS SLR Telescope. Of the six free-standing telescope buildings, only two (74 inch and Reyonlds) have their iconic white domes intact, three buildings (Yale Columbia, Great Melbourne and Oddie) are reduced to their masonry walls and some remnant internal structure, and one (former Swedish Uppsala) was demolished in the clean-up but the footprint remains.

Buildings constructed on site since the fires included the Precision Engineering Centre (PEC) or ‘the Barn’ (to provide immediate replacement workshop space), the Advanced Instrumentation Technology Centre (AITC) (constructed in two phases in 2006 and 2011 to continue the function of manufacturing of astronomical instruments), three new outreach telescope domes (constructed in 2005 for public use), and the residential building Faulkner Court (constructed in 2011).

5.1.1 Definitions of Condition—Ruins

Of the built evidence remaining at the Mount Stromlo Observatory Precinct, several of the telescope buildings and residential sites have simply been cleared of debris and made safe. They are unlikely to be reconstructed. To develop appropriate management policies for these important structures, this HMP uses a specific definition of the term ‘heritage ruins’ when referring to these elements on site.

The guideline *Ruins: A guide to conservation and management* published by the Australian Heritage Council in 2013 defines:

> A heritage ruin is defined as a place that currently, through abandonment, redundancy or condition, is disused and incomplete, is usually no longer maintained and appears unlikely to regain its original or a substantive use, function or purpose other than interpretation.

For the purposes of management and consistency, this HMP refers to buildings which were damaged in the 2003 fires, which have no current specified use, and which have lost significant features of the structure (eg the dome/roof) as heritage ruins. The following structures on the site are considered heritage ruins:

- Oddie Telescope Building;
- Great Melbourne Telescope Building;
- Yale Columbia Telescope Building; and
- The Director’s Residence (stabilisation and conservation works completed 2014).

The buildings which were damaged in the 2003 fires yet retain significant features (but may not currently allow access or have a specified use) include:

- Reynold’s Telescope Dome;
- 74inch Telescope Dome; and
- Houses 8, 18 and 20.

All other buildings on the site fall into the following categories: completely destroyed by the 2003 fires and subsequently demolished in the clean-up, received minimal damage and/or continued to function, have been reconstructed or newly built.

These definitions have been applied to the descriptions of the built elements on the site.
5.2 Built Elements at the Mount Stromlo Observatory

5.2.1 Built Element Types

At the Mount Stromlo Observatory there are four major building types, each constructed to suit particular functions;

- domes/telescope buildings;
- observatory buildings/workshops;
- administration buildings, and
- residential buildings.

There are also additional elements which do not strictly fall into the above categories, such as visitor facilities.

This section briefly describes each element within the distinctive building types, noting the extent of damage from the 2003 fires, and comparing an early photo of the element (where available) with a contemporary photo.

The telescopes were often constructed earlier than the building or dome to house them; the dates included in bold below are the construction dates of the buildings. Detailed description and analysis of the historic development of each individual structure are included in Volume 2 of the HMP. The location of the extant built elements is shown in Figure 1.2.

5.2.2 Domes/Telescope Buildings

Located on the northwest side of the ridge, the extant iconic white dome structures are the signature buildings of the Mount Stromlo landscape. The telescopes and related buildings demonstrate the design and technology of various periods of astronomy research, dating back to the early twentieth century.

The Oddie Telescope Dome building is one of the oldest Commonwealth purpose built buildings in the Territory. It was constructed in 1911 to test the site suitability and demonstrate the potential for Australia to fulfil an important role in solar observation and astronomical research.

While many of the telescope buildings are no longer used for research purposes, and had only utilitarian functions from the 1960s onwards (following the development of the ANU Siding Spring Observatory); in their current ruined state they continue to provide powerful physical evidence of Australia’s postwar scientific endeavours.3

Despite the loss of most of the distinctive domes in the 2003 fires, the remaining bases and dome framework and in some cases remnant telescope structures offer evocative reminders of the extent of the seminal scientific work carried out on site, and the destructive force of the fires. The Yale-Columbia building is particularly captivating with its remnant internal concrete telescope support and rusted window frames, inviting visitors to create picture frame views of the surrounding landscape from within, and contemplate the impact and speed of wildfire.
### Oddie Telescope Building

<table>
<thead>
<tr>
<th>Name</th>
<th>Date and Description</th>
<th>Status/Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Oddie Telescope Building</strong></td>
<td>1911 (Pre-1923 Phase) The Oddie Telescope was built in the 1890s and was the first telescope erected on site in 1911, located on a high point at the northern end of the ridge. The walls of the masonry cruciform shaped building and the iron dome rim remain, demonstrating the relatively petite size of the original structure.</td>
<td>Damaged in the 2003 fires—heritage ruin. A replica of the telescope was built in 1911 as part of centenary celebrations.</td>
</tr>
</tbody>
</table>

#### Commonwealth Solar Observatory Domes—Heliostat and Farnham Telescopes

<table>
<thead>
<tr>
<th>Name</th>
<th>Date and Description</th>
<th>Status/Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Heliostat Telescope</strong></td>
<td>(1924–1938 Phase) The Heliostat Telescope, located in the small dome on the east wing of the Commonwealth Solar Observatory Building, was erected in c1928, and was the main instrument used on site from 1931 to 1946. The Heliostat Telescope lens was removed in 1995 for use in the Visitor Centre. The Heliostat Telescope was not reinstated to the dome.</td>
<td>Damaged in the 1952 and 2003 fires. The dome was reconstructed in 2006 with the Commonwealth Solar Observatory Building.</td>
</tr>
<tr>
<td><strong>6inch Farnham Telescope</strong></td>
<td>(1924–1938 Phase) The 6inch Farnham Telescope, located in the small dome on the west wing of the Commonwealth Solar Observatory Building, was erected in 1928. The 6inch Farnham Telescope was relocated to an Outreach Dome in 2005.</td>
<td>Survived the 1952 fires and had minor damage in the 2003 fires. The dome was reconstructed in 2006 with the Commonwealth Solar Observatory Building.</td>
</tr>
</tbody>
</table>

---

**Figure 5.1** Oddie Telescope Dome in 1929. (Source: NAA 3167270)

**Figure 5.2** Oddie Telescope Building. (Source: GML 2013)

**Figure 5.3** Rear of the Commonwealth Solar Observatory Building and domes c1928. (Source: MSO Archives)

**Figure 5.4** Farnham and Heliostat Domes on the Commonwealth Solar Observatory Building. (Source: GML 2013)
Reynold’s Telescope Dome

<table>
<thead>
<tr>
<th>Name</th>
<th>Date and Description</th>
<th>Status/Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Also referred to as the 30inch Reynold’s Reflector and 76cm Reflector.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The telescope was built c1910 and erected on site in 1929. Positioned to the west of the Commonwealth Solar Observatory building, it is the southernmost telescope building on the ridge line. It is a free-standing building with a masonry cylindrical base and metal plate clad dome.

Yale–Columbia Telescope Building

<table>
<thead>
<tr>
<th>Name</th>
<th>Date and Description</th>
<th>Status/Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Also known as the 66cm Refractor Telescope and 26inch Refractor.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The telescope was built c1923–1924 in the USA, originally for operation near Johannesburg. It was relocated to Mount Stromlo in the early 1950s, and positioned at a main road junction on the site. The masonry walls of the cylindrical building remain on a concrete floor slab. The dome was destroyed and the adjacent masonry annex was damaged and removed in the clean-up. The building contains the remnant concrete telescope support arm and steel window frames.
74inch Telescope Dome

<table>
<thead>
<tr>
<th>Name</th>
<th>Date and Description</th>
<th>Status/Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Also known as the 1.9m Reflector Telescope and Coude Spectroscope.</td>
<td>Up until 1974 and the construction of the Anglo-Australian Telescope, the 74inch Telescope was the equal largest telescope in the southern hemisphere.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>It is a steel framed masonry structure with a steel plate clad dome, located centrally on the site. The building contains remnant internal scientific equipment and a dome rotating mechanism, albeit damaged. The adjacent masonry Coude Spectroscope annex was damaged in the fires and substantially demolished in the clean-up from the fires.</td>
<td></td>
</tr>
</tbody>
</table>

Figure 5.9 74inch Telescope Dome and Coude Spectroscope building, 1974. (Source: ACT Heritage Library, 005974)

Figure 5.10 74inch Telescope Dome (note the different angle to Figure 5.9). (Source: GML 2013)

Great Melbourne Telescope Building

<table>
<thead>
<tr>
<th>Name</th>
<th>Date and Description</th>
<th>Status/Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Melbourne Telescope Building</td>
<td>1952-1955 (1939–1955 Phase)</td>
<td>Damaged in the 2003 fires—heritage ruin. New doors and windows have been added to restrict access.</td>
</tr>
<tr>
<td>Also referred to as 50inch Reflector/1.3m Reflector Telescope.</td>
<td>The telescope was built in 1868 in Dublin for the Melbourne Observatory and was transferred to Mount Stromlo in 1944. It is located nearby the Commonwealth Solar Observatory Building. The masonry walls of the cylindrical base remain on a concrete floor slab. The dome was destroyed and the adjacent masonry annex was damaged and removed in the clean-up. The building contains the remnant concrete telescope support arm, and damaged scientific equipment.</td>
<td></td>
</tr>
</tbody>
</table>

Figure 5.11 Great Melbourne Telescope Dome 1954. (Source: MSO Archives)

Figure 5.12 Great Melbourne Telescope building. (Source: GML 2013)
Swedish Uppsala Telescope Building

<table>
<thead>
<tr>
<th>Name</th>
<th>Date and Description</th>
<th>Status/Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Also referred to as the 20inch Uppsala Schmidt Telescope or Uppsala Telescope.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The building housed the Uppsala Schmidt Telescope for the Swedish University of Uppsala. The telescope was relocated in 1983 to Siding Spring Observatory and the building later became the headquarters of the Canberra Astronomical Society.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A masonry building with a copper dome, originally located on the eastern side of the ridge, near the Workshop. The building was demolished and only evidence of the brick building footprint remains.</td>
<td></td>
</tr>
</tbody>
</table>

Figure 5.13 Swedish Uppsala Dome c1970. (Source: MSO Archives)

Figure 5.14 Cleared site of the Swedish Uppsala Telescope building. (Source: GML 2014)

Other Domes

<table>
<thead>
<tr>
<th>Name</th>
<th>Date and Description</th>
<th>Status/Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not an ANU managed telescope—it is separately managed by Electro Optic Systems (EOS) and Geoscience Australia. The modern facility is located near the Oddie Telescope Dome to the north of the site.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Public donations provided funds for the three small Outreach Domes, constructed on the location of the former Workshop building destroyed in the 2003 fires.</td>
<td></td>
</tr>
</tbody>
</table>

Figure 5.15 Outreach Telescope Domes on the location of the former Workshop building (Source GML 2013).

Figure 5.16 EOS SLR Facility. (Source: GML 2013)
5.2.3 Main Observatory Buildings/Workshops

The Commonwealth Solar Observatory Building (formerly known as the Main Observatory Building) was designed by John Smith Murdoch for the Federal Capital Commission. It was constructed in 1925–1926 with a central building and two substantial wings to the east and west linked by covered walkways and a small group of outbuildings to the north. Arranged around two courtyards and contained within garden walls, the building had a range of modifications before it was severely damaged in the 1952 fires, and again in the 2003 fires. This building was reconstructed shortly after both events following original building plans. It is a key component of the site, a focus of its layout and landscaping, and evidence of its national institutional role.

The workshops at Mount Stromlo are an integral part of the site and its function. Many of the instruments used to make significant astronomical discoveries were designed and constructed in the workshops. Therefore, it was important that a workshop facility was quickly rebuilt following the 2003 fires when the early brick workshop complex was destroyed.

A large steel mechanical workshop (referred to as the Precision Engineering Centre or ‘the Barn’) was constructed shortly after the 2003 fires to provide temporary workshop space until the Advanced Instrumentation Technology Centre (AITC) was completed, this building now has an independent scientific function. The AITC, built in stages since 2006, provides a modern state of the art facility for the ongoing function of the Observatory. Moreover, AITC provides specialist optical, mechanical, electronics, and software engineering and fabrication facilities for designing, constructing, integrating, and testing instruments that are used on telescopes and in spacecraft in Australia and overseas.

The Duffield Building was constructed in the 1960s and contains facilities for research, a lecture theatre, a seminar room and office space for the scientific staff. It is a large steel framed two-storey building with face concrete block walls and a low pitched steel framed roof. It was linked to the neighbouring three-storey Woolley Building, constructed in 1995, with a concrete two-storey bridge. The Duffield and Woolley Buildings, named after the first two Observatory directors, are key features along the main entrance road to the site, situated on the steep eastern slope of the ridge.

### Commonwealth Solar Observatory Building

<table>
<thead>
<tr>
<th>Name</th>
<th>Date and Description</th>
<th>Status/Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commonwealth Solar Observatory Building Also known as the Administration Building and the Main Observatory Building.</td>
<td>1925–1926 (1924–1938 Phase) Designed by JS Murdoch, additions were made in 1942 and the building was reconstructed after the 1952 and 2003 fires. The original design of the building displayed a unique Inter-War Mediterranean style architecture and incorporated two telescopes as well as garden pavilions. The 2006–2007 reconstruction aimed to be true to the original 1920s design, incorporating many of the original architectural details. It is a masonry building with a tile roof. The reconstruction also included a contemporary extension, providing a large open function space featuring a large glass wall facing northwest. This space interprets the original floorplan of the attached workshops which were destroyed. The east wing incorporates the dome originally housing the Heliostat Telescope, with a laboratory and library facilities; and the west wing contains the dome originally for the Farnham Telescope, with workshops and an electrical substation.</td>
<td>Damaged in the 1952 and 2003 fires. Reconstructed in 2006–2007.</td>
</tr>
</tbody>
</table>
Duffield and Woolley Buildings

<table>
<thead>
<tr>
<th>Name</th>
<th>Date and Description</th>
<th>Status/Condition</th>
</tr>
</thead>
</table>
| Duffield Building | 1964 (1956–1977 Phase)  
A two-storey steel framed building with a flat roof. It is positioned axially opposite the Commonwealth Solar Observatory Building, intentionally planned to reflect the main entrance of the older building. | Only minor damage in the 2003 fires.                  |
Designed by Collard Clarke Jackson, the three-storey steel framed building with face concrete block and fibre cement sheet walls and flat roof, is connected to the neighbouring Duffield Building. | Only minor damage in the 2003 fires.                  |
Workshop Buildings

<table>
<thead>
<tr>
<th>Name</th>
<th>Date and Description</th>
<th>Status/Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precision Engineering Centre ‘the Barn’</td>
<td>2003 (2003–Present Phase) Large steel framed green colorbond shed, located to the south of the Commonwealth Solar Observatory Building. It was built immediately after the 2003 fires to provide temporary workshop facilities until a permanent structure was completed.</td>
<td>Newly built.</td>
</tr>
<tr>
<td>Advanced Instrumentation Technology Centre (AITC)</td>
<td>2006/2011 (2003–Present Phase) Designed by Daryl Jackson Alastair Swayn Architects, the modern structure was built to sit in the landscape, following the established line of the Duffield and Woolley Buildings, set below the ridge. It is the largest building on site, providing state of the art facilities for the RSAA to maintain the function of manufacturing astronomical equipment and instrumentation on site.</td>
<td>Newly built.</td>
</tr>
</tbody>
</table>

Figure 5.21 Woolley building, south façade. (Source: GML 2014)
Figure 5.22 Woolley building, north façade. (Source: GML 2014)
Figure 5.23 Precision Engineering Centre, ‘the Barn’ under construction in 2005. (Source: MSO Archives)
Figure 5.24 Precision Engineering Centre, ‘the Barn’. (Source: GML 2014)
5.2.4 Residential Buildings

The provision of residential accommodation on the site was important due to the distant location of the Observatory from the city, and the need for staff to be on site for nocturnal work. The provision of staff accommodation on the site resulted in the early formation of community life at Mount Stromlo. The social events at the Director’s Residence, and the croquet lawn and tennis courts provided opportunities for gatherings and friendships to develop.

A number of residences were constructed between the 1920s and 1950s in the Residential Precinct on the southern side of the ridge. The houses are of a modest scale, all single storey of rendered masonry construction with terracotta roofs. The cottages are compact in form and simple in their design—varying slightly with some simplified design elements drawing on Mediterranean and Functionalist styles.8 Two types of houses were constructed during the later 1950s period; nine prefabricated Riley Newsum houses (eight removed in 1994), and two brick cottages which were positioned further south of the main residential area.

The Director’s Residence (completed in 1928) is a key built element on the site, as it was the social centre of the Observatory as well as the ongoing home of the Observatory’s Director. The physical location of the Residence is also reflective of ‘the style of administrative arrangements associated with scientific and other government institutions established during the early development of Canberra,’9 located close to the main administration area of the site and overseeing all of its principal elements and functions. To the east of the house and associated with the Director’s Residence was a croquet lawn, gardens and an orchard that was planted by Mrs Duffield. The Residence is a two-storey brick building, originally with a pitched slate roof. It is based on designs from the Federal Capital Commission’s Architect, Henry Maitland Rolland.

In 1942 a Bachelor’s Quarters building was constructed to accommodate staff, students and visitors to the site. An additional Bachelor’s Quarters was constructed in 1955 and the 1942 building was demolished in 1968. The 1955 building was destroyed in the 2003 fires and the site subsequently cleared. Faulkner Court, designed by Architectus, was built on the site in 2011 to continue the function of providing single person accommodation.

Other than the Director’s Residence, all accommodation is contained within the Residential Precinct at the southern end of the site, situated below the ridge. The different styles of houses constructed demonstrate the different eras in which they were built.10
Evidence of driveways and concrete floor slabs indicate where houses were located can be seen in the Residential Precinct, together with steps, garden gates and fences. Ad hoc garages and sheds of a later date have also been constructed in this area.

### Houses

<table>
<thead>
<tr>
<th>Name</th>
<th>Date and Description</th>
<th>Status/Condition</th>
</tr>
</thead>
</table>
| **House No. 20** | Originally known as Residence H.  
1925 (1924–1938 Phase)  
The first house to be built on site. It is located closest to the main access road. It is faintly Mediterranean in style, and is a single-storey, roughcast rendered brick house with a hipped terracotta tile roof. | Minor damage from the 2003 fires—intact. |
| **House No. 18** | 1928 (1924–1938 Phase)  
Originally one of a row of houses, including Houses 20 and 19: House 18 references the Functionalist style. It is a single-storey, roughcast rendered brick house with a hipped terracotta tile roof. | Minor damage from the 2003 fires—intact. |
| **House No. 8**  | 1938 (1924–1938 Phase)  
This house, positioned opposite House 8, differs from the others in its crescent shaped form. It is a single-storey house with painted brick walls and hipped terracotta tile roof. | Minor damage from the 2003 fires—intact. |
| **House Nos 2 and 3** | 1950s (1939–1955 Phase)  
These two neighbouring single-storey red brick houses are of a simple rectangular design with gable tile roofs. They are located south of the main Residential Precinct, at the site’s entry. | Not damaged in the 2003 fires. |

**Figure 5.27** Houses on Mount Stromlo in 1925. (Source: NAA 3118918 A3560)

**Figure 5.28** House No. 20. (Source: GML 2014)

**Figure 5.29** House 18 and the original Bachelor's Quarters. (Source: MSO Archives)

**Figure 5.30** House 18. (Source: GML 2014)
**Director’s Residence**

<table>
<thead>
<tr>
<th>Name</th>
<th>Date and Description</th>
<th>Status/Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Also known as</td>
<td>Although designed by the Federal Capital Commission (Henry Maitland Rolland) in Canberra, the Residence was influenced by the first Director, Walter Duffield and his wife Doris, confirming the necessary prominence of the Director’s role in the early establishment of the Commonwealth institution. Prominently sited, the Residence is the only two-storey residential building on the site with rendered brick walls, and originally a tile roof and Jarrah timber floors and staircase (destroyed).</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 5.31** House No. 8 in the early 1950s. (Source: MSO Archives)

**Figure 5.32** House No. 8. (Source: GML 2014)

**Figure 5.33** House No. 2. (Source: ANU Heritage)

**Figure 5.34** House Nos. 2 and 3. (Source: GML 2014)

**Figure 5.35** Director’s Residence 1928. (Source: NAA 3149381)

**Figure 5.36** Director’s Residence after stabilisation works addressed fire damage. (Source: ANU 2015)
## Other Accommodation

<table>
<thead>
<tr>
<th>Name</th>
<th>Date and Description</th>
<th>Status/Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faulkner Court</td>
<td>2011 (2003–Present Phase) Designed by Architectus and built on the site of the demolished 1955 Bachelor’s Quarters, the single-storey building has a flat roof and provides numerous rooms for RSAA students.</td>
<td>Newly built.</td>
</tr>
</tbody>
</table>

**Figure 5.37** Design drawings of Faulkner Court, indicating individual accommodation areas. (Source: Architectus)

**Figure 5.38** Faulkner Court on the site of the former Bachelor’s Quarters. (Source: GML 2014)

### 5.2.5 Other Buildings/Elements

The Visitor Centre was initially constructed in 1996 as the ‘Exploratory’ providing a cafe (Red Belly Black Cafe), shop and tourist information centre. Although the building received minimal damage from the 2003 bushfire, the original cafe was destroyed and reopened as the Scope café (closed late 2014). Access to facilities for the public is an important part of the outreach services for the Observatory.

The gravesite of Walter Duffield, the first director of the Observatory who died in August 1929, and the ashes of his wife Doris (died 1956), and Joan Duffield (died 2014) is located at the northwest of the site, accessed via a gravel track.

The ANU Gardens and Grounds Depot is located to the south of the site along the entrance road. A tennis court was constructed (likely in the early 1920s) for the residents of the site. The office building located beside the Woolley Building provides administrative functions for the EOS SLR facility.

Additional built structures on the site include a flammable goods stores, a water tank, fire sheds and pump houses, amenities and ad hoc transportable buildings and garages. These buildings, dispersed around the site, are not key structures which greatly contribute to the overall layout and understanding of the development of the Observatory, however, they provide vital services for the function of the site.

A small structure with a roll-off roof was erected in 2004 for the Canberra Astronomical Society’s new 14inch Meade Telescope, replacing instruments damaged in the 2003 fires. The structure was the former housing for an automatic weather station for the Great Melbourne Telescope and is currently located near ‘the Barn’.
### Other Buildings/Elements

<table>
<thead>
<tr>
<th>Name</th>
<th>Date and Description</th>
<th>Status/Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Originally known as the ‘Exploratory’, which included the Red Belly Black Café, later Scope Cafe.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The building was constructed in a modern style that reflected the massing and styles of the existing site architecture with its rendered brick, single-storey entrance facade, and the elevated auditorium block which has sheet steel cladding on a concrete frame. The café has a balcony facing west providing expansive views over the mountains.</td>
<td></td>
</tr>
<tr>
<td>Gravesite of Walter Duffield, contains ashes of Doris Duffield (1956) and Joan Duffield (2014).</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The grave, located to the northwest of the site, is marked with an inscription and surrounded by gravel. The whole site is enclosed by a white picket fence and a wooden cross marks the site.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A collection of small scale ancillary structures within a fenced enclosure including a machinery shed and amenities building with bathrooms, offices and kitchen facilities.</td>
<td></td>
</tr>
<tr>
<td>Tennis Court</td>
<td>1920s (1924–1938 Phase)</td>
<td>Good condition and still in use. upgraded over time.</td>
</tr>
<tr>
<td>While the date is not stated, the drawings of the Tennis Court were signed off by HM Rolland for the Federal Capital Commission and therefore a tennis court on the site was likely built in the 1920s. The pavilion shown on the plans was either not constructed or removed at a later date.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportable building originally brought to site to house administration functions of RSAA while the Commonwealth Solar Observatory Building was being restored, later leased to EOS as office space.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 5.39** Northern side of Visitor Centre, showing views over the Murrumbidgee Valley. (Source: GML 2014)

**Figure 5.40** Entrance to the Visitor Centre. (Source: GML 2014)
5.2.6 Buildings/Elements Removed from the Site

Many buildings have been removed or replaced since the establishment of the site (Figure 5.56). Following the 2003 fires, severely damaged buildings were demolished and in some cases new buildings have been constructed in their place. In other locations, foundations and slabs remain.

Notable buildings and structures removed from the site include:

<table>
<thead>
<tr>
<th>Name</th>
<th>Date and Description</th>
<th>Status/Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kite House</td>
<td>c1914</td>
<td>An early scientific building (prior to the formal establishment of the Observatory), the kite house was a small octagonal building used for studies of the ionosphere. Located near the Director’s Residence, the site has been built over with a car park.</td>
</tr>
<tr>
<td>Name</td>
<td>Date and Description</td>
<td>Status/Condition</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>House Nos 7 and 11</td>
<td>1926  Houses 7 and 11 were single-storey roughcast rendered brick houses with a tile roof. House 7 was of a Mediterranean style, while House 11 referenced the Functionalist style.</td>
<td>Building destroyed in the 2003 fires. Demolished in the clean-up.</td>
</tr>
<tr>
<td>House No. 19</td>
<td>1928  House 19 was a single-storey roughcast rendered brick house with a tile roof, faintly Mediterranean in style. Ben and Rosalie Gascoigne lived in this house for many years. While the house has been removed, evidence of the domestic garden design and cultural plantings remain.</td>
<td>Building destroyed in the 2003 fires. Demolished in the clean-up.</td>
</tr>
<tr>
<td>PZT Hut, Schmeidler Hut and Transit Hut</td>
<td>1940s/1960s  The Schmeidler Hut was a wooden building erected in the 1940s to house a transit telescope which was removed in the early 1960s. The PZT Hut &amp; House was constructed in 1961 to house the Photographic Zenith Tube which was later disposed of to the Museum of Victoria. The Schmeidler Hut was a wooden building erected in the 1940s to house a transit telescope which was removed in the early 1960s. The PZT Hut &amp; House was constructed in 1961 to house the Photographic Zenith Tube which was later disposed of to the Museum of Victoria. The Schmeidler Hut was a wooden building erected in the 1940s to house a transit telescope which was removed in the early 1960s. The PZT Hut &amp; House was constructed in 1961 to house the Photographic Zenith Tube which was later disposed of to the Museum of Victoria.</td>
<td>Removed in 1990.</td>
</tr>
<tr>
<td>Optical Shop</td>
<td>Unknown, but on site by the 1950s  Located between the 74inch Telescope Dome and the large Workshop, specific details of the construction of the Optical Shop are unknown.</td>
<td>Removed by 1965.</td>
</tr>
<tr>
<td>Bachelor’s Quarters</td>
<td>1942 and 1955  The 1942 building was an L-shaped structure, later removed from the site. The 1950s building, constructed to the north of its predecessor, was a single-storey face brick structure with communal and single occupant rooms. Faulkner Court accommodation was built on this site in 2011.</td>
<td>1942 quarters were demolished in 1968. 1955 quarters were destroyed in the 2003 fires. Demolished in the clean-up.</td>
</tr>
<tr>
<td>Riley Newsum Houses</td>
<td>1950s  Nine standard prefabricated Riley Newsum type houses were located around the Residential Precinct. They were single-storey houses with timber framed fibrous cement sheet walls on brick footings and a metal sheet roofing.</td>
<td>Eight of the original nine Riley Newsum houses were removed in 1998. The remaining house was destroyed in the 2003 fires.</td>
</tr>
<tr>
<td>Mechanical, Electrical and Optical Workshop</td>
<td>1953–1961  The large steel framed red brick Functionalist style building with a skillion roof was built in stages and extended, providing as needed workshop space. It was located somewhat away from the main Observatory building as a way of ensuring the demarcation between the ‘front of house’ and the working areas of the site. The building was demolished and the site cleared after the fires and the new Outreach Domes were constructed on the northern end of the site. Evidence of the original Canberra red bricks from the building can be seen on site.</td>
<td>The building was destroyed in the 2003 fires. Demolished in the clean-up.</td>
</tr>
</tbody>
</table>
Figure 5.44  Octagonal Kite House.  (Source: MSO Archives)

Figure 5.45  House 7 following the 2003 fires.  (Source: MSO Archives)

Figure 5.46  House 19 in 1926, the later home of the Gascoigne family.  (Source: MSO Archives)

Figure 5.47  Garden and entry to House 19 (demolished), previously occupied by the Gascoigne family following severe damage from the 2003 fires.  (Source: GML 2014)

Figure 5.48  PZT Hut.  (Source: MSO Archives)

Figure 5.49  Small arched Transit Hut, behind the Commonwealth Solar Observatory Building.  (Source: MSO Archives)
Figure 5.50 Optical Shop located nearby the 74inch Telescope Dome, late 1950s. (Source: MSO Archives)

Figure 5.51 Small scientific huts and structures were built around the Observatory in 1970. (Source: ACT Heritage Library 005975)

Figure 5.52 Riley Newsum prefabricated houses at Mount Stromlo, 1956. (Source: MSO Archives)

Figure 5.53 Aerial showing Riley Newsum houses, both Bachelors' Quarters, and the Schmeidler Hut (far left) c1950s. (Source: MSO Archives)

Figure 5.54 Workshop construction c1950s. (Source: MSO Archives)

Figure 5.55 Cleared site of the former Workshop building, showing red brick remnants. (Source: GML 2013)
Figure 5.56 The Mount Stromlo Observatory Precinct indicating demolished buildings (red) in the context of current buildings. (Source: GML edit on ANU base plan)
5.3 Historical Archaeological Potential

The historical archaeological potential of a site has been assessed through research and analysis to develop an understanding of the physical development of the place. It is based on a comparison of the events in the past that would have created archaeological deposits and other events that would have destroyed archaeological deposits. The archaeological potential of the site is thus embodied in the features, artefacts and strata that remain and their potential to provide us with information and insight into the past that no other resource can.

5.3.1 Overview of Archaeological Potential at Mount Stromlo

Prior to the resumption of the land at Mount Stromlo by the Federal Capital Commission for the construction of an observatory, the area was used for farming and grazing. This activity would have produced little or no archaeological evidence; therefore, it would be all but invisible in the archaeological record. The Aboriginal archaeological potential of the site is discussed in Section 4.0.

There is a greater likelihood that historical archaeological evidence would have been created in conjunction with and during the Observatory use of the site.

The day to day use of the site would have affected the archaeological record in different ways. The site comprises two broad activity areas—the scientific areas (comprising the Main Observatory Precinct, the Telescope and Workshops Precinct and the current RSAA Working Precinct); and the residential areas (Residential Precinct). The archaeological signatures of these areas would be different.

In the scientific areas, the style of construction of the buildings is unlikely to have resulted in the creation of many archaeological deposits. Until the 2003 fires, the general arrangement of buildings at Mount Stromlo had seen very little demolition and rebuilding, which could have resulted in the creation of stratified archaeological sequences. It is also unlikely that many scientific objects or items would have been incidentally lost into the archaeological record surrounding each building. Such technical items would have had specific purposes and been looked after carefully. The highest likelihood of the scientific areas of the site having an archaeological signature would relate to the damage wrought by the 2003 fires and their subsequent clean-up. Items of damaged infrastructure, such as fittings and fixtures for the telescopes, in the immediate vicinity may be of some archaeological interest.

In the residential areas, once again the construction style of the houses is unlikely to have facilitated the creation of any substantial archaeological deposits. However, there is a greater probability of personal items being incidentally lost in the surrounds of these buildings than there is for objects lost in the surrounds of the scientific buildings. Once again, the fires would have had an effect on the nature of the archaeological record relating to these structures, as well as their damage and subsequent demolition.

Often historical archaeological evidence relates to change in the configuration of the site through the creation and demolition of buildings. Section 5.2.6 outlines changes to the built elements of the site and lists key buildings removed from the site as:

<table>
<thead>
<tr>
<th>Name</th>
<th>Date of construction</th>
<th>Status/Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific Areas—Main Observatory Precinct, Telescope and Workshops Precinct and current RSAA Working Precinct</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kite House</td>
<td>c1914</td>
<td>Removed c1970.</td>
</tr>
</tbody>
</table>
### Table: Former Buildings in the Mount Stromlo Observatory Precinct

<table>
<thead>
<tr>
<th>Name</th>
<th>Date of construction</th>
<th>Status/Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workshop</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optical Shop</td>
<td>Unknown</td>
<td>Removed before 1965.</td>
</tr>
<tr>
<td>Swedish Uppsala Telescope Building</td>
<td>1957</td>
<td>Building destroyed in the 2003 fires. Partially demolished in the clean-up and established as an interpretive node.</td>
</tr>
<tr>
<td>Residential Precinct</td>
<td></td>
<td></td>
</tr>
<tr>
<td>House Nos 7 and 11</td>
<td>1926</td>
<td>Building destroyed in the 2003 fires. Demolished in clean-up.</td>
</tr>
<tr>
<td>House No. 19</td>
<td>1928</td>
<td>Building destroyed in the 2003 fires. Demolished in clean-up.</td>
</tr>
<tr>
<td>Bachelor’s Quarters</td>
<td>1942 and 1955</td>
<td>1942 quarters were demolished in 1968. 1955 quarters were destroyed in the 2003 fires. Demolished in clean-up.</td>
</tr>
<tr>
<td>Riley Newsum Houses</td>
<td>1950s</td>
<td>Eight of the original nine houses were removed from the site in 1998. The remaining house was destroyed in the 2003 fires.</td>
</tr>
</tbody>
</table>

The archaeological potential of the sites of these former buildings is discussed below.

### 5.3.2 Scientific Area Archaeological Potential

The Kite House (c1914–c1970) was one of the earliest buildings on the site and is largely recorded in photographs only. This building was a timber framed, octagonal structure located on the top of the Mount Stromlo ridge. The site of this early structure has since been impacted by the construction of the visitor’s car park to the southeast of the 74 inch Telescope Dome. Given the small size and lightweight construction of this building, its masonry plinth footing would probably not have been very substantial and, while relatively shallow, the excavation for the construction of the car park is most likely to have been of sufficient depth to have destroyed most evidence of it. Therefore, there is unlikely to be any archaeological evidence remaining from this building.

Historical photographs (Figures 5.57–5.58) indicate that a range of smaller scientific structures were constructed and demolished during the lifetime of the observatory. Buildings such as the PZT Hut, the Schmeidler Hut, the Transit Hut, a separate Optical Shop near the large Workshop and others were built in the Precinct at various times in the 1940s to the 1960s, to the north and west of the Commonwealth Solar Observatory Building. These buildings appear to be timber framed, clad in either timber or curved corrugated iron and set onto brick plinths or timber stumps. The Schmeidler Hut was removed in the 1960s as were some of the other smaller buildings; the Optical Shop was removed by 1965 and the PZT Hut was demolished in 1990.

Once again, given the small size and lightweight construction of these buildings, their footings (either masonry or timber) would probably not have been very substantial. It is probable that the demolition of these buildings would have resulted in the wholesale removal of most of these footings.

Current site conditions indicate that new landscaping, car parking and/or structures have been built on top of the former locations of all of these structures. Excavation and ground surface shaping for these new works would most probably have impacted any remaining archaeological evidence of the earlier structures. They are unlikely to have any archaeological signature remaining.
The Mechanical, Electrical and Optical Workshop was constructed between 1953 and 1961 in stages. This was a large building with a concrete floor for one section and brick piers in another section. Like
many of the scientific buildings on the site, the use of these workshops will not have resulted in the creation of any specific archaeological signature within the building’s footprint. Some incidentally lost or discarded objects may have been incorporated into the ground within the surrounding area; however, such occurrences are likely to have been ad hoc, resulting in a very dispersed and low density archaeological signature. The structure was destroyed in the 2003 fires. Photographs (Figures 5.59–5.60) of the clean-up of the site after that event indicate that the most of the ground surface around the former workshops would have been impacted during these site remediation works. The archaeological potential of this area is low.

Several buildings remain standing as heritage ruins after the fires, including a number of the telescope buildings. All of these fire affected ruins may have newly created archaeological deposits in their near vicinity relating to the damage they suffered during the fires and their subsequent clean-up.

The Swedish Uppsala Telescope Building was one of these buildings demolished after being destroyed in the 2003 fires. This structure has subsequently been tidied up for presentation as a public interpretation node. It is possible that the process of cleaning it up and re-laying the ground with red gravel may have removed any remaining archaeological deposits relating to its destruction by fire.

5.3.3 Residential Precinct Archaeological Potential

Three of the early phase houses were destroyed by the fires in 2003 (Nos 7 and 11 (built 1926) and No. 19 (built 1928)). All three of these houses were built at a time when tongue-in-groove timber floorboards were used for the flooring; therefore, they would have relatively small underfloor archaeological deposits relating to the occupation of the house. Some everyday items may have been incidentally lost or discarded in the backyards and surrounds of these houses and may have been incorporated into the archaeological record. Such items would most typically be mid-twentieth century domestic articles.

Minor changes to the configuration of these houses may have also left some archaeological evidence.

However, the post-fire clean-up and demolition of these sites would have substantially impacted the archaeological record from before the fires, but may have created new archaeological deposits relating to the fires and the demolition episode.

Only one domestic structure, the Director’s Residence, remains standing as a heritage ruin. This structure has had the least post-fire intervention and cleaning up, and may continue to retain the most
intact archaeological signature on the site. That archaeological signature may have been in part affected by post-fire cleaning up activities, but has largely evaded wholesale removal from bulldozing and surface scraping. Typically the construction style of this building would have also retarded the creation of underfloor archaeological deposits during its occupation; but the fires would have produced a new archaeological layer, including remnants of fire affected artefacts and fittings.

Two buildings were built as Bachelor’s Quarters; the first in 1942 and the second, located nearby, in 1955. The first building was demolished in 1968 and the second was destroyed in the 2003 fires. It has since been replaced by the Faulkner Court accommodation building in 2011. The construction style of these earlier buildings would not have facilitated the creation of many archaeological deposits during their use. No occupation related underfloor deposits would have been created. Like the houses, some everyday items may have been incidentally lost or discarded in the immediate surrounds of these buildings, and may have been incorporated into the archaeological record. Such items would most typically be mid-twentieth century domestic articles. However, the demolition and clean-up after the fires may well have disturbed or destroyed any of these archaeological remains. The archaeological potential of the Bachelor’s Quarters area is relatively low.

Nine Riley Newsum style prefabricated houses were installed on the site in the 1950s. In a similar fashion to the other houses, the surrounds of these 1950s houses may contain incidentally lost artefacts and items of a personal and domestic nature. At best, these transitory occurrences would produce a highly dispersed and very low density archaeological signature. The removal of eight of these houses would have disturbed some of the archaeological remains in the surrounding area; and the final post-fire removal of the last house would have also impacted any remaining archaeological evidence of their occupation. Evidence may remain of the footings and footprint of these buildings. The predicted archaeological potential for the former locations of these houses is low.

5.3.4 Demolition Rubble

An area of scattered and mounded demolition rubble from one (or some) of the buildings on the site exists to the north of Precision Engineering Centre or ‘the Barn’ across the access track (Figures 5.60–5.63). This scatter covers an area of approximately 15m x 5m and comprises fragments of broken brick, concrete, roofing tile, fibrous cement sheeting, melted and rusted metals, and glass. The amount of rubble in this pile does not look like the amount of material that would be derived from the complete demolition of any one building. An investigation of this archaeological deposit may reveal more information about its origin.

However, the presence of fragmentary fibrous cement sheeting in amongst this rubble presents a potential health and safety risk.

Given the risks of working with potentially hazardous materials balanced against the possible information retrieved from an investigation of this pile, it would be prudent to consider in advance whether or not an investigation of such an archaeological resource would be likely to yield significant information that cannot be obtained from other sources. The relatively high level of historical information known about the site suggests that the potential for new significant information would be low and that no further investigation of such a mound should be undertaken.

Consideration should be given to careful remediation of this area instead.
5.3.5 Other Objects and Artefacts

Other objects and artefacts may also exist on the landscape which bear some relationship to the history of the Mount Stromlo Observatory.

A rusted metal frame possibly from a piece of scientific equipment or a telescope lies on the landscape near the access track to the north of the Visitor Centre (Figures 5.65–5.66). These metal items and the small metal aerial/radar dish nearby, on the other side of the track, would have a connection to a specific period and use of the site.

Further investigation of these items may reveal some further information about the workings of the site. Such information may also be available from people who worked at the site in the recent past.
Other artefacts relating to the use of the site may also exist around the landscape. The previous CMP\textsuperscript{13} observed that artefacts that may be distributed around the site are most likely to relate to the main type of activity in each area; scientific type objects would be found in areas of scientific activity and domestic objects would be found in areas of domestic activity. This correlation seems reasonable but presupposes that these artefacts would have become incorporated into the archaeological record in the first place.

As noted above (Section 5.3.1), it is unlikely that many scientific objects or items would have been incidentally lost into the archaeological record surrounding each building. Such items would have been on the site for a specific purpose and, therefore, probably would have been looked after rather than lost. It also seems unlikely that many items would have been discarded into the landscape once their use was over. It is more likely that items of damaged infrastructure, such as fittings and fixtures for the telescopes, may have been incorporated into the archaeological record in conjunction with cleaning up the site after the 2003 fires.

The likelihood of domestic artefacts being incorporated into the archaeological record in the Residential Precinct is higher, although they are more likely to cluster in low densities close to the individual houses themselves.

**5.3.6 Conclusion**

In summary, the overall archaeological potential of the Mount Stromlo Observatory Precinct is relatively low.

Generally the creation of archaeological deposits across the site during its use is likely to have been low. Any deposits that accumulated prior to the bushfires would have been disturbed in the subsequent clean-up. Any archaeological deposits that may remain intact would most likely relate to the mid-twentieth century domestic use of the site.

The fires would have also created new archaeological deposits in close association with existing and demolished structures. These deposits may be significant in the future. Ongoing management of the site should consider the potential existence of these deposits when assessing impacts for redevelopments. Potentially sensitive areas for the survival of post-fire archaeological deposits include inside and immediately around the Director's Residence and the remaining house sites of Houses 11 and 19.
5.4 Comparative Analysis

5.4.1 Introduction

In conjunction with an understanding of the site’s natural, Indigenous and historic development, a comparative analysis of the Mount Stromlo Observatory Precinct against similar places assists in the preparation of the heritage values assessment (Section 6.0). The analysis provides an understanding of the broader site context, its heritage values and whether the site is considered rare or representative.

The Mount Stromlo Observatory Precinct is part of the broader group of ANU campus sites. It is located on the ridge of Mount Stromlo, west of Canberra, and incorporates a range of buildings and areas designated by their functional uses including the telescope dome buildings, the research, administration and working buildings, the residential buildings and the visitor facilities.

This comparative analysis assesses the Mount Stromlo Observatory against similar observatories both in Australia and internationally, other Commonwealth complexes, as well as the work of prominent Commonwealth architects John Smith Murdoch and Henry Maitland Rolland.

5.4.2 ANU Observatories

The ANU has one other observatory campus located west of Coonabarabran, NSW, in the Warrumbungle Mountain Range, Warrumbungle National Park.

Siding Spring Observatory

Siding Spring Observatory, like the Mount Stromlo Observatory, is a working research observatory facility for the RSAA, considered ‘Australia’s premier optical and infrared observatory’. Although not as old as the Mount Stromlo Observatory, the Siding Spring site is strongly connected with it. Selected in 1962 as a field station for Mount Stromlo (because of the effects of increasing light pollution in Canberra), it began operations in 1965.

Like Mount Stromlo, the rural mountain setting of Siding Spring Observatory was chosen for its clear and dark skies. The Observatory sits on the edge of the Warrumbungle Mountain Range, listed on the National Heritage List (NHL) for its natural heritage values.

The rural, bush location of the Siding Spring Observatory site has also seen it suffer the effects of fire disasters on the buildings of the site, and on the work done at the Observatory, most recently in 2013.

The Siding Spring Observatory comprises 38 telescopes and a network of associated buildings, with distinct functions, similar to the Mount Stromlo complex. It also includes an Administration Building and on-site accommodation for scientists and researchers. It includes the remains of the Director’s Cottage which was damaged in the 2013 fires, some residential cottages and the ruins of the old Lodge building (which included sleeping facilities, a commercial kitchen and dining hall) which was also destroyed in the 2013 fires. The site contains a water treatment plant, tanks and sheds.

Although a working facility, Siding Spring Observatory does not currently provide for public stargazing activities; but like Mount Stromlo, it provides educational material through its Visitor Centre, and facilities including a cafe and shop.

Since its opening in 1965, all new telescopes for the RSAA have been located and built at Siding Spring Observatory rather than Mount Stromlo.
At present, the RSAA operates its research telescopes at Siding Spring Observatory and hosts other national and international institutions, including I-Telescope (an ANU telescope) and the Anglo-Australian Telescope by the Australian Astronomical Observatory.

It is comparable to the Mount Stromlo Observatory as a remote, once self-sufficient location, with similar facilities and functions. It is different in that it is a newer facility, which maintains its intended function and retains working research telescopes for the RSAA.

Figure 5.67 Aerial photo of telescopes at Siding Spring Observatory, including the ANU 2.3m telescope (square building at front) and SkyMapper (top centre). (Source: <http://rsaa.anu.edu.au/observatories/siding-spring-observatory>)

5.4.3 Australian Observatories

The following examples are notable Australian observatories that have comparable histories, functions, uses or social associations to the Mount Stromlo Observatory. Many have been used, or were built, for similar purposes—but these comparisons demonstrate the distinctiveness of the Mount Stromlo Observatory’s long, continued history of use; its local, national and scientific associations; and its setting.

Sydney Observatory

Situated on Observatory Hill (the highest point that overlooks Sydney Harbour), Sydney Observatory is the oldest Australian observatory and telescope still in use. Established in 1858 it reflects a different architectural style with its Italianate character and elaborately detailed sandstone buildings. It is representative of a period when government astronomers, like the directors and workers of the Mount Stromlo Observatory, and their families lived and worked in close proximity to their telescopes. As a result, building complexes emerged to support these arrangements. Astronomers lived at Sydney
Sydney Observatory is also associated with several historical figures including Governors Bligh and Macquarie and is listed on the NSW State Heritage Register. The grounds include a small building complex, the Observatory Building (which incorporates a museum and exhibition space), a south dome and telescope, north dome and telescope, west office wing, Astronomer’s Drawing Room (which includes a lecture room and 3D theatre), the Messenger’s Cottage (now converted to Sydney Observatory staff offices), Signal Master’s Cottage, gift shop and formal cultivated gardens. Currently Sydney Observatory acts as a public observatory and viewing facility that focuses on astronomy education and provides for tourist activities via its connection with the Powerhouse Museum. Its exhibits cover themes that reflect the history of the site including astronomy, meteorology, timekeeping and archaeology.

Melbourne Observatory/The Great Melbourne Telescope

The Melbourne Observatory was established in 1863 and from 1869 housed the Great Melbourne Telescope (the largest in the Southern Hemisphere at the time). The telescope was illustrative of the advanced technology of the time, and the Observatory played an important scientific role in the colony, providing meteorological data and researching the southern skies.

The site comprises a fine architecturally detailed Italianate Main Observatory building, several domes and residences including a Caretaker’s House and Second Astronomer’s Residence. When it closed
in 1944 the Great Melbourne Telescope (and its observation records) was relocated to the Mount Stromlo Observatory. The Astronomical Society of Victoria continues to use some of the equipment on the site (now part of the Royal Botanic Gardens, Melbourne), and also hosts tours of the building for the public. Following the 2003 fires in Canberra, the burnt remains of the Great Melbourne Telescope were returned to Melbourne in 2008, with a goal to restore the telescope to working order.

The former Observatory site is listed on the Victorian Heritage Register and is of architectural significance as a rare and largely intact example of a nineteenth-century observatory complex. It is one of the earliest examples of a nineteenth-century observatory designed to house separate functions in separate buildings, and with accommodation for astronomers on site.

Figure 5.69 Melbourne Observatory, Royal Botanic Gardens. (Source: Wikipedia)

Old Perth Observatory/New Perth Observatory

The Perth Observatory first opened in 1891. It is Australia’s oldest continuously operating observatory and continues to contribute to astronomical research internationally.

The Observatory was originally located in Havelock Street, West Perth, and was connected to a Government Astronomer’s Offices and Residence. However, from around the 1960s, the complex began to suffer the same problems with light pollution from the encroaching city that Mount Stromlo also experienced around this time. From 1964, a new site in Bickley, approximately 25km east of Perth, was selected to rehouse and rebuild the Observatory, which began operating in 1966.

Perth Observatory shares several other similarities with Mount Stromlo. The Bickley site is located on the outskirts of a major city and comprises a similar complex, with an Administration Building, Caretaker’s Residence, various telescope and dome buildings, a visitor facility and formal garden beds with introduced species. The site is also maintained as an education and research facility and, since the 1980s, provides visitor programs.

The former Perth Observatory and the Government Astronomer’s Residence remain at Havelock Street in Perth and have become an important landmark in the city of Perth, given its close proximity to the Parliament House. The building is the current headquarters of the National Trust, WA.
The new Perth Observatory complex is currently listed on the Western Australian Heritage Register which notes the transition between natural bush setting and the formal fabric of the Administration Building, sharing similarities with Mount Stromlo in this regard. It is representative of the late twentieth-century International style of architecture.\(^{30}\)

**Figure 5.70** The former Perth Observatory, current home of the WA National Trust. (Source: Wikipedia)

**Figure 5.71** New Perth Observatory, Bickley, WA. (Source: Allen Stewart <http://www.perthnow.com.au/news/western-australia/research-at-perth-observatory-axed/story-e6frg13u-122659367391>)

### 5.4.4 International Observatories

The Mount Stromlo Observatory Precinct can also be viewed in relation to other observatories internationally. The following sample of international observatories has been selected for their comparisons with Mount Stromlo.

#### European Southern Observatory

The European Southern Observatory (ESO) is an intergovernmental astronomy organisation that aims to provide ‘state of the art research facilities to astronomers and astrophysicists’. The have several facilities, but the most notable are in La Silla and Cerro Paranal, Chile.\(^{31}\)

**La Silla**

La Silla was constructed from 1965–1966 in a remote, desert setting. Like Mount Stromlo, it was situated on a peak located away from light pollution sources, and the telescopes are positioned along a ridge with the residential area located at one end. La Silla houses the Very Large Telescope (VLT) which continues to be involved in active research.\(^{32}\) Its location makes it a striking feature of the landscape, which is highly visible.

**Paranal Observatory**

As with La Silla, Paranal Observatory is situated in a remote setting, on the crest of a mountain and cuts a striking feature on the landscape. It began scientific operations in 1999, and is home to a VLT that is used for research purposes, as well as other unit and auxiliary telescopes. The Paranal complex also contains hotel accommodation, the Residencia.\(^{33}\)
Manua Kea

Mauna Kea, Hawaii, is the world's largest astronomical observatory and is a facility used by over 11 countries.\textsuperscript{34} It contains thirteen working telescopes located on the summit of a dormant volcano. It provides a comparison with the layout of the Mount Stromlo Observatory with buildings and domes positioned along the ridge.

5.4.5 CSIRO/Additional Observatory Sites

There is a range of other private or amateur observatories across Australia, many of which are connected with universities, and many other larger observatories that generally only utilise radio telescopes and dishes.

Some of these include the CSIRO operated or managed observatories at Tidbinbilla (Canberra Deep Space Communication Complex), Parkes (Parkes Observatory) and Narrabri (the Paul Wild Observatory).\textsuperscript{35} These observatories do not draw strong parallels with Mount Stromlo for their function, complex layouts, significance or association.
5.4.6 Commonwealth Scientific Complexes

A number of purpose built complexes in the Federal Capital are representative of the Commonwealth Government’s hierarchical administration/bureaucratic institutions established post-Federation. These sites demonstrate the need for institutions to be self-sufficient and inclusive of a range of functions including administration and residences. Mount Stromlo draws comparisons in this regard as one of the earliest of the Commonwealth scientific complexes.

The Australian Forestry School

The Australian Forestry School (former) is listed on the CHL and has strong associations with the early development of the Federal Capital. The Forestry School building is a good example of Inter-War Stripped Classical style of architecture, designed in 1926 by J Kirkpatrick with Henry Maitland Rolland of the Federal Capital Commission. It was the Federal Capital’s first tertiary institution; and like Mount Stromlo, included a separate Principal’s Residence, known as Westridge House.

CSIRO

Initially established in 1916 as the Advisory Council of Science and Industry, it was restructured in 1926 as the Council of Scientific and Industrial Research (CSIR), and later as the CSIRO. The creation of the Australian Capital Territory provided a focus for the Commonwealth Government’s role in scientific research in Australia—which included the CSIR, along with the Observatory at Mount Stromlo, the School of Forestry, the Australian Institute of Anatomy and later the Australian National University. The Main Entomology Building at the CSIRO, initially constructed c1929, is associated with the early phase of Commonwealth scientific endeavour in Canberra and is a good example of the Inter-War Stripped Classical style of architecture in Canberra.

ANU Acton Conservation Area

The Acton Conservation Area, listed on the CHL, is important for its role as the administrative, residential and social centre of Canberra from 1911 to the 1920s. The site retains evidence of the earliest phases of development of the Federal Capital. Division and hierarchy according to socio-economic status is shown through the separation of accommodation types. Old Canberra House was constructed between October 1912 and December 1913. It was built as the Residence (or ‘Residency’) of the Administrator of the Federal Territory, Colonel David Miller, and was the first substantial brick house constructed in the new Territory. The site, like Mount Stromlo, is also directly associated with architects John Smith Murdoch and Henry Maitland Rolland.

RMC Duntroon

The Royal Military College (RMC) was established at Duntroon in 1911, incorporating buildings and grounds from the early nineteenth-century Duntroon Estate. The college was designed by Chief Architect of the Commonwealth, John Smith Murdoch, responsible for numerous notable Canberra buildings. The institution contained a range of buildings including accommodation, messes, classrooms, workshops and later expansions and additions, including a hospital block and chapel. Its function remains today, and is demonstrative of a self-sufficient early Commonwealth institution. The RMC Duntroon Conservation Area, listed on the CHL, has historical significance as Australia’s first military college since Federation and Canberra’s first major institution.
5.4.7 Commonwealth Architects

Architects such as John Smith Murdoch and Henry Maitland Rolland were involved in the design and construction of key buildings in the early development of Commonwealth buildings in the Federal Capital. The links between Canberra and Mount Stromlo can be seen through their architectural style.

John Smith Murdoch (1862–1945)

John Smith Murdoch was the Commonwealth Architect from 1919–1929 and had a significant impact on the design and aesthetics of Canberra, designing many of its early buildings. Murdoch was part of the reviewing board for the National Capital design competition, and designed many of Canberra’s notable buildings and sites including RMC Duntroon (1911), the Powerhouse at Kingston (1915), Gorman House (1924), Hotel Canberra (now the Hyatt Hotel) (1924), the Hotel Kurrajong (1926), Provisional Parliament House (1927), Old Canberra House, Acton (1912) and the National Archives of Australia (East Block) (1927); as well as other important Commonwealth buildings including the Spencer Street Post Office and the High Court of Australia (now Federal Court) in Melbourne.

Murdoch is noted as having made a distinct and significant contribution to the Canberra landscape, and Commonwealth architecture, during the frugal interwar period. Murdoch often combined architectural styles including Mediterranean, Functionalist and other Inter-war styles, such as the Stripped Classical architectural style present in Provisional Parliament House.

Murdoch designed the central Commonwealth Solar Observatory Building in 1924 at Stromlo which reflects Murdoch’s Mediterranean style during this period, and connects the Mount Stromlo Observatory with the broader fabric design of Canberra during this time.

Henry Maitland Rolland (1882–1972)

Henry Maitland Rolland was a Federal Capital Commission architect involved in the development and design of some of Canberra’s early buildings, in particular early residential buildings including early housing at Acton. In the Acton Conservation Area, he designed 7 Liversidge Street for himself in 1913; 3 Liversidge Street (for Prime Minister Hughes’ Secretary); 16 and 18 Balmain Lane (for use by
Federal Capital Commission officers); Acton Old Hospital Buildings, the Administration Block and the Isolation Ward. In addition, he was involved in the design of the Albert Hall (1927) and the Commonwealth Forestry School Building (1926), which (like Murdoch’s designs) employed a Stripped Classical design.

Rolland’s experience with accommodation style buildings extends to the Mount Stromlo Observatory, as Rolland was responsible for signing off on the design of the Director’s Residence. He was also involved in the intrinsic details of the Residence, providing contractors with specific instructions relating to details of the required brickwork for the various fireplaces throughout the Residence.

5.4.8 Conclusion

This comparative analysis with other observatories, institutions and structures in Australia and internationally, confirms the distinctiveness of the Mount Stromlo Observatory’s long, continued history of use, its layout and setting, associations, and its design.

The Mount Stromlo Observatory was the first observatory established by the Commonwealth, with many other observatories in Australia being either state government, municipal or private observatories. It is therefore an important institution demonstrating the Commonwealth Government’s commitment to early and ongoing scientific endeavour in Australia.

The Mount Stromlo Observatory was established to become self-sufficient with a range of functional buildings including research buildings and domes, workshops and residences. While observatories constructed later in the twentieth century, both nationally and internationally, included similar characteristics (located on mountain summits and away from light sources, with key buildings positioned along a ridge), the layout and setting of the Mount Stromlo Observatory with its distinctly separated functional precincts was unusual for its time.

The Observatory has associations with other observatories, for example the Melbourne Observatory from which a telescope was received; its sister facility Siding Spring Observatory which was established when Mount Stromlo was affected by light pollution and influenced in its functional design layout; and international observatories which are now part of a large network of facilities working and collaborating towards scientific advancement.

The Mount Stromlo Observatory is one of the earliest purpose-built Commonwealth scientific complexes established post-Federation, and is representative of Commonwealth Government hierarchical administration/bureaucratic institutions in the Federal Capital. As a purpose-built complex, it demonstrates the need for institutions to be self-sufficient and inclusive of a range of functions, including providing administration support and residential accommodation.

Individual buildings at the Mount Stromlo Observatory are characteristic of the Inter-War styles of architecture seen in the early construction of Canberra. The Commonwealth Solar Observatory Building and Director’s Residence are associated with other architectural work in the Federal Capital from prominent architects John Smith Murdoch (the Commonwealth’s Chief Architect) and Henry Maitland Rolland. It is similar to many buildings of its era in Canberra with common Inter-war Mediterranean features such as roughcast render, red Marseille roof tiles and decorative rondels; an architectural style which has become known as the Federal Capital Style.
5.5 Endnotes


2. Ibid.

3. Department of the Environment 2004, *Commonwealth Heritage List—Mount Stromlo Observatory Precinct, Mt Stromlo Rd, Mt Stromlo, ACT, Australia*, viewed 15 January 2014 <http://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=105309>.


6. ANU Mount Stromlo Heritage Walk Brochure.

7. Department of the Environment 2004, *Commonwealth Heritage List—Mount Stromlo Observatory Precinct, Mt Stromlo Rd, Mt Stromlo, ACT, Australia*, viewed 15 January 2014 <http://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=105309>.


42. Tanner Architects, op cit, p 49.


46. Tanner Architects, op cit, p 136.


6.0 Assessment of Heritage Values

6.1 Assessment of Mount Stromlo—the Whole Site

The Mount Stromlo Observatory Precinct is an important cultural landscape in the Canberra region and nationally. It has been assessed as being significant for its historic, rarity, potential to yield information, characteristic, aesthetic, creative/technical, social and associational values. The Mount Stromlo Observatory Precinct has been identified on the CHL as Place ID: 105309. Its official values include significance for its outstanding scientific research in optical astronomy and astrophysics, telescope design and engineering achievements. The CHL citation is included in Appendix A.

6.1.1 Methodology for Assessing Heritage Values

In this HMP, the Mount Stromlo Observatory is reassessed holistically for its historic, natural and Indigenous heritage values.

This HMP concludes that the official CHL citation requires revision or a new nomination to ensure the full scope of heritage values of the place are formally recognised, particularly in light of the changes to the site since the 2003 fires (see Section 6.5 below).

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

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

Identifying the many layers of value of heritage—its sites, places, elements and collections—and assessing their relative values through this report provides the knowledge base needed for the framing and implementation of heritage management and conservation policies discussed in Section 8.0.

This HMP also identifies that the site has potential National Heritage values.

6.2 Commonwealth and National Heritage Criteria

6.2.1 Environment Protection and Biodiversity Conservation Act 1999 (Cwlth)

The 2004 amendments to the Environment Protection Biodiversity Conservation Act 1999 (Cwlth) (EPBC Act) established the Commonwealth and National Heritage Lists (NHL). The CHL is for those places owned or controlled by the Commonwealth that have been assessed as having significant heritage values against the criteria established under that Act. Places identified as of outstanding heritage value for the nation are eligible for inclusion in the NHL. NHL places do not have to be owned by the Commonwealth.

Section 528 of the EPBC Act defines the heritage value of a place as including the place’s natural and cultural environment having aesthetic, historic, scientific or social significance, or other significance, for
current and future generations of Australians. The EPBC Act therefore covers all forms of cultural significance (Indigenous and non-Indigenous) and natural heritage significance.

Section 10.01A and Section 10.03A of the EPBC Regulation define the nine National and Commonwealth Heritage criteria for evaluating, identifying and assessing the Commonwealth or National Heritage values of a place. Note that the only difference between them is the threshold for National Heritage value which is at an outstanding level of significance.

The threshold for inclusion on the CHL or NHL is that the place meets one or more of the criteria for ‘significant’ or ‘outstanding’ heritage values.

### 6.3 Historic Themes

The Commonwealth has developed a framework of ‘Australian Historic Themes’ to assist with identifying, assessing, interpreting and managing heritage places and their values. The Australian Historic Themes were developed and identified by the former Australian Heritage Commission and provide a context for assessing heritage values. The nine national themes are linked to human activities in their environmental context. Themes link places to the stories and processes which formed them, rather than to the physical ‘type’ of place represented. Themes can assist in the understanding of heritage values and comparative analysis, but also in the development of interpretative stories and messages.

The Australian Historic Themes are grouped together by an overriding historic theme, which is further divided into more specific themes and sub-themes. The Australian Historic Themes which underpin the assessment of the Mount Stromlo Observatory Precinct are set out in Table 6.1.

<table>
<thead>
<tr>
<th>Australian Historic Themes and Sub-Themes</th>
<th>Assessment Rationale Relevant to the Mount Stromlo Observatory Precinct</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Developing local regional and national economies</td>
<td>The Mount Stromlo Observatory played a vital role during World War II as an optical munitions factory contributing substantially at a scientific level to the war effort in the manufacturing of optical instruments. The site has maintained its function for the manufacturing of astronomical and optical instrumentation to date. The isolation of living and working at Mount Stromlo fostered a social life at the site, with the staff and families forming a close community. The site has been twice severely damaged by fires (in 1952 and 2003). Despite losing substantial amounts of scientific research, telescopic equipment and buildings, the site and institution has recovered.</td>
</tr>
<tr>
<td>4 Building settlements, towns and cities</td>
<td>The Mount Stromlo Observatory is one of the earliest purpose built Commonwealth complexes in the Nation’s Capital. It has a significant role in the development of Canberra as an important scientific research facility associated with the ANU. It has continued to develop and maintain its function since its establishment.</td>
</tr>
<tr>
<td>6 Educating</td>
<td>By its very nature, the function of the Observatory required a remote location for clear night skies on an elevated position. The site’s connection with the ANU and RSAA as an educational research facility and the remoteness and isolation of the site are important aspects of its history and development. This resulted in the need for on-site accommodation, and the establishment of the Mount Stromlo Observatory community.</td>
</tr>
</tbody>
</table>
### Australian Historic Themes and Sub-Themes

<table>
<thead>
<tr>
<th>Australian Historic Themes and Sub-Themes</th>
<th>Assessment Rationale Relevant to the Mount Stromlo Observatory Precinct</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>7 Governing</strong></td>
<td>During World War II, the site changed focus from observations and devoted its resources to operating as an optical munitions factory—through this function, it developed 43 new instrumental systems in the wartime years.</td>
</tr>
<tr>
<td>7.7 Defending Australia</td>
<td></td>
</tr>
<tr>
<td>7.7.1 Providing for the common defence</td>
<td></td>
</tr>
<tr>
<td><strong>8 Developing Australia’s cultural life</strong></td>
<td>Rosalie Gascoigne, who lived at Mount Stromlo with her astronomer husband Ben for 17 years, became a celebrated artist. Influenced by the isolation of living at Mount Stromlo, she drew her inspiration from the surrounding landscape. Scientific research and work undertaken at the Mount Stromlo Observatory demonstrates a high level of technical achievement, and the site is directly involved in the advancement of astronomical technology development. Many astronomers from the Observatory have been recognised for their significant scientific achievements.</td>
</tr>
<tr>
<td>8.10 Pursuing excellence in the arts and sciences</td>
<td></td>
</tr>
<tr>
<td>8.10.2 Creating visual arts</td>
<td></td>
</tr>
<tr>
<td>8.10.5 Advancing knowledge in science and technology</td>
<td></td>
</tr>
</tbody>
</table>

### 6.4 Existing Assessment of Heritage Value for the Study Area

#### 6.4.1 Commonwealth Heritage List Official Heritage Values Assessment

Table 6.2 provides the existing Commonwealth Heritage assessment of the Mount Stromlo Observatory Precinct, Place ID: 105309.³

**Table 6.2** Official CHL Assessment for the Mount Stromlo Observatory Precinct.

<table>
<thead>
<tr>
<th>Commonwealth Heritage Criteria</th>
<th>Official Assessment against the Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criterion (a) Processes</td>
<td>the place has significant heritage value because of the place’s importance in the course, or pattern, of Australia’s natural or cultural history.</td>
</tr>
<tr>
<td></td>
<td>Mount Stromlo Observatory Precinct, an optical astronomical research complex arranged across the ridge of a mountain, is a significant cultural landscape with a surviving richness of features including the mountain top landscape setting. Despite serious damage by the January 2003 bushfire, significant elements continuing to contribute to the heritage values of the place include the standing and remnant structures of the telescope dome building, the administration buildings, housing, gardens, workshop, the Duffield grave, utility structures, remaining landscape features, and the layout pattern of the complex. Initially conceived in 1905 by the solar astronomer, Dr W G Duffield, to fill a solar recording gap in the Western Pacific, the observatory has incorporated phases of development that encompass structures dating from 1911. The significant features with a strong association to the historic phases of the precinct’s development are as follows:</td>
</tr>
<tr>
<td></td>
<td>(1) The ruins of the Oddie Telescope building with its small scale, the cruciform layout of the remaining concrete walls, the remaining steel base of the dome mechanism, and the concrete plinth with the remnant cast iron telescope mounting structure, is an extant feature of the first site development reflecting 1911 technology.</td>
</tr>
<tr>
<td></td>
<td>(2) The design and technology of the 1920s period of development is represented by the standing remains of the Administration Building, formerly the Commonwealth Solar Observatory, designed by JS Murdoch for the Federal Capital Commission, and completed in 1928. The Administration Building consists of standing walls with damaged windows, the symmetrical telescope domes of the Solar Tower and the Farnham, courtyards and adjacent garden remains.</td>
</tr>
<tr>
<td></td>
<td>(3) The standing walls of Director’s Residence, outbuildings, garden remnants and croquet lawn area, also contribute to information on the early period, and reflect a time when Directors were accommodated at an institution.</td>
</tr>
<tr>
<td></td>
<td>(4) The pattern of the roads leading to the buildings with the formal garden features in front of the Administration Building.</td>
</tr>
<tr>
<td></td>
<td>(5) The Reynolds telescope structure, dating from 1930, remains a substantially intact significant structural feature of the early period.</td>
</tr>
<tr>
<td>Commonwealth Heritage Criteria</td>
<td>Official Assessment against the Criteria</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>(6) Intact houses and standing house ruins also contribute to the precinct's historic record.</td>
<td></td>
</tr>
<tr>
<td>(7) The technology of the large standing ruin of the large 74 inch telescope, Coude Spectrograph and building, reflects the importance given to science in the 1950s.</td>
<td></td>
</tr>
<tr>
<td>(8) Although the Yale Columbia telescope and telescope building, the Great Melbourne telescope and telescope building, and the Uppsala telescope building, have predominantly been used for utilitarian purposes since the 1960s, the design and technology represented by the extensive ruins of these structures contributes to the story of scientific expansion of the postwar years.</td>
<td></td>
</tr>
<tr>
<td>(9) The pattern of the precinct layout remains a feature of the cultural landscape. This is reflected in the arrangement of buildings and building ruins in their function areas, with some separation by landscape spaces; a pattern that has been reinforced in the siting of new developments during the life of the complex. Staff housing on the southern slopes of the mountain, administration buildings at the southern eastern area of the ridge and the telescope buildings in staggered locations along the western face of the ridge, with the Directors House centrally located as a focal feature on the ridge spine; all contribute to the significant layout. The workshop and accompanying utilitarian buildings, such as fuel stores, were discreetly located beyond the ridge on the western slope. The layout on the mountain takes advantage of spectacular views and informal tree plantings, with simple paths, and stone retaining walls. The landscaping pattern close to the Administration Building, Directors House and staff housing, is more formally arranged and with a greater variety of exotic trees and plants.</td>
<td></td>
</tr>
<tr>
<td>Mount Stromlo Observatory Precinct is significant as the earliest example of Commonwealth scientific endeavour located in Canberra and demonstrates the role the Commonwealth has played in scientific research, from the period shortly after Federation. The creation of the Australian Capital Territory provided a focus as the location for such activity and the Observatory is associated with the early period of the development of the national capital. It reflects both the Commonwealth's interest in science and a vision for Canberra as the location for scientific institutions as well as general government administration. Mount Stromlo Observatory is one of a number of scientific buildings or complexes commenced by the Commonwealth in the Territory. Mount Stromlo Observatory Precinct is significant for its outstanding scientific research in optical astronomy and astrophysics, as well as telescope design and engineering achievements. During World War II it played a role as an optical munitions factory. It has retained its continuity of use as a research institution since its establishment. Evidence of the bushfires of 18 January 2003, constitutes historical significance.</td>
<td></td>
</tr>
<tr>
<td>Attributes:</td>
<td></td>
</tr>
<tr>
<td>The ruins of the Oddie Telescope building, including the remaining steel base of the dome mechanism, concrete plinth, and remnant cast iron telescope mounting structure.</td>
<td></td>
</tr>
<tr>
<td>The standing remains of the Administration Building including the standing walls, windows, the telescope dome structures, the courtyards and adjacent garden precincts.</td>
<td></td>
</tr>
<tr>
<td>The standing walls of the Director's Residence, outbuildings, garden remnants and croquet lawn area.</td>
<td></td>
</tr>
<tr>
<td>The road pattern and formal garden areas.</td>
<td></td>
</tr>
<tr>
<td>The Reynolds telescope structure.</td>
<td></td>
</tr>
<tr>
<td>Intact houses and standing house ruins</td>
<td></td>
</tr>
<tr>
<td>The standing ruin of the 74 inch telescope, Coude spectrograph and building.</td>
<td></td>
</tr>
<tr>
<td>The ruins of the Yale Columbia telescope, the Great Melbourne telescope and telescope building, the Uppsala telescope building.</td>
<td></td>
</tr>
<tr>
<td>The pattern of the precinct layout with the arrangement of buildings in function areas with separating landscape spaces: staff housing on the southern slopes, administration buildings on the southeaster area of the ridge, and telescope building in staggered locations on the western ridge face, the Director's House on the ridge spine.</td>
<td></td>
</tr>
<tr>
<td>The formally arranged landscaping with exotics around the Administration Building and the Director's House.</td>
<td></td>
</tr>
<tr>
<td>Criterion (b) Rarity</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>Mount Stromlo Observatory Precinct is a rare example of an optical observatory complex in Australia (the only other Australian complex of comparative size, being the Siding Spring Observatory). Although</td>
<td></td>
</tr>
<tr>
<td>Commonwealth Heritage Criteria</td>
<td>Official Assessment against the Criteria</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>many of the building are in ruins, it is rare in its array of historical telescope building structures.</td>
<td>Attributes:</td>
</tr>
<tr>
<td>The ruins of the Oddie Telescope building, including the remaining steel base of the dome mechanism, concrete plinth, and remnant cast iron telescope mounting structure.</td>
<td>The standing remains of the Administration Building including the standing walls, windows, the telescope dome structures, the courtyards and adjacent garden precincts.</td>
</tr>
<tr>
<td>The standing walls of the Director's Residence, outbuildings, garden remnants and croquet lawn area.</td>
<td>The road pattern and formal garden areas.</td>
</tr>
<tr>
<td>The Reynolds telescope structure.</td>
<td>Intact houses and standing house ruins</td>
</tr>
<tr>
<td>The standing ruin of the 74 inch telescope, Coude spectrograph and building.</td>
<td>The ruins of the Yale Columbia telescope, the Great Melbourne telescope and telescope building, the Uppsala telescope building.</td>
</tr>
<tr>
<td>The pattern of the precinct layout with the arrangement of buildings in function areas with separating landscape spaces: staff housing on the southern slopes, administration buildings on the southeaster area of the ridge, and telescope building in staggered locations on the western ridge face, the Director's House on the ridge spine.</td>
<td>The formally arranged landscaping with exotics around the Administration Building and the Directors House.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Criterion (c) Potential for information</th>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The official CHL entry makes no assessment against this criterion.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Criterion (d) Characteristic values</th>
<th>the place has significant heritage value because of the place’s importance in demonstrating the principal characteristics of:</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. a class of Australia’s natural or cultural places; or</td>
<td>ii. a class of Australia’s natural or cultural environments.</td>
</tr>
<tr>
<td>The remains of the Administration Building, have design importance as an example a 1920s optical observatory and for demonstrating Canberra’s Inter-War Mediterranean style architecture, incorporating the two telescope and garden pavilions.</td>
<td></td>
</tr>
<tr>
<td>The ruins of the Director's House reflect that style of administrative arrangements associated with scientific and other government institutions establishments during the early development of Canberra (School of Forestry, Canberra Hospital, Institute of Anatomy).</td>
<td></td>
</tr>
<tr>
<td>Attributes:</td>
<td>The standing remains of the Administration Building including the standing walls, windows, the telescope dome structures, the courtyards and adjacent garden precincts. Also, the standing walls of the Director's Residence, outbuildings, garden remnants and croquet lawn area.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Criterion (e) Aesthetic characteristics</th>
<th>the place has significant heritage value because of the place’s importance in exhibiting particular aesthetic characteristics valued by a community or cultural group.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mount Stromlo Observatory Precinct has an aesthetic value, due to the expansive views experienced from its mountain top setting. Although aesthetic significance was reduced by the 2003 bushfire, the period character of the remnant 1926 architecture, and the unusual aesthetic of the remaining dome structures, contribute to the aesthetic value.</td>
<td></td>
</tr>
<tr>
<td>Attributes:</td>
<td>Access to expansive views. The period character of the remnant 1926 architecture. The remaining dome structures.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Criterion (f) Creative/Technical achievement</th>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The official CHL entry makes no assessment against this criterion.</td>
<td></td>
</tr>
</tbody>
</table>
Official Assessment against the Criteria

Criterion (g) Social value

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.

An interpretation centre, the Stromlo Exploratory, constructed in 1996, reflects the increasingly important role the Mount Stromlo observatory contributes to the community’s understanding of science and physics. Mount Stromlo Observatory is valued by the Canberra community, observatory staff, researchers and amateur astronomers who have a strong association with the place.

Attributes:
Stromlo Exploratory centre.
Public access to the site

Criterion (h) Significant people

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 place is significant for its strong association with scientists who have made a substantial contribution to astronomy and astrophysics such as WG Duffield, R Woolley, CW Allen, LGH Huxley, RG Giovanelli, DF Martyn, B Bok, O Eggen, DS Mathewson, AW Rodgers and JR Mould. The grave of Walter Duffield and his wife commemorates the pioneer astronomer. The remains of the Oddie telescope structure retain the association with the Oddie family.

Attributes:
The grave of Walter Duffield and his wife. The remains of the Oddie telescope structure.

Criterion (i) Indigenous

The place has significant heritage value because of the place’s importance as part of Indigenous tradition.

The official CHL entry makes no assessment against this criterion.

6.4.2 Official Summary Statement of Significance

The following summary Statement of Significance is the official CHL citation for the ‘Mount Stromlo Observatory Precinct’.

Mount Stromlo Observatory Precinct, an optical astronomical research complex arranged across the ridge of a mountain, is a significant cultural landscape with a surviving richness of features including the mountain top landscape setting. Despite serious damage by the January 2003 bushfire, significant elements continuing to contribute to the heritage values of the place include the standing and remnant structures of the telescope dome building, the administration buildings, housing, gardens, workshop, the Duffield grave, utility structures, remaining landscape features, and the layout pattern of the complex. (Criterion A3)

Initially conceived in 1905 by the solar astronomer, Dr W G Duffield, to fill a solar recording gap in the Western Pacific, the observatory has incorporated phases of development that encompass structures dating from 1911. The significant features with a strong association to the historic phases of the precinct’s development are as follows:

(1) The ruins of the Oddie Telescope building with its small scale, the cruciform layout of the remaining concrete walls, the remaining steel base of the dome mechanism, and the concrete plinth with the remnant cast iron telescope mounting structure, is an extant feature of the first site development reflecting 1911 technology.

(2) The design and technology of the 1920s period of development is represented by the standing remains of the Administration Building, formerly the Commonwealth Solar Observatory, designed by JS Murdoch for the Federal Capital Commission, and completed in 1928. The Administration Building consists of standing walls with damaged windows, the symmetrical telescope domes of the Solar Tower and the Farnham, courtyards and adjacent garden remains.
3. The standing walls of Director’s Residence, outbuildings, garden remnants and croquet lawn area, also contribute to information on the early period, and reflect a time when Directors were accommodated at an institution.

4. The pattern of the roads leading to the buildings with the formal garden features in front of the Administration Building.

5. The Reynolds telescope structure, dating from 1930, remains a substantially intact significant structural feature of the early period.

6. Intact houses and standing house ruins also contribute to the precincts historic record.

7. The technology of the large standing ruin of the large 74 inch telescope, Coude Spectrograph and building, reflects the importance given to science in the 1950s.

8. Although the Yale Columbia telescope and telescope building, the Great Melbourne telescope and telescope building, and the Uppsala telescope building, have predominantly been used for utilitarian purposes since the 1960s, the design and technology represented by the extensive ruins of these structures contributes to the story of scientific expansion of the postwar years.

9. The pattern of the precinct layout remains a feature of the cultural landscape. This is reflected in the arrangement of buildings and building ruins in their function areas, with some separation by landscape spaces; a pattern that has been reinforced in the siting of new developments during the life of the complex. Staff housing on the southern slopes of the mountain, administration buildings at the southern eastern area of the ridge and the telescope buildings in staggered locations along the western face of the ridge, with the Directors House centrally located as a focal feature on the ridge spine; all contribute to the significant layout. The workshop and accompanying utilitarian buildings, such as fuel stores, were discreetly located beyond the ridge on the western slope. The layout on the mountain takes advantage of spectacular views and informal tree plantings, with simple paths, and stone retaining walls. The landscaping pattern close to the Administration Building, Directors House and staff housing, is more formally arranged and with a greater variety of exotic trees and plants. (Criterion A4 Australian Historic Themes 4.3 Developing Institutions)

Mount Stromlo Observatory Precinct is significant as the earliest example of Commonwealth scientific endeavour located in Canberra and demonstrates the role the Commonwealth has played in scientific research, from the period shortly after Federation. The creation of the Australian Capital Territory provided a focus as the location for such activity and the Observatory is associated with the early period of the development of the national capital. It reflects both the Commonwealth’s interest in science and a vision for Canberra as the location for scientific institutions as well as general government administration. Mount Stromlo Observatory is one of a number of scientific buildings or complexes commenced by the Commonwealth in the Territory. (Criterion A 4, Australian Historic Themes 4.3 Developing Institutions)

Mount Stromlo Observatory Precinct is significant for its outstanding scientific research in optical astronomy and astrophysics, as well as telescope design and engineering achievements. During World War II it played a role as an optical munitions factory. It has retained its continuity of use as a research institution since its establishment. (Criterion A4: Australian Historic Themes 8.10; Pursuing excellence in the arts and sciences, advancing knowledge in science and technology)

Mount Stromlo Observatory Precinct is a rare example of an optical observatory complex in Australia (the only other Australian complex of comparative size, being the Siding Spring Observatory). Although many of the building are in ruins, it is rare in its array of historical telescope building structures. (Criterion B2)

The place is significant for its strong association with scientists who have made a substantial contribution to astronomy and astrophysics such as WG Duffield, R Woolley, CW Allen, LGH Huxley, RG Giovanelli, DF Martyn, B Bok, O Eggen, DS Mathewson, AW Rodgers and JR Mould. The grave of Walter Duffield and his wife commemorates the pioneer astronomer. The remains of the Oddie telescope structure retain the association with the Oddie family. (Criterion H)
Mount Stromlo Observatory Precinct has an aesthetic value, due to the expansive views experienced from its mountain top setting. Although aesthetic significance was reduced by the 2003 bushfire, the period character of the remnant 1926 architecture, and the unusual aesthetic of the remaining dome structures, contribute to the aesthetic value. (Criterion E1)

The remains of the Administration Building, have design importance as an example a 1920s optical observatory and for demonstrating Canberra’s Inter-War Mediterranean style architecture, incorporating the two telescope and garden pavilions. The ruins of the Director’s House reflect that style of administrative arrangements associated with scientific and other government institutions establishments during the early development of Canberra (School of Forestry, Canberra Hospital, Institute of Anatomy). (Criterion D2)

Evidence of the bushfires of 18 January 2003, constitutes historical significance. (Criterion A4, Australian Historic Themes: 3.16.1 Dealing with hazards and disasters)

An interpretation centre, the Stromlo Exploratory, constructed in 1996, reflects the increasingly important role the Mount Stromlo observatory contributes to the community’s understanding of science and physics. Mount Stromlo Observatory is valued by the Canberra community, observatory staff, researchers and amateur astronomers who have a strong association with the place. (Criterion G1)

6.5 Revised Assessment of the Heritage Values

The existing assessment of significance determines that the Mount Stromlo Observatory meets the threshold for listing on the CHL for criteria (a), (b), (d), (e), (g) and (h). The official CHL listing does not assess the site for its Indigenous or natural heritage values. The official citation also does not assess the site for its potential to yield further information (Criterion (c)) or for its creative or technical achievement (Criterion (f)).

Reassessing heritage significance/values is an important part of understanding and responsibly managing the heritage values of a place. Values may alter over time, especially due to changes in condition, and sometimes new information becomes available which discloses previously hidden values, or losses can change assessments of rarity.

The CHL citation was updated shortly after the January 2003 fires; however, in the intervening 12 years further changes have occurred to the site (see Section 2.3). The site’s landscape has transformed, buildings have been removed or reconstructed and the heritage values have altered. Assessing the values of the site in light of the changes since the 2003 fires, particularly in relation to the aesthetic and social values, is vital to understanding its significance.

In Table 6.3 below each statement against the criteria sets out the attributes of the Mount Stromlo Observatory Precinct that are relevant to the particular criterion. In this table, ‘attributes’ means those aspects of the place that most strongly embody that heritage value.

6.5.1 Natural Heritage Values

An assessment of the natural heritage values has been undertaken in this HMP. Natural heritage is defined in the provisions of the Natural Heritage Charter, 2002, and focuses mainly on the categories of ‘ecological processes’ and ‘earth processes’, as well as the Charter’s values criteria of ‘existence’. That is, if there are elements which survive that demonstrate the natural history or earth processes. The research and analysis for this HMP indicates that these natural values do not appear at the Mount Stromlo Observatory. However, the Natural Heritage Charter also contemplates the concept of introduced elements and how these might contribute permanently to the natural significance of a place.
Human influence and management of the site make this concept relevant to the Mount Stromlo Observatory.

In this revised assessment there is a clear distinction drawn between cultural landscape value and natural heritage value.

6.5.2 Cultural Landscape Values

An assessment of the cultural heritage value of the Mount Stromlo Observatory Precinct requires an understanding of the landscape, its setting and the key characteristics that together contribute to the cultural landscape of the site.

A cultural landscape is defined as the combined works of nature and humankind. The concept emphasises the landscape scale of history and the connectivity between people, places and heritage items—recognising that the present landscape is the product of these long term and complex relationships.

The combined assessment of natural values and cultural heritage values (historic, aesthetic, social, scientific, etc) informs the assessment of the site’s cultural landscape values. There are layers of the site’s history which define the cultural landscape of the site—these layers comprise the natural environment and landscape setting through to the Observatory’s development, fire events and ongoing use of the site.

6.5.3 Indigenous Heritage Values

Indigenous heritage conservation and management aims to sustain the relationship between Indigenous people and their heritage places. The Indigenous heritage values assessment comprises the views of Indigenous community representatives and an assessment of the potential survival of archaeological remains around the site.

Investigation, consultation and assessment for this project established that there were no Indigenous heritage values specific to the Mount Stromlo Observatory Precinct.

6.5.4 Revised Heritage Values Assessment

<table>
<thead>
<tr>
<th>Commonwealth Heritage Criteria</th>
<th>Revised Assessment against the Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criterion (a) Processes</td>
<td>the place has significant heritage value because of the place’s importance in the course, or pattern, of Australia’s natural or cultural history.</td>
</tr>
<tr>
<td></td>
<td>The Mount Stromlo Observatory Precinct is highly significant to the course of Australia’s cultural history. It is the earliest example of Commonwealth scientific endeavour located in Canberra and demonstrates the role that the Commonwealth has played in scientific research from the period shortly after Federation. The creation of the Australian Capital Territory provided a focus as the location for such activity and the Observatory is associated with the early period of development of the National Capital. The Observatory reflects both the Commonwealth’s interest in science and a vision for Canberra as the location for scientific institutions, as well as general government administration. The Mount Stromlo Observatory is one of a number of scientific buildings or complexes commenced by the Commonwealth in the Territory in the years following Federation. The Mount Stromlo Observatory Precinct is a complex landscape incorporating structures from all historic phases of development of the site; pre-1923, 1924–1938, 1939–1955, 1956–1977, 1978–2003 and 2003–Present. The Oddie Telescope Dome was constructed in 1911 to house the first telescope on site; it is one of the earliest purpose built Commonwealth buildings in the ACT, and was established to test the site for its...</td>
</tr>
</tbody>
</table>
The Mount Stromlo Observatory Precinct is significant for its outstanding scientific research in optical astronomy and astrophysics, as well as telescope design and engineering achievements. It has retained its continuity of use since its establishment as a research institution and in the ongoing development of instrumentation.

During World War II the Observatory played a vital role as an optical munitions factory contributing substantially at a scientific level to the war effort in the manufacturing of optical instruments. The expansion of the site in the 1950s with considerable telescope acquisition reflects the importance of science at that time, and is demonstrated through the remnant telescope dome buildings.

The scientific research undertaken at the site has resulted in notable achievements. This includes the comprehensive photometric atlas of the solar spectrum produced by Clabon Allen, the highly acclaimed 1960s MACHO Project which focused on resolving missing mass in the universe, and the discovery of the Magellanic Stream.

The 2003 construction of the modern state of the art Advanced Instrumentation Technology Centre (AITC) continues the function of the site for scientific research and the development of astronomical instrumentation for Australia and internationally.

The residential accommodation demonstrates the early need to house staff and families on site due to the isolated nature of the Observatory and the requirement for nocturnal work. The Director’s Residence also reflects a time when directors of early government institutions were housed on site, similar to Westridge House for the School of Forestry and the Director’s Residence for the Institute of Anatomy. The ongoing provision of residences at Mount Stromlo continues this function.

The 2003 firestorm is a historically significant event in the history of the Mount Stromlo Observatory, which destroyed most of the buildings and workshops, research telescopes, instruments, important research and records on site, as well as the vegetation, including the surrounding pine plantation. The evidence of the ruined buildings and domes demonstrates the extent of the devastation.

The evolving nature of the Observatory, adapting to advances in technology as well as responding to adversities (such as the 1952 and 2003 fires), is an important aspect of the development of the site, and demonstrates the response and recovery efforts. The reconstructed Commonwealth Solar Observatory, stabilised Director’s Residence and the new AITC facility show the ability for the ANU and the RSAA to rebuild and continue to grow the capacity of the site.

The combined natural values, the landscape setting, the historic development and various elements of the site, including the built elements, ruined buildings, cultural plantings, landscape spaces and the setting, form the cultural landscape of the Mount Stromlo Observatory Precinct.

**Attributes:**

The Mount Stromlo Observatory Precinct meets the threshold for this criterion.

- The Mount Stromlo Observatory Precinct as a whole, including its setting, the layout, the location of structures along the ridge, the functional precincts and continuous use.
- The buildings and features which demonstrate the various phases of development and were critical in the establishment and ongoing function of the Observatory; the ruin and intact telescope buildings and domes, the Commonwealth Solar Observatory building, the Director’s Residence, the remaining houses from the 1920s, 1930s and 1950s, and the Duffield building.
- The evidence of the 2003 fires from the ruined buildings and domes; Yale-Columbia Telescope building, the Great Melbourne Telescope building, the Oddie Telescope building, including the newly created archaeological remains associated with that event.
<table>
<thead>
<tr>
<th>Commonwealth Heritage Criteria</th>
<th>Revised Assessment against the Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Criterion (b) Rarity</strong></td>
<td><em>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.</em></td>
</tr>
<tr>
<td></td>
<td>The Mount Stromlo Observatory Precinct is one of two optical observatories managed by the ANU (the other being Siding Spring Observatory near Coonabarabran), and is one of several observatories established in Australia and internationally. It has continuously provided the function of astronomical observation and research in its location since 1911. The layout of the Observatory and its key buildings on a ridge, set away from light sources (initially), with its telescope domes, residences and workshop buildings set out in distinct functional precincts remains evident to this day. During the period from 1944 to 1968 the site was the home of the Commonwealth Time Service, established by Ben Gascoigne and RVDR Woolley, using the transit telescope, quartz clocks to track stars passing the zenith line and setting the time for Australia. The Mount Stromlo Observatory is one of the early purpose built Commonwealth complexes in the Nation’s Capital. It demonstrates the Commonwealth Government’s commitment to scientific endeavour through the establishment of a self-sufficient institution with a range of functional buildings including research buildings and domes, workshops and residences. There are areas on the western and northwestern slopes of Mount Stromlo which were not planted to pines and which support modified and fire disturbed native vegetation. There are pockets of grassland and woodland, but none which satisfy the criteria for ‘endangered ecological communities’ status. The Mount Stromlo Observatory Precinct meets the threshold for this criterion. <strong>Attributes:</strong> The continuous and ongoing function of the site for astronomical observations, research and instrumentation development. Buildings from the early establishment of the complex including the Commonwealth Solar Observatory building, the Director’s Residence, the Oddie Telescope building, and those which demonstrate the range of functional buildings and domes and the residences.</td>
</tr>
</tbody>
</table>

<p>| <strong>Criterion (c) Potential for information</strong> | <em>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.</em> |
|                                            | The Mount Stromlo Observatory Precinct has potential to yield information about the establishment of Commonwealth institutions post-Federation. The function and management of the institution with the need for a Director’s Residence on site and administrative offices, as well as the specific scientific buildings, provides an insight into the planning and creation of early Commonwealth sites. It also provides an understanding into the science and technology of early twentieth-century observatories. There is potential for the site to yield further information about the nature of human values and associations to disaster or commemorative sites from the Canberra community response to the 2003 fires. The Mount Stromlo Observatory Precinct meets the threshold for this criterion. <strong>Attributes:</strong> Buildings from the early establishment of the complex including the Commonwealth Solar Observatory building, the Director’s Residence, the Oddie Telescope building and residential Houses (8, 18 and 20). Structures demonstrating the scientific function of the site; the intact 74inch Telescope Dome, Reynold’s Telescope Dome and the Commonwealth Solar Observatory Building. The ruined buildings and domes; Yale-Columbia Telescope building, the Great Melbourne Telescope building and the Oddie Telescope building. |</p>
<table>
<thead>
<tr>
<th>Commonwealth Heritage Criteria</th>
<th>Revised Assessment against the Criteria</th>
</tr>
</thead>
</table>
| Criterion (d) Characteristic values | the place has significant heritage value because of the place's importance in demonstrating the principal characteristics of:  
   i. a class of Australia's natural or cultural places; or  
   ii. a class of Australia's natural or cultural environments. |
| | The Mount Stromlo Observatory is representative of purpose built Commonwealth institutions established following Federation. The separate functional areas and the complex of buildings demonstrate the need for a self-sufficient site and the hierarchical division of building types (residential, scientific and administration).  
The Observatory is characteristic of other national and international observatories, with similar scientific and site specific facilities, functional layout, setting on a hill or ridge, and typical dome structures.  
The Director's Residence reflects the administrative arrangements associated with scientific and other government institutions during the early development of Canberra. The architectural character of the Commonwealth Solar Observatory building, designed by John Smith Murdoch, is representative of Inter-War Mediterranean style architecture in Canberra.  
The Mount Stromlo Observatory Precinct meets the threshold for this criterion.  
Attributes:  
The layout and planning arrangement of the functional areas of the site.  
The location of the key observatory buildings along the ridge.  
The Commonwealth Solar Observatory building (reconstructed 2006).  
The Director's Residence and associated garage and garden remnants (stabilised 2014).  
Remnant telescope domes and ruins; Reynolds Telescope Dome and 74inch Telescope Dome. |
| Criterion (e) Aesthetic characteristics | 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 Mount Stromlo Observatory is a visual landmark in Canberra, characteristic for its distinct white dome structures.  
The damage from the 2003 fires has changed the visual characteristics of the site from a largely vegetated area with numerous telescope domes and buildings to a cleared landscape with some intact structures and ruins.  
The historic character of the Commonwealth Solar Observatory building and the Director's Residence are aesthetic examples of the style of architecture of early Commonwealth buildings, providing a visual link with similar structures in Canberra.  
The setting of the site with key elements positioned along the ridge and the division of the types of buildings (residential, scientific and administration) provides an aesthetic understanding of the layout of early Commonwealth institutions and observatories. The spatial arrangement of the buildings with open areas and view lines between key Observatory structures contributes to the landscape setting of the site.  
The approach to the site along the steep and winding road is an evocative reminder for visitors of the remoteness (historically) and the isolation experienced by the early inhabitants.  
Aesthetic values must be demonstrated as being valued by the community to qualify for recognition on the CHL. It is highly likely that the site is valued by the Canberra community for its aesthetic values and would reach the threshold; however, community appreciation of the aesthetic value of the Mount Stromlo Observatory has not been formally tested.  
The combination of the site's buildings and ruined structures, particularly the publically accessible Yale-Columbia Telescope building, are regularly used as backdrops for members of the community to create aesthetically pleasing and compositional photographs for weddings and other special events.  
The scenic views over the Murrumbidgee Valley and towards the city are experienced by visitors to the site.  
The Mount Stromlo Observatory Precinct meets the threshold for this criterion.  
Attributes:  
The site as a whole, including the combination of intact and ruined structures. The layout and spatial arrangement of the different types of buildings along and below the ridge, and the open space between |
<table>
<thead>
<tr>
<th>Commonwealth Heritage Criteria</th>
<th>Revised Assessment against the Criteria</th>
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<tbody>
<tr>
<td></td>
<td>key buildings.</td>
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<td>The remaining white dome structures, the Reynold’s Telescope Dome and the 74inch Telescope Dome; and other highly visible buildings situated along the ridge, including the Director’s Residence, Commonwealth Solar Observatory Building and the Oddie Telescope building.</td>
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<td></td>
<td>The ruined remains of the Yale-Columbia Telescope building, including the window frames and concrete telescope support.</td>
</tr>
<tr>
<td><strong>Criterion (f)</strong></td>
<td><strong>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.</strong></td>
</tr>
<tr>
<td>Creative/Technical achievement</td>
<td>The Mount Stromlo Observatory demonstrates a high degree of technical achievement through the continuous use of the site for astronomical observations, research and technological development.</td>
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<tr>
<td></td>
<td>The design and manufacture of optical equipment during World War II resulted in the improvement of visual (telescopic) and communication technology that greatly enhanced operations in the field.</td>
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<tr>
<td></td>
<td>The early telescope domes and buildings provide an understanding of the advanced technology required for optical observing. The 74inch Dome was the equal largest dome in the southern hemisphere from its construction up until 1974.</td>
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<td></td>
<td>As well as telescopes the site was developed with integrated ‘one stop shop’ workshops with engineers and technicians to design and develop equipment and instrumentation to support scientific research. This onsite technical expertise and purpose built facilities resulted in little work being contracted out, for example the design and construction of the 2.3 metre telescope and its rotating building which was designed and built at Mount Stromlo for installation at the Siding Springs Observatory.</td>
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<td></td>
<td>Scientific research and work undertaken at Mount Stromlo Observatory demonstrates a high level of technical achievement, including the MACHO Project and the contribution of the RSAA’s research and engineering to international projects such as the Giant Magellen Telescope and the Gemini Telescopes.</td>
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<td></td>
<td>The advancement of technology has resulted in the need to develop purpose built and state of the art facilities at the site. The modern AITC reflects the ongoing need to accommodate the changing requirements in astronomical technology.</td>
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<td></td>
<td>The Mount Stromlo Observatory is recognised for significant technical achievements in the development of optical munitions during World War II, contributions to national and international scientific understanding in the field of astronomy, astrophysics and solar aspects; and it continues to be associated with many scientists who are highly respected in their field of scientific endeavour.</td>
</tr>
<tr>
<td></td>
<td>The Mount Stromlo Observatory Precinct meets the threshold for this criterion.</td>
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<tr>
<td><strong>Attributes:</strong></td>
<td>The continuous function of the site for astronomical observations, research and instrumentation development.</td>
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<td></td>
<td>The remaining telescope domes for the 74inch Telescope and the Reynold’s Telescope.</td>
</tr>
<tr>
<td><strong>Criterion (g)</strong></td>
<td><strong>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.</strong></td>
</tr>
<tr>
<td>Social value</td>
<td>The Mount Stromlo Observatory has significant social values to the scientific community, ANU staff and researchers, amateur astronomers and the broader Canberra community who have a strong association with the place, demonstrated by the numerous publications, social events, site functions, scientific reports, news articles, art shows and historical exhibitions.</td>
</tr>
<tr>
<td></td>
<td>The scientists, staff and their families who lived and worked on site due to the initial remoteness and isolation of the site formed a unique community. Communal activities such as tennis, and social events held at the Director’s Residence provided occasions for social interaction. The ongoing provision of accommodation in the residential precinct located on the south side of the ridge retains a sense of community life at the site.</td>
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<td></td>
<td>The Mount Stromlo Observatory demonstrates a community spirit established from perseverance through the adversity of fires, both in 1952 and 2003. The broader Canberra community who were affected by the 2003 fires have strong associations to the site. This is demonstrated through commemorative events and exhibitions including the Past, Present and Future display and the 10 year anniversary of the 2003 fires, held at Mount Stromlo.</td>
</tr>
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<td></td>
<td>The donation of public funds to the establishment of Outreach Telescope Domes following the fires</td>
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<tr>
<td>Commonwealth Heritage Criteria</td>
<td>Revised Assessment against the Criteria</td>
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<td></td>
<td>demonstrates the importance that the community holds in the ability to use the site for observation purposes. Public visitors to the site who experience the views, photograph the structures, partake in astronomical observing events, undertake recreational activities or visit the cafe all have a close connection to the site. The Mount Stromlo Observatory Precinct meets the threshold for this criterion. <strong>Attributes:</strong> The separate residential precinct and provision of community facilities such as the tennis courts (in their original location nearby the Director’s Residence). The ruined buildings: Yale-Columbia Telescope building, the Great Melbourne Telescope building, the Oddie Telescope building, as visual reminders of the extent of the destruction of the 2003 fires. Public access to parts of the site. The Visitor’s Centre, cafe facilities and exhibition spaces. The Outreach Domes used for public stargazing nights and by school groups.</td>
</tr>
<tr>
<td><strong>Criterion (h)</strong> Significant people</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>The Mount Stromlo Observatory is associated with the life and works of the members of the scientific community who conducted research, observations and the development of astronomical instruments at the site, initially for the Commonwealth and later through the ANU. The 10 directors of the Observatory since its establishment in 1924 have played vital roles in the development of the site and their contribution to astronomical science. These include the first Observatory Director, Walter Duffield, who was pivotal in the establishment of the site; and the second Director, Richard van der Riet Woolley, who suggested the Observatory devote its resources to the production of optical munitions during World War II, changed the focus of the observatory from solar to stellar astronomy and oversaw the largest telescope acquisition to the site during the 1950s. The tenth and current Director, astronomer Matthew Colless, was based at the Mount Stromlo Observatory from 1993 to 2004, was a key member of the international team working on the 2dF Galaxy Redshift Survey, a great scientific achievement measuring the amount of dark matter in the universe. Other notable scientists who have made a substantial contribution to astronomy and astrophysics include Clabon Allen, Leonard Huxley, Robert Giovanelli, David Martyn, Bart Bok, Olin Eggen, Donald Mathewson, Alex Rodgers, Jeremy Mould, Kenneth Freeman, Penny Sackett, and Harvey Butcher. Professor Brian Schmidt was a co-recipient of the Nobel Prize for Physics 2011 for the discovery that the universe is expanding at an accelerating rate. The design of the Director’s Residence was influenced by the first Observatory Director, Walter Duffield, and his wife Doris; particularly in the design of the building to suit the specific needs of the site and to ensure it was prominently located and of an appropriate standard to represent the newly established scientific institution. The Duffield gravesite is located at Mount Stromlo. Rosalie Gascoigne, celebrated Australian artist, and wife of Professor Ben Gascoigne, lived at Mount Stromlo for about 17 years. Her passion for art was influenced by the isolation of the site and she drew inspiration from the surrounding landscape of Mount Stromlo. The surviving stand of Canary Island Pines in the south of the site is the only surviving relic of Thomas Charles Weston’s original trial plantings in the area (1916) as Officer in Charge of Afforestation for the Federal Capital. Two of the Chinese Elms in the carriage loop of the Commonwealth Solar Observatory Building and the oak tree beside the Director’s Residence were planted by Mrs Doris Duffield and represent the formal landscaping aspirations of the early observatory period. The surviving stumps of the orchard are associated with early attempts by the Mount Stromlo community, led in this case by Doris Duffield, to grow on-site produce for the relatively isolated community. The gardens and landscape features around House No. 19 (destroyed by fires) were established by the Canberra artist Rosalie Gascoigne in the early 1950s. The Mount Stromlo Observatory Precinct meets the threshold for this criterion. <strong>Attributes:</strong> The Commonwealth Solar Observatory building and the telescope buildings and ruins on site are associated with the numerous scientists and their achievements.</td>
</tr>
</tbody>
</table>
Commonwealth Heritage Criteria | Revised Assessment against the Criteria
---|---
The Duffield family is strongly associated with the Director’s Residence, the Chinese Elms outside the Commonwealth Solar Observatory building, the oak tree beside the Director’s Residence and the gravesite. The Canary Island Pines on the entry road to the south of the site are associated with Weston. The remnant garden and landscape features surrounding the site of former House No. 19 are associated with artist Rosalie Gascoigne.

Criterion (i) Indigenous

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

The Mount Stromlo Observatory Precinct does not meet this criterion.

6.5.5 Summary Statement of the Heritage Values

The Mount Stromlo Observatory meets eight of the CHL criteria for its historic, rarity, potential to yield information, characteristic, aesthetic, creative/technical, social and associational values. The place has significant heritage values and meets the Commonwealth Heritage threshold at an Exceptional level (see definitions in Table 6.4 below) and has potential National Heritage values. The assessment indicates that the whole site has potential National Heritage values which would be the subject of a future detailed assessment.

The following Statement of Significance summarises the recommended heritage values reassessment.

The Mount Stromlo Observatory Precinct is highly significant in Australia’s cultural history. It reflects both the Commonwealth’s interest in science and its vision for Canberra as the location for national scientific institutions, in addition to general government administration. The 1911 Oddie Telescope Dome is one of the earliest purpose built Commonwealth buildings in the ACT. The site has retained its continuity of use since its establishment as a research institution and in the ongoing development of optical instrumentation. The Mount Stromlo Observatory Precinct is significant as evidence of outstanding scientific research in optical astronomy and astrophysics, as well as telescope design and engineering achievements. During World War II it played a vital role as an optical munitions factory.

The Mount Stromlo Observatory demonstrates a high degree of technical achievement through the continuous use of the site for astronomical observations, research and technological development, such as the design and manufacture of optical equipment during World War II. The research undertaken at the site has resulted in notable scientific achievements. This includes the comprehensive photometric atlas of the solar spectrum produced by Clabon Allen, the highly acclaimed 1960s MACHO Project which focused on resolving missing mass in the universe, and the discovery of the Magellanic Stream. The early telescope domes and buildings provide an understanding of the evolution of advanced technology required for optical observing. The 74inch Telescope Dome was the equal largest dome in the southern hemisphere from its construction up until 1974. The advancement of technology has resulted in the need to develop purpose built and state of the art facilities at the site with the modern AITC reflecting the ongoing need to accommodate the changing requirements in astronomical technology.

The Mount Stromlo Observatory is representative of purpose built Commonwealth institutions established following Federation. The separate functional areas and the complex of buildings demonstrates the need for a self-sufficient site and the hierarchical division of building types (residential, telescopes and administration). The Observatory shares characteristics of other national
and international observatories, with similar scientific and site specific facilities, functional layout, setting on a hill or ridge, and typical dome structures. The Director’s Residence reflects the administrative arrangements associated with other national government institutions during the early development of Canberra. The architectural character of the Commonwealth Solar Observatory Building, designed by John Smith Murdoch, is representative of Inter-War Mediterranean style architecture in Canberra.

The Mount Stromlo Observatory Precinct is a complex cultural landscape incorporating structures from all historic phases of development of the site; pre-1923, 1924–1938, 1939–1955, 1956–1977, 1978–2003 and 2003–Present. The planned layout of the precinct evidences the historic division of functions across the site which remains today. The on-site residential accommodation demonstrates the isolated nature of the Observatory and the early need to house staff and families on site due to the requirement for nocturnal work. The Director’s Residence also reflects a time when directors of early government institutions were hierarchically housed on site.

The 2003 firestorm is a historically significant event in the history of the Mount Stromlo Observatory, which destroyed most of the buildings and workshops, research telescopes, instruments, important research and records, as well as the vegetation, including the surrounding pine plantation. Evidence of the ruined buildings and domes demonstrates the extent of the devastation and the resilience of the scientific institution.

The Mount Stromlo Observatory Precinct is one of two optical observatories managed by the ANU (the other being Siding Spring Observatory near Coonabarabran), and is one of several observatories established in Australia and internationally. It has continuously provided the function of astronomical observation and research in its location since 1911.

The Mount Stromlo Observatory Precinct has potential to yield information about the establishment, planning and creation of early Commonwealth institutions post-Federation. It also provides an understanding into the science and technology of early twentieth-century observatories. There is potential for the site to yield further information about the nature of human values and associations to disaster or commemorative sites from the Canberra community response to the 2003 fires.

The Mount Stromlo Observatory is an important cultural landscape and visual landmark in Canberra, characteristic for the views of its distinct white dome structures in a landscape setting. The setting, with key elements positioned along the ridge and the division of building types, provides an aesthetic understanding of the layout of early Commonwealth institutions and observatories. The spatial arrangement of the buildings with open areas and view lines between key observatory structures contributes to the landscape setting of the site. The approach to the site along the steep and winding road is an evocative reminder for visitors of the historical remoteness of the site and the isolation experienced by the early inhabitants. The scenic views over the Murrumbidgee Valley and toward the city are experienced by visitors to the site.

The damage from the 2003 fires has changed the visual characteristics of the site, from a largely vegetated area with numerous telescope domes and buildings to a cleared landscape with some intact structures and ruins.

The Mount Stromlo Observatory has significant social values to the scientific community, ANU staff and researchers, amateur astronomers and the broader Canberra community who have a strong association with the place, demonstrated by the numerous publications, social events, site functions, scientific reports, news articles, art shows and historical exhibitions. The scientists and their families
who lived and worked on site due to the initial remoteness and isolation of the site formed a unique community.

The Mount Stromlo Observatory demonstrates a community spirit established from perseverance through the adversity of fires, both in 1952 and 2003. The broader Canberra community who were affected by the 2003 fires have strong associations to the site.

The Mount Stromlo Observatory is associated with the life and works of the members of the scientific community who conducted research, observations and the development of astronomical instruments at the site, initially for the Commonwealth and later through the ANU. The ten directors of the Observatory since its establishment in 1924 have played vital roles in the development of the site and their contribution to astronomical science. These include the first Observatory Director, Walter Duffield, who was pivotal in the establishment of the site and whose grave is located at the site; and the second Director, Richard van der Riet Woolley, who suggested the Observatory devote its resources to the production of optical munitions during World War II and oversaw the largest telescope acquisition to the site during the 1950s. The tenth and current Director, astronomer Matthew Colless, was based at the Mount Stromlo Observatory from 1993 to 2004, and was a key member of the international team working on the 2dF Galaxy Redshift Survey, a great scientific achievement measuring the amount of dark matter in the universe. Other notable scientists who have made a substantial contribution to astronomy and astrophysics include Clabon Allen, Leonard Huxley, Robert Giovanelli, David Martyn, Bart Bok, Olin Eggen, Donald Mathewson, Alex Rodgers, Jeremy Mould, Kenneth Freeman, Penny Sackett, and Harvey Butcher. Professor Brian Schmidt was a co-recipient of the Nobel Prize for Physics 2011 for the discovery that the universe is expanding at an accelerating rate.

Rosalie Gascoigne, celebrated Australian artist and wife of Emeritus Professor Ben Gascoigne, lived at Mount Stromlo for about 17 years in House 19. Her passion for art was influenced by the isolation of the site and she drew inspiration from the surrounding landscape of Mount Stromlo.

The surviving stand of Canary Island Pines in the south of the site is the only surviving relic of TCG Weston’s original trial plantings in the area (1916). Two of the Chinese Elms in the carriage loop of the Commonwealth Solar Observatory Building and the oak tree beside the Director’s Residence were planted by Mrs Doris Duffield and represent the formal landscaping aspirations of the early observatory period. The surviving stumps of the orchard are associated with early attempts by the Mount Stromlo community, led in this case by the Director’s wife, to grow on-site produce for the relatively isolated community.

6.6 Significance Ranking of Individual Elements

6.6.1 Explanation of Ranking of Elements

As set out above, the Mount Stromlo Observatory Precinct possesses an array of identified heritage values, and the site is made up of many elements that contribute to these values to a greater or lesser degree.

The purpose of understanding the significance of the various elements is to enable a clear approach to managing the place and its individual elements. The ranking has been applied to the site as a whole, and to individual elements. It is important to note that the elements were assessed individually in the 2004 CMP and will be reassessed in more detail as the inventories at Volume 2 of this HMP are prepared, using the methodology outlined here.
Following the national benchmark approach set out by JS Kerr in *The Conservation Plan*, the significance of the various elements has been assessed by considering the independent value of the element ‘tempered by consideration of the degree to which the element tends to reinforce or reduce the significance of the whole’. It is also based on current methodology established by the ANU and referred to as the ‘ANU heritage classification’. The ANU classifies its heritage in a number of different ways dependent upon the type of site: European, Indigenous or natural. The Mount Stromlo Observatory is considered a European site and is ranked by the ANU to be an Exceptional site—this means that the site is listed on the CHL and/or has been identified as having Commonwealth Heritage values.

The following rankings and additional explanation have been provided below to assist with assessing the contribution that individual elements at the Mount Stromlo Observatory make to the overall Commonwealth Heritage values of the place.

**Table 6.4 Definition of the Ranking or Grades of Heritage Significance Used in this HMP.**

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Explanation of the Heritage Significance Ranking/Grade</th>
<th>Threshold</th>
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<tbody>
<tr>
<td>Exceptional</td>
<td>Rare or outstanding element which significantly embodies and demonstrates National and Commonwealth (or other) Heritage values in its own right and makes a direct and irreplaceable contribution to a place’s significance/value. They are of Outstanding value to the nation (as assessed against the National Heritage criteria). Generally these elements include an exceptional degree of original fabric or attributes with heritage values, and include non-tangible components such as views and functional relationships which directly contribute to their Outstanding/Exceptional values. These may include some alterations which are of a minor nature and do not detract from significance. Loss or alteration would significantly diminish the National or Commonwealth (or other) Heritage values of the place. At the Mount Stromlo Observatory, the site as a whole is considered to meet the Exceptional level—refer to Table 6.6.</td>
<td>Likely to fulfil criteria for National Heritage List.</td>
</tr>
<tr>
<td>High</td>
<td>Element which demonstrates Commonwealth (or State) Heritage values in its own right and makes a significant contribution to the place’s heritage value. Existing alterations do not detract from its heritage values. Loss or unsympathetic alteration would diminish the Commonwealth Heritage values of the place. At the Mount Stromlo Observatory, there is a high proportion of elements with High level heritage significance.</td>
<td>Likely to fulfil Commonwealth and State Heritage criteria.</td>
</tr>
<tr>
<td>Moderate</td>
<td>Element that reflects some Commonwealth (or other local) Heritage values but only contributes to the overall significance/values of the place in a moderate way. Loss or unsympathetic alteration is likely to diminish the Commonwealth Heritage values of the place. At the Mount Stromlo Observatory, there are a high proportion of elements with Moderate level of heritage significance.</td>
<td>Likely to fulfil Commonwealth Heritage criteria.</td>
</tr>
<tr>
<td>Low</td>
<td>Element that reflects a low level of Commonwealth Heritage values and may only contribute to the overall significance/values of the place. Loss will not diminish the Commonwealth Heritage values of the place.</td>
<td>Unlikely to meet local heritage criteria.</td>
</tr>
<tr>
<td>Neutral</td>
<td>Element that does not reflect or demonstrate any Commonwealth or Local Heritage values and detracts from the overall heritage values of the place. Does not fulfil criteria for heritage listing.</td>
<td>Does not have Commonwealth or local heritage value on its own merit.</td>
</tr>
<tr>
<td>Intrusive</td>
<td>Damaging to the place’s heritage values. Loss may contribute to the Commonwealth Heritage values of the place. Does not fulfil criteria for heritage listing.</td>
<td>Does not fulfil criteria for Commonwealth or local listing.</td>
</tr>
</tbody>
</table>
Refer to Table 6.6 and Figure 6.1 for the application of the different levels of significance rankings to the Mount Stromlo Observatory Precinct.

6.7 Tolerance for Change for Individual Elements

6.7.1 Explanation of Tolerance for Change

In the case of a site such as the Mount Stromlo Observatory, the concept of sensitivity or ‘tolerance for change’ is a useful management tool which assists in managing any proposed change to the site’s heritage values, in particular the built and landscape character.

Tolerance for change applied to the Mount Stromlo Observatory has been used to identify the extent to which a place’s heritage values/significance and key attributes are able to tolerate change without adversely impacting the nature or degree of its heritage values/significance and contribution to the site overall. Change generally refers to development, major works, new uses, adaptive re-use or conservation works. It does not refer to maintenance.

Table 6.5 sets out the range of tolerance for change levels used in this report, and explains their application to the Mount Stromlo Observatory Precinct, including a broad management guideline for the elements in relation to their ability to tolerate change.

Table 6.5  Explanation for the Range of Tolerance for Change Levels.

<table>
<thead>
<tr>
<th>Tolerance for Change</th>
<th>Definition of the Application to the Mount Stromlo Observatory</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low tolerance for change</strong></td>
<td>The element and its key attributes (form, fabric, function and/or location) embody the heritage values and contribute strongly to Mount Stromlo. The element usually retains a high degree of intactness with no major change or alterations, or only very minor alterations that do not detract from the heritage values of the element itself or the site. General management guideline to be applied: the element should be retained, interpreted and conserved. Most elements of high heritage significance have a low tolerance to change.</td>
</tr>
<tr>
<td><strong>Some tolerance for change</strong></td>
<td>The element and its key attributes (form, fabric, function and/or location) embody the heritage values of the element and its contribution to the site. The element has undergone some alteration, but it does not detract from the heritage values of the element itself or the site. General management guideline to be applied: the element should generally be retained, interpreted and conserved. However, they may be sensitively changed to some degree without adverse impact on the heritage values of the site.</td>
</tr>
<tr>
<td>Able to tolerate moderate change</td>
<td>The element and its key attributes (form, fabric, function and/or location) only partly embody the heritage values of the site, or have been considerably modified. General management guideline to be applied: the element should be retained and conserved. There is greater opportunity for moderate change with less adverse impact on the heritage values of the site.</td>
</tr>
<tr>
<td>Able to tolerate reasonable change</td>
<td>The element and its key attributes (form, fabric, function and/or location) have relatively little heritage value, but it may contribute to the overall significance of the site. Past alterations to the element detract from the heritage values and are difficult to interpret. General management guideline to be applied: the element can be changed with a reasonable degree provided this does not impact the heritage values of the site.</td>
</tr>
<tr>
<td>Able to tolerate substantial change</td>
<td>The element and its key attributes (form, fabric, function and/or location) have little or no heritage value that contributes to the overall site. General management guideline to be applied: the element can be changed substantially, or removed, provided this does not impact the heritage values of the site.</td>
</tr>
</tbody>
</table>
Refer to Table 6.6 and Figure 6.2 for the application of different levels of tolerance for change to the site.

6.7.2 Application of Ranking and Tolerance for Change at the Mount Stromlo Observatory

The tolerance for change rankings apply to the current state of the element, whether it is a heritage ruin, intact, reconstructed or newly built. Volume 2 will provide a detailed significance assessment of each built element at Mount Stromlo.

The tolerance for change rankings for individual elements at the Mount Stromlo Observatory have been applied primarily in relation to their attributes of fabric and form. Buildings with no current specified use may be adapted for a new appropriate use, which is sympathetic to the overall site function.

Table 6.6  Application of Ranking/Grades of Significance and Tolerance for Change to the Site.

<table>
<thead>
<tr>
<th>Name of the Element</th>
<th>Heritage Significance</th>
<th>Tolerance for Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Mount Stromlo Observatory Precinct (whole site—cultural landscape)</td>
<td>Exceptional</td>
<td>Variable (depending on the element or space)</td>
</tr>
<tr>
<td>Telescope/Dome Buildings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 inch Oddie Telescope Building (heritage ruin)</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Reynolds Telescope Dome</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>74 inch Telescope Dome</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Yale-Columbia Telescope Building (heritage ruin)</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Great Melbourne Telescope Building (heritage ruin)</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Swedish Uppsala Telescope Building (footings)</td>
<td>Low</td>
<td>Reasonable</td>
</tr>
<tr>
<td>EOS Satellite Laser Ranging Facility</td>
<td>Low</td>
<td>Reasonable</td>
</tr>
<tr>
<td>Outreach Telescope Domes</td>
<td>Low</td>
<td>Reasonable</td>
</tr>
<tr>
<td>Observatory Buildings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commonwealth Solar Observatory Building</td>
<td>High (Moderate for the newer extension)</td>
<td>Low (Reasonable for the newer extension)</td>
</tr>
<tr>
<td>Duffield Building</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>Woolley Building</td>
<td>Low</td>
<td>Moderate</td>
</tr>
<tr>
<td>Precision Engineering Centre ‘the Barn’</td>
<td>Low</td>
<td>Substantial</td>
</tr>
<tr>
<td>Advanced Instrumentation Technology Centre (AITC)</td>
<td>Low</td>
<td>Reasonable</td>
</tr>
<tr>
<td>Residential Buildings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>House No. 20</td>
<td>Moderate</td>
<td>Some</td>
</tr>
<tr>
<td>House No. 18</td>
<td>Moderate</td>
<td>Some</td>
</tr>
<tr>
<td>House No. 8</td>
<td>Moderate</td>
<td>Some</td>
</tr>
<tr>
<td>Houses Nos 2 and 3</td>
<td>Low</td>
<td>Reasonable</td>
</tr>
<tr>
<td>Director’s Residence (heritage ruin)</td>
<td>High</td>
<td>Low</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Name of the Element</th>
<th>Heritage Significance</th>
<th>Tolerance for Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faulkner Court</td>
<td>Low</td>
<td>Reasonable</td>
</tr>
</tbody>
</table>

**Other Buildings**

<table>
<thead>
<tr>
<th>Name of the Element</th>
<th>Heritage Significance</th>
<th>Tolerance for Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visitor Centre</td>
<td>Low</td>
<td>Substantial</td>
</tr>
<tr>
<td>Duffields' Grave</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>ANU Garden and Grounds Depot</td>
<td>Low</td>
<td>Substantial</td>
</tr>
<tr>
<td>Tennis Court</td>
<td>Moderate</td>
<td>Reasonable</td>
</tr>
<tr>
<td>EOS Office Building</td>
<td>Low</td>
<td>Substantial</td>
</tr>
</tbody>
</table>

Some intrusive elements are located within the Precinct. The informal car park between the Commonwealth Solar Observatory Building and the Director’s Residence detracts from the open park-like character of the precinct and is an impact on the landscaping of the site. Ad hoc structures on the site which are not sympathetic to the planning layout or function of the site have the potential to impact the heritage values.
Figure 6.1 Significance rankings of the built elements at the Mount Stromlo Observatory Precinct. (Source: GML on ANU base plan)
Figure 6.2 Tolerance for change rankings of the built elements at the Mount Stromlo Observatory Precinct. (Source: GML on ANU base plan)
6.8 Significance Ranking and Tolerance for Change for Vegetation

6.8.1 Explanation of Ranking and Tolerance for Change

The vegetation and landscape features, identified in Section 3.0 as having heritage value, have been assessed for their heritage significance.

Table 6.7 The Criteria for Heritage Significance and Tolerance for Change Ranking for Vegetation.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Heritage Significance</th>
<th>Tolerance for Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relics of original native plant communities.</td>
<td>Exceptional</td>
<td>Low</td>
</tr>
<tr>
<td>Plantings associated with Weston’s early plantation trials.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultural plantings and landscape remnants associated with the</td>
<td>High</td>
<td>Some</td>
</tr>
<tr>
<td>establishment of the Observatory (1920–1930).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultural plantings and landscape remnants associated with the life and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>work of a person or group eg Rosalie Gascoigne</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thematic native plantings pre-1960.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early regrowth of native species representative of original</td>
<td>Moderate</td>
<td>Some</td>
</tr>
<tr>
<td>communities.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultural plantings of the 1940s and 1950s.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thematic native plantings post-1960.</td>
<td>Low</td>
<td>Substantial</td>
</tr>
<tr>
<td>Regrowth of native flora, replacing pine forests.</td>
<td>Neutral</td>
<td>Substantial</td>
</tr>
</tbody>
</table>

Refer to Table 6.8 and Figures 6.3–6.6 for the application of different levels of significance rankings to the site.

6.8.2 Application of Ranking and Tolerance for Change at the Mount Stromlo Observatory

Table 6.8 Heritage Significance and Tolerance for Change of Vegetation (natural heritage/cultural plantings) at the Mount Stromlo Observatory.

<table>
<thead>
<tr>
<th>ID</th>
<th>Description</th>
<th>Heritage Significance</th>
<th>Tolerance for Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>NH0</td>
<td>Natural Heritage Vegetation Areas of western slopes not used for pine</td>
<td>Neutral</td>
<td>Substantial</td>
</tr>
<tr>
<td></td>
<td>plantations. Currently dominated by wattle and eucalypt regrowth, but</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>with pockets of grassland and woodland.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NH1</td>
<td>Natural Heritage Vegetation Eucalyptus mannifera in the Observatory area.</td>
<td>Low</td>
<td>Substantial</td>
</tr>
<tr>
<td></td>
<td>Representative of the original Mount Stromlo vegetation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NH2</td>
<td>Natural Heritage Vegetation Eucalyptus mannifera adjacent to the Director’s</td>
<td>Medium</td>
<td>Some</td>
</tr>
<tr>
<td></td>
<td>Residence. Representative of the original Mount Stromlo vegetation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Very tall individual whose growth form indicates early growth in a forest</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>or competitive environment.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NH3</td>
<td>Natural Heritage Vegetation Eucalyptus polyanthemos in the rockery area</td>
<td>Low</td>
<td>Substantial</td>
</tr>
<tr>
<td></td>
<td>adjacent to the Director’s Residence. Representative of the original Mount</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stromlo vegetation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NH4</td>
<td>Natural Heritage Vegetation Eucalyptus mannifera in the Observatory area.</td>
<td>Low</td>
<td>Substantial</td>
</tr>
<tr>
<td></td>
<td>Representative of the original Mount Stromlo vegetation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ID</td>
<td>Description</td>
<td>Heritage Significance</td>
<td>Tolerance for Change</td>
</tr>
<tr>
<td>-----</td>
<td>-----------------------------------------------------------------------------</td>
<td>-----------------------</td>
<td>----------------------</td>
</tr>
</tbody>
</table>
| NH5 | Natural Heritage Vegetation  
Eucalyptus dives* in the southern residential area.  
Representative of the original Mount Stromlo vegetation.  
*identification to be confirmed. | Medium                | Some                 |
| NH6 | Natural Heritage Vegetation  
Eucalyptus mannifera in the southern residential area.  
Representative of the original Mount Stromlo vegetation. | Medium                | Some                 |
| NH7 | Natural Heritage Vegetation  
Allocasuarina verticillata regrowth on the ridge line leading to the Duffields' grave.  
Representative of the original Mount Stromlo vegetation. | Medium                | Some                 |
| CP1 | Cultural Planting  
Stand of Canary Island Pine (Pinus canariensis) trees on the southern extremity of the site alongside the entrance road, survivors of Weston's 1916/1920 plantings. | Very High             | Low                  |
| CP2 & CP3 | Cultural Planting  
Two Chinese Elms (Ulmus parvifolia) planted by Mrs Duffield in the late 1920s in the carriage loop of the Commonwealth Solar Observatory building. | High                  | Low                  |
| CP4 | Cultural Planting  
English Oak (Quercus robur) planted adjacent to the Director's Residence driveway in the late 1920s. | High                  | Low                  |
| CP5, CP6, CP7 & CP8 | Landscape Element  
Rockery elements from original gardens constructed around the Director's Residence.  
The bulb store retained in soil from that time includes bluebells, snowdrops and daffodils. | Moderate              | Substantial          |
| CP9 | Landscape Element  
Site of the croquet lawn laid out adjacent to the Director's Residence as part of the contemporary landscaping, now with post-2003 eucalypt plantings at the southwestern end. | Moderate              | Substantial          |
| CP10 | Cultural Planting  
Site of the orchard set up by Mrs Duffield as part of the contemporary landscaping.  
Old cut stumps in rows suggest the orchard’s layout. | Medium                | Some                 |
| CP11 & CP12 | Cultural Planting  
Remnants of gardens (growing from underground parts or soil seed stores) around the sites of the residential houses in the southwest of the site, which were destroyed in the 2003 fires.  
Plants include bulbs, roses, oleander, California poppy and yucca. | Low                   | Substantial          |
| CP13 | Cultural Planting  
Remnants of gardens (including remnant shrubs and plants growing from underground parts or soil seed stores) around the sites of the residential House 19, which was destroyed in the 2003 fires.  
The site includes stone walls, paths, steps and a small arbor.  
Remnants of plants associated with the house edges (eg Acanthus) and rockeries are in evidence. | High                  | Some                 |
<table>
<thead>
<tr>
<th>ID</th>
<th>Description</th>
<th>Heritage Significance</th>
<th>Tolerance for Change</th>
</tr>
</thead>
</table>
| CP14  | Cultural Planting  
A self-seeded cotoneaster plant growing among recently planted olive trees (photo below) at the northern rear of the Commonwealth Solar Observatory building. | Low | Substantial |
| CP15  | Cultural Planting  
The replacement Chinese Elm (foreground) in the carriage loop in front of the Commonwealth Solar Observatory building. | Medium | Some |
| CP16 & CP17 | Cultural Planting  
English Oak trees between the approach road and House No. 8. | Medium | Some |
| CP18  | Cultural Planting  
Fraxinus (Ash) tree on the northern curtilage of the Director’s Residence (called Acer sp. in Tanner 2004). | Medium | Some |
| CP19 to CP26 | Cultural Planting  
Eight Eucalyptus bicostata trees, scattered throughout the Observatory site. | Low | Substantial |
| CP27 & CP28 | Cultural Planting  
Two Eucalyptus bicostata trees in the residential area which appear to predate the 1960s plantings. | Medium | Some |
| CP29  | Cultural Planting  
Eucalyptus maidenii* trees. One north of the Director’s Residence which may have been planted in conjunction with the E. bicostata plantings in the 1960s; being slower growing, it may predate them.  
*identification to be confirmed. | Medium | Some |
| CP30 & 31 | Cultural Planting  
Two other Eucalyptus maidenii trees in the south of the site near House 19. | Low | Substantial |
| CP32  | Cultural Planting  
A Melaleuca (decora?) tree in the southern residential area. | Low | Substantial |
Figure 6.3 Significance of the landscape elements: natural heritage vegetation and cultural plantings at the Mount Stromlo Observatory Precinct. (Source: GML on ANU base plan)
Figure 6.4 Significance of the landscape elements: natural heritage vegetation and cultural plantings at the Mount Stromlo Observatory Precinct. (Source: GML on ANU base plan)
Figure 6.5 Significance of the landscape elements: natural heritage vegetation and cultural plantings at the Mount Stromlo Observatory Precinct. (Source: GML on ANU base plan)
Figure 6.6 Significance of the landscape elements: natural heritage vegetation and cultural plantings at the Mount Stromlo Observatory Precinct. (Source: GML on ANU base plan)
6.9 Condition of the Heritage Values

6.9.1 Correlations between the Condition of Fabric and Condition of Heritage Values

The EPBC Act Regulations Schedule 7A, governing management plans for Commonwealth Heritage places, requires that such plans include a description of the identified Commonwealth Heritage values and their condition. Under the EPBC Act, managers of heritage places are establishing the best means to assess and monitor the condition of identified heritage values, and a best practice approach is still evolving. Verification of previous assessments against the Commonwealth Heritage criteria is one of the ways in which it is possible to monitor ‘the condition of the heritage values’ over time.

In addition, the management of the Commonwealth Heritage values should provide for regular monitoring and reporting on the conservation of the Commonwealth Heritage values, which relies on an understanding of those values, along with their measuring and monitoring.

There are links between the condition of significant built fabric and the condition of heritage values, although it is not always synonymous. In Australia, condition is used as a measure of the deterioration of a place or site, and thus its ability to survive into the future without remedial action being required. It should not be used interchangeably with integrity. Some structures have extraordinary authenticity and integrity, but may be in very poor condition.

The measuring of the condition of the heritage values includes consideration of:

- their authenticity—their cultural values are truthfully and credibly expressed through their attributes of form, design, materials, techniques and management systems, location and setting (an authentic place is the honest product of its history and of historical processes); and

- their integrity—the sites include all elements necessary to express their heritage values, are of adequate size to ensure the complete representation of the features and processes which convey their significance and, while abandoned, have not been developed inappropriately with adverse effect to heritage values—integrity is a measure of the wholeness and intactness of the place and its attributes.

Heritage values can be embodied in the non-physical, intangible values or in the setting of a place. Intrinsic values such as the site’s ongoing function, the setting and layout, and the social connections or associations with the place are all important values.

The conservation of the values that extend beyond the physical fabric of a place is as important as caring for the fabric. For example, the condition of the heritage values at the Mount Stromlo Observatory Precinct could be diminished by changes that obscured the layout and planning arrangement of the site, because heritage values are embodied in the ability to understand the site’s division of the functional areas. Similarly the cessation of the function of the site for astronomical research and development would impact the condition of its heritage values.

6.9.2 Condition of the Commonwealth Heritage Values at the Mount Stromlo Observatory

**Built/Historic Heritage**

The built elements at the Mount Stromlo Observatory are in various levels of physical condition. The buildings which were not affected by the 2003 fires, were reconstructed, or are newly built are in good condition; while the structures that are heritage ruins with only minor clearing or stabilisation works are...
in poor condition and require structural assessments to ensure their stability and management as heritage ruins. It is important to note that deterioration in condition does not necessarily correspond to a loss of heritage value.

The condition of the Commonwealth Heritage values generally at the Mount Stromlo Observatory is good. The whole Mount Stromlo Observatory Precinct has been assessed in this HMP as having Exceptional heritage values and it is likely to meet the threshold for inclusion in the NHL when it is formally assessed. The description and condition of the individual elements is provided in the inventories in Volume 2.

The historic heritage values of the site in relation to the understanding of the site as an early Commonwealth scientific institution and its development as an Observatory have changed, but not been lost through the current physical condition of the ruined structures. However, they do require management to be sustained. Evidence of the early planning and administrative layout of the site continues to be demonstrated through the remains of the telescope dome buildings, the houses and the Commonwealth Solar Observatory Building.

Natural Heritage and Cultural Plantings

The significance rankings for the cultural landscape—the natural heritage and cultural plantings have been modified following on-site condition assessment of the natural heritage elements in 2013/2014. Individual trees and groups of trees identified as having natural heritage value are in varying condition. Most of the Eucalypts are healthy and, if they stay free from root compaction caused by adjoining works or uses, will be maintained with minimal additional effort. Some isolated trees (for example, the *E. mannifera* on the western side of the Director’s Residence) are in poorer condition and may not survive in the medium to long term.

However, the highest value trees (the *Pinus canariensis* group and the Chinese Elms in the carriage loop of the Administration Building) are in good condition and require only protection from encroachment and routine arborist inspections to ensure their continued survival.

Many of the landscape elements and garden remnants, however, are in poor condition. The rock gardens and bulb fields originally installed to the north of the Director’s Residence have become fragmented and disturbed. Rockeries have been shifted or removed and new Eucalypt plantings have encroached on the site of the croquet lawn and orchard. These will require improved management to sustain their values.

Similarly, garden remnants associated with houses destroyed by the 2003 fires in the south of the site have been largely fragmented by the clean-up of the ruins following the fire. The best preserved garden is the one at the site of House No. 19 because this garden was combined with built landscape features (rock walls, steps and an arbour) which have retained the garden’s configuration and species mix.
6.10 Endnotes

4 ibid.
6 Definition of Cultural Landscapes designated in Article 1 of the UNESCO Operational Guidelines for the Implementation of the World Heritage Convention. Furthermore, the definition states that cultural landscapes are illustrative of the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and successive social, economic and cultural forces, both external and internal.
7.0 Context for Development and Conservation Decisions

7.1 Introduction

This section discusses the issues affecting the future conservation, management and interpretation of the identified heritage values of the Mount Stromlo Observatory Precinct. It contextualises the conservation policies and processes set out in the following Section 8.0.

The key management opportunities and constraints for the precinct derive from a combination of the site’s significance, user requirements and the condition and integrity of the precinct, specifically the:

- identified Commonwealth heritage values which are embodied in the physical elements and attributes of the site;
- requirements and aspirations of ANU for the site and the principle users of the precinct in terms of future development plans, as expressed in the Mount Stromlo Campus Master Plan 2030;
- ANU Facilities and Services Division internal heritage management tools and processes and the National Capital Authority’s (NCA) role and works approvals;
- current physical condition and degree of integrity of the site, its landscape and in particular the ruins; and
- the requirements imposed by external factors including statutory obligations and legislation which govern the management of the place, principally the EPBC Act, National Capital Plan and the ACT Nature Conservation Act 1980.

7.2 Understanding the Heritage Values of the Precinct

7.2.1 Key Issues Arising from the Heritage Values

The establishment of requirements for the retention of the heritage values of the site is an essential first step in the development of conservation policies. The heritage values of the Mount Stromlo Observatory Precinct gives rise to a range of obligations and requirements, the most fundamental of which is to ensure that the heritage values of the site are sustained and conserved for present and future generations. The investigation of opportunities to interpret these heritage values also needs consideration. The Commonwealth Heritage values need to be understood, celebrated and sustained by the ANU, visitors and the Canberra community alike. This will depend on how well the conservation of heritage values can be integrated into future development decisions and processes for the site.

Aspects of significance identified in the revised Statement of Significance relevant to these constraints and opportunities include:

- the cultural landscape and layered evidence provided by the site as a whole, including buildings and other structures, landscape features and archaeological remains of its various phases of site use that are evidence of its development and reflect changes in the functional needs of astronomy and astrophysics;
- the importance of the Observatory as a rare example of its type, demonstrating Australia’s national commitment to scientific research into optical astronomy and astrophysics; and its
evolution and ongoing research contributions into telescope design, solar spectrum research and the expanding universe;

- the ability of the Precinct to demonstrate the physical context of such astronomical research processes through the landscape and equipment, set in a formal landscaped precinct;
- the association of the site with the ten directors of the Observatory, and the scientific achievements and research of the astronomers and scientists;
- the aesthetic and social associations with the catastrophic 2003 fires; and
- the aesthetic and local landmark qualities of the site in views from Canberra and the surrounding area.

The main obligations which thus arise from the heritage values of the site stem from the need to:

- conserve and protect the heritage values while also sustaining the ongoing evolution of the operation of the ANU and RSAA functions for astronomical research, advancements in technology and instrumentation development;
- maintain and conserve the buildings and elements which embody the heritage values of the overall site and individually, while also identifying future changes or new functions that are compatible with its heritage values;
- conserve and manage the heritage ruins in the long term through a sustaining management regime which includes practical consideration of their future use, reconstruction, adaptation or interpretation;
- ensure planning for new development on site to optimise the interpretation of the site’s heritage values;
- manage the site and its heritage values to avoid, mitigate or minimise any adverse impacts of development or change, using the tolerance for change tables of the HMP as a pragmatic guidance tool; and
- manage community sensitivities in relation to the 2003 fires and the changing associations and commemorative connections with the site.

### 7.2.2 Management of the Heritage Values

Managing the precinct’s heritage values within the framework of operational use and development of the site by ANU and RSAA going forward will require consistent integration of heritage and development objectives.

The right balance will come from a shared understanding of the heritage values of the site being factored into development proposals early in the decision-making process. Section 8.0 Conservation Policy provides the guidance required to make informed decisions about the site.

Section 6.0 reassessed the heritage values of the Mount Stromlo Observatory, and identified it as an important cultural landscape in Canberra—a place with significant Commonwealth Heritage value related to its history and associations, characteristic values, rarity, aesthetic values, social values, potential for information and creative/technical achievements at an Exceptional level.
Because of the exceptional quality of its heritage values, the Mount Stromlo Observatory is also likely to meet the National Heritage criteria—that is ‘to hold outstanding values for the nation’. To confirm this, a specific study to determine the National Heritage values is needed. Alternatively, such an analysis could form part of the brief to update this HMP at the next five-year review.

In the meantime, the ANU should continue to manage the Commonwealth Heritage values of the Mount Stromlo Observatory. The continued conservation works, a clearly identified approach to the management of the existing ruined elements, and a cautious approach to any new work will together ensure that the Commonwealth Heritage values are sustained.

### 7.2.3 Opportunities Arising from the Heritage Values

Opportunities for the conservation and interpretation of the heritage values at the Mount Stromlo Observatory Precinct include:

- adopting innovative and varied approaches to conserving and managing the heritage ruins;
- expanding visitor engagement through interpretation of the site’s layered heritage values, told through the stories of the site’s function and history, and the evocative ruins;
- adaptive re-use of buildings with no currently identified function;
- considering Indigenous cultural values and linking traditional stories with modern astronomy; and
- revitalising the site landscape through managing the identified natural heritage (vegetation, individual trees and tree groups), in particular the cultural plantings, with heritage values at the site.

### 7.2.4 Managing the Ruins at the Mount Stromlo Observatory Precinct

In the decade since the catastrophic 2003 fires, the major ruins of the Observatory have been managed in a variety of ways, with the objective of making the site fully operational and establishing a safe working and visiting environment. The prominence of the site as a public area which bears the physical scars of the emotional experience of Canberra communities means that the management of the ruins in the long term needs specific interpretation and an ongoing commitment to the maintenance of values, beyond their historic and scientific heritage, as they transition from derelict structures to archaeological sites. The values of the structures will shift as they decay. In some cases management through adaptation will be justified, in others the processes of controlled and recorded decay will be acceptable for the heritage ruins.

In 2013 the Australian Heritage Council published the first national conservation guidelines on this subject: *Ruins: A guide to conservation and management*, which addresses the philosophies and considerations of managing heritage ruins, with a range of applicability at the Mount Stromlo Observatory.

Five different management approaches are included in the guidelines, underpinned by the methodology of the Burra Charter.

- re-establishing the use of a place or incorporating a new and compatible use into a place;
- reconstructing the structure of a place;
- maintaining the ruin as it is;
- allowing a ruin to continue to deteriorate; and
- demolishing unsafe elements and structures.  

As noted in the AHC Guidelines: ‘Each approach involves specific types of conservation action and a different level of intervention. A decision as to which approach to take must be guided by careful consideration of the significance of the place and analysis of its social, economic and environmental setting.’ The guidelines provide an indication of when each approach might be most appropriate.

The AHC Ruins Guidelines define the five different approaches as follows:

- **Coming alive again**—‘sometimes there is a desire or a need that brings a place back to life’, where the values do not rely on it remaining as a ruin. This may also be appropriate where the attachment or associations to the place are strong and would allow a reconnection, or when leaving the place in the ruined state is distressing. This approach involves reconstruction and restoration, and a new compatible use or activity could be introduced. Adaptive re-use to give the place new purpose is allowed if it’s appropriate to the significance of the place; often enabling a past use or activity can help to reinforce the place’s heritage values.

- **Returning it to its former state**—this approach involves a combination of reconstruction and restoration to return a place to an earlier state. Often this allows a former use to be re-established in a place and can be closely linked to places that have been recently ruined and where there is strong community support. The structural integrity of the place may require minor repairs to ensure a more stable condition. The Commonwealth Solar Observatory building was ‘returned to its former state’ through reconstruction and restoration.

- **Simply maintain**—‘some ruins are simply best left as ruins because of what they are, ruinous structures that reflect and evoke past times.’ With this approach, the fabric of the place is maintained and protected in its existing state and deterioration is retarded. This approach is appropriate where the existing condition is important to understanding the significance of the place, where limited information is available to restore or reconstruct, when limited funding is available, where the aesthetic value of the ruin is a major consideration or that the ruin has become part of the community appreciation of the place. Managing a ruin requires structural stabilisation, regular maintenance and ensuring the safety of visitors (i.e. through controlling access). At Mount Stromlo, the three ruined telescope buildings—the Yale Columbia, Great Melbourne and the Oddie—all of which contain their masonry walls and some internal telescope supporting infrastructure (but do not have their original domes) now follow the ‘simply maintain’ approach, conserving their aesthetic and social significance. These structures will require structural stabilisation to ensure the safety of visitors entering and walking around, and regular maintenance. Improved opportunities to understand their construction and operation are suggested in Section 9.0.

- **Letting nature take its course**—this approach is used where a place has insufficient or little heritage value warranting protection (and there are better examples); it has deteriorated beyond repair; or it is intrusive to the heritage values of the wider site and therefore it may be appropriate to let the ruin decay naturally. This approach is acceptable where the place will not cause a risk to public safety. At Mount Stromlo this approach has begun in the residential precinct, where the buildings have been razed, but the cultural plantings are now resurgent.
raising associated interpretation and management issues as the significance of these elements shifts.

- **When removal is inevitable**—when letting nature take its course presents too many hazards, or when removing a less significant part of a place will allow more significant elements to be conserved, often removing the place is the most ideal outcome. This approach is ideally reserved for less significant and more deteriorated places; however, some instances require removal to allow for a continuing use or to address competing uses of the space where the ruin may lack a specific function. This approach is also considered for parts of a ruin or where 'tidying up' is required for safety or aesthetic reasons. It is a highly destructive action and should only be considered when careful investigations of significance have been undertaken. In some cases (ie the Workshop, Uppsala Telescope Dome and Houses 7, 11 and 19) removal was considered to be inevitable at Mount Stromlo, although the archaeological remnants now require interpretation and alternative management.

In the case of the first two options—an essential prerequisite for all restoration and reconstruction work is the requirement for sufficient information or knowledge to enable accurate reinstatement. This refers to detailed architectural documentation, information on materials and detailing, archival documentation, historic photographs, etc. Adaptive re-use may be combined with reconstruction or new development.

All actions should be preceded by careful and appropriate recording of the existing fabric, the decision-making process and the works.

**Interpretation**

ANU has been exploring interpretation opportunities to provide an engaging experience for visitors and site users through targeted interpretation methods including the Interactive Heritage Trail (launched 2014) and the interpretive works undertaken as part of the conservation and stabilisation of the Director’s Residence. The site offers a diverse range of opportunities for presenting the heritage values through an understanding of the science, research, history and development of the Observatory, as well as the devastation of the fires.

There are also important opportunities for demonstrating conservation process and interpretation methods through the physical conservation and presentation of the structures on site. A detailed Interpretation Plan will assist the ANU in developing innovative and successful initiatives. See Section 9.0 for an interpretation framework for the Mount Stromlo Observatory Precinct.

**Adaptive Re-use**

Following the discussion above about the management of ruins, the Mount Stromlo Observatory has the option to explore adaptive re-use opportunities for the currently unused structures on the site—including the heritage ruins and the two dome buildings. Finding compatible uses for the structures will require careful consideration of their heritage values and the themes of the overall site stories, ensuring the uses will be complementary and provide opportunities for visitor engagement and interpretation.6

The ANU should refer to the *New Uses for Heritage Places: Guidelines for the Adaptation of Historic Buildings and Sites* prepared by the Heritage Office, NSW Department of Planning and the Royal Australian Institute of Architects NSW Chapter.7
The installation of temporary interpretation devices (including audio-visual material) into these buildings could provide a short-term use while still enabling an alternative use to be added when the need arises, and it is determined appropriate to the space. Note that ‘the adaptation of a ruin to allow for visitation is a form of adaptive re-use.’

The inventories at Volume 2 of the HMP will provide further detail on adaptive re-use and development guidelines for individual elements at the site.

**Indigenous Cultural Values**

As identified in Section 4.0 there are opportunities for understanding more about Aboriginal astronomy and culture through collaboration with the RSAA at Mount Stromlo. The shared learning between the Aboriginal community and the scientific staff at Mount Stromlo would be a potentially stimulating and important collaborative opportunity for the Observatory. The site is in a unique position to offer the experience of exploring Aboriginal traditional stories and astronomy contrasted with modern scientific astronomy.

**Natural Heritage and Cultural Planting Values**

The cultural landscape of the site which comprises its combined heritage values, including the natural heritage and cultural planting values, is its most enduring and yet presently one of the most damaged aspect of its heritage significance. For the ‘landscape’ values of the site, there are three main areas of opportunity in managing the identified heritage values of the natural and cultural plantings to improve presentation and legibility.

*Conserve the Landscape Amenity of the Site*

An opportunity exists for sustaining the site vegetation’s strong contribution to the Mount Stromlo Observatory Precinct—the landscape values (described in this HMP as the natural heritage and cultural plantings) and, in the case of the items of heritage value, the conservation of a link with the original site vegetation or past site landscaping phases.

*Conserve Remnants of Cultural Plantings*

Additionally, the remnants and relics of the cultural plantings and landscaping works which link to different historic phases of landscape aesthetics and site domestication (especially those associated with individuals) provide an opportunity through their conservation and interpretation to display ways in which the Observatory’s past staff and residents related to their environment.

*Promote Ecological Values and the Aesthetic Landscape*

Opportunities also exist to capitalise on the new environmental context of the Mount Stromlo Observatory site as its surroundings revert to a more natural state after the 2003 fires and subsequent clearing. Native flora and fauna will increasingly colonise the edges of the site and there is an opportunity to enhance and extend these ecological developments within the essential constraints of fire hazard minimisation. This opportunity has been a primary focus of landscape studies following the fires. More specifically, itemised landscape opportunities on this theme which were recommended in Scenic 2004 refer to:

- retaining the recently acquired open views over the city of Canberra, described below and in Appendix C;
returning the north and west sides of Mount Stromlo to a landscape that will integrate with the natural character of Canberra’s other major hills;

utilising landscape design to reflect technology advancements, while respecting the site’s heritage; and

planning landscape development areas as natural ecosystems.

Need to Integrate/Opportunities

These three main opportunity areas for natural heritage and cultural planting management have not yet been integrated into a Landscape Management Plan for Mount Stromlo. Certain significant elements have been identified for retention in the 2004 Scenic and Tanner management plans (the Canary Island Pines, the Chinese Elms in the carriage loop and the English Oak adjacent to the Director’s Residence) or reinstatement (the exotic plantings within the Commonwealth Solar Observatory Building’s inner courtyards); but to date no landscape plan or guideline has been developed which provides an integrated management direction for realising the full range of opportunities.

7.3 Operational Requirements

7.3.1 Management Responsibilities

The ANU Facilities and Services Division is responsible for the management of the Mount Stromlo Observatory’s facilities including the buildings, grounds and infrastructure. The division also manages the development and construction of new buildings and other infrastructure, the refurbishment or demolition of existing buildings, as well as statutory, preventative and corrective maintenance across ANU campuses. Refer to Sections 7.5 and 7.6 below for further detail on the responsibilities of the ANU under the EPBC Act, and the relevant heritage management tools and processes for implementation.

Landscape Management

The Grounds and Gardens Section of the Facilities and Services Division of the ANU is responsible for day to day management of the trees and landscape of the ANU campuses, including Mount Stromlo. For the ANU Acton Campus, the activities of the Division and the developers of campus facilities are guided by the Landscape Protection Guidelines for the Australian National University Campus and Management Plan for the Trees of the ANU. However, these two valuable documents do not extend to the landscape of the Mount Stromlo Observatory. Nor does the Facilities and Services Division’s tree database, which supports the management prescriptions for the ANU Acton Campus landscape, cover the Mount Stromlo Observatory.

At the Mount Stromlo Observatory, following the 2003 fires, a Management Plan by Scenic Landscape Architects and a CMP by Tanner Architects were commissioned. These plans have guided the post-fire development of the Mount Stromlo Observatory Precinct landscape—more as strategic directions rather than blueprints. The grounds maintenance personnel at the Mount Stromlo Observatory carry on their activities with a necessary degree of autonomy and the dominant theme of the landscape development since 2003 has been the need to reduce fire hazard, with some new plantings introduced and existing vegetation removed with this in mind. Additionally, ornamental species have been
selected for their hardiness. This has been a prime consideration in the harsh and exposed conditions on the mountain following the removal of the sheltering pine plantations.

However, in order to balance these needs with the conservation and management of natural and cultural plantings which are identified as heritage items at the Mount Stromlo Observatory, future landscape developments (new gardens, tree plantings and the construction of landform features) and routine landscape tasks (such as tree and shrub replacement, consolidation of garden areas and the opening up of others) need to be guided by a new overall Landscape Management Plan.

### 7.3.2 Use and Day to Day Functions

The Mount Stromlo Observatory is the headquarters of the RSAA and houses the administration, offices and workshops for the research school.

The RSAA is Australia’s premier university centre for astronomical research. The school’s mission is to ‘advance the observational and theoretical frontiers of astronomy and its enabling technologies, provide national and international leadership and train outstanding scientists’. The focus of the Observatory has changed over time from solar observing to optical observing and research as well as the design, development and fabrication of scientific and astronomical instrumentation. The advancement of technology has seen the increased need for the manufacture and testing of equipment. The AITC at Mount Stromlo provides design, manufacturing and testing capabilities for precision instruments and opportunities for student participation in technical projects within the RSAA. It is also home to a research and development program focusing on the next generation of large optical telescopes. The RSAA and AITC are also key contributors to the development of instruments for the Gemini Telescope, and are part of an international partnership to design and build the Giant Magellan Telescope (GMT), based in Chile.

While there are no longer active ANU research telescopes at the Mount Stromlo Observatory, there are small telescopes (in the Outreach Domes) which are used for public astronomy nights and student projects. The only working research telescopes remaining at Mount Stromlo are the Satellite Laser Ranging facilities operated by the space technology company, EOS.

In addition to the site’s function as home to the RSAA, Mount Stromlo is a visitor destination and associated with nearby recreational activities. People travel to the site for the expansive views to the city and west over the Murrumbidgee Valley, for bushwalking, to visit the café and walk around the site and to inspect the heritage ruins. Cyclists from the neighbouring Stromlo Forest Park follow dirt tracks up the mountain which cross over the Observatory site.

The Visitor Centre and Café provide facilities for visitors. The centre assists the RSAA in hosting public observing nights, often in association with the Canberra Astronomical Society. Exhibitions have also been displayed in the Visitor Centre including art shows and the Past Present Future Exhibition, commemorating the 10 year anniversary of the fire in 2013.

The Precinct also offers venues for functions and conferences, and can be held in the Commonwealth Solar Observatory Building, the Duffield Building theatre and the Visitor Centre. The ruined Yale Columbia Telescope building is also promoted and used for functions, and weddings are often held on site with the scenic backdrop of ruins, landscaping and expansive views.
7.3.3 Operational and Planning Issues

The key operational issues for the site are in relation to its ability to continue to function as a research, scientific and academic facility while also allowing for public visitation.

Due to the increased light pollution from Canberra and the encroaching suburban development, the Mount Stromlo Observatory has altered its key function as an observing facility to more of a focus on manufacturing (a role it has been consistently undertaking since the 1940s). The future of the site is leaning toward an 'industry park', with a focus on scientific technology development.

This section provides a consideration of the operational and planning issues of the site relevant to the HMP, including an understanding of the findings of the Master Plan, bushfire management, increased visitation and changing landscape setting and views.

Refer to Section 7.7 below for information about NCA planning and works approvals.

Master Plan

A Mount Stromlo Observatory Master Plan 2030 was prepared for the site in 2014 to ‘provide a number of objectives, principles and actions to help guide the development of the campus’. These objectives, principles and actions have been identified across a range of various planning themes by the Master Plan team, from academic intent, campus structure, functional elements, built form, landscape and environment, transport and movement, infrastructure, living campus and cultural values, sustainability; and include some preliminary heritage considerations, although to date there has not been interaction between the Master Plan team and the HMP preparation.

The main driver for the Master Plan is identified as ‘improved amenity including infrastructure, landscape and public realm and enhanced public engagement at the site’. The plan identifies that the site has ‘ample space available to transform and create a new structure for the Mount Stromlo campus built around the bold character of existing buildings, key elements and activity nodes’. It suggests ‘enhancing the existing clarity and legibility of the campus through the establishment of carefully designed infill buildings, gateways and entrances and external spaces without losing the significant visual amenity of the site.’ The HMP provides the essential policies to move beyond the generality of visual amenity to the necessary consideration of the site’s potential National Heritage values.

The Master Plan summarises the development opportunities of the site and provides a ‘key areas’ plan outlining broad areas within designated functional precincts of the Mount Stromlo Observatory Precinct (Figure 8.1). In light of the potential National Heritage values at the site it is recommended that the findings of the HMP be integrated into the implementation of the Master Plan.

The HMP confirms opportunities for sympathetic development and expansion on site, providing guidance for appropriate building locations, which will in turn require careful consideration of setbacks, form, scale, character, materiality, etc, in relation to individual heritage elements and in the context of the heritage values of the site as a whole. Refer to Section 8.6 of the HMP for further information.

The conservation of the important historic elements in appropriate curtilages is a priority, and the Master Plan needs to ensure that it references and incorporates the policies and findings of this HMP.
**Bushfire Management**

The Mount Stromlo Observatory has a site-specific bushfire management plan, completed in 2013. It identifies landscape zones and applies fire risk levels to areas of the site. Within the ANU Facilities and Services Division is a bushfire officer who oversees the bushfire management at Mount Stromlo.

Bushfire management is important at such a high risk site, particularly in light of the two destructive fires that have impacted the Mount Stromlo Observatory. However, it is also important that it is managed in relationship to the identified heritage values. The ANU should explore options for sympathetic integration with the heritage fabric and form when ensuring compliance with requirements for extreme fire rating/proofing of buildings—for example, when selecting materials for windows and doors, external finishes and roofing.

**Visitation**

The Mount Stromlo Observatory Precinct generally retains its historic layout; however, visitation and public engagement is an important element of the site’s function—additional facilities and associated structures have been added to cater for visitors (eg the Visitor Centre and Cafe, interpretation signage, directional and warning signs and boom gates).

The ANU and RSAA have to ensure a balance between providing for the research and scientific function of the site, with the increasing popularity of the site as a visitor destination. There are currently approximately 150–300 visitors per day with increases during the summer and holiday periods. This has potential to increase with the growth of Canberra and with additional visitor facilities encouraging public access to the site.

Issues associated with increased visitation include the need for additional visitor facilities and parking requirements, potentially impacting the landscape and layout of the site. There are currently designated car parks and an ad hoc arrangement of overflow car parking on an un-landscaped area between the Commonwealth Solar Observatory Building and the Director’s Residence.

Due to the open nature of the site with a lack of fences or dividing boundaries (a distinct concept of the early planning of the site, established to foster a community of scholarship), the separation between the spaces used for research and university functions versus the spaces intended for public use has merged. An interpretation strategy for the site would assist in managing audience and visitor expectations and rationalising existing installations, such as the signage that has been introduced to identify areas where the public should not enter, which requires modification to alternatively interpret the historic intention of the site layout.

**7.3.4 Landscape Setting and Views**

It is recognised that the landscape environment of Mount Stromlo post-2003 is a very different place from the pre-2003 landscape. Prior to the January 2003 fires, the views to and from the Mount Stromlo Observatory were restricted by the pine forest which surrounded the site and covered an extensive part of the region (refer to Appendix C). The densely planted forest provided a thick vegetated barrier around the site, and views within the site were predominantly restricted, focusing on the immediate setting of the Observatory and its distinctive white telescope domes staggered along the ridge—some of these could be viewed from distant locations and they also provided bearings within the site. The use of dark pine forest planting was initiated by the early intention to reduce glare and shimmer for the improved function of the Observatory telescopes.
The regrowth of the slopes of Mount Stromlo, coupled with the reduction of exotic plantings on the summit are changing the environment into a semi-natural ecosystem. The buildings spotted throughout the site and as viewed along the ridge from a distance remain important despite the changed and more open landscape.

Despite the now bare appearance of the landscape, which starkly contrasts with the previous appearance as ‘pockets of Northern Hemisphere nostalgia tucked into the bush (Eucalypt forest) and overrun by the Black Forest.’ 

The management of the views and the landscape values involves retaining the extant, post-fire trees and cultural plantings. The extant natural heritage, vegetation and tree groups which are both native and cultural plantings (listed in Section 3.0) and identified as significant to the site are recommended to be retained and managed appropriately (refer to Section 8.0).

However, to regain or replant the ‘forest’, which was historically significant to Canberra, is not being considered by the ANU or the ACT Government (who manage the land surrounding the mountain) for the Mount Stromlo Observatory due to fire risk concerns, changes in the operation of the site for research rather than astronomical observation, and increased suburban development near Mount Stromlo.

7.4 Current and Future Development

The following projects and proposals are currently in development by the ANU.

7.4.1 Director’s Residence Stabilisation and Interactive Heritage Trail

The ANU was a successful recipient of the Commonwealth Government’s ‘Your Community Heritage Program’ for 2013, for two separate projects at the Mount Stromlo Observatory. 

A substantial fund was awarded for proposed works to the Director’s Residence to make it safe and publically accessible, including the installation of audio-visual interpretation. This project saw the building stabilised and much of the exterior restored. The completed project was officially launched in January 2015.

Funding was also provided for the development of an interactive heritage trail and smartphone app to engage visitors and communicate the heritage values of the whole site. This project was launched in July 2014.

Interpretation opportunities are detailed in Section 9.0

7.4.2 Australian Museum of Astronomy and Space Science

An agreement was signed between the ANU and the Smithsonian Institutions’ National Air and Space Museum in January 2011 in relation to the development of an Australian Museum of Astronomy and Space Science (AMASS) at Mount Stromlo. The museum would aim to tell the story of Australia’s contribution to space science and space technologies and to celebrate the special role Australia astronomers have placed in the exploration of the cosmos.

The agreement facilitates discussions between the two museums regarding the lending of artefacts and the sharing of exhibitions.

A targeted workshop was held in May 2011 with participants from the ANU and the Smithsonian; and national institutions including the Australian War Memorial, National Museum of Australia and Questacon, as well as other scientific organisations and interested parties.

The Outcomes Report from the workshop provides a background to the proposed vision for the museum, the targeted/expected audience, interpretation themes and attractions at the site, potential
partners and collaborators, as well as detailed considerations on the content, themes and the collection.

The proposed vision for the museum is that it will:

- Create an educational resources that will ignite the imaginations of young people, capturing their interest in science and technology by focussing on past, present and future developments in space and astronomy;

- Bring together students from the northern and southern hemispheres by providing remote access to facilities that will allow them to study each other’s night skies in real time;

- Contribute to nation building by inspiring national pride in Australia’s contributions to the exploration, understanding and appreciation of the cosmos;

- Educate, entertain and engage local, interstate and international visitors in key scientific issues and developments;

- Present those aspects of Indigenous cultures relating to the night sky and origin of the universe;

- Preserve selected, unique artefacts that bring the Australian story to life and place the story in context;

- Provide visitors with the opportunity to enjoy gazing at artefacts from the Smithsonian National Air and Space Museum; and

- Develop a multi-functional building that complements existing scientific facilities and creates an exciting destination within a new and developing tourist precinct.²²

The museum would allow for increased opportunities to share the stories of space exploration, scientific discovery, the history and development of the Mount Stromlo Observatory and its role in astronomy on a national and international scale. Linking the science to the place will provide the buildings at the site an important function and opportunities for adaptive re-use.

The constraints and considerations that need to be carefully assessed include the design, placement, siting and scale of the museum building/facility, the resulting increase in visitation and its implications on access and parking, and the conservation and management of the neighbouring ruins, buildings and landscape elements, so as to not impact the identified heritage values.

7.4.3 Master Plan Development

As previously mentioned, the Master Plan 2030 identifies proposed actions for future development of the Mount Stromlo Observatory, which includes introducing infrastructure elements, expanded existing facilities, improvements to the transport and movement around the site, and an indication of potential new buildings for increased visitation.

Initial plans include wind generation facilities on the western slope of the site, water harvesting and recycling facilities, solar panels, a gondola or alternative visitor access, a museum or similar educational/outreach facility and additional accommodation on the site. The gondola and accompanying terminus site is intended to assist in reducing private visitor cars accessing the site, and would link the Observatory to the neighbouring Stromlo Forest Park facility.

Any major new development at the Mount Stromlo Observatory should be carefully considered to ensure the heritage values of the site, specifically the historic and aesthetic values, are not impacted from inappropriate development. Refer to Section 8.6 of the HMP.
7.5 The Legislative and Management Framework

The legislation which governs the heritage management of the ANU is principally the EPBC Act, the Australian Capital Territory (Planning and Land Management) Act 1988, the National Capital Plan and the ACT Nature Conservation Act 1980. The obligations arising from the heritage legislation are briefly described in this section.

It should be noted that the ACT Heritage Act 2004 legally recognises and protects significant heritage places within the Australian Capital Territory. However, places owned or managed by the ANU and listed or nominated to the ACT Heritage Register are not legally protected under the Heritage Act 2004. This is because the Mount Stromlo Observatory is located on national land (under the control of the Commonwealth) and therefore is protected by Commonwealth environmental and heritage legislation—the EPBC Act.

7.5.1 Environment Protection and Biodiversity Conservation Act 1999 (Cwlth)

The EPBC Act was established in part to protect places of significant natural or cultural heritage value owned or controlled by the Commonwealth.

The Mount Stromlo Observatory is included on the CHL and is therefore subject to the provisions of the EPBC Act. The Mount Stromlo Observatory has potential National Heritage values but these have not been formally assessed against the criteria.

Obligations under the EPBC Act

The ANU Responsibilities

The ANU is responsible for carrying out works to conserve, maintain and improve the amenity and quality of the University and its various sites and buildings; and it has obligations to minimise any adverse impact on heritage values. Under the EPBC Act, the ANU (a Commonwealth agency) must act in accordance with the EPBC Act to protect, conserve and transmit the heritage values of the places it owns and manages. The agency must ensure that it does not take any action that has, will have or is likely to have an adverse impact upon the identified Commonwealth (or National) Heritage values of any place in its ownership or control, unless there is no feasible or prudent alternative to taking that action and that all measures that can be reasonably taken to mitigate the impact of the action on those values are taken.

A number of documents and management plans have been prepared by the ANU to meet the EPBC Act obligations and guide the conservation and management of its heritage values. These include:

- ANU Heritage Strategy 2010–2012;
- ANU Heritage Register/Database; and
- Various management plans (also referred to as conservation or heritage management plans) for Commonwealth listed places owned or managed by the ANU.

These documents need to be updated on a regular basis and revised to take into consideration the identified Commonwealth Heritage values of the Mount Stromlo Observatory.

Role of the Department Responsible for the EPBC Act

The ANU Heritage Strategy 2010–2012 and the ANU Heritage Management Manual 2010 set out the responsibilities, consultation and approvals role undertaken by both the ANU and the Department
responsible for the EPBC Act (currently called the Department of Environment). In brief, the Heritage Strategy states that HMPs prepared for ANU sites with identified Commonwealth Heritage values are forwarded to the Department for comment and are to be reviewed every five years.

**7.5.2 Commonwealth Heritage Management Principles**

The EPBC Act (s341Y) requires CHL places to be managed in accordance with the Commonwealth Heritage Management Principles which encourage identification, conservation and presentation of a place’s heritage values through applying best available skills and knowledge, community (including Indigenous) involvement and co-operation between various levels of government. The principles are set out in Schedule 7B of the EPBC Regulations and apply specifically where there is no HMP in place. This HMP has been written to comply with the requirements of the EPBC Regulations, Schedule 7B and, where relevant, reference has been made to show compliance. Schedule 7B is included in Appendix B.

**7.5.3 Management Plans for CHL Places**

Schedule 7A of the EPBC Regulations sets out the matters to be addressed in management plans and this HMP complies with these requirements—refer to Appendix B. In broad terms, HMPs for Commonwealth Heritage places are prepared to assist Commonwealth departments and agencies to manage their heritage sites appropriately, and to guide future works and developments to reduce the need for referrals under the legislation.

The EPBC Act (s341S) requires Commonwealth agencies to prepare a management plan to protect and manage their CHL places consistent with the plan and the Commonwealth Heritage management principles. This HMP has been written to comply with the requirements of the EPBC Regulations (refer to the table in Appendix B).

Section 8.0 has conservation policies, actions and implementation recommendations.

**7.5.4 Australian Capital Territory (Planning and Land Management) Act 1988 (Cwlth)**

**The National Capital Plan**

The National Capital Plan (NCP) forms the strategic planning framework for Canberra and the ACT. In accordance with Section 10 of the *Australian Capital Territory (Planning and Land Management) Act 1988*, the NCP sets out detailed conditions for planning design and development for Designated Areas for which the National Capital Authority is responsible for planning and development approval. A designated area is an area of land specified in the NCP as having ‘the special characteristics of the National Capital’.

The Mount Stromlo Observatory falls within the ‘Inner Hills’ Area of the NCP:

> The Inner Hills provide the scenic backdrop and natural setting for Canberra’s urban areas, and within Canberra Central they are integral to Griffin’s composition. Accordingly their planning, design and development as open space areas are central to the maintenance and enhancement of the character of the National Capital.\(^{23}\)

The Mount Stromlo Observatory is also within the National Capital Open Space System (NCOSS):

> These open spaces constitute a system which protects the environmental quality of Canberra’s present and future water catchments, river systems, and important ecological and heritage areas from the increasing pressure of Canberra’s growth. While each part has its own land use and character they are all interrelated as parts of a total system.\(^{24}\)
The NCP notes that the Mount Stromlo Observatory is a nationally and internationally prominent centre for astronomical research, and the amount of dark sky light pollution suffered at the Observatory impacts on the effectiveness of its operation. The gradual encroachment of urban development into areas previously undeveloped or used for non-urban purposes has contributed to the deterioration of observing conditions. Because of the site’s potential National significance, a measure of protection is necessary.

The NCP includes principles and policies for planning and development in all Designated Areas. The ANU should be aware of the policies for development in relation to Mount Stromlo and the NCOSS.

7.5.5 ACT Nature Conservation Act 1980

**Biodiversity and ACT Declared Threatened Species/Ecological Communities**

In the ACT, plant and animal species, as well as ecological communities, may be declared threatened under the ACT Nature Conservation Act 1980 and/or the Commonwealth EPBC Act. Both pieces of legislation are referred to for nature conservation in the ACT.

About 30 plant and animal species and two ecological communities have been declared as vulnerable or endangered under the Nature Conservation Act 1980. With the intention of integrating the conservation of threatened species with the ecological communities of which they are a part, three nature conservation strategies have been prepared for the ACT. Two of the strategies are based around the ecological communities that are declared endangered: yellow box-red gum grassy woodland and natural temperate grassland. The third strategy, which is for ACT aquatic species and the riparian zone, includes two terrestrial species declared threatened under ACT legislation.

The ANU Facilities and Services Division should manage the plant and animal species following the action plans (ACT) and recovery plans (Commonwealth) for declared species and ecological communities. These plans are statutory documents within their jurisdictional context. They provide a formal basis for actions directed to the conservation of species and ecological communities, including dealing with threatening processes.

7.6 ANU Facilities and Services—Management Tools and Processes

7.6.1 ANU Heritage Strategy 2010–2012

The ANU Heritage Strategy (2010–2012) is a document that outlines the strategy for managing heritage places and the steps that should be taken to protect and conserve the ANU’s Commonwealth Heritage values. It states that the constantly evolving nature of university research places additional pressures on the heritage values and fully cements the need for an effective heritage strategy.

The document has been prepared as a requirement of the EPBC Act. All Commonwealth agencies, in this case the university, are required to prepare a heritage strategy that outlines the processes for managing places that have, or may have, Commonwealth Heritage values.

This HMP fulfils one of the requirements identified in the Heritage Strategy—that is, to protect and manage the identified heritage values of places that the ANU owns and manages.

7.6.2 ANU Heritage Register/Database

The ANU currently registers places that are in the CHL and these are available in the online Heritage Database. The list is intended to grow as more places are assessed for their inclusion in the CHL.
Each place has a hyperlink to individual fact sheets about places and buildings and their heritage values.

The register and fact sheets can eventually be replaced with more detailed heritage assessments in the Heritage Inventory for the Mount Stromlo Observatory (Volume 2 of this HMP).

The Heritage Inventory will identify and assess individual places for Commonwealth Heritage values in readiness for their nomination to the CHL. Volume 2 could be uploaded to the ANU Heritage Database as it develops.

**7.6.3 Heritage Management Plans**

The Heritage Strategy outlines the process for which heritage management plans are prepared at the ANU. Essentially, they follow the Commonwealth guidelines for managing heritage places (Working Together: Managing Commonwealth Heritage Places—Developing Management Plans). The plans aim to protect and manage the identified Commonwealth Heritage values of a specific place, site, area or building. They also provide a management framework that includes reference to any statutory requirements and agency mechanisms for the protection of identified Commonwealth Heritage values.

Management plans are forwarded by the ANU to the Department responsible for the EPBC Act and the Australian Heritage Council for comment and review every five years.

**7.6.4 The ANU Heritage Management Manual**

The Heritage Management Manual was prepared by the ANU in 2010 and replaces the 2006 version. It outlines the internal heritage procedures for the ANU to act in accordance with the EPBC Act and its requirements to manage Commonwealth Heritage values.

It provides guidance for ANU managers proposing works to undertake a self-assessment to decide whether or not any proposals may have, or are likely to have, a significant adverse impact on the Commonwealth or National Heritage values of the place. This is explained further below.

The manual needs to be updated on a regular basis to account for changes in legislation and to include the findings in this HMP. An annual internal review, with a five-year peer review, is recommended in 2015.

**7.6.5 ANU Heritage Management Procedure—Self-Assessment Process**

Identification and management of heritage values should be considered early in any planning process. All prudent alternatives to demolition or major alterations should be investigated before works are approved.

It is important to avoid negative impacts to heritage sites and their values whenever possible. However, it must be remembered that heritage conservation is about protecting the heritage values of a place, not necessarily only the fabric of a building or the physical elements of a site.

Heritage (or environmental) impact assessments—often also referred to as heritage impact statements—provide for the examination of impacts from different redevelopment or alteration options, and identify appropriate mitigation or minimising measures.

A standard decision-making process for implementing the requirements and responsibilities of the EPBC Act is suggested in Figure 7.1.
Figure 7.1 Decision-making process to ensure Commonwealth and National Heritage values are considered when planning developments, activities and other proposals at the ANU.

The self-assessment should be objective and based on sufficient information. Accordingly, the assessment process included in the ‘Significant impact guidelines for the EPBC Act’ suggests that Commonwealth agencies taking actions should:

- Consult the official heritage values to ensure the proposal is consistent with the values.
- Consult a management plan, if there is one, to ensure the proposal is consistent with the management recommendations and/or conservation policies.
- Consult the Commonwealth and National Heritage management principles to be consistent with them.
- Consider the action in the broadest context, including its related activities and infrastructure.
• Look at all possible alternatives to the action or proposal.
• Look at any possible subsequent effects the action may have on other matters of National Environmental Significance or in the future.
• Select an action that does not, or is not likely to, adversely (significantly) impact on heritage values.
• Undertake measures which mitigate the impact on Commonwealth and/or National Heritage values.
• Document the decision about taking the action and demonstrate how the action is not likely to have an adverse impact on heritage values.
• Refer actions that may have a significant impact.

7.6.6 Determining Significant Impacts under the EPBC Act

What is a Significant Impact?

Under the EPBC Act, a significant impact is defined as ‘an impact which is important, notable, or of consequence, having regard to its context or intensity’. Whether or not an action is likely to have a significant impact depends upon the sensitivity, value, and quality of the environment which is impacted, and upon the intensity, duration, magnitude and geographic extent of the impacts. The definition of ‘likely’ in the Commonwealth Significant Impact Assessment Guidelines states that to be likely it is necessary for a significant impact to have a real or not remote chance or possibility. If there is uncertainty about the impacts of your action and potential impacts are serious or irreversible, it is recommended to take a precautionary approach.

If there is scientific uncertainty about the impacts of your action and potential impacts are serious or irreversible, the precautionary approach or principle is applicable. Accordingly, a lack of scientific certainty about the potential impacts of an action will not itself justify a decision that the action is not likely to have a significant impact on the environment.

Decisions on Significant Impacts

Where an action is likely to significantly impact the environment—which under the EPBC Act includes heritage places—the action must be referred to the Minister for the Environment for consideration. Three outcomes of such a referral are possible:

1. The action is determined not to have a significant impact and can go ahead.
2. The action can go ahead subject to specific conditions (included in the referral).
3. The action is controlled, which means that further assessment is required before a decision can be made on whether it can go ahead.

The Minister for the Environment considers the information provided and determines if the action can go ahead and under what circumstances. The Minister can refuse an action at the end of this process if the impacts cannot be appropriately managed.
EPBC Act Consultation

Consultation should be sought with the Heritage Division of the Department responsible for the EPBC Act for proposed activities where they may have a significant impact. It is important to advise the Heritage Division that the redevelopment proposal and the heritage process are being undertaken in accordance with the ANU’s Heritage Management Manual, individual management plans, the Commonwealth Heritage management principles and any other relevant requirements of the EPBC Act for Commonwealth agencies.

Further guidance on undertaking internal assessments, determining significant impacts and making referrals under the EPBC Act can be found in the publication Working Together: Managing Commonwealth Heritage Places, prepared by the (then) Department of the Environment, Water, Heritage and the Arts in 2008.

7.7 National Capital Authority Role and Works Approvals

7.7.1 Development and Work Approval within Designated Areas

Under the NCP the ANU is required to obtain work approval for:

- all external works to the building or grounds; and
- any works that change the landscape (eg earthworks, tree removal and replanting).

The NCA works approval process does not cover:

- internal alterations; or
- works that may have an impact on threatened species and communities. These must be addressed under both the EPBC Act and the ACT Nature Conservation Act (1980) and subsequent amendments.

The NCA’s role is to assist applicants, including the ANU, through a process of negotiation and design development to achieve outcomes appropriate to those areas which embody the special characteristics of the National Capital.

The Facilities and Services Division has a ‘Works Approvals Checklist for Alterations in or about Buildings’ to be undertaken by ANU project managers prior to making a decision about seeking works approval by the NCA.

7.7.2 Consultation with the NCA

Works approval requirements include the submission of a development application and, in some cases, evidence of environmental clearance or approval from the Department responsible for the EPBC Act. This may include a heritage impact assessment/statement or referral documentation. Therefore, it is recommended that consultation with the Department responsible for the EPBC Act and/or an EPBC Act referral should be undertaken prior to lodging a works approval application.

As a courtesy, consultation with the NCA and the Department responsible for the EPBC Act is advisable in the early stages of the design process, before lodging a formal works approval/development application to outline the full scope of a proposal and the heritage self-assessment process which is being followed. This will assist in identifying any major issues that require resolution prior to the submission of a works approval consent form.
It is also possible to submit more detailed design drawings, when developed, to the NCA for assessment and an indication of whether the proposal is consistent with the NCP, prior to the preparation of construction documentation.

7.8 Endnotes

2 ibid, p 25.
3 ibid.
4 ibid, p 28.
5 ibid, p 32.
8 ANU Facilities and Services Division, viewed 20 February 2014 <http://facilities.anu.edu.au>.
15 ibid, p 53.
16 ibid, p 22.
17 ibid, p 47.
18 Australian Archives Series A1, Item 1918/6038. Establishment of an Astronomical Observatory at Canberra, as quoted in Tanner Architects, op cit, p 45.
22 ibid, p 12.
23 National Capital Authority, National Capital Plan Section 8.5.5 Designated Area ‘The Inner Hills’.
24 National Capital Authority, National Capital Plan Section 8.1 National Capital Open Space System Background p 74.
25 National Capital Authority, National Capital Plan Section 8.1 National Capital Open Space System Background p 108.
27 ibid, p 21.
29 Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies Significant Impact Guidelines 1.2, EPBC Act.
8.0 Conservation Policy

8.1 Introduction

The Mount Stromlo Observatory Precinct is recognised as a place of significance by its listing on the CHL and the findings of this HMP, which recognises additional heritage values as well as the potential for NHL listing.

The existing CHL listing means that the site needs to be conserved and managed in accordance with the EPBC Act and the conservation policies in this HMP. The purpose of the conservation policies is to provide solid guidance for the ongoing and future management of the site, and to be integrated into decisions about management, development interpretation, maintenance and long-term conservation.

Conservation policy is based on the principles embodied in the Burra Charter; a set of principles, processes and guidelines for practice in heritage conservation developed by Australia ICOMOS (International Council of Monuments and Sites) which is based on international standards. The Burra Charter has been accepted as the national standard for conservation planning and work by practitioners and all Australian government heritage bodies. The 2013 update of the Burra Charter included a revised Practice Note for Developing Policy. The Burra Charter and its guidelines can be viewed at the following link: <http://www.icomos.org/australia/charter.html>.

The conservation policies for the Mount Stromlo Observatory are founded on the heritage significance and constraints and opportunities (Sections 6.0 and 7.0) analysed and described in this HMP. The table in Section 8.5 provides management and conservation policies and actions for the Mount Stromlo Observatory Precinct.

The active implementation of these policies and actions will ensure that the ANU meets its obligations under the EPBC Act to conserve the Commonwealth Heritage values of the site.

8.2 Key Objectives of the Conservation Policy

Schedules 5A and 7A of the EPBC Regulations item (a) require that Commonwealth agencies ‘establish objectives for the identification, protection, conservation, presentation and transmission of the Commonwealth Heritage values of the place’.

This HMP reflects these objectives, and reference to the conservation polices should be made by the ANU when:

- proposing conservation works;
- proposing new uses for structures on the site;
- designing, constructing or altering the landscape; and
- undertaking routine maintenance and repair work, including the stabilisation of the heritage ruins.
8.3 Implementation of the Conservation Policies and Actions

8.3.1 Priorities

The following section outlines specific conservation policies and subsequent actions for the conservation and management of the Mount Stromlo Observatory. Each policy is numbered, with the priority and timing for the implementation of the policy stated, as well as the responsible party to undertake each action. The priorities for action are listed in three categories, each responding to a different level of risk to the site’s heritage values:

- **High**—Actions which are essential to mitigate key risks to the heritage values. These actions are key activities for implementing the HMP; without implementing them, the heritage values of the Mount Stromlo Observatory may suffer adverse impacts.

- **Medium**—Actions that should be planned for in order to conserve the heritage values of the site. Resources should be planned to enable implementation of these actions and ensure conservation of the heritage values.

- **Low**—Actions that are important to the future conservation of the heritage values but respond to less imminent risks. Resources should be planned ahead for these actions.

8.3.2 Timing

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

- immediately upon adoption of the HMP (within 12 months);
- within 24–36 months;
- annually;
- within 5–10 years;
- as required; or
- on an ongoing basis.

8.3.3 Responsibilities

The ANU Heritage Strategy 2010–2012 outlines the responsibilities for the management of the university’s heritage obligations. The key responsibility for implementation of specific policies and adopting the heritage management processes and decision-making procedures of the HMP lies with the ANU Facilities and Services Division. The ANU Heritage Officer has the day to day responsibility for implementation, review and monitoring of the HMP.

As site users, the RSAA also has responsibilities for heritage management on the site. Their role in the ongoing function of the site as an observatory, educational facility and astronomical manufacturing facility means that they should act in accordance with the identified heritage values.

The individual responsibilities for the implementation of each policy are listed in Table 8.1 below.
8.4 Background to Policies

8.4.1 Introduction: The Major Conservation Issues

The conservation policies of all HMPs for sites of such significance must include overall procedural matters, issues related to the treatment of significant features and fabric of the place (in the case of Mount Stromlo—buildings, heritage ruins, cultural landscape elements, archaeological remains and its setting) and recommendations for future site development.

However, at Mount Stromlo, ten years after the fires, three commitments are of the greatest importance to the site’s management and conservation as a heritage precinct.

**Implementing the Heritage Management Plan** in the short term demonstrates the commitment from the ANU to conserving and managing the site, with particular attention to the site’s ruins and cultural landscape. The development of Volume 2 of the HMP by the ANU Facilities and Services Division will gradually build the detailed data and policies needed for each site element, based on a standard template developed by GML for the Acton Campus Heritage Study 2012. The Director’s Residence is the first element to be researched and analysed as a pilot study.

**Preparing and implementing a Landscape Management Plan** which can unify, interpret and revitalise the site is an urgent need in order to re-imprint the ANU campus values across the site by reinterpreting the linkages and relationships that demonstrate the site development and integrating it with the site’s Master Plan.

**Development of a site wide Interpretation Strategy** is the third major commitment needed, which would tell the many stories and celebrate the scientific achievements of the work conducted on site.

8.4.2 A Landscape Management Plan to Integrate Natural Heritage and Cultural Landscape Elements

The geography and history of the development of Mount Stromlo has created a landscape redolent with stories that are now partially obscured or lost by the fires and subsequent redevelopment. Today, only limited elements of the original landscape and the dark forest plantings that formed a glare-free context remain. Also evident are the layers of buildings, roads, ruins and plantings which demonstrate its use and the catastrophic fires which have damaged the site twice in living memory. Yet to most visitors, and indeed to site staff, these stories are only partly seen and the site is in danger of obscuring or losing its meanings. One of the most urgent and far-reaching policies of this HMP is the recommendation for the preparation of an overall Landscape Management Plan which guides future interpretation and management of the remarkable cultural landscape of the site as a whole.

This would include identifying and analysing the specific landscape qualities and heritage values of the site’s layout, plantings and potential sites for redevelopment, as well as routine landscape tasks. This plan will provide an integrated management direction for realising the identified opportunities for natural heritage, valuable cultural plantings, and the ecological and aesthetic landscape development recommended in previous landscape reports.¹

8.4.3 An Interpretation Strategy

This HMP recommends the development of a specific Mount Stromlo Interpretation Strategy to provide the ANU with a clear approach to interpretation initiatives suitable for the site. Based on the heritage values of the site and identifying key themes and stories, the ANU would be able to develop appropriate interpretation methods and measures to target potential audiences of the Mount Stromlo
Observatory. It is important the interpretation captures a wide range of themes and messages from the site, including the landscape setting, buildings, scientific history of astronomy, the history of the site’s development, and the associations and meanings attached to the site throughout its whole history of occupation.

Section 9.0 of this HMP provides a detailed Interpretation Framework and discussion on recommendations for the development of an Interpretation Strategy.
## 8.5 Conservation Policies

### MOUNT STROMLO OBSERVATORY PRECINCT

<table>
<thead>
<tr>
<th>Policies</th>
<th>Actions</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Management Processes</strong></td>
<td></td>
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</tr>
<tr>
<td>1.1 Adopt this HMP for the Mount Stromlo Observatory Precinct.</td>
<td>1.1.1 The ANU should formally adopt the HMP as the basis for future management of the heritage values of the Mount Stromlo Observatory Precinct.</td>
<td>High</td>
</tr>
<tr>
<td>1.2 Refer to this HMP as the primary heritage management document for the Mount Stromlo Observatory Precinct.</td>
<td>1.2.1 Refer to this HMP for all matters relating to the heritage values, conservation and management of the site.</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>1.2.2 Implement the policies and actions set out in this HMP, in line with the identified priority and timing guidelines.</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>1.2.3 Refer to Volume 2 of the HMP for recommendations and identified issues for specific heritage elements at the site.</td>
<td>High</td>
</tr>
<tr>
<td>1.3 Manage the Mount Stromlo Observatory Precinct in accordance with the identified heritage values.</td>
<td>1.3.1 Contact the Department responsible for the EPBC Act to arrange for a formal revision of the CHL citation for the Mount Stromlo Observatory Precinct to reflect the changes recommended in Section 6.0.</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>1.3.2 The ANU should undertake further assessment and consider the nomination of the Mount Stromlo Observatory Precinct to the National Heritage List.</td>
<td>Medium</td>
</tr>
<tr>
<td>1.4 Manage the Mount Stromlo Observatory Precinct in accordance with relevant legislation where it applies.</td>
<td>1.4.1 The ANU should manage the site in accordance with relevant Commonwealth legislation, regulations and codes as noted in Section 7.</td>
<td>High</td>
</tr>
<tr>
<td>Policies</td>
<td>Actions</td>
<td>Implementation</td>
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<tr>
<td>1.5 Manage the site in accordance with best practice heritage systems and skills.</td>
<td>1.5.1 Ensure all ANU/RSAA staff and contractors have access to the information in this HMP (hard copy and electronically) and have suitable induction, training and development activities to understand its importance and intent to ensure best heritage practice.</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>1.5.2 Seek expert advice from heritage professionals for:</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>- heritage values assessment against the EPBC Act criteria;</td>
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<td></td>
<td>- heritage and interpretation management planning advice;</td>
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<td>- impact assessments for proposed works and development;</td>
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<td></td>
<td>- archaeological assessment advice; and</td>
<td></td>
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<td></td>
<td>- Indigenous cultural heritage management advice.</td>
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<tr>
<td>1.6 Ensure adequate funding is available for heritage management.</td>
<td>1.6.1 Appropriate staffing and funding arrangements, resources and processes should be put in place to support the effective implementation of the HMP. Heritage management includes site based heritage conservation, management and interpretation; and, if necessary, the engagement of expert heritage advice.</td>
<td>High</td>
</tr>
<tr>
<td>1.7 Ensure all planning or strategic documents are consistent with the heritage values of the site and the policies outlined in the HMP.</td>
<td>1.7.1 All planning or strategic documents should integrate the recommendations of this HMP for primary guidance on the management of the Mount Stromlo Observatory Precinct’s heritage values.</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>1.7.2 Integrate the HMP findings with the Master Plan for the Mount Stromlo Observatory 2030, ensuring that the two reports are complementary.</td>
<td>High</td>
</tr>
</tbody>
</table>
## 2. Conservation Processes

<table>
<thead>
<tr>
<th>Policies</th>
<th>Actions</th>
<th>Implementation</th>
</tr>
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<tbody>
<tr>
<td>2.1 Conserve the identified heritage values of the Mount Stromlo Observatory Precinct in accordance with the HMP.</td>
<td>2.1.1 The heritage values of the Mount Stromlo Observatory Precinct as an important cultural landscape (official values and revised values in this HMP) provide the basis for all conservation processes and development actions.</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>2.1.2 Refer to the level of significance for elements of the Mount Stromlo Observatory and for their tolerance for change to guide appropriate decision-making.</td>
<td>High</td>
</tr>
<tr>
<td>2.2 All conservation works and planning should be undertaken in accordance with this HMP and relevant statutory and non-statutory heritage regulations and guidelines.</td>
<td>2.2.1 Manage the site in accordance with this HMP which is compliant with Burra Charter principles, the Australian Capital Territory (Planning &amp; Land Management Act and Schedule 7B EPBC Act Regulations), the Commonwealth Heritage management principles and Ask First: A Guide to Respecting Indigenous Heritage Places and Values, Australian Heritage Commission, 2002.</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>2.2.2 Integrate the HMP policies and actions with the appropriate operational guidelines for all ANU employees (staff and researchers), contractor inductions and ensure the HMP is conveyed to all site users.</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>2.2.3 Specific roles and responsibilities in relation to the HMP should be set out and communicated to the ANU staff/researchers to ensure policies are followed through by the appropriate person.</td>
<td>High</td>
</tr>
<tr>
<td>2.3 Ensure appropriately qualified personnel, consultants and contractors are engaged in any assessment of proposed actions or works at the site which impact heritage values.</td>
<td>2.3.1 Ensure appropriate heritage expertise is engaged for management, assessments and works; and that all involved are aware of Burra Charter principles for conservation, traditional construction techniques or developments.</td>
<td>High</td>
</tr>
</tbody>
</table>
### 2.4 Conserve the whole site—the cultural landscape of the Mount Stromlo Observatory Precinct.

<table>
<thead>
<tr>
<th>Policies</th>
<th>Actions</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.4.1 Retain the historic layout and planning arrangement of the Mount Stromlo Observatory—significant evidence from all phases of development of the site exists, from the early establishment of the Observatory, the construction and ongoing function of the site, the evidence of its scientific endeavour, the devastation of the 2003 fires and the post-fire recovery.</td>
<td>High</td>
<td>Immediately and ongoing</td>
</tr>
<tr>
<td>2.4.2 Reinforce and manage the cultural landscape of the whole site. This includes the right balance between natural landscape elements and the cultural plantings which define the site, its setting, the historic layout and individual precincts.</td>
<td>High</td>
<td>Immediately and ongoing</td>
</tr>
<tr>
<td>2.4.3 Respect and interpret the historic layout and distinction of the functional areas and precincts (Main Observatory Precinct, Telescopes and Workshop Precinct and Residential Precinct) at the Mount Stromlo Observatory.</td>
<td>High</td>
<td>Ongoing</td>
</tr>
<tr>
<td>2.4.4 Retain the open nature of the site with the lack of fences or boundary divisions.</td>
<td>High</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

### 2.5 Conserve the character of individual historic precincts.

<table>
<thead>
<tr>
<th>Policies</th>
<th>Actions</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5.1 The Main Observatory Precinct—Conserve the spatial and visual relationship between the Commonwealth Solar Observatory building and the Director’s Residence, and the limited built elements along the ridge.</td>
<td>High</td>
<td>Ongoing</td>
</tr>
<tr>
<td>2.5.2 Telescopes and Workshop Precinct—Continue to facilitate the operation and function of the Observatory for research, development and academic purposes.</td>
<td>High</td>
<td>Ongoing</td>
</tr>
<tr>
<td>2.5.3 Residential Precinct—Maintain the historic function of the provision of modest Observatory related accommodation at a low, domestic scale.</td>
<td>High</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Policies</td>
<td>Actions</td>
<td>Implementation</td>
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</tbody>
</table>
|                                                                        | 2.6 Conserve and stabilise the remnant, yet standing dome buildings. 2.6.1 Retain the dome structures, specifically the Reynold’s Telescope Dome, the 74inch Telescope Dome and the Commonwealth Solar Observatory Domes and explore opportunities for appropriate adaptive re-use and interpretation. | Priority: High  
Timing: Ongoing  
Responsibility: ANU Facilities and Services Division                                                                                                                   |
|                                                                        | 2.7 Conserve and manage the ruined buildings. 2.7.1 Retain the heritage ruins, specifically the Yale-Columbia, Great Melbourne and Oddie Telescope buildings, and manage in accordance with the identified heritage values. The ‘simply maintain’ approach, as outlined in the AHC 2013 guideline: Ruins: A guide to conservation and management, should be followed for the heritage ruins. | Priority: High  
Timing: Immediately and ongoing  
Responsibility: ANU Facilities and Services Division                                                                                                                  |
|                                                                        | 2.7.2 Retain and interpret evidence of all layers of history, including the construction, use and destruction from the fires where possible. 2.7.3 Undertake regular structural and condition assessments by qualified professionals and ensure the buildings are stabilised and safe for access. As part of regular condition assessments, ensure vegetation growth is maintained to avoid structural damage. | Priority: Medium  
Timing: Within 24–36 months  
Responsibility: ANU Facilities and Services Division                                                                                                                 |
|                                                                        | 2.7.4 Continue to manage public access to the Oddie and Yale Columbia Telescope buildings. 2.7.5 Remove intrusive accretions/additions (eg windows and doors from the Great Melbourne Telescope building) and replace with sympathetic barriers if required. | Priority: High  
Timing: Ongoing  
Responsibility: ANU Facilities and Services Division                                                                                                                  |
|                                                                        | 2.7.6 Resist ‘cleaning up’ the ruins or areas around the ruins, which may contain recently created archaeological evidence of the bush fires, unless it is necessary for WH&S requirements. | Priority: Medium  
Timing: Ongoing  
Responsibility: ANU Facilities and Services Division                                                                                                                  |
### Policies

<table>
<thead>
<tr>
<th>2.8 Identify and conserve moveable heritage elements of the Mount Stromlo Observatory Precinct.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.8.1 Retain in situ extant/unused scientific equipment in telescope buildings, where possible.</td>
</tr>
<tr>
<td>2.8.2 Damaged and/or displaced telescope equipment, and other scientific paraphernalia will be assessed, salvaged, recorded and stored for future interpretative purposes.</td>
</tr>
<tr>
<td>2.8.3 Identify, catalogue and manage the collection in accordance with appropriate standards for research and exhibition use.</td>
</tr>
<tr>
<td>2.8.4 Actively repatriate objects that have been temporarily removed.</td>
</tr>
</tbody>
</table>

### 3. Cultural Landscape Approach—Natural Heritage and Cultural Plantings

<table>
<thead>
<tr>
<th>3.1 Retain the heritage values which embody and contribute to the cultural landscape of the Mount Stromlo Observatory Precinct.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1.1 Retain the heritage values of the cultural landscape including the natural heritage values and cultural plantings, listed in Section 3.0 Also refer to Policy 2.4.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3.2 Prepare and implement a Landscape Management Plan to guide the management of the cultural landscape—the natural heritage and cultural plantings of the site.</th>
</tr>
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<tbody>
<tr>
<td>3.2.1 Prepare and implement a Landscape Management Plan to guide future landscape development which recognises, interprets and enhances natural heritage and cultural plantings.</td>
</tr>
<tr>
<td>3.2.2 Integrate opportunities for the management of the natural heritage and cultural plantings with existing environmental, ecological and scenic amenity planning strategies.</td>
</tr>
<tr>
<td>3.2.3 Implement recommendations of the Landscape Management Plan into future landscape design, development of features and landscape works.</td>
</tr>
</tbody>
</table>
### Policies

<table>
<thead>
<tr>
<th>Policies</th>
<th>Actions</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.3 Manage and protect existing trees and groups of trees with identified heritage value—the natural heritage and cultural plantings of the site.</td>
<td>3.3.1 Disseminate identification and reference data as a trigger for protective action for trees at NH2, NH5, NH6, NH7, CP1, CP2, CP3, CP4, CP15, CP16, CP17, CP18, CP27 and CP28.</td>
<td>High</td>
</tr>
<tr>
<td>3.3.2 Ensure physical protection of the existing trees, tree groups and cultural plantings from planned developments, services works and maintenance, formal and informal access, etc.</td>
<td>High</td>
<td>Ongoing</td>
</tr>
<tr>
<td>3.3.3 Assess and implement appropriate arboricultural protection and management measures of the identified natural heritage and cultural plantings. For example, ensure Safe Useful Life Expectancy (SULE) is defined in the proposed Landscape Management Plan for significant cultural plantings.</td>
<td>High</td>
<td>Ongoing</td>
</tr>
<tr>
<td>3.3.4 Undertake regular routine inspection of the health (diseases, pests and storm damage) of identified natural heritage and cultural plantings and develop a replacement planting program.</td>
<td>Medium</td>
<td>As required</td>
</tr>
<tr>
<td>3.3.5 Update the Facilities and Services Division’s Tree Database to cover the Mount Stromlo Observatory.</td>
<td>High</td>
<td>As required</td>
</tr>
<tr>
<td>3.4 Conserve and interpret important historic and remnant gardens and landscape relics.</td>
<td>3.4.1 At the House 19 site, remove recent native encroachments and pasture weeds; protect and stabilise (where needed) garden structures (walls, paths, steps, rockeries and arbour) and provide water to sensitive exotic garden species.</td>
<td>High</td>
</tr>
<tr>
<td>3.4.2 At and around the Director’s Residence landscaping should interpret the original features and provide signage explaining significance.</td>
<td>Medium</td>
<td>Within 24–36 months</td>
</tr>
</tbody>
</table>
### Policies

<table>
<thead>
<tr>
<th>Policies</th>
<th>Actions</th>
<th>Implementation</th>
<th>Priority</th>
<th>Timing</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.4.3</td>
<td>The garden and landscape area of House 19 (The Gascoigne’s home—demolished) and the landscape surrounding the Director’s Residence should be interpreted and presented as part of the Mount Stromlo story.</td>
<td>Low</td>
<td>Low</td>
<td>Within 5–10 years</td>
<td>ANU Facilities and Services Division</td>
</tr>
</tbody>
</table>

### 4. New Works and Development

<p>| 4.1    | Use the decision-making process set out in Section 7.0 in order to make consistent and effective decisions on the potential impacts of proposed works, activities or actions on the heritage values of the site. | 4.1.1 Decision-making will include consultation with internal and external stakeholders. | High      | As required     | ANU Facilities and Services Division   |
|        |                                                                                                                                            | 4.1.2 Decision-making will be documented and the records kept for future reference.  | High      | Immediately     | ANU Facilities and Services Division   |
| 4.2    | Assess all actions, including conservation works, for potential impacts on the heritage values of the site. | 4.2.1 Prepare a Heritage Impact Assessment in accordance with the EPBC Act Significant Impact Guidelines 1.2 for any proposal or action with potential to have an adverse impact on the Commonwealth Heritage values of the site. | High      | As required     | ANU Facilities and Services Division   |
| 4.3    | Follow the NCA Works Approval process when required for proposed works.                                                                   | 4.3.1 Refer to Section 7.0 of the HMP for guidance on the Works Approval process.     | High      | As required     | ANU Facilities and Services Division   |
| 4.4    | Respect the existing character of the Mount Stromlo Observatory Precinct when planning new development.                                           | 4.4.1 New development in the overall Mount Stromlo Observatory Precinct should be relevant to the function or interpretation of the site | High      | As required     | ANU Facilities and Services Division   |
|        |                                                                                                                                            | 4.4.2 New development in the Main Observatory Precinct should be limited to retain the historic relationship between the existing dominant structures (the Commonwealth Solar Observatory building, the Director’s Residence and the Oddie Telescope building). | High      | As required     | ANU Facilities and Services Division   |</p>
<table>
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<tr>
<th>Policies</th>
<th>Actions</th>
<th>Implementation</th>
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</thead>
</table>
|                                                                        | 4.4.3 New development in the Telescope and Workshop Precinct is considered appropriate to support the ongoing function of the Mount Stromlo Observatory Precinct as a research and optical manufacturing facility. Development in this precinct could also have a public/visitation focus, and should respect the scale and function of the original observatory layout.                                                                                                                                                                                                                                                                                                                                                                    | High  
As required  
ANU Facilities and Services Division                                                                 |
### Policies

#### 4.5.4 Prepare detailed Development Control Guidelines to guide future development on the site. Also refer to Section 8.6 of the HMP.

<table>
<thead>
<tr>
<th>Priority</th>
<th>Timing</th>
<th>Responsibility</th>
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</thead>
<tbody>
<tr>
<td>High</td>
<td>Within 24–36 months</td>
<td>ANU Facilities and Services Division</td>
</tr>
</tbody>
</table>

#### 4.6 Conserve the key views to and from the Mount Stromlo Observatory Precinct.

- **4.6.1** When planning new development, refer to Appendix C of the HMP for discussion on key views to, from and within the site, which should be conserved.
  
<table>
<thead>
<tr>
<th>Priority</th>
<th>Timing</th>
<th>Responsibility</th>
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</thead>
<tbody>
<tr>
<td>High</td>
<td>As required</td>
<td>ANU Facilities and Services Division</td>
</tr>
</tbody>
</table>

- **4.6.2** Other than the construction of Telescope domes, new development in areas highly visible from the city should be avoided.

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<tr>
<th>Priority</th>
<th>Timing</th>
<th>Responsibility</th>
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<tbody>
<tr>
<td>High</td>
<td>As required</td>
<td>ANU Facilities and Services Division</td>
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</tbody>
</table>

- **4.6.3** New buildings should be set below the ridge in order to not be prominent from a distance.

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<tr>
<th>Priority</th>
<th>Timing</th>
<th>Responsibility</th>
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</thead>
<tbody>
<tr>
<td>High</td>
<td>As required</td>
<td>ANU Facilities and Services Division</td>
</tr>
</tbody>
</table>

#### 4.7 Consider the proposal for an Australian Museum of Astronomy and Space Science and its potential for impacts on the heritage values of the site.

- **4.7.1** Consider the potential for impacts on the heritage values when planning for potential new uses/functions on the site. For example, the proposed Australian Museum of Astronomy and Space Science may result in increased visitation and have implications for access and parking.

  The design, placement, siting and scale of any major new facilities, such as the museum, will require careful consideration to ensure the heritage values of ruins, buildings and landscape elements are integrated with the concept, interpreted and protected.

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<tr>
<th>Priority</th>
<th>Timing</th>
<th>Responsibility</th>
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<tbody>
<tr>
<td>High</td>
<td>As required</td>
<td>ANU Facilities and Services Division RSAA</td>
</tr>
</tbody>
</table>

#### 4.8 Consider the proposal for a gondola linking with Stromlo Forest Park and its potential for impacts on the heritage values of the site.

- **4.8.1** Consider the potential for impacts on the heritage values of the site when planning a gondola linking to Stromlo Forest Park. Detailed design principles should be applied to reduce visual impacts. Refer to Section 8.6 of the HMP.

<table>
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<tr>
<th>Priority</th>
<th>Timing</th>
<th>Responsibility</th>
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<tbody>
<tr>
<td>High</td>
<td>As required</td>
<td>ANU Facilities and Services Division</td>
</tr>
</tbody>
</table>

#### 4.9 Avoid impacts on areas of potential historical archaeological sensitivity.

- **4.9.1** New developments should avoid the former house sites of Houses 11 and 19 and the interior and immediate surrounds of the Director’s Residence. Proposed developments for these three areas should assess the potential for impacts upon the archaeological resource.

<table>
<thead>
<tr>
<th>Priority</th>
<th>Timing</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium</td>
<td>Ongoing</td>
<td>ANU Facilities and Services Division</td>
</tr>
</tbody>
</table>
## Policies

### 4.10 Avoid impacts on unidentified and unassessed Indigenous archaeological sites.

<table>
<thead>
<tr>
<th>Actions</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.10.1 Undertake an Indigenous archaeological assessment for new developments in areas of the site not previously disturbed or developed.</td>
<td>Medium Ongoing ANU Facilities and Services Division</td>
</tr>
</tbody>
</table>

### 4.11 Explore opportunities to adaptively re-use buildings with no current identified use.

<table>
<thead>
<tr>
<th>Actions</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.11.1 Explore opportunities for adaptive re-use of buildings with no current identified use, including for visitor engagement and interpretation purposes. Refer to the New Uses for Heritage Places: Guidelines for the Adaptation of Historic Buildings and Sites, prepared by the Heritage Office, NSW Department of Planning and the Royal Australian Institute of Architects NSW Chapter, 2008.</td>
<td>High As required ANU Facilities and Services Division RSAA</td>
</tr>
<tr>
<td>4.11.2 Any new identified use should be relevant to the site’s function and sympathetic to the character of the site and the building.</td>
<td>High As required ANU Facilities and Services Division</td>
</tr>
<tr>
<td>4.11.3 The adaptation of the structure for a new use should consider the heritage values of the element and not impact the significant original or early fabric.</td>
<td>High As required ANU Facilities and Services Division</td>
</tr>
</tbody>
</table>

### 4.12 Demolition of any structure with identified heritage values should be avoided.

<table>
<thead>
<tr>
<th>Actions</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.12.1 Consideration of demolition should follow the standard decision-making process outlined in Section 7.0.</td>
<td>High As required ANU Facilities and Services Division</td>
</tr>
<tr>
<td>4.12.2 Alternatives, including adaptive re-use, should be considered prior to planning for demolition.</td>
<td>High As required ANU Facilities and Services Division</td>
</tr>
<tr>
<td>4.12.3 Archival recording should be undertaken prior to demolition in accordance with the NSW Heritage Office Guidelines for Archival Recording.</td>
<td>High As required ANU Facilities and Services Division</td>
</tr>
</tbody>
</table>

### 4.13 Regular maintenance of heritage buildings, ruins and landscapes should be undertaken.

<table>
<thead>
<tr>
<th>Actions</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.13.1 Maintenance should be undertaken in accordance with the Burra Charter.</td>
<td>High Ongoing ANU Facilities and Services Division</td>
</tr>
<tr>
<td>4.13.2 Maintenance should not impact the heritage significance of the individual heritage elements or the overall the Mount Stromlo Observatory Precinct.</td>
<td>High Ongoing ANU Facilities and Services Division</td>
</tr>
<tr>
<td>Policies</td>
<td>Actions</td>
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<tr>
<td></td>
<td>4.13.3</td>
</tr>
<tr>
<td></td>
<td>Regular preventative maintenance should be undertaken with respect to significant fabric on individual heritage elements (eg painting). Refer to Volume 2 of the HMP.</td>
</tr>
<tr>
<td>4.14</td>
<td>Consider the heritage values of the building when installing new and/or upgrading services.</td>
</tr>
<tr>
<td></td>
<td>4.14.1</td>
</tr>
<tr>
<td></td>
<td>Upgrades to services should involve minimal impact to building fabric and should be reversible.</td>
</tr>
<tr>
<td></td>
<td>4.14.2</td>
</tr>
<tr>
<td></td>
<td>Retain historic services which are no longer used unless removal is required for safety reasons. Newly installed services should be discreet and respect the significant original or early fabric.</td>
</tr>
<tr>
<td>4.15</td>
<td>Building upgrades to meet legislative requirements (ie for fireproofing standards or to meet BCA and DDA compliance) should carefully consider the heritage values.</td>
</tr>
<tr>
<td></td>
<td>4.15.1</td>
</tr>
<tr>
<td></td>
<td>Respect the heritage values of the site; the fabric of the significant buildings should be adapted or development proposed.</td>
</tr>
<tr>
<td></td>
<td>4.15.2</td>
</tr>
<tr>
<td></td>
<td>Alternative and sympathetic materials selection should be considered when upgrading buildings if original materials are no longer available or suitable.</td>
</tr>
</tbody>
</table>

5. Use, Access and Security

<table>
<thead>
<tr>
<th>Policies</th>
<th>Actions</th>
<th>Implementation</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Priority</td>
</tr>
<tr>
<td>5.1</td>
<td>Maintain the primary function of the Mount Stromlo Observatory as the headquarters of the RSAA and a campus of the ANU.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.1.1</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Continue to use the Mount Stromlo Observatory Precinct for astronomical research and technology development by the RSAA and ANU.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.1.2</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Ensure that the facilities required by the RSAA and ANU are available for the continuing function of their scientific work, and that their development considers their context in a heritage site.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.1.3</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Control of visitor access to RSAA restricted areas should be through appropriate standard Mount Stromlo signage.</td>
<td></td>
</tr>
</tbody>
</table>
## Policies

<table>
<thead>
<tr>
<th>Policies</th>
<th>Actions</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2 Allow the Mount Stromlo Observatory to continue to be a visitor destination, with additional interpretation facilities.</td>
<td>5.2.1 Retain public access to large areas of the Mount Stromlo Observatory Precinct where this does not impact upon the operational capacity of the site.</td>
<td>High Ongoing ANU Facilities and Services Division</td>
</tr>
<tr>
<td></td>
<td>5.2.2 Encourage visitation to the Mount Stromlo Observatory Precinct through targeted interpretation and public programs (refer to Section 9.0 of the HMP for further guidance).</td>
<td>High Ongoing ANU Facilities and Services Division</td>
</tr>
<tr>
<td></td>
<td>5.2.3 Review existing visitor facilities, including the cafe, gallery and interpretative spaces, to ensure adequate public amenities.</td>
<td>Medium Within 24–36 months ANU Facilities and Services Division</td>
</tr>
<tr>
<td></td>
<td>5.2.4 Develop heritage walking trails to show visitors the site as a whole.</td>
<td>High Immediately ANU Facilities and Services Division</td>
</tr>
<tr>
<td></td>
<td>5.2.5 Continue to host public observing nights and encourage visitors to experience the site through astronomy related functions and events.</td>
<td>Medium Ongoing ANU Facilities and Services Division</td>
</tr>
<tr>
<td>5.3 Upgrade the site entrance and approach along Mount Stromlo Road.</td>
<td>5.3.1 Create a welcoming and distinct entrance to the site through an appropriate gateway, signage and management of the landscape of the approach road.</td>
<td>Medium Within 24–36 months ANU Facilities and Services Division</td>
</tr>
<tr>
<td></td>
<td>5.3.2 Enhance the visitor experience and appreciation of the historic perspective of the remoteness and isolation of the site.</td>
<td>Medium Ongoing ANU Facilities and Services Division</td>
</tr>
<tr>
<td>5.4 Identify public areas of the Mount Stromlo Observatory Precinct to be used for commemorative purposes.</td>
<td>5.4.1 Continue to allow public access internally to the Yale Columbia Telescope building, which has become a commemorative site for the devastation of the 2003 fires due to its ease of accessibility and prominence in the site.</td>
<td>High Ongoing ANU Facilities and Services Division</td>
</tr>
<tr>
<td></td>
<td>5.4.2 Maintain the access and path to the Duffields’ Grave.</td>
<td>High Ongoing ANU Facilities and Services Division</td>
</tr>
</tbody>
</table>
## Policies

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<tr>
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<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.5 Allow public areas of the Mount Stromlo Observatory Precinct to be used for recreational purposes.</td>
<td>5.5.1 Continue to allow visitation to the Mount Stromlo Observatory Precinct by hikers, cyclists and other recreational users.</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>5.5.2 Encourage recreational users of the site, including mountain bike riders, to use existing paths. This may include the use of appropriate Mount Stromlo signage.</td>
<td>Medium</td>
</tr>
<tr>
<td>5.6 Car parking at the Mount Stromlo Observatory Precinct should be rationalised.</td>
<td>5.6.1 The intrusive informal car park between Commonwealth Solar Observatory and the Director’s Residence should be removed.</td>
<td>Medium</td>
</tr>
<tr>
<td>5.7 Manage the security of staff, visitors and the site.</td>
<td>5.7.1 Ensure that security requirements and measures do not have an adverse impact on the heritage values of the Mount Stromlo Observatory Precinct.</td>
<td>Medium</td>
</tr>
</tbody>
</table>

## 6. Stakeholder Consultation and Community Involvement

| 6.1 Recognise the strong community attachment to the heritage values of the Mount Stromlo Observatory Precinct through regular liaison on proposals affecting the future uses and development of the place. | 6.1.1 Consult broadly on proposals with the potential to impact on the heritage values of the Mount Stromlo Observatory Precinct. | High | As required | ANU Facilities and Services Division |
|  | 6.1.2 Consult local Canberra community stakeholders when significant change (ie major development) is proposed for the Mount Stromlo Observatory Precinct. | High | As required | ANU Facilities and Services Division |
|  | 6.1.3 Consult with Indigenous stakeholders on matters related to the heritage values of the Mount Stromlo Observatory Precinct. | High | As required | ANU Facilities and Services Division |
|  | 6.1.4 Consult with the neighbouring Stromlo Forest Park facility for collaborative opportunities and when planning major development at the Mount Stromlo Observatory Precinct. | High | As required | ANU Facilities and Services Division |
### Policies

<table>
<thead>
<tr>
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<th>Actions</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2</td>
<td>Maintain regular liaison with the Department responsible for the EPBC Act and the National Capital Authority (NCA) regarding the management of the Commonwealth Heritage values of the Mount Stromlo Observatory Precinct.</td>
<td>Priority</td>
</tr>
<tr>
<td></td>
<td>6.2.1 Seek informal comment from the Department responsible for the EPBC Act and the NCA on any proposals which have the potential to impact on the heritage values of the Mount Stromlo Observatory Precinct, as part of the decision-making process to assess the significance of impacts.</td>
<td>High</td>
</tr>
<tr>
<td>6.3</td>
<td>Continue to consult with visitors, local astronomical community members and commemorative groups on matters regarding the heritage values of the Mount Stromlo Observatory Precinct.</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>6.3.1 Provide regular information for visitors, local astronomical community members and commemorative groups on the heritage values of the Mount Stromlo Observatory Precinct, its status as a Commonwealth Heritage listed place and any proposed changes to the place which may impact on the heritage values.</td>
<td>High</td>
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### Interpretation

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<th>Actions</th>
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</thead>
<tbody>
<tr>
<td>7.1</td>
<td>A heritage Interpretation Strategy should be prepared for the Mount Stromlo Observatory Precinct.</td>
<td>Priority</td>
</tr>
<tr>
<td></td>
<td>7.1.1 Prepare an Interpretation Strategy specific to the Mount Stromlo Observatory Precinct as a means of showcasing and celebrating the heritage values—refer to Section 9.0 of the HMP for further guidance on themes and interpretative methods.</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>7.1.2 Consult and involve stakeholders in the development of the Interpretation Strategy and specific interpretation initiatives (eg RSAA and the local Indigenous community).</td>
<td>High</td>
</tr>
<tr>
<td>7.2</td>
<td>Interpret the heritage values of the Mount Stromlo Observatory Precinct.</td>
<td>Priority</td>
</tr>
<tr>
<td></td>
<td>7.2.1 Interpret the heritage values of the Mount Stromlo Observatory Precinct to local, national and international audiences—using a range of media including published material, online material and signage.</td>
<td>High</td>
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## Policies

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<tr>
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</thead>
<tbody>
<tr>
<td>7.2.2 Build on and utilise existing ANU interpretation tools and interpretive material to interpret the Mount Stromlo Observatory’s heritage values and themes.</td>
<td>High</td>
</tr>
<tr>
<td>7.2.3 Ensure all phases of development at Mount Stromlo are interpreted with no single historical phase dominating another.</td>
<td>High</td>
</tr>
<tr>
<td>7.2.4 Establish a resource collection of existing Mount Stromlo Observatory historical documentation, photographs, archives and books to be referred to when preparing interpretation material.</td>
<td>High</td>
</tr>
<tr>
<td>7.2.5 Explore opportunities for demonstrating the conservation process and interpretation methods through the physical conservation and presentation of the structures on site.</td>
<td>Medium</td>
</tr>
</tbody>
</table>

### 8. Documentation, Monitoring and Review

<p>| 8.1 Review and update the HMP every five years to comply with S341X of the EPBC Act. | 8.1.1 Review and update the HMP every five years or following any major change in circumstance, including conservation works, impacts from natural disaster or new development/ construction. | Medium | Within 5–10 years and as required  | ANU Facilities and Services Division |
| 8.2 Collate all monitoring data annually, as required by this HMP, as a basis for reporting on the implementation of the HMP and monitoring the condition of the values, in compliance with the EPBC Act. | 8.2.1 Use annual reporting on the implementation of the HMP to review the guidelines set out in this HMP for the priority and timing of actions. Priorities should be re-assessed in any review following the definitions set out in this HMP—that is, highest priority should be attributed to actions which alleviate or mitigate key risks to the heritage values (as set out in the definitions at the beginning of this section). | High | Annually  | ANU Facilities and Services Division |
| 8.3 Monitor the condition of the identified heritage values of the Mount Stromlo | 8.3.1 Monitor the condition of the Commonwealth Heritage values and include the re-evaluation as part of the five-yearly review of the HMP. | Medium | Within 5–10 years and as required  | ANU Facilities and Services Division |</p>
<table>
<thead>
<tr>
<th>Policies</th>
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<th>Implementation</th>
<th>Priority</th>
<th>Timing</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observatory Precinct.</td>
<td>8.3.3 Ensure all conservation works and maintenance tasks are identified, reported and monitored annually.</td>
<td>High</td>
<td>Annually</td>
<td>ANU Facilities and Services Division</td>
<td></td>
</tr>
<tr>
<td>8.4 Maintain records of conservation and maintenance works.</td>
<td>8.4.1 As a minimum, record the nature and outcomes of works, interventions and maintenance on the ANU Heritage Register/Database for the Mount Stromlo Observatory Precinct, as required by the EPBC Act.</td>
<td>Medium</td>
<td>As required</td>
<td>ANU Facilities and Services Division</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8.4.2 Existing elements of heritage value should be recorded to appropriate archival standard prior to any intervention or major works that will alter the place.</td>
<td>Medium</td>
<td>As required</td>
<td>ANU Facilities and Services Division</td>
<td></td>
</tr>
<tr>
<td>8.5 Collect and conserve documents pertaining to the construction, development, and ongoing function of the Observatory.</td>
<td>8.5.1 Continue to update the ANU Heritage Register/Database with records/archives of relevance to the heritage values of the Mount Stromlo Observatory Precinct.</td>
<td>Medium</td>
<td>Ongoing</td>
<td>ANU Facilities and Services Division</td>
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</tr>
<tr>
<td></td>
<td>8.5.2 Make the records available for research generally, especially those relating to the ongoing heritage management of the place.</td>
<td>Medium</td>
<td>As required</td>
<td>ANU Facilities and Services Division</td>
<td></td>
</tr>
<tr>
<td>9. Research and Training</td>
<td>9.1.1 Provide training opportunities for relevant staff to build capacity in heritage management, particularly in the philosophy and practice of heritage management and heritage impact assessment.</td>
<td>High</td>
<td>Ongoing</td>
<td>ANU Facilities and Services Division</td>
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</tr>
<tr>
<td></td>
<td>9.1.2 Provide regular information sessions for staff on the heritage values of the place and their management through the HMP.</td>
<td>High</td>
<td>Annually</td>
<td>ANU Facilities and Services Division</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9.1.3 Provide training where necessary to assist in consultation with Indigenous stakeholders.</td>
<td>Medium</td>
<td>Within 24–36 months</td>
<td>ANU Facilities and Services Division</td>
<td></td>
</tr>
</tbody>
</table>
## Policies

<table>
<thead>
<tr>
<th>Policies</th>
<th>Actions</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.2 Continue to foster and promote research on the heritage values of the Mount Stromlo Observatory Precinct.</td>
<td>9.2.1 Continue to undertake and foster research into the heritage values of the Mount Stromlo Observatory Precinct, as a basis for refining future understanding and management for the benefit of the national community.</td>
<td>Priority: Medium</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Timing: Ongoing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Responsibility: ANU Facilities and Services Division</td>
</tr>
</tbody>
</table>
8.6 Development Control Guidelines

Development control guidelines for the Mount Stromlo Observatory Precinct are needed to ensure the Commonwealth Heritage values are not adversely impacted from inappropriate development within the site. Policy 4.5 in Section 8.5 recommends that detailed Development Control Guidelines should be prepared to guide the ANU in planning for new development at Mount Stromlo. The Mount Stromlo Observatory Master Plan 2030 also recommends that development guidelines are prepared.2

The following principles have been prepared to assist and give clear direction to masterplanners/design architects early in the development stages. The principles are based on an understanding of the Commonwealth Heritage values (Section 6.0), the context of the site, its operation, users and potential opportunities (Section 7.0), and the conservation policies (Section 8.5).

The principles summarise/expand on the actions within Policy 4.1, which provides an approach to managing new development within the site in a heritage context.

8.6.1 Principles for New Development at the Mount Stromlo Observatory Precinct

New facilities developed at the Mount Stromlo Observatory Precinct should be designed to avoid or mitigate adverse impacts on the site’s National Heritage values. The ongoing evolution of the site will necessitate new development and this section provides guidance to encourage sympathetic development and avoid any compromise of the character of the precinct and sub-precincts, which may adversely impact its heritage values. Adverse impacts can be avoided or mitigated by engaging with the site’s heritage values form the start of the design process and implementing good infill design principles into the built form and location of new structures.

The following broad design principles are based on the Design in Context6 guidelines, and reflect also the Controls for New Development outlined in the former 2004 CMP. They should be carefully considered by designers for any future design development, ensuring compliance with the requirements of the EPBC Act and avoiding potential delays.

<table>
<thead>
<tr>
<th>Design Aspect</th>
<th>Principle for New Development at the Mount Stromlo Observatory Precinct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use/Function</td>
<td>New development at the Mount Stromlo Observatory should:</td>
</tr>
<tr>
<td></td>
<td>• be relevant to the function or interpretation of the site;</td>
</tr>
<tr>
<td></td>
<td>• not overcrowd or lessen the existing functionality of RSAA; and</td>
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<tr>
<td></td>
<td>• respect the existing functional layout and historic division of precincts.</td>
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<tr>
<td>Form, Scale and Massing</td>
<td>New development at the Mount Stromlo Observatory should:</td>
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<tr>
<td></td>
<td>• complement the site in terms of its scale, massing, character and fabric/materiality, relating carefully to existing heritage elements;</td>
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<td></td>
<td>• respect the overall scale and character of the individual site precinct’s heritage context;</td>
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<tr>
<td></td>
<td>• retain the prominence of the domes on the ridge;</td>
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<td></td>
<td>• be of a domestic nature, single-storey, low scale and footprint, and within the Residential Precinct; and</td>
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<tr>
<td></td>
<td>• respond to the topography of the site and the ridge.</td>
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<tr>
<td>Fabric</td>
<td>The building fabric of new development should be designed to:</td>
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<td></td>
<td>• be recessive in the landscape and achieve a high degree of integration with the setting (eg by using dark colours such as dark grey and aubergine and avoiding highly reflective/visible materials). New telescope buildings/domes may be an exception.</td>
</tr>
<tr>
<td>Location and Landscape Setting</td>
<td>The location of any new development should:</td>
</tr>
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<td></td>
<td>• be designed to integrate with the surrounding environment and the character of the site;</td>
</tr>
</tbody>
</table>
### Design Aspect

<table>
<thead>
<tr>
<th>Principle for New Development at the Mount Stromlo Observatory Precinct</th>
</tr>
</thead>
<tbody>
<tr>
<td>• not dominate the open park-like character of the site;</td>
</tr>
<tr>
<td>• be carefully positioned, set below the ridge to avoid being highly visible from the city;</td>
</tr>
<tr>
<td>• allow sufficient space and setback around the existing heritage elements;</td>
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<tr>
<td>• be limited/avoided within the Main Observatory Precinct in order to retain the historic relationship between the existing dominant structures (the Commonwealth Solar Observatory Building, the Director’s Residence and the Oddie Telescope building);</td>
</tr>
<tr>
<td>• observe the spatial arrangement in the Residential Precinct in regards to the placement of buildings and garden curtilages, and avoid the former house sites of Houses 11 and 19;</td>
</tr>
<tr>
<td>• sited to ensure that visitors to the site are encouraged to explore the site and its stories in the public areas; and</td>
</tr>
<tr>
<td>• generally avoid being located on existing ruins or former building sites.</td>
</tr>
</tbody>
</table>

### 8.6.2 Key Development Areas

An analysis of the Master Plan key areas for development was undertaken to understand the future aims and requirements for development and expansion at the site. These areas are summarised below. This HMP provides an initial response to the proposed development areas, and an indication of acceptable sites with respect to the heritage values of the Mount Stromlo Observatory Precinct.

#### Master Plan 2030—Development Areas

The Master Plan 2030 identifies broad localities which ‘lend themselves to future development of facilities and infrastructure’ (Figure 8.1). These locations respond to the function of the key areas and availability of vacant land.

An area adjacent to the Director’s Residence (the ‘Academic/Research Interface’ area) was identified as a development site. The location was identified as on the cusp between the university/academic research side of the site and the public interface side; it has potential to combine the functions or be open to a wider range of uses, and its prominent setting is noted. This is a particularly sensitive area in terms of adversely impacting heritage values.

A large ‘Visitor/Outreach’ area (covering the eastern portions of the Main Observatory Precinct and the Telescope and Workshop Precinct) was flagged as a location to be opened up for a wider range of visitor activities, including a potential development site for a gondola connection, interpretative facilities, museum and other visitor amenities. Potential linkages between the Stromlo Forest Park and the Mount Stromlo Observatory are maximised in this area and its potential as a visitor outreach location is evident. Careful consideration of the heritage impacts of developing within this large area would be needed to develop appropriate design responses that avoid dominating the landscape and prominence of the domes.

A long area of land extending from the Outreach Telescopes to the Residential Precinct was identified (the ‘Technology Facilities’ area) for the ongoing function of the university for research and manufacturing purposes. A development site with up to 3000m of floor space is proposed, including buildings that could ‘dominate the landscape’. Careful consideration of the heritage impacts of developing within this large area would be needed to develop appropriate design responses to avoid dominating the landscape and prominence of the domes.

The ‘Residential and Miscellaneous’ area was flagged as the primary location for ongoing student and visitor accommodation for the site. Ongoing residential use is appropriate for this area, avoiding the existing and former house sites and utilising infill design principles.
Figure 8.1 Key Areas Plan, showing localities identified in Master Plan as opportunities for redevelopment or new development. (Source: Tract Consultants, Master Plan 2030, 25 October 2013 p 58)
HMP Precincts—Development Areas

This HMP identifies potential areas where new buildings, infrastructure or development could be acceptable in regard to the heritage values and character of the historic precincts, as well as the overall Mount Stromlo Observatory Precinct.

Descriptions of the areas are provided below within the site precincts and are shown in Figure 8.2.

New development is not restricted only to within these areas; however, they are identified as spaces generally considered appropriate for future development from a heritage context.

Heritage advice would of course form part of the design process and a Heritage Impact Assessment would need to be prepared for any new development proposal or action with potential to have a significant impact on the Commonwealth Heritage values of the site.

**Main Observatory Precinct**

Development should be limited/avoided within the Main Observatory Precinct in order to retain the historic relationship between the existing dominant structures (the Commonwealth Solar Observatory Building, the Director’s Residence and the Oddie Telescope Building). New structures along the ridge should be avoided to retain the prominence of existing structures from a distance.

Development in this area needs to respect the planned nature of the core area and its open park-like character. It needs to carefully consider the curtilages of the significant buildings in this precinct which date from the early establishment of the site.

**Telescope and Workshop Precinct/Current RSAA Precinct**

Development in both the Telescope and Workshop Precinct and the current RSAA Precinct to support the ongoing function of the Mount Stromlo Observatory Precinct as a research and optical manufacturing facility is appropriate. The Telescope and Workshop Precinct also has a public/visitation focus, with the Visitor Centre, Yale Columbia Telescope Building, the 74inch Telescope Dome and Outreach Domes located at the eastern end of this precinct.

A large area of land extending across parts of these precincts, west facing over the Murrumbidgee Valley toward the Brindabella Mountains would suit additional facilities for the purpose of the RSAA and the Observatory’s function. The eastern end of this site could have a public visitor interface, particularly due to the proximity of the existing Outreach Domes.

This site covers relatively steep terrain on the slope of the Mount Stromlo ridge. Similar to the nearby AITC building, careful consideration would be required to ensure new development fits into the landscape and responds to the topography of the site and the realities of bushfire hazards. It is important in this area to avoid reducing the prominence of remnant domes.

**Residential Precinct**

Development in the Residential Precinct is generally permitted to support the ongoing function of the Observatory by providing accommodation for staff, visitors and educational purposes. New development in this area should avoid the platforms and curtilages of the remnant and former (demolished) house sites and gardens. New buildings should be of a domestic nature, single-storey with low scale and footprint, respectful of the historic landscaping and observing the spatial arrangement of the precinct in terms of layout, siting and setbacks. Should larger scale
accommodation buildings be required, this could be located in the vicinity of the current RSAA Working Precinct (ie near Faulkner Court), rather than within the low scale Residential Precinct

Areas Outside Precincts

A potential development site is an area facing east and on the main road approach into the public part of the site, to the east of the Main Observatory Precinct. Due to its location away from the RSAA working and functional area of the site, development here could have a public/visitor outreach purpose. The Master Plan has designated this position for a gondola terminal, connecting to the neighbouring Stromlo Forest Park. This location is visible from the direction of Canberra. Therefore, it is important to ensure that low scale, recessive design principles are used. Opportunities for development within the broader landscape of the site can be readily assessed using the development control principles outlined above.
Figure 8.2 Indicative development area plan, showing areas within the Mount Stromlo Observatory Precinct and historic precincts where well designed sympathetic new development could generally be considered. Note the specific development guidelines and recommendations for these areas are provided in Section 8.6.2. (Source: GML edit on ANU base plan)
8.7 Endnotes

1 Scenic Landscape Architecture, Mount Stromlo Observatory Landscape Plan, 2004; and Tanner, Mount Stromlo Observatory Precinct—Conservation Management Plan, report prepared for the RSAA and ANU, 2004.


3 NSW Heritage Office and RAIA NSW Chapter, Design in Context: Guidelines for Infill Development in the Historic Environment, June 2005.

4 Tract Consultants, op cit, p 56.

5 Tract Consultants, op cit, p 56.
9.0 Interpretation Framework

9.1 Introduction
This section provides an overview of existing interpretation at the Mount Stromlo Observatory Precinct and an introductory framework for future interpretation initiatives, considering the operational realities of the site and its important Commonwealth Heritage values.

9.2 Interpretation as a Conservation Process
Interpretation is an essential part of the conservation process as defined by the Burra Charter. The term interpretation means ‘all the ways of presenting the cultural significance of a place.’ This includes the treatment of heritage fabric through maintenance, restoration, etc, as well as the use of a place and the introduction of explanatory material, events and activities. Successful interpretation encourages personal appreciation and enjoyment of the experience of a place; it can also be an engaging educational tool, inspiring or deepening connections between people and places. The active interpretation of heritage places supports community recognition, enjoyment and understanding of the site’s heritage values and significance. Interpretation can also be a useful tool in explaining the layers of change at a heritage place. Importantly, the maintenance and retention of the heritage fabric at the Mount Stromlo Observatory fulfils an interpretative role in itself.

9.3 Interpretation on Site
9.3.1 Existing Interpretation
Previously there was limited interpretation signage on site, most of which was installed around the site after the 2003 fires. The signs had ANU branding with a similar colour palette and font use for consistent presentation between signs. The signs were in poor condition, with some illegible, due to weathering damage and sunlight (Figure 9.1). These signs were renewed and replaced as part of the Interactive Heritage Trail (2014) (Figures 9.2-9.4).

Signage is always an integral component of heritage interpretation, but it is not all that is needed. For many audiences signage is a comfortable and familiar technique, yet today’s audiences are increasingly sophisticated and expect far more than a sign to communicate what’s significant about a place. Signage is useful for conveying static information such as text, maps and imagery. It is well suited to site orientation, and managing and controlling visitor behaviours and movements; it can also accommodate information in several languages.

But for large places or landscapes with multiple precincts and elements like Mount Stromlo, a signage system and hierarchy can do much more to create and communicate a cohesive identity and image. A signage system for the Mount Stromlo cultural landscape and its individual sites should utilise the same palette of materials and be designed to focus on the broad landscape context, as well as specific features or elements of interest within the site.

At Mount Stromlo, signage should be sensitively designed and thoughtfully sited to lead visitors around the site, enhancing the personal visitor experience and articulating the significance of the different precincts and landscape settings. Signs need to be cost effective, robust and used judiciously to avoid clutter and confusion. Today, signage is often being supplemented or replaced by mobile phone apps as used in the Interactive Heritage Trail.
9.3.2 Interpreting the Cultural Landscape of Mount Stromlo

The landscape of Mount Stromlo is itself a historical artefact, the product of natural and cultural shaping forces—geology, settlement, scientific research decisions, fire and recovery. At Mount Stromlo, landscape interpretation will need to work well across the landscape as a whole and at individual sites. Interpretation should aim to encourage a sense of ownership and responsibility for the care and conservation of the cultural landscape; and encourage appreciation and respect for its significance by both visitors enjoying the site and staff responsible for its management.

Most of the native vegetation associated with Mount Stromlo has been removed due to forestry and observatory activities; and the entire landscape has been severely and repeatedly modified by fire. Some of the introduced cultural plantings have specific historic significance, such as the Chinese Elms and oak tree planted by Mrs Duffield and the post-2003 fire garden remnants of the residential precinct. The Observatory’s precinct based layout and surviving/newly revealed historic views and vistas are all readily interpretable components of the site’s significance (Section 6.0). These stories need to be integrated into the new interpretation of the Mount Stromlo Observatory.

The garden and landscape area of House 19 (demolished) and the landscape elements—including the rock walls, croquet lawn and bulb fields surrounding the Director’s Residence—should be reinstated as much as possible as the self-contained domestic environments they once were, as well as interpreted and presented as part of the Mount Stromlo Observatory story.

Landscape reinstatement can also enhance the experience of various precincts and increase the site’s authenticity. The original dark vegetation planting of the mountain hillsides which were selected to reduce heat glare and blurring for the telescopes deserves particular consideration in developing a Landscape Management Plan for the site. Selective management and potential reinstatement of specific cultural plantings can contribute to the visual complexity of the site and provide a means to interpret the history of this cultural landscape.

9.3.3 Interpreting the Buildings and Ruins of Mount Stromlo

The remaining buildings and structures of Mount Stromlo are the tangible cultural heritage resources that demonstrate how the Observatory community and institution have responded to the environment and changed through time. The fabric and spaces, materials and finishes all contribute to the experience of Mount Stromlo and reflect important aspects of its history of occupation, damage and use.

The telescope base ruins and dramatic reflector arms, and the reconstructed building are relatively easy to appreciate; but interpreting different elements of the fabric and construction techniques of various structures can also reveal further insights into the stories of the site.

Special interpretation techniques can be used to demonstrate conservation in practice of historic layers of fabric—that is, cross-section cutaways, interpreted paint scrapes and retained remnant layers of wall finishes—can all provide exciting real windows into the past of the Observatory. Such devices can help nurture an understanding of changes to the site through time and promote ANU conservation practice and processes. These techniques will require additional interpretation resources, because to some visitors it is not obvious what is being shown or why. Some people may perceive exposed and damaged building fabric as unfinished work rather than a glimpse into past construction techniques and the dramatic history of fire and recovery.
Commonwealth funding is enabled stabilisation and access to the ruins of the former Director’s Residence (see Section 7.4.1) with the introduction of audio-visual interpretation. The project was completed in 2014 and now plays a pivotal role in visitor understanding of the site and its wider heritage values.

9.3.4 Art as Interpretation

The use of place based public art presents a great opportunity for ANU to enliven and distinguish the heritage and identity of the Mount Stromlo Observatory. The historically rich cultural landscape can be re-interpreted through sculpture, stencils, murals and other creative media. Public art can be integrated along paths, bike trails and scenic walks forming part of the site signage strategy, or can be used as landmarks.

Artwork could be commissioned as a project through annual engagements with the ANU Art School or via public competition. Artwork provides a great mechanism for attracting other thoughts and perspectives about the site. It can help reveal aspects of its history that are not immediately visible and provoke a sensory reaction on the part of the visitor. Public art displayed in a landscape setting, either on an ephemeral or permanent basis, can enliven and enrich the environment and draw significant audiences to the locality. Sculpture by the Sea is one example of an annual Sydney and Perth event that has become increasingly popular and each year draws larger audiences and more media coverage. A similar project by the ANU Art School based on the heritage values of Mount Stromlo could share similar success.

Public art gets people talking and can direct people around the site in a particular way. Artworks can often stimulate emotional responses or spiritual connections that other interpretation techniques or devices cannot, and may prove important memory valves for the community fire and recovery experience.

Already there are individual works of public art which interpret themes of astronomy on display at the Mount Stromlo Observatory (Figures 9.5–9.6).
9.3.5 Guided Tours, Self-Guided Walks on Site, Public Programs and Special Events

Guided tours and self-guided trails are a wonderful means of enabling people to explore the wider cultural landscape of Mount Stromlo and make connections between its precincts. Walking trails can engage people actively in choreographing their own experience of the site by enabling them to choose from a variety of routes or places to visit. Trails can assist in visitor management and help direct flow,
concentrating wear and tear in specific locations and avoiding areas of the working precinct where visitors would not be especially welcomed.

ANU provides regular guided tours of the site, and it is important to ensure that training and delivery needs be regularly reviewed and refreshed to keep guides engaged and enthusiastic in their visitor relationships.

Alternatively, artworks may be specially commissioned or directional signage carefully sited to ensure visitors are able to find their own way and make choices easily and quickly. Signage along routes can be designed to provide information, engage the senses and create an identity that reflects the character of the locality. Route markers can add to this experience.

At Mount Stromlo, textures, stencils and other motifs can be inlaid in site pathways to arouse visitor interest and curiosity. Techniques such as stencilling can be cheaply applied and refreshed, and is especially exciting and fun for children.

Access issues also need to be carefully considered when planning trails to provide as many visitors as possible with the opportunity to enjoy the experiences that are offered by Mount Stromlo.

The Interactive Heritage Trail updated a previous brochure and is presented in line with the heritage values of this HMP and incorporated into the regular ANU tours of the site.

Public programs and events to engage local people and the wider community in the history and heritage of Mount Stromlo can also be a distinct means for people to enjoy themselves and a way to leave a lasting impression, as well as a sense of excitement and anticipation regarding future events. Mount Stromlo is a site that almost everyone in Canberra knows, but not as a place at which performances, music or re-enactments can bring aspects of its extraordinary scientific achievements and historic past to life. ‘Back to’ or commemorative events can help reconnect people and communities and keep alive the important associations, memories and experiences of Mount Stromlo.

Special events at Mount Stromlo have been associated with the centenary of the establishment of the Oddie Telescope in 2011 (a replica of the telescope was constructed and a costumed re-enactment event held on site) and the 10 year commemoration of the 2003 fires in 2013 (Figures 9.7–9.8). The number of topics and themes that can be covered through public programs is only limited by imagination and resources, and can be managed to coincide with school holidays or other times of the year when the climate is favourable.

Figure 9.7 Centenary of the establishment of the Oddie Telescope. (Source: GML 2011)

Figure 9.8 Commemorative event for the 10 year anniversary of the 2003 fires. (Source: GML 2013)
9.3.6 The Mount Stromlo Observatory Archaeology and Collections of Objects

Interpretation of the site's archaeological evidence and collection of objects provides another means for communicating the history and heritage significance of Mount Stromlo. The post-fire archaeology of the site provides an insight into the lost traces of the site's early configuration, and occasional guided tours (Heritage Week, Canberra Day) by trained interpreters or archaeologists can provide face to face commentary about the site's history and the process of archaeology. The physical evidence of what archaeology reveals about the site and its people in the past could be an engaging component of ANU public programs at Mount Stromlo.

The Mount Stromlo Observatory has donated various burnt and melted astronomical items salvaged from the 2003 fires to other Canberra institutions such as the Australian War Memorial and National Museum of Australia (NMA) (Figures 9.9–9.10). There are also items from the Mount Stromlo Observatory collection displayed on site which tell the story of the establishment of the Observatory from inception to the present day.

The post-fire display of the Observatory objects allowed visitors to imagine stories and events at Mount Stromlo by thinking about the former use and life of the objects on display. More robust objects were made available for visitors to touch. Such displays and exhibitions are a great way to ‘set the scene’, providing enough information for people to gain an understanding of the Observatory and to select themes or specific places that they might want to explore further across the site.

However, exhibitions can be expensive and have a limited lifespan; they date and require content to be refreshed every five to eight years. They often require special lighting, adequate space, security and sometimes special environmental conditions if sensitive materials or objects are exhibited. A place based section in the exhibition space at the Mount Stromlo Visitor’s Centre would be a good central place for people to congregate and start their journey or exploration of the Mount Stromlo site. There, visitors can park, find out about what’s on, visit the cafe, view the display and pick up a site map to orientate themselves and get a feel for the places they are most interested in visiting.

![Figure 9.9](image_url) Object No. 2004.0002.0005 from the Mount Stromlo Observatory Collections. A china teacup with part of the molten aluminium observatory roof attached and black burn marks. (Source: NMA)

![Figure 9.10](image_url) Object No. 2004.0002.0001 from the Mount Stromlo Observatory Collections. Fire damaged 1950s era autocollimator. The main metal barrel of this alignment instrument is blackened and blue from being highly heated, and the lens in one end remains in situ but is shattered. (Source: NMA)
9.3.7 School and Other Education Programs

The RSAA invites schools to participate in an outreach program of visits to the Observatory. School groups visit the Mount Stromlo Observatory on selected evenings throughout the year to watch a 3D astronomy movie as an introduction to the main part of the evening—a stargazing session using Stromlo's outreach telescopes and a Question & Answer session with professional astronomers.

Complementary site tours could be developed and tailored to suit appropriate school curricula areas such as science, technologies and/or humanities and social sciences. This would need preparation of an education kit and teacher/guide training, but could extend school visits and assist in youth understanding of the Commonwealth Heritage values of Mount Stromlo.

9.4 Objectives for Future Interpretation of Mount Stromlo

Implementing selected interpretation initiatives is an essential component of the heritage management plan and will increase public awareness of all phases of the development and history of the Mount Stromlo Observatory, promoting in turn the work of the ANU and RSSA.

9.4.1 Develop an Interpretation Strategy

The development of a specific Mount Stromlo Interpretation Strategy would provide a clear approach to the interpretation initiatives appropriate for the site and would include a review of existing signage, brochures and Internet material for consistency with identified heritage values, site identity, desired messages and up to date information. Based on clearly identified themes, ANU could then develop a program to upgrade the site signs/brochures as necessary. A piecemeal approach to interpretation should be avoided. All new interpretation should be developed within a Mount Stromlo Observatory.
brand with co-ordinated colour, font and signage. An Interpretation Strategy would assist in a unified presentation which avoids repetition and confusion between interpretation at different areas of the site and uses a variety of media.

The location of signs and notices should be reviewed as part of any upgrade to ensure optimum interpretation benefit.

9.4.2 Potential Audiences

An Interpretation Strategy should tailor interpretation to potential audiences and generate visitor numbers appropriate to the carrying capacity of the site. Likely audiences for interpretation at the Mount Stromlo Observatory include a mixture of scientists and staff connected with the RSAA, casual recreational visitors who come to admire the view and visit the cafe, bushwalkers and cyclists, and educationally motivated members of the public interested in either the scientific or heritage aspects of the site. There are also school groups from primary school, high school and university, and community astronomical society members.

9.4.3 Messages to Convey

The strategy should identify key interpretation themes and messages for the site. The interpretation messages should closely echo the heritage values and stories of the Mount Stromlo Observatory (Sections 2 to 6) and the policies (Section 8) employed to conserve those values. Effective communication of key messages will both raise the profile of the Mount Stromlo Observatory and assist in conveying messages of its heritage significance. Interpretation should include the landscape setting, buildings, scientific history of astronomy and history of the development of the site, and the associations and meanings attached to the site throughout its whole history of occupation. The key phases of development at the site identified in this HMP should all be interpreted, with no one aspect dominating the others.

Specific key themes and messages drawn from the heritage values may include:

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<tr>
<th>Themes/Values</th>
<th>Messages</th>
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• The establishment of the Observatory and its continued function as a research, education and academic facility.  
• Key events in the site’s history (ie devastation from the 2003 fires). |
### Themes/Values | Messages
---|---
**Aesthetic** | • The landscape setting including the ridge, steep site, approach, vegetation and views.<br>• Division of the site with distinct functional areas, and the layout and spatial arrangement of the buildings.<br>• The structures and iconic white domes atop the mountain and along the ridge.<br>• The evocative reminder of the 2003 fires demonstrated by the ruins.

**Social** | • Living on site, the residential community and coping with the adversities of isolation.<br>• Rosalie Gascoigne and the site’s influence on her art and inspiration.<br>• The 2003 fires; destruction, rebuilding and commemoration.

**Research/Scientific** | • Scientific discovery and achievements as a result of work at the Observatory.<br>• Significant people/scientists involved in research on site.<br>• The continuing use of the site for astronomical research and technological development.

The Mount Stromlo Observatory (as a place of work) where outstanding scientific development at the centre of cutting edge scientific discovery (in the past, present and into the future) can be contrasted with its isolated rural setting (as a place of residence) in its early years. Likewise, the peace and harmony of nature and the landscape views contrast with that other natural Australian phenomenon which is anything but peaceful—fire.

Although not a specifically identified heritage value for Mount Stromlo, the Aboriginal community (who were consulted during this project) were interested in the Aboriginal cultural background of the general area being interpreted as part of any Mount Stromlo Observatory visitor experience. Further liaison with Aboriginal representatives is recommended to develop this concept.
9.4.4 Opportunities for Associated Interpretation and Partnerships

There exist opportunities for the ANU and the RSAA to establish and cultivate links with associated Canberra community groups, universities, museums and other relevant institutions.

The Canberra Astronomical Society (CAS) is committed to promoting co-operation between amateur and professional astronomers, and has active public outreach and education programs. CAS has forged strong links with RSAA at the Mount Stromlo Observatory, with members on the staff. The outreach domes are used for public nights and student projects.

There are opportunities for links with the University of Canberra and ANU within their heritage and conservation programs to get students involved in the physical process of conserving buildings. The ruins provide ideal case study projects for understanding physical conservation processes and interpretation.

Additional partnerships to be further explored include other local and national science and astronomy institutions to expand on visitor outreach and education.

9.4.5 Australian Museum of Astronomy and Space Science

The proposed development of the AMASS at Mount Stromlo would provide additional interpretation opportunities, and facilitate an increase in visitation to the site.

The 2011 Planning Workshop for the AMASS identified that the museum should tell a uniquely Australian story. There would be a focus on astronomy and space science in Australia’s culture (including Aboriginal astronomy); the southern sky; and Australia’s geographical position, linked in with the history of Mount Stromlo and other local places, as well as national sites.

The development of the AMASS should be undertaken with careful consideration of the direction for interpretation for the Mount Stromlo Observatory Precinct. The preparation of the Interpretation Strategy would assist in providing an integrated approach to interpretation at the site.

9.4.6 Develop an Internet Presence for Off-Site Virtual Interpretation

The ANU and RSAA could develop an internet presence to convey information about the identified heritage values of the Mount Stromlo Observatory and their conservation. The internet presence should be user-friendly and have all information related to the history, heritage values and interpretation of the Mount Stromlo Observatory in one easily locatable place. Opportunities to showcase collection objects not housed at the Mount Stromlo Observatory should be explored. Off-site virtual interpretation is also a means of addressing difficult accessibility issues and providing a different visitor experience for the mobility impaired.

9.4.7 Site Marketing and Visitor Numbers

Strategies for dealing with increased visitation would need to be assessed following careful market analysis and may include extended opening hours and/or additional accessible areas for late night stargazing to appreciate all the site has to offer.

9.4.8 Improve Site Access and Facilities

With the potential for rising visitor numbers over time, and particularly if the site’s public exposure and accessibility increases, additional site facilities for education and interpretation needs should be investigated and implemented where there is no conflict with the conservation of heritage values.
Provision for access by all ability groups should be investigated and implemented as conservation constraints permit. Alternative interpretation delivery for disabled groups should be explored.

**9.4.9 Develop a Program of Themed Events, Changing Exhibitions and Community Participation**

A program of themed events, changing exhibitions and community participation will assist in engaging the local Canberra community in the Mount Stromlo Observatory. These events could be organised in tandem with stakeholders and partners as identified in an Interpretation Strategy.

Suggestions include rotating display content and temporary exhibitions which draw on the themes identified above. Other possibilities for consideration include special events (poetry nights or music presentations), and additional commemorative events and temporary art installations. The potential use of the remnant domes and ruins to house exhibitions, interpretative displays and audio-visual content should be further explored.

**9.4.10 Develop Monitoring and Evaluation Processes**

Develop a means of review and evaluation to ensure that operational aims, conservation objectives and interpretation needs are being met; standards are kept high; and further investment in interpretation is suitably targeted. An annual workshop of staff and stakeholders can provide the opportunity for such discussion.

**9.4.11 Ensure Funding and Adequate Resourcing for Interpretation**

Ongoing funding and resourcing will be required to successfully undertake full interpretation at the site. Some costs may be recouped with the use of volunteers, donations and merchandising of guide books, audio tour sales or ticketed themed events. The vitality of the site will spring from excellence in interpretation and regular public programs, partnerships and engagements with community groups, as well as the development of diverse audiences.

**9.5 Conclusion**

Heritage interpretation is an essential part of the conservation process. It translates how heritage values can be appreciated and understood by the general public. Interpretation initiatives need to move visitors beyond the standard appreciation of a grand historic house or objects displayed and interpreted in a museum glass case into portraying the nationally significant role that the Mount Stromlo Observatory has played in Australia’s scientific development, as well as its recent fire and recovery experiences. Interpretation is vital if the significance of this special site is to be well conveyed—it is an integral part of heritage conservation and management processes.

**9.6 Endnotes**

4. *ibid*, Article 15.
10.0 Appendices

Appendix A
CHL Citation for the Mount Stromlo Observatory Precinct, Place ID 105309

Appendix B
Compliance Table for Schedules 7A of the EPBC Act Regulations

Appendix C
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Mount Stromlo Observatory Conservation Management Plan 2004—History
Appendix A

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Mount Stromlo Observatory Conservation Management Plan 2004—History