people place heritage

CONTEXT

SIDING SPRING OBSERVATORY

Heritage Management Plan: Volume 2

Final Inventory
June 2015

Prepared for
Australian National University

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Report Register

This report register documents the development and issue of the report entitled *Siding Spring Observatory: Heritage Management Plan: Volume 2* undertaken by Context Pty Ltd in accordance with our internal quality management system.

Project No.	Issue No.	Notes/description	Issue Date	Issued to
1827	1	Volume 2: Final Inventory	17/06/15	Amy Jarvis, ANU Heritage Officer

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1 INTRODUCTION

1.1 Project Background

In March 2014 the Facilities and Services Division of the Australian National University (ANU) commissioned Context Pty to prepare a Heritage Management Plan (HMP) to identify and assess the heritage values of the Siding Spring Observatory (SSO) and to provide conservation and management guidance based on these findings.

The SSO was built in the early 1960s as a field station of the Mt Stromlo Observatory in a bid to distance Australia's astronomical research from the increased light pollution from Canberra. Since that time, the SSO has become Australia's principal centre for astronomical research and the facility continues to be used by scientists from around the world.

In 2012 ANU prepared a Preliminary Assessment of the 40 Inch Telescope Building at the SSO and identified at least historic, representative, creative/technical and associative values for the site. Previous to this, in 2006, a Community Based Heritage Study undertaken for the former Coonabarabran Shire assessed the Observatory as being of State level heritage significance, as well as being an important tourism icon for the region.

This HMP forms part of the continued ANU program to identify and assess the value of heritage places under its management in accordance with the Commonwealth *Environment Protection and Biodiversity Conservation* Act 1999 (EPBC Act) and in line with its Heritage Strategy. This HMP follows the production of studies for other ANU managed sites - Mt Stromlo Observatory and Acton Campus.

The HMP also provides direction for the Siding Spring Campus Master Plan 2030 which is currently in preparation. The Campus Master Plan is intended to act as the anchor document for the ANU's development processes, providing a coherent framework for future development.

In summary, the HMP conveys a full understanding of the heritage values attached to the SSO, in order to:

- provide inputs into masterplanning for the site
- inform possible nomination to the Commonwealth Heritage List (CHL)
- meet with best practice in site heritage conservation and management; and
- develop specific heritage policy and recommendations to guide future management.

1.2 Report format

The HMP comprises two volumes, of which this volume is the second.

Volume 1 of the HMP comprises eight sections, as listed below.

Section 1 – This introductory section sets out details of the project background and the study area. It then describes the broad project methodology (this is explained further in relevant sections) and the structure of the report.

Section 2 - This section sets out the history of the Siding Spring Observatory, as a foundation upon which to determine its heritage significance. It begins by describing the wider context within which the site was established, and then provides a historical account for the Siding Spring Observatory itself.

Section 3 - This section describes and analyses the physical place and its setting, including the structures, various discernable areas and other features within the site and its archaeological potential

Section 4 - This section responds to the previous sections and provides an analysis of the historic, social, community aesthetic, Indigenous and natural values of the SSO site

Section 5 - This section provides an assessment of the cultural heritage significance of the Siding Spring Observatory. It applies the Commonwealth Heritage Criteria to the SSO site and then presents a Statement of Significance for the place as a basis for the policy and management recommendations provided in the following section. It then identifies the attributes to which this significance is attached and discusses their relative significance.

Section 6 - This section discusses the current and future management situation at the site and identifies issues that should be considered in managing its heritage values.

Section 7 - This section contains the heritage management policy and implementation recommendations for conserving and managing the heritage values of the SSO site

Section 8 – This section sets out the references used in the production of this HMP.

A series of appendices to Volume 1 contain the following:

- Commonwealth Heritage List Criteria
- The results of the online survey conducted to inform this HMP
- Notes from interviews about the SSO
- A review of existing materials relating to aesthetic value:
  - Image examples of Aesthetic Value Expression in the Public Domain
  - Text Examples of Aesthetic Value Expression in the Public Domain
- A list of species recorded at the SSO
- Details of this HMP's compliance with the EPBC Act.

1.3.4 This volume

This volume: Volume 2 of the HMP, comprises an inventory of the buildings and structures on the site. It contains information relating to each building or structure and its history, description, condition, heritage significance and relevant management recommendations.

The inventory is cross-referenced to a specially prepared GIS (Global Information System) mapping layer. It is intended that this can be aligned with ANU's current databases and mapping capabilities to provide a useful site management tool that can be viewed, searched and updated as appropriate. This will also enable individual components to be linked to relevant heritage listings in the event that the site or particular parts of it are designated. It will also enable illustrative maps to be produced quickly and easily and facilitate the export of data to other ANU departments and stakeholder organisations.

2 THE SIDING SPRING OBSERVATORY INVENTORY

(Arranged according to ANU Building number)

N001 - UK Schmidt Telescope (UKST)

ANU ID Number	**N001**
HMP Number	**001**
Type	**Astrograph**
Ownership	**ANU (Building only) AAO owns Scope and all internals of building**
Management	**AAO**
Status	**Active**
Date constructed/ installed	**1972-73**
Level of significance	**High**

(Source: Context 2014)

(Source: AAO)

History

The UK Schmidt telescope (UKST) was built by the British Science Research Council concurrently with the construction of the AAT. The construction the buildings to house the telescope began in 1972, and the telescope commissioned and opened in 1973. The telescope

was built on site, 1km northeast of the AAT dome, but was not part of, or under the management of, the Anglo-Australian Observatory at this date. The UKST formally opened in 1973. It was operated by the Royal Observatory, Edinburgh, until 1988, when it became part of the Anglo-Australian Observatory (ANU, 'UKST"; AAO, 'UK Schmidt'; High Ground Consulting 1006:43).

The UKST is a survey telescope with an aperture of 1.2m (48 inches) and a very wide-angle field of view; compared to the Anglo-Australian telescope which has a narrower field and view (Figure 30). The UKST surveys large areas of sky at a more rapid rate, leaving the more detailed study to the larger Anglo-Australian Telescope (ANU, 'UKST"). The telescope is one of three large Schmidt units operations in the world (Whitehead 2008:361). Later additions to the building included an office and laboratory to the north and east elevations, which are shown on Bunning and Madden drawings dating to December 1974 (ANU plans).

The telescope was commissioned in 1973 and until 1988 it was operated by the Royal Observatory, Edinburgh. From 1988, the UKST was operated by the Anglo-Australian Observatory on behalf of the ANU, funded by the 'RAdial Velocity Experiement' (RAVE) project, which measured physical parameters for over 500,000 stars in the Milky Way galaxy. In 2014, the UKST is being refurbished in preparation to conduct the 'Taipan galaxy survey' and 'Funnelweb stellar survey', planned to begin in 2016 (ANU, 'UKST").

The UK Schmidt Telescope is located within its own small independent cadastral boundary, within the ANU site. This lot (along with the subdivided lot for the Faulkes telescope) was subdivided in 1972 (ANU plan, 'SSO plan boundary redefinition & survey of encroachments', c1970s; ANU plan N908/S/018/1of3). [Q to client, is there a lease to the AAO for this AAT and UK Schmidt telescope? Is any of the land leased out to other companies?]

Description

A rectilinear two level brick structure, comprising a large ground level approximately 23m by 26m in dimension supporting a second level on a smaller footprint, surmounted by a large central telescope dome. The base structure contains offices and laboratories connected by a central stair and another spiral stair in the building's south west corner, and a third stair connects the second level to the telescope chamber in the dome and also provides access to an external walkway around the second level. Two roller doors on its southern side provide access to a large central workshop and stores. Originally the lower two floors appear to have followed the same dimensions, but additions to the lower level, to create additional ranges of rooms on its west, north and eastern sides, have expanded the lower storey, and the resultant stepped structure with its central dome now has something of the appearance of an Islamic mosque or Hindu temple religious building. The brick construction has been bagged, painted white and surmounted with segmented metal cladding. The dome is of aluminium sheet construction. The additions were designed by Bunning and Madden in 1974 and, like both the Workshop and Visitor Centre by the same architects, the UK Schmidt building has deep metal eaves that unify and define its form and represent part of an overall site design language. The building is sited by itself on a prominent rise at the eastern end of the SSO site and early site photos indicate that the building's site was created through a substantial cut and fill exercise.

Condition

Good condtion generally although it is understood that an accident with the telescope resulted in some internal damage. The building was unoccupied at the time of the site insepction. Telescope is to be refurbished for use 2015.

Threats

Main threat would result from an ongoing lack of use. Also, although no vegetaiton is located close to the structure large trees are located north east of the building and could be a bush fire risk.

Masterplan issues

Isolated location and limited space around it for associated new development. Any proposed external alteration may impact its strong visual appearance and form.

Relevant policies

12 Relationship with the AAO

21 Bushfire planning

22 Primary uses of the Siding Spring Observatory

25 Conservation of general form and layout of the site

27 Maintenance planning and works

29 Condition monitoring

32 Moveable heritage

33 Removal of significant equipment

34 Relationship to Warrumbungle National Park

35 Relationship to the broader landscape

42 Interpretation planning

47 Visitor offering

N002 - 40 inch Telescope

ANU ID Number	**N002**
HMP Number	**002**
Type	**Telescope**
Ownership	**ANU**
Management	**ANU**
Status	**Redundant [telescope donated to Milroy Observatory in 2009]**
Date constructed/ installed	**1963-64**
Level of significance	**High**

(Source: Context 2014)

History

The first telescope at the new site was the 40 inch telescope of advanced design, ordered from the American firm Boller and Chivens in 1961, with an expected delivery date of 1963. First, a road was constructed, utilities laid and the building and dome erected to house the telescope. Designed for photography or photoelectric work, the 40 inch telescope was used to undertake cutting-edge research work. The telescope was fitted with an optical corrector plate, a special device designed by Ben Gascoigne, an optical specialist. It was the most advanced telescope the MSO possessed (Gascoigne et al. 1990:49-52; ANU, '40 inch'; ANU preliminary heritage assessment). The building also contained living quarters and a library as well as a workshop area (ANU preliminary heritage assessment).

On 12 February 1964 the telescope was in place and the first images were taken at the Siding Spring Observatory, by Ben Gascoigne. The following month, the telescope was in full operation as a multi-use instrument. Within its first 14 months of operation, it was used by Professor Bart Bok and his wife, astronomer Priscilla Bok, to undertake their renowned research into the structure of the Milky Way and Magellanic Clouds. Later Director, Olin Eggen spent at least one week per month at the 40 inch telescope (Gascoigne et al. 1990:49-52; ANU, '40 inch').

In more recent years, CCD imagers and spectrographs were built for the telescope, which extended its capabilities. From 1999, a Wide Field Imager camera was used broadly. Research projects carried out using the 40 inch Telescope include those related to observational cosmology, the dynamics and evolution of galaxies, the structure and evolution of the Milky Way, stellar astrophysics, the search for extra-solar planets and the aforementioned project relating to Magellanic Clouds (ANU, '40 inch').

The telescope has since been removed from the building and was donated to a local astronomy group, the Milroy Observatory (ANU preliminary heritage assessment, Tourist Centre info brochure). The telescope has been conserved and is used for visitor observations (see Sections 3.2.1 and 3.7). [Also see Milroy Telescope listing]

Description

A two story rendered brick structure, similar in configuration and construction to 16" (N05) and 24" (N07) telescope buildings, with a dome at the southern end at the upper storey level. The ground floor contains several now vacant rooms which were previously used as offices, a workshop, a library and storage cupboards. A dark room and WC retain their fittings, including shelving, related equipment and signage in the case of the former. Most of these rooms now feature suspended ceilings and carpet tiles. The space beneath the dome contains a loading area, lit by two small windows and accessed via a roller door at the south end of the building, and the hydraulic ram which lifted the adjustable floor within the telescope dome.

On the upper floor a laboratory is next to the dome whilst two bedrooms, a common area and a kitchen occupy its northern portion and there is an external balcony at its northern end. All of the second floor rooms feature original timber floors, partial wooden wall panelling and fitted wooden furniture. The dome structure has concrete walls and a concrete floor over which is a circular steel platform which could be hydraulically raised up, and a concrete stair within the dome enables access to this floor when raised. The dome itself, which is constructed of aluminium sheet over a timber framework, supports strip lights and a small gantry crane rated to carry 250kg. An external metal balcony runs around the dome at the southern end of the building.

Early photographs show the concrete render of the structure and aluminium sheet of the dome exposed. But the whole building has been painted white since at least the early 1970s.

The building contains numerous items of moveable heritage relating to its use, including original chairs, notice boards, magazine and filing racks and various pieces of out-of-date equipment.

Post construction alterations are fairly few, but include the infill of a ground floor window to the south west and the addition of ember screens following the recent fires.

Condition

The building is in fair condition, with only cosmetic damage/deterioration relating to water damage of the external render. Dead mice observed inside suggest some infestation.

Threats

The building is no longer used - the telescope itself having been removed. Examples elsewhere on the site suggest that the wooden dome will be prone to deterioration.

Masterplan issues

Disuse. Distance from visitor centre. Valuable site (the KMTNet development was prevented from using it on heritage grounds)

Relevant policies

23 Compatible uses

25 Conservation of general form and layout of the site

27 Maintenance planning and works

29 Condition monitoring

30 Standards of Maintenance

31 Records of intervention and maintenance

33 Removal of significant equipment

38 Minor new works to existing structures

42 Interpretation planning

47 Visitor offering

N003 - Administration Building

ANU ID Number	**N003**
HMP Number	**003**
Type	**Administration**
Ownership	**ANU**
Management	**ANU**
Status	**Active**
Date constructed/ installed	**1972-1974**
Level of significance	**Moderate. Later extensions at each end.**

(Source: Context 2014)

History

The Administration Building was built between 1972 and 1974 to serve the Anglo-Australian Telescope. The building also incorporates the site's Private Automatic Branch Exchange (PABX) telephone switching system, which were both built around the same time.

Description

A single-storey brick administration building with a corrugated metal ridge roof which extends forward of the front (south) façade to form deep eaves which are supported on metal stanchions. The building comprises an original central portion, with a now blocked hearth and chimney at its eastern end, and later extensions of the same brick and corrugated metal construction to either side. The main entrance to the building is in the centre of the original building's southern façade. This is accessed via a raised stone-faced and concrete floored verandah which extends from here to the east side of the building and a small pvc entrance porch which is another more recent addition. The verandah has been extended east along the

southern side of the eastern extension. A rear door is located in a corresponding position in the centre of the building's north side, and a small flat-roofed brick annex to the immediate west of this is an original element. Internally, the main building, which appears to have been renovated relatively recently, contains an open office space with a second office opening from it. To the rear of these rooms are a kitchen, toilets and a back room which has been sound proofed, probably for previous use as a sleeping room for astronomers, and now contains plan chests containing a large collection of architectural drawings (perhaps including some originals) relating to each of the buildings on the site. The western extension (see entry for PABX facility) opens from this room. The eastern extension, which is accessed via the kitchen, comprises a large meeting room. Several garden trees flank a concrete path leading from the rear of the building. As with all of the buildings on the site, cinder screens have been added to all of the windows and vents since the 2013 bushfire.

Condition

The building is in good condition and is in constant use.

Threats

The building is under no obvious threat under the current management regime. A thorough inventory of the drawings stored in the building should be undertaken and policy concerning their archiving and storage developed.

Masterplan issues

None specific

Relevant policies

22 Primary uses of the Siding Spring Observatory

27 Maintenance planning and works

32 Moveable heritage

43 Updating interpretation

47 Visitor offering

N004 - Skymapper Telescope

ANU ID Number	**N004**
HMP Number	**004**
Type	**Telescope**
Ownership	**ANU**
Management	**ANU**
Status	**Active**
Date constructed/ installed	**2007**
Level of significance	**Low**

(Source: Context 2014)

History

Built in 2007 (Whitehead 2008:365), the Skymapper telescope is a state-of-the-art automated wide-field survey telescope with a 1.35 metre primary mirror. Skymapper is intended to robotically create the first comprehensive digital survey of the entire southern sky in massive detail, to a sensitivity one billion times fainter than the human eye can see. The information obtained by the Skymapper will be available for public access online (ANU, 'SkyMapper telescope').

Description

The telescope is housed within a circular corrugated metal structure, built on a concrete pad, which in turn supports a spherical sheet metal dome. Three large blacked-out windows are spaced around the structure, and although it was not accessed internally, it would appear to contain a single chamber. A storage room on the north east side of the structure is of identical construction and shares the concrete pad. Warning signs indicate that this room, which has its own external entrance, contains gas which is supplied via a line from the road below. The main

structure is entered from the northwest via a deep open entrance porch, again of identical construction but supported on metals posts beyond the concrete pad.

Condition

The structure is as built and in good (operational) condition

Threats

The structure was built for a specific purpose/project and may cease to be of use on completion of that task.

Masterplan issues

The facility is approaching the point at which they will no longer be competitive for scientific research, and the ANU's research interest is the site is thus decreasing.

Relevant policies

22 Primary uses of the Siding Spring Observatory

29 Condition monitoring

33 Removal of significant equipment

34 Relationship to Warrumbungle National Park

35 Relationship to the broader landscape

42 Interpretation planning

47 Visitor offering

N005 - 16 Inch Telescope

ANU ID Number	**N005**
HMP Number	**005**
Type	**Telescope**
Ownership	**ANU**
Management	**ANU**
Status	**Redundant (telescope only)**
Date constructed/ installed	**c1964-65**
Level of significance	**High**

(Source: Context 2014)

History

The 16 inch telescope, also built for the Australian National University by the firm Boller and Chivens, was operational soon after to 40 inch telescope, c1964-65. It was designed as a photometric telescope to follow up observations made on the 40 inch telescope. It has a 20cm Schmidt camera mounted on it for photographic studies or very large nebulae (Gascoigne et al. 1990:49-52; ANU, '16 inch').

The building which houses the telescope was built to accommodate small electronic and mechanical workshops (ANU, '16 inch'). In more recent years, the telescope has not been used for scientific purposes but for observations (Whitehead 2008:365).

Description

A rendered brick telescope building similar in configuration and construction to 40" (N02) and 24" (N07) telescope buildings. It appears to have been built on a constructed platform which is broken to the north by a small concrete path leading to a hatch. This evidently provides access to a void beneath the structure. The building essentially exists as two ranges aligned north to south, side by side. Both are single storey, except for where a concrete telescope dome structure extends above the southern part of the western range. The telescope chamber, beneath the aluminium sheet dome, has a concrete slab floor over which lies a circular steel platform comprising a 'lift floor'. This could be hydraulically raised by a shaft housed in a steel column in the chamber below which was powered by a mechanism located in the void under the building. A single concrete stair, built in from the external wall, provides access to the telescope chamber and features metal safety barriers at the top to prevent injury relating to the lift mechanism. The telescope dome is redundant, the telescope having been dismantled (with parts apparently used elsewhere in the site) although its equatorial mounting remains together with a variety of related paraphernalia and fittings including original lights and control panels. The ground floor chamber is used for storage and contained several sections of the telescope at the time of survey. To the west and north of this chamber are a series of small rooms (not accessed but identified from plans as including a computer room and dark room). These include one small chamber of unclear purpose which is externally accessed from the west, via a large covered porch, and which at the time of survey contained a rack containing small drawers of small components (screws etc). The remainder of the western range is occupied by a large workshop with a double external door to the west. To the east, a central corridor separates these rooms from a row of offices, each with an east facing window, and a small WC also opens onto it. This corridor is accessed via the building's main entrance – a single door at its southern end.

The eastern part of the building appears to have been renovated recently, each of the offices featuring carpeted floors and modern office furniture. The workshop, whilst still in use, contains some original fittings and furniture supplemented with additions – for example a modern screen door. A later garage/shed of standing seam metal construction and an aspalt driveway stand immediately to the northwest of the building.

Condition

Some ephemeral deterioration, in the form of peeling paint, is evident in the redundant part of the structure, but otherwise it is in good condition. However, a lack of light made an assessment of the condition of the dome difficult.

Threats

The building is currently in use, but only for workshop and administrative functions – the dome is redundant and thus vulnerable to deterioration.

Masterplan issues

There is a need to archive information on equipment and parts to inform the manufacture of replacements.

Relevant policies

22 Primary uses of the Siding Spring Observatory

23 Compatible uses

27 Maintenance planning and works

29 Condition monitoring

N006 - Observatory Lodge site

ANU ID Number	**N006, N013**
HMP Number	**006**
Type	**Accommodation**
Ownership	**ANU**
Management	**ANU**
Status	**Destroyed by 2013 Bushfire**
Date constructed/ installed	**1964-65 (Additional Lodge built c1968)**
Level of significance	**Low**

(Source: Context 2014)

History

Between 1964-5, the first Observatory Lodge was constructed for staff and astronomers working at the site (Figure 27). The additional Lodge was constructed immediately to the south c1968, according to plan dating to December 1968 (ANU plans, 20 Dec 1968, Drawing No. 9436/5, 6). The motel-type lodge was constructed for visiting and commuting astronomers and residences for staff, with catering facilities and a library. The Lodges were damaged by the fires in January 2013 and have since been demolished (Gascoigne et al. 1990:49-52; SSO info panel on site).

Description

The site of a motel-unit type lodge which provided accomodation to visiting astronomers. There is currently demountable temporary lodge accommodation on the site and some concrete slab and brick footings of the former lodge remain.

Condition

Destroyed by the bushfire of January 2013. Foundations condition unclear as currently obscured by temporary lodge.

Threats

None

Masterplan issues

Need for permanent replacement

Relevant policies

22 Primary uses of the Siding Spring Observatory

27 Maintenance planning and works

42 Interpretation planning

N007 - 24 inch Telescope

ANU ID Number	**N007**
HMP Number	**007**
Type	**Telescope**
Ownership	**ANU**
Management	**ANU**
Status	**Redundant (telesope only - offices remain in use)**
Date constructed/ installed	**1966**
Level of significance	**High**

(Source: Context 2014)

History

The third telescope built on site was the 24 inch reflector, commissioned and built on site in 1966, under Director Olin Eggen. The third Boller & Chivens build, the telescope was an f/18 Cassegrain on an equatorial mount. The telescope building was constructed with an aluminising plant room and storage areas. In November 1966, RSAA (Research School of Astronomy and Astrophysics, of the ANU) astronomers Mathewson and Serkowski began taking polarimetric observations with its double channel polarimeter. Mathewson later completed a two year observation of 2,000 stars, using this telescope, and collected 'the most

accurate polarization measures ever obtained'. Subsequently, he constructed the first consistent magnetic field chart of our local arm of the Milky Way (Gascoigne et al. 1990:49-52; ANU, '24 inch').

In recent years, the telescope was primarily fitted with instruments for photometry and imaging work, used mainly for photoelectric photometry. In 2014, the telescope has been decommissioned and the building serves as offices and work spaces (ANU, '24 inch').

Description

A rendered brick telescope building similar in configuration and construction to the 40" (N02) and 16" (N05) telescope buildings. The structure, which is built into the prevailing slope, comprises a single storey rectangular structure with a telescope dome above its south eastern section. The dome, which is constructed of aluminium sheet over a timber framework, could be rotated by a series of electric motors driving rails around its base, whilst another drove the roller mechanism for the shutter. As in the 16" telescope building, the telescope chamber beneath the dome has a concrete slab floor over which lies a circular steel platform comprising a 'lift floor'. This could be hydraulically raised by a shaft housed in a steel column in the chamber below which was powered by a mechanism located in a void under the building. A single concrete stair, built in from the external wall, provides access to the telescope chamber from below and features metal safety barriers at the top to prevent injury relating to the lift mechanism. The telescope dome is redundant, but the telescope and its equatorial mounting remain in situ, together with a variety of related paraphernalia and fittings including a 250kg rated gantry crane, original lights and control panels similar to those surviving in the 16" telescope building.

The ground floor chamber beneath the telescope chamber contains numerous circuit boxes and is now also used for storage. It has recently been partitioned, through the introduction of a stud wall, to accommodate a toilet and wash basin. To the north of this chamber is a large open office which at the time of survey was being used by KMTNet (the company constructing the new Korean telescope to the north), and this has recently been refitted with modern office furniture and equipment for this purpose. The room's original function as a store is indicated by external double doors to the south west, but it can also be accessed through single doors via the chamber beneath the dome.

The remainder of the building comprises a single large room which is separated from the others and accessed by large double doors at its northwest end. Original drawings show this to have been purpose-built as an an aluminising plant room, and it still fulfils this function containing the original 1964 plant together with related facilities including a large 2-ton rated gantry crane. It is understood that this facility continues to be used to re-aluminise all of the telescope mirrors on the site with a diameter of less than c.1m (the facility in the AAT is used for the larger mirrors).

Condition

The building appears to be in good condition with some ephermeral external ware including peeling paint. Aluminising plant room and new office section operational

Telescope dome is currently redundant

Threats

The telescope portion of the building is redundant, as is the in situ telescope. The current use of the office portion is temporary, whilst the function of the aluminising plant is dependent on demand from within the site.

Masterplan issues

None specific

Relevant policies

22 Primary uses of the Siding Spring Observatory

N008/N009/N913 - Roads and Services

ANU ID Number	**N008, N009 & N913**
HMP Number	**039**
Type	**Infrastructure**
Ownership	**ANU**
Management	**ANU**
Status	**Active**
Date constructed/ installed	**From 1962**
Level of significance	**Low**

(Source: Context 2014)

History

From 1962 there was intense activity on the mountain and its approach. By 1963 the road to Siding Spring Mountain was constructed, mainly funded by Coonabarabran Shire Council (Whitehead 2008:275). In 1968, plans were approved for an improved access road to Blackburn's Hill, to be constructed by Coonabarabran Shire Council.

Description

Ashpalt roads across the site. These include the main arterial Observatory Road which runs up to the site from Timor Road to its south, enters at its eastern end and runs along the ridge, finishing next to the trig point at the site's western end. Six small access roads branch from this - from east to west these are to: the UK Schmidt and Faulkes telescopes (and the iTelescope building), the Tourist Centre, the Residences, the AAT, the Pump House and water tanks and the AAT (and new KMTNet Telescope).

The lack of soil over the bedrock is such that the network of services extending across the western part of the site is above-ground. Some subterranean installations are present in this area, but these appear isolated and facility-specific. The primary mains, such as those running upslope to the west and south from the water tanks and Pump House on the northern slopes of the site, are on the surface, although these are generally connected by junction boxes which are partially buried. Attempts have been made in some cases to protect service pipes and cables with a concrete shell.

Services are installed below ground where this can be achieved, as illustrated in the man-holes and fully subterranean junction boxes that can be seen across the eastern part of the site, although power cables are still suspended on poles. Across the site, standalone generators provide supplementary power to the major facilities. Examples can currently be seen adjacent to the Pump House and AAO Workshop buildings.

A number of weather stations are positioned around the site, some of which are now solar powered.

Condition

Good – operational

Threats

None specific

Masterplan issues

None specific

Relevant policies

13 Relationship with external management organisations

21 Bushfire planning

22 Primary uses of the Siding Spring Observatory

23 Compatible uses

27 Maintenance planning and works

29 Condition monitoring

47 Visitor offering

N010 - Fire Station site

ANU ID Number	**N010**
HMP Number	**009**
Type	**Infrastructure**
Ownership	**ANU**
Management	**ANU**
Status	**Destroyed by 2013 Bushfire**
Date constructed/ installed	**Not known**
Level of significance	**Low**

(Source: Context 2014)

History

The Fire Station was destroyed by the 2013 bushfire. Little is known of the history of the fire station.

Description

The fire station building was destroyed by the 2013 bushfire. The steel hose-mast and the concrete foundation pad remain.

Condition

Destroyed by the bushfire of January 2013, extant foundations in fair condition.

Threats

None

Masterplan issues

Need for permanent replacement

Relevant policies

23 Compatible uses

27 Maintenance planning and works

N011 - UPPSALA Telescope

ANU ID Number	**N011**
HMP Number	**0010**
Type	**Telescope**
Ownership	**ANU**
Management	**ANU**
Status	**Redundant**
Date constructed/ installed	**1956, moved to SSO in 1982**
Level of significance	**High**

(Source: Context 2014)

History

The Uppsala 0.5 metre Schmidt Telescope (also known as the Uppsala Southern Schmidt Telescope) was built in 1956 at the Uppsala Observatory in Sweden and moved to Mount Stromlo Observatory in 1957. The telescope was moved to Siding Spring Observatory in 1982 (Figure 28), and played an important role in the further development of the Observatory. It has been used in photographic studies of the Milky Way in the southern hemisphere, asteroid and comet discovery and imagery for student projects (ANU, 'Uppsala').

It was built as a manually operated photographic telescope, and was refurbished in stages. It was computer controlled with dome pointing, a spherical mirror and 0.5m correcting plate to achieve a 6 degree field of view, with a CCD camera mounted at the Newton focus. It was used to discover and track near-Earth asteroids and comets (ANU, 'Uppsala'). The telescope was decommissioned in 2013 and the Southern Near Earth Object Survey closed down.

The Uppsala was the telescope with which Robert McNaught of the RSAA (Research School of Astronomy and Astrophysics, of the ANU) not only discovered over 400 potentially hazardous near-Earth asteroids, but also discovered the Great Daylight Comet of 2007 (aka C/2006 P1), which was the brightest comets seen in over 40 years. When located at Mount Stromlo Observatory this telescope also took the first known images of the Sputnik satellite – the first man-made satellite that was put into orbit around the Earth by Russia in 1957 – and map its orbit. 'In the political climate of the time, this achievement provided the opportunity for RSAA director Bart Bok to address a joint session of both houses of Parliament, which he ultimately used to obtain funding for a new observatory site and to gain political support for establishing to Anglo-Australian Telescope' (ANU, 'Uppsala').

Description

A simple telescope building comprising a dome mounted on a low circular rendered concrete foundation wall. Within this wall, the wooden floor of the single chamber is supported on a series of cemented brick piers. The dome, and the large pulley-driven shutter which covers the aperture within it, are of timber frame construction lined inside and out with Masonite panels and externally clad with aluminium sheeting. When operational the dome was rotated by means of a rail at its base which is supported on a series of spring-loaded bogies set in the wall, held in place by metal brackets and driven by a single electric motor. A metal 'skirt' running around the dome shields the resulting gap between the rail and the wall from the elements. The viewing chamber contains several pieces of furniture, of which some, including a 'mirror box', contain telescope components. Otherwise it is sparsely equipped with generic power and lighting fittings. The equatorial mounting of the telescope remains although the telescope itself appears to have been removed. The viewing chamber is reached via a short wooden stair from a single external door, adjacent to which is a hatch into a crawl space amongst the brick foundation piers. The door opens onto a small porch which also covers the entrance to a prefabricated aluminium (?) control room. This structure, which is lined with fibro-cement sheeting, represents a later addition and is now entirely empty except for a wooden bench running along two sides and a white board.

Condition

The build quality of the structure is fairly poor compared to the earlier telescope buildings to the west, and the structure has deteriorated. The wooden frame and internal panels of the dome in particular are in poor condition, and several have been removed.

Threats

Both components of the structure are disused and reuse is currently unlikely because of the condition of the dome. Given that the telescope was only decommissioned in late 2013, the deterioration would appear to have been rapid, and this poses a significant risk.

Masterplan issues

None specific

Relevant policies

23 Compatible uses

27 Maintenance planning and works

29 Condition monitoring

30 Standards of Maintenance

31 Records of intervention and maintenance

32 Moveable heritage

33 Removal of significant equipment

37 New structures or major works to existing structures

N012 - Advanced Technology Telescope (ATT) 2.3m Telescope

ANU ID Number	**N012**
HMP Number	**011**
Type	**Telescope**
Ownership	**ANU**
Management	**ANU**
Status	**Active**
Date constructed/ installed	**1984**
Level of significance	**High**

(Source: Context 2014)

History

The 2.3 metre Advanced Technology Telescope (ATT) was built for the Australian National University in 1984 (Figure 32) (Whitehead 2008:365; ANU, 'ANU 2.3m Telescope'). The construction of the ATT was an outstanding vision of Director Don Mathewson in the 1970s. It was described in the 1978 Annual Report of the MSSSO as 'a new telescope so novel in design that it belongs in the next generation of telescopes' (Haynes et al. 1996:184).

The project was managed by the observatory's technical staff and much of the smaller mechanics were carried out in-house at Mount Stromlo and Siding Spring. The telescope incorporated three radical features that were never before combined in a single instrument. These included an uncommonly thin mirror, an altitude-azimuth telescope mount and a rotating building (previously only the dome rotated) (ANU, 'ANU 2.3m Telescope'; John Hart, pers. comm. 20 May 2014).

The telescope was inaugurated by Prime Minister Bob Hawke on 16 May 1984 (Figure 31), which illustrates the importance of the technological achievement the construction was in Australia, increasing the profile of Siding Spring Observatory in the field. In 1985 the ATT won the Excellence Award of the Institution of Engineers, Australia, Canberra Division (Haynes et al. 1996:184-5).

Eight pieces of interchangeable equipment can be fitted to the telescope, allowing direct imaging (TV), spectra and infra-red, allowing multiple operations. In May 2009, the telescope was installed with a wide-field (WIFeS) spectrograph, updating the telescope with leading-edge technology (John Hart, pers. comm. 20 May 2014; ANU, 'Wide-Field Spectrograph'). In 2014, the telescope is widely used by students from the RSAA (Research School of Astronomy and Astrophysics, of the ANU) and other universities. It remains the ANU's primary active telescope at Siding Spring Observatory (John Hart, pers. comm. 20 May 2014).

Description

The 2.3m Telescope is housed in a large roughly cuboid structure constructed of steel frame clad in aluminium sheeting which is broken by a large concertina shutter which extends down from a set-back roof ridge to the first storey level. The lightweight nature of the structure enables the whole to rotate on a platform which is mounted on rails within a circular concrete foundation beneath. The platform is driven on the rails by two motorised bogies (known as 'east' and 'west' on the basis of their orientation when the telescope is in its 'home' position) and two brakes ('north' and 'south') in the upper part of this foundation (Level 1). The structure is built into the prevailing slope, resulting in an additional floor beneath this mechanical level which is used for storage and also now contains an area partitioned off with stud walls to form a refreshment room. On top of the platform, the structure includes a ground floor (Level 2) across the whole footprint, a first storey on which the telescope is centrally mounted, and a further two mezzanine floors lining three sides of the building around the central space, all of which are accessed by means of a metal corner stair. The ground floor is accessed via double doors which provide a point of entry and exit for large pieces of equipment which can be lowered from the telescope level. Aside from the telescope itself, which is set on an altazimuth mount, the first storey (Level 3) also accommodates areas of equipment and an enclosed laboratory occupies one side of this floor. The entire of the second storey (Level 4) is enclosed, and this accommodates the control room for the telescope and its related equipment. The third storey, which is open to the roof, accommodates a large gantry crane spanning the central space and a storage area in which alternative 'front-ends' for the telescope are kept.

Condition

Good – operational

Threats

None specific

Masterplan issues

The facility is approaching the point at which they will no longer be competitive for scientific research, and the ANU's research interest is the site is thus decreasing.

Relevant policies

22 Primary uses of the Siding Spring Observatory

23 Compatible uses

27 Maintenance planning and works

29 Condition monitoring

30 Standards of Maintenance

31 Records of intervention and maintenance

33 Removal of significant equipment

38 Minor new works to existing structures

42 Interpretation planning

47 Visitor offering

N014 - PABX Extension

ANU ID Number	**N014**
HMP Number	**012**
Type	**Administration**
Ownership	**ANU**
Management	**ANU**
Status	**Active**
Date constructed/ installed	**1972-1974**
Level of significance	**Low**

(Source: Context 2014)

History

The Administration Building was built between 1972 and 1974 to serve the Anglo-Australian Telescope. The building also incorporates the site's Private Automatic Branch Exchange (PABX) telephone switching system, which was a later extension.

Description

This building, which comprises an extension to the west of the Administration Building, accommodates equipment relating to the PABX (Private Automatic Branch Exchange) site telephone system. At the time of survey, this room also contained files, plan chests and one of the 8 inch Tinsley Telescopes used in the late 1950s site-testing for a new field station to Mt Stromlo Observatory.

Condition

Good

Threats

None

Masterplan issues

None specific

Relevant policies

23 Compatible uses

29 Condition monitoring

30 Standards of Maintenance

31 Records of intervention and maintenance

32 Moveable heritage

33 Removal of significant equipment

38 Minor new works to existing structures

42 Interpretation planning

N015 - Siding Spring Exploratory & Visitor Centre

ANU ID Number	**N015**
HMP Number	**013**
Type	**Visitors Centre/Exploratory**
Ownership	**ANU**
Management	**ANU**
Status	**Active**
Date constructed/ installed	**1974**
Level of significance	**Moderate**








(Source: Context 2014)

History

Siding Spring Observatory was closed to the public for four years during the construction of the Anglo-Australian Telescope (completed in 1974). In late 1974 the observatory re-opened, with the newly built 'Tourist Centre' (Visitor Centre) and 'Exploratory', which housed a permanent exhibition on astronomy, to encourage visitors to the place. The exhibition, titled 'Exploring the Universe', was officially opened on 6 December 1974 and aimed to introduce all visitors to contemporary astronomy (Figure 23). The exhibit included a scale version of the recently opened Anglo-Australian telescope (ANU reporter, Vol 5, No. 19, 22 Nov 1974, via Judy Over collection). This promotion for public visitation was supported by both the Coonabarabran Shire Council and the National Parks and Wildlife Services (John Whitehead, pers. comm. May 2014).

Description

Sometimes referred to as the 'Tourist Centre', the Visitor Centre is a light brown face brick single level structure, rectangular in plan, with a main feature being a brown coloured metal profile facia. The building is cut into a hill on its western side and is associated with a car park and grassed area at its eastern approach and another grassed area behind a metal fence on its southern side. The southern majority of the building accommodates the museum facility known as 'the Exploratory' which contains static displays, interactive exhibits and two small theatre spaces. Although there is a doorway direct to the Exploratory, in a full-height glass wall section on its eastern face, this is generally not used. Instead access to the facility is through the café which occupies the northern section of the building. This part has a lower roof, with a darker brown fascia, that it shares with an entrance porch supported on a brick column under which is the main access to the Visitor Centre. Immediately to the north of the café, and accessed from it by a series of glass doors, a covered patio area which is terraced into the surrounding ground level. From here, a concrete slab path runs around the rear of the building, past the café kitchen and toilet blocks, to meet another which runs along the southern end of the building, from a gate in the fence. The path then curves up the slope, to the south east of the Workshop, towards the visitor access of the Anglo-Australian Telescope. There is current landscaping occurring on the steep bank to the west of the building, and a undated ANU plans

show proposals to reverse the building planning and have the cafe at the southern end facing the key views in this direction, and also closer to the AAT access path.

Condition

Fair condtion generally althogh the interior including the exhition now appears dated.

Threats

The exhibition area may need updating to retain visitor interest.

Masterplan issues

Vistor experiences - presentation of information is dated too complex and not relating to the site

Relevant policies

23 Compatible uses

32 Moveable heritage

34 Relationship to Warrumbungle National Park

35 Relationship to the broader landscape

38 Minor new works to existing structures

41 Public outreach

42 Interpretation planning

43 Updating interpretation

47 Visitor offering

N017 - AAO Workshop

ANU ID Number	**N017 (N016)**
HMP Number	**014**
Type	**Workshop**
Ownership	**ANU**
Management	**AAO**
Status	**Leased to AAO**
Date constructed/ installed	**1972-1974**
Level of significance	**Moderate**

(Source: Context 2014)

History

The large axial workshop was built between 1972 and 1974 to serve the Anglo-Australian Telescope.

Description

A large rectangular structure occupying a constructed terrace in the centre of the SSO site, the workshop is located to the north east of the Anglo-Australian Telescope building, to the east side of which it has been connected by a single-storey corridor from the workshop's southern end. Although containing only a single tall storey, the workshop stands at roughly two standard stories in height. It is constructed in brick, with a corrugated metal roof, and it also features a skirt of corrugated metal mounted around its upper portion. Whilst also expressing an architectural language which this building shares with other contemporary examples on the site, it is understood that the skirting serves to regulate temperature by shielding the walls from sunshine. The building is orientated to the north west, facing into the asphalt compound defined by it, the AAT, the site of the former fire station and the Administration Office. All of the external entrances are on this side, whilst a row of large aluminium framed windows runs along the opposite side of the building facing the visitor centre. Two small annexes, of one and two storeys respectively, extend in this direction from the northern and southern ends of the building, and the terrace on this side also accommodates a series of concrete platforms on which are positioned (south to north) a gas cylinder storage cage, large LPG tanks, a generator (SSO emergency power plant N016) and a pair of large transformers. At its southern end, the north west face of the workshop features three large roller doors, providing access to a large plant rooms. The one of these that was accessed during the site survey contained controls relating to the AAT power supply and was also being used to store one of the original observation trailers used in the 1960s site selection process that eventually resulted in the development of the Siding Spring site. The southern majority of the building comprises a single open workshop which contains a wide variety of engineering equipment used to maintain, and in many cases fabricate, parts for the AAT and also other ANU/AAO facilities under a partnership agreement. This area is served by a large gantry crane mounted on rails which can run the length of the room. A two storey section in the south western corner of this area contains offices and amenities, and the upper storey, which is accessed via a stair from the workshop floor, extends out as a metal framed addition supported on stanchions at the southern end of the building. From this addition an external door opens onto a terrace over the corridor beneath. Double doors at the south end of the workshop provide access to the corridor connecting to the AAT which is lined with windows on its western side. As well as providing a link between the workshop and the AAT, the corridor accommodates racks for the storage of metal blanks, and in colder weather it apparently provide a main access to the AAT,

not just for comfort but because the ice which forms over the main entrance has been known to fall on it creating a safety hazard. All services from the plant rooms run beneath the corridor to the AAT. Although the corridor is of the same brick and metal roof construction, the abutting brickwork at its northern end indicates that it was built as a later addition to the workshop, and this would also appear to be the case in turn for a small brick garage with a concrete slab roof which abuts the western side of the corridor.

Condition

Good – operational

Threats

There is some difficulty in undertaking maintenance – for example the equipment necessary to replace the lights cannot be brought in over the mechanic's pits.

Masterplan issues

None specific

Relevant policies

12 Relationship with the AAO

22 Primary uses of the Siding Spring Observatory

27 Maintenance planning and works

31 Records of intervention and maintenance

38 Minor new works to existing structures

N019 - Bingar Cottage

ANU ID Number	**N019**
HMP Number	**015**
Type	**Accommodation**
Ownership	**ANU**
Management	**ANU**
Status	**Active**
Date constructed/ installed	**Probably by 1965**
Level of significance	**High**

(Source: Context 2014)

History

Plans dating to December 1965 show that a house in the approximate location of Bingar Cottage existed at this date (ANU plan N908/S/011/1of1), suggesting that Bingar Cottage was one of the earliest buildings located on the site, contemporary to the 16 inch and 40 inch telescopes, located at Siding Spring by 1965 (ANU Plan N908/S/011/1 of 1). Historic photos suggest that the weatherboard house, Bingar Cottage, was built in a residential location and moved to the Mount Bingar Field Station in the late 1950s or early 1960s (Figure 17), before being relocated to Siding Spring where it was named in acknowledgement of this move. The cottage underwent alterations at a later date, with modifications to the cladding and window openings. It currently serves as the site manager's house.

Description

A single level residence comprising a timber frame on brick piers clad in fibre cement weatherboards and with a corrugated iron hipped roof. The house has aluminium sliding windows with fire protection screens but no gutters. To its south side there is a skillion addition and an open carport over concrete hardstanding.

Condition

Good – occupied

Threats

Usual site risks only

Masterplan issues

None specific

Relevant policies

21 Bushfire planning

22 Primary uses of the Siding Spring Observatory

27 Maintenance planning and works

29 Condition monitoring

30 Standards of Maintenance

31 Records of intervention and maintenance

38 Minor new works to existing structures

41 Public outreach

N020 - Pump House

ANU ID Number	**N020**
HMP Number	**017**
Type	**Infrastructure**
Ownership	**ANU**
Management	**ANU**
Status	**Active**
Date constructed/ installed	**c1975**
Level of significance	**Low**

(Source: Context 2014)

History

The pump house is located at the north-east end of the site, next to three large water tanks, and was constructed c1975.

Description

Approached via a side road that drops steeply down from Observatory Road, the complex comprises three large steel water tanks, one of which is covered, set across an asphalt

compound from a pump house. Piping from each of the tanks converges on the northern side of the compound, behind a metal wire security fence, before passing through a covered concrete duct to the pump house. This structure is of cinder block construction with a sloped corrugated metal roof. It comprises five separate bays, each of which is accessed through double metal doors with vents above. The easternmost and two westernmost bays have slightly larger doors and ceiling mounted rails with pulleys for loading heavy equipment. The easternmost and westernmost bays, which were inspected internally, contain storage and a pump respectfully, and pumping could be heard from at least one of the others. The rears of each bay are ventilated by vent bricks in the rear wall, and these have had cinder-screens added recently as a bushfire precaution. From the bays pipework passes out of the rear (south side) of the building, from where it proceeds up the hill to meet Observatory Road.

Condition

This facility is vital to the functioning of the site, and it is thus maintainined in good operational condition.

Threats

Some of the equipment may be approaching the end of its operational life, in which case it will need to be replaced.

Masterplan issues

None specific

Relevant policies

22 Primary uses of the Siding Spring Observatory

27 Maintenance planning and works

29 Condition monitoring

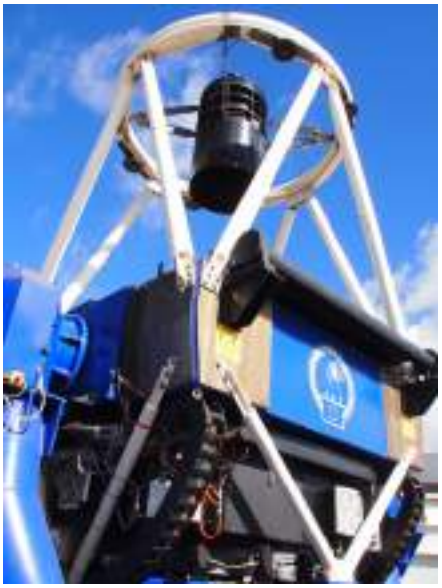
30 Standards of Maintenance

31 Records of intervention and maintenance

38 Minor new works to existing structures

N021 - Faulkes Telescope South

ANU ID Number	**N021**
HMP Number	**018**
Type	**Telescope**
Ownership	**LCOGT (Las Cumbres Observatory Global Telescope Network)**
Management	**LCOGT**
Status	**Active**
Date constructed/ installed	**2004**
Level of significance	**Moderate**



(Source: Context 2014)

History

Located at Siding Spring Observatory, the Faulkes Telescope South is operated by the Las Cumbres Observatory Global Telescope Network. It was installed by 2004 and began fully operating in 2006 (LCOGT). Designed and built in Liverpool, United Kingdom, it is one of the largest robotic telescopes in the world, with a mirror with a 2metre aperture. Faulkes Telescope North is located in Maui, Hawaii, and together the two telescopes supply free

resources for science education. There are over one thousand registered users world-wide, including students, community groups and professional astronomers (ANU, 'Faulkes Telescope South'; Faulkes Telescope Project online).

Faulkes Telescope South is part of the growing global network of robotic optical telescopes, which will provide continuous sky coverage and resources for innovative science in partnership with other international organisations. The network is deigned to be operated as a single instrument via an international control centre which operates the Faulkes Telescope automatically (ANU, 'Faulkes Telescope South').

Las Cumbres presence at the SSO site was recently expanded with the addition of the two Stellan A and Stellan B telescopes to immediately to the south west of the Faulkes Telescope. The two 1-meter telescopes comprise a node of the southern hemisphere telescope network that Las Cumbres is currently deploying, with others at the Cerro Tololo Inter-American Observatory (CTIO) in central Chile and at the South African Astronomical Observatory in Sutherland, South Africa. The term 'Stellan', which is common to all of the telescopes in the network, applies to the Las Cumbres Observatory 1-meter enclosures. These are walls married to modified Ash-Dome (manufacturer) domes that are highly integrated with the telescope and electrical and software systems.

The Faulkes and Stellan telescopes lie within their own small independent cadastral boundary within the ANU site. This lot (and the lot for the UK Schmidt telescope) was subdivided in 1972 (ANU plan, 'SSO plan boundary redefinition & survey of encroachments', c1970s; ANU plan N908/S/018/1of3).

Description

The Faulkes Telescope South is a robotic Alt Azimuth telescope constructed in c.2004 to be used in association with a twin facility in the UK - both incorporate a c.2m diameter mirror and share the status of being the largest robotic telescopes in the world. The Siding Spring Faulkes Telescope is housed in a rectangular structure with a segmented fabric roof which opens fully through the action of hydraulic rams, and this innovative enclosure provides an excellent system for cooling by exposing the whole telescope to the night air and eliminating the problem of heat build up in the traditional dome enclosure. Two flat roofed panel walled structures to either side of the main structure house plant and a control room. Immediately to the south west of the Faulkes Telescope South are two more recent dome telescope structures which house smaller telescopes named as Stellan A and Stellan B, both of which are used as part of the Las Cumbres southern hemisphere telescope network.

Condition

Good and in active use

Threats

Normal site risks such as bushfire - there has been recent removal of vegetation around the immediate site.

Masterplan issues

None specific

Relevant policies

13 Relationship with external management organisations

21 Bushfire planning

22 Primary uses of the Siding Spring Observatory

N022 - iTelescope.Net Observatory

ANU ID Number	**N022**
HMP Number	**019**
Type	**Telescopes**
Ownership	**iTelescope**
Management	**iTelescope**
Status	**Active**
Date constructed/ installed	**2013**
Level of significance	**Low**

(Source: Context 2014)

History

The iTelescope Observatory at Siding Spring is part of a global network of internet connected robotic telescopes, of small to medium-sized, which are designed to use by the public via the internet. iTelescope.Net is a non-profit organisation that is in partnership with the RSAA, creating the world's first network of internet connected public telescopes, for the purposes of education, research and astro-photography (ANU, 'iTelescope.Net'; itelescope.net website).

Siding Spring Observatory contains the southern hemispheric station for iTelescope and was the flagship Observatory, commissioned in January 2013 (ANU, 'iTelescope.Net'; itelescope.net website).

Description

A single level rectangular building, located immediately to the west of the tennis courts, which measures approximately 16m by 8m and is constructed in white metal clad sandwich panels within a steel fame. It has a truss-framed roof, curved in section, that fully retracts by remote control along two steel I-beams supported on 2 x 3 I-beam columns. Access to the telescope enclosure is from the south end. The enclosure contains approximately 12 small telescopes, most of which are owned by iTelescope and available to users remotely via the internet, but several of which are individually owned and operated.

Condition

Good - operational as maintained by a person living on site

Threats

Usual site risks only

Masterplan issues

None specific

Relevant policies

13 Relationship with external management organisations

21 Bushfire planning

22 Primary uses of the Siding Spring Observatory

23 Compatible uses

N023 - Solaris Telescope

ANU ID Number	**N023**
HMP Number	**020**
Type	**Telescope**
Ownership	**Nicolaus Copernicus Astronomical Center, Poland**
Management	**Nicolaus Copernicus Astronomical Center, Poland**
Status	**Active**
Date constructed/ installed	**c2014**
Level of significance	**Low**

(Source: Context 2014)

History

The Solaris Telescope is owned and operated by the Nicolaus Copernicus Astronomical Centre in Torun, Poland, which is a branch of the Polish Academy of Sciences. Project Solaris operates from a network of three sites in the Southern Hemisphere – Australia, Argentina and South Africa (ANU, 'Solaris').

The Solaris Telescope at Siding Spring is a 20 inch Ritchy Chretien system, which will look for planets around eclipsing binary stars, using precision photometry (ANU, 'Solaris'; Solaris website). Technically speaking, the goal of the telescope is 'to detect circumbinary planets around a sample of up to 350 eclipsing binary stars using eclipse timing and precision radial velocities, and to characterize the binary stars with an unprecedented precision to test the stellar structure and evolution models' (Solaris website).

Description

This structure is similar in external design to the nearby Prompt Telescope, although slightly smaller. It comprises a spherical sheet metal structure with a retractable casing that is

supported on a low pedestal. The small enclosure, which is accessed via a side hatch approached by three steps, accommodates a 20 inch telescope on a direct-driven high precision mount that allows it to track through 355 degrees without the need to flip while passing the meridian.

Condition

Good (externally) – operational

Threats

None specific

Masterplan issues

None specific

Relevant policies

13 Relationship with external management organisations

21 Bushfire planning

23 Compatible uses

N024 - Water tanks (3)

ANU ID Number	**N024**
HMP Number	**021**
Type	**Infrastructure**
Ownership	**ANU**
Management	**ANU**
Status	**Active**
Date constructed/ installed	**c1975**
Level of significance	**Low**

(Source: Context 2014)

History

The water tanks were constructed at the same time as the pump house in c1975.

Description

Three large water tanks constructed of standing seam metal panels and located near the pump house, at the north-east end of the site. The eastern two tanks are covered whilst the third appears to be open. All three are secured behind a chain link fence.

Condition

Good – operational

Threats

None specific

Masterplan issues

None specific

Relevant policies

21 Bushfire planning

27 Maintenance planning and works

29 Condition monitoring

30 Standards of Maintenance

31 Records of intervention and maintenance

N025 - YSTAR-KAO Telescope

ANU ID Number	**N025**
HMP Number	**022**
Type	**Telescope**
Ownership	**Yonsei Univerity Observatory & Korea Astronomy Observatory**
Management	**Yonsei Univerity Observatory & Korea Astronomy Observatory**
Status	**Active**
Date constructed/ installed	**2005**
Level of significance	**Low**

(Source: Context 2014)

History

Before their decommissioning in 2015, the YSTAR-KAO telescopes at Siding Spring Observatory were part of an international network, managed by both the Yonsei University Observatory and Korea Astronomy Observatory. Under a Memorandum of Understanding, the University of New South Wales undertook site preparation for the new telescope, oversaw the construction of the observatory building by a Wollongong engineering works and helped commission the station at Siding Spring in January 2005. It consists of automated telescopes that were operated from Seoul, Korea (sign on site, viewed May 2014; UNOOSA; Burton 2008:20) and contributed to a YSTAR (Yonsei Survey Telescopes for Astronomical Research) program begun in 1998 that aimed to detect and monitor optical brightness variations and moving objects. The first telescope of the network was installed in 2003 in Sutherland, South Africa, while others are located in Korea and Cerro Tololo Inter-Amercian Observatory in Chile (UNOOSA).

Description

The YStar Telescopes are housed in a modified shipping container levelled on concrete footings. The roof of the northern half of the structure has been replaced with a pitched sheet metal example which can be slid over the remainder to open the telescope enclosure. A substantial cinder block wall has recently been built around the southern end of the structure to provide the facility with some protection from bushfire

Condition

Fair (externally) – operational

Threats

Redundant

Masterplan issues

None specific

Relevant policies

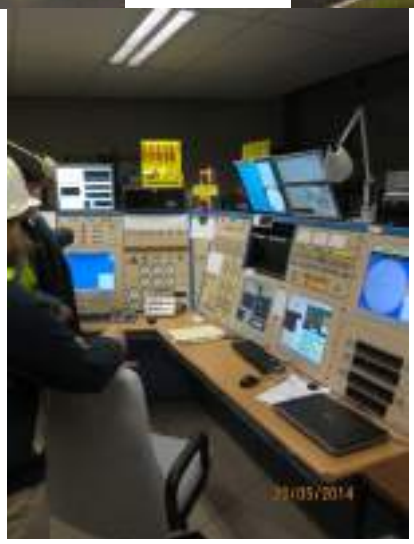
13 Relationship with external management organisations

21 Bushfire planning

23 Compatible uses

N026 - Anglo-Australian Telescope (AAT)

ANU ID Number	**N026**
HMP Number	**023**
Type	**Telescope**
Ownership	**AAO**
Management	**AAO**
Status	**Active**
Date constructed/ installed	**1972-1974**
Level of significance	**High**



(Source: Context 2014)

History

Construction of the building to house the Anglo-Australian 150 inch Telescope (AAT) began in 1972, while the telescope was commissioned and assembled in 1973-74. Council's engineering staff assisted with the project from conception in 1968 to completion in 1974, as the site was prepared and infrastructure installed or updated (AAO online; Whitehead 2008:312).

The telescope was inaugurated on 16 October 1974, officially opened by His Royal Highness Prince Charles (Figure 22) In addition to HRH Prince Charles, speeches were made by Sir Fred Hoyle, the Chairman of the Anglo-Australian Telescope Board, the British High Commissioner, Sir Morrice James and Prime Minister of Australia Gough Whitlam (Whitehead 2008:322-3). In the same year, the AAT won an 'Excellence Award' from the Association of Consulting Engineers Australia (NSW SHI, 'AAO'). Scientific work began in 1975 and regularly schedules observations began in June 1975 (AAO online).

It is an equatorially-mounted telescope with a 3.9m-diameter (150 inch) mirror, serving many uses. Equipped with a robotic spectrograph, it can simultaneously observe hundreds of stars and galaxies (AAO online). The domed building which houses the telescope has seven principal floors, which include a library, aluminising equipment, an electrical junction room, console room and the main floor with the telescope base and visitor's gallery, amongst other spaces (Whitehead 2008:315). The visitor's gallery was built under the direction of the Coonarabran Shire Council, who wanted to encourage tourism to the site (John Whitehead, pers. comm. May 2014).

Externally, a catwalk extends around the base of the dome.

In 2009, the Anglo-Australian Telescope – 'the largest telescope in Australia' – celebrated its 35th birthday. To mark the occasion, the AAO presented a sundial to the town of Coonabarabran, positioned outside the Coonabarabran Courthouse. The sundial was intended to be 'a lasting reminder of the importance of astronomy in the life of Coonabarabran', and was presented in appreciation to the community for their hospitality and understanding of and compliance with the local light pollution controls (AAO Media Release, 13 October 2009).

The AAT has been used for several important southern sky surveys, such as the '2-degree-field Galaxy Redshift Survey' (final data released in 2003). The AAT remains the largest optical (visible light) telescope in Australia and one of the largest telescopes to be constructed using equatorial mounting (ANU, 'Siding Spring Observatory'; AAO online). Its optics, stability and precision make it 'one of the finest telescopes in the world' (AAO online; Whitehead 2008:365) and is celebrated as a highly significant accomplishment in Australian astronomy (Judy Over collection).

Description

The AAT is 37m in diameter and 26 m high (to the base of the dome). The building comprises a structurally independent central structure, which supports the telescope itself, built within an outer cylindrical concrete building, designed to withstand the high winds prevailing at that location, which in turn supports the rotating dome. The main telescope level is located some way up inside the structure where it is surrounded by office, control and amenity facilities. It has a timber floor, over which stands the massive equatorial mounting of the telescope. Visitors to the AAT approach via a concrete path which climbs the slope from the Exploratory Centre, passing a series of sculptures on the way and ends at a gravelled terrace with southerly views into the Warrumbungles. The metal casing in which the telescope mirror was transported from England is displayed in this area, together with the dummy mirror that was used for testing the telescope. From here a visitor lift provides access to a gallery and interpretative display which look onto the main floor. Above the telescope level are access gantries, adjustable maintenance platforms and service levels used for storing large pieces of equipment, including alternative 'front-ends' for the telescope, and these in turn provide access to an external walkway which runs around the building at the bottom of the dome. The dome, which weighs 560 tonnes, is rotated on 32 bogeys driven by four 3.5 kW DC motors. A large square central shaft descends from the main floor, through a series of massive hatches, to a loading dock and storage area at ground level. In so doing it passes floors containing laboratories/dark rooms, air conditioning plant and a facility to re-aluminise the telescope's mirrors. The latter is also used for the mirrors of the other larger telescopes on the site which cannot be accommodated in the smaller aluminiser in the 24" Telescope building (i.e. now only that of the ATT 2.3m Telescope).

Condition

Good – operational

Threats

Lack of use of some components - the aluminiser has done less than 50 hours work in its lifetime.

Masterplan issues

None specific

Relevant policies

12 Relationship with the AAO

21 Bushfire planning

22 Primary uses of the Siding Spring Observatory

33 Removal of significant equipment

N027 - HAT-South Telescopes

ANU ID Number	**N027**
HMP Number	**024**
Type	**Telescopes**
Ownership	**Harvard-Smithsonian Center for Astrophysics.**
Management	**ANU**
Status	**Active**
Date constructed/ installed	**2009**
Level of significance	**Low**

(Source: Context 2014)

History

Operating since 2009, the Hat-South (Hungarian Automated Telescope) telescopes at Siding Spring (two 'HS4' units) are part of a network of fully automated, identical telescopes that are part of the HAT-South project. The network searches for and detects transiting extrasolar planets in the Southern Hemisphere and characterises their physical properties (ANU, 'The HAT-South Project'; info panel on site).

The network consists of two other telescopes, at evenly-spaced longitude, in Las Campanas Observatory in Chile and the Hess Site in Namibia. Each site holds two 'TH4' units. Each site is able to monitor 128 square degrees of sky, 24 hours per day. The project is a collaboration between the ANU, the Harvard/Smithsonian Centre for Astrophysics (CfA) and the Max Planck Institute for Astronomy (ANU, 'The HAT-South Project'; info panel on site).

Description

The facility comprises two lidded modules which are levelled on concrete posts and metal feet and screened on their opening sides by slatted fences. Each module contains four 0.18m astrographs, which are provided with power and control via a converted shipping container mounted along Observatory Road.

Condition

Good (externally) – operational

Threats

Redundant

Masterplan issues

None specific

Relevant policies

13 Relationship with external management organisations

21 Bushfire planning

23 Compatible uses

N028 - Bowser Shed

ANU ID Number	**N028**
HMP Number	**016**
Type	**Infrastructure**
Ownership	**ANU**
Management	**ANU**
Status	**Active**
Date constructed/ installed	**c1970**
Level of significance	**None**

(Source: Context 2014)

History

A bowser shed is located to the east of Bingar Cottage. This appears for the first time on a 1970 plan of the site, where it is described as a 'Flammable Liquids Store, Fire Hose and Compressor' (ANU plans).

Description

Located near Bingar Cottage, the Bowser Shed is a single level light brown brick structure with a metal clad shallow pitch roof. It has an open covered area to its north. The Bowser Shed is located in a prominent position near the main road. Its visibility and setting are compromised by several small metal shed structures located nearby.

Condition

Fair - operational

Threats

Fuel storeage risks.

Masterplan issues

None specific

Relevant policies

21 Bushfire planning

22 Primary uses of the Siding Spring Observatory

38 Minor new works to existing structures

N032 - KMTNet Telescope (aka Microlensing Telescope?)

ANU ID Number	**N032**
HMP Number	**025**
Type	**Telescope**
Ownership	**Korea Astronomy and Space Sciences Institute**
Management	**Korea Astronomy and Space Sciences Institute**
Status	**Under construction**
Date constructed/ installed	**2014 under construction**
Level of significance	**Low**

(Source: Context 2014)

History

In 2014, a 1.6 metre telescope is being built at Siding Spring as part of the Korea Microlensing Telescope Network (KMTNet), owned by the Korea Astronomy and Space Sciences Institute (KASI). As part of the network, two other 1.6 metre telescopes are being built at Cerro Tololo Inter-American Observatory in Chile, and at the South Africa Astronomical Observatory in Sutherland, South Africa. A 340 megapixel camera – the largest ever made – will be attached to each of the 1.6 metre telescopes, built by Ohio State astronomers, funded by KASI (OSU.edu).

Description

Under construction at the time of the May 2014 site visit, on a newly prepared site to the east of the 40 Inch Telescope and north of the ATT, this structure represents something of a return to the format of the former and the other 1960s telescope buildings in this area. It comprises a large telescope enclosure (to be surmounted by a dome), which is accessed via a shallow porch with double doors, and a supporting annex accessed by both single and double doors. This design is presumably shared with its sister sites in Chile and South Africa.

Condition

Good – under construction

Threats

None specific

Masterplan issues

None specific

Relevant policies

13 Relationship with external management organisations

21 Bushfire planning

23 Compatible uses

N033 - Automated Patrol Telecope (APT)

ANU ID Number	**N033**
HMP Number	**026**
Type	**Telescope**
Ownership	**UNSW**
Management	**UNSW**
Status	**Active**
Date constructed/ installed	**c1960s (moved to SSO in 1994)**
Level of significance	**Low**

(Source: Context 2014)

History

The Automated Patrol Telescope (APT) was operated by the University of New South Wales prior to its decommissioning in 2012. It is a 0.5 metre, wide-field CCD imaging telescope that can be operated remotely from Sydney, or be fully automated. It was developed by modifying the optical, mechanical and electronic systems of a Baker-Nunn satellite tracking instrument, which was originally located at Woomera, South Australia, in the 1960s and later located at Orroral Valley near Canberra. In 1992, the camera was donated to the University of New South Wales by the Smithsonian Institute. The UNSW conducted most of the modifications to the camera, before the telescope was relocated to Siding Spring Observatory. The telescope is housed in a 'roll-off' roof building, which allows rapid access to the sky. The optics were redesigned at UNSW and in 1993, installation was complete and by 1994 the telescope was fully operational. It has played a key role in the UNSW's extra-solar planet search program (ANU, 'APT'; UNSW, 'APT').

Description

The 0.5m Automated Patrol Telescope (APT) is housed in a "roll-off" roof building that allows rapid access of any part of the sky. This comprises a large corrugated sheet metal structure which is built on a partial brick platform to negotiate the gentle slope across its footprint. The structure is built within a rectangular frame which consists of two rows of six metal I-beam columns, each of which supports horizontal I-beams – the sheet metal structure occupies the space between the four southern pairs of columns whilst the northern 'bay' is open apart from a metal roof which shelters the access to the building, via a low brick stair. The long horizontal beams support a pitched sheet metal roof over the southern part of the building which slides along them to open the telescope enclosure. The latter is also accessed via a garage roller door on its western side and there is a single large square window on the western face of the northern workshop part of the building.

Condition

Good externally but decommissioned 2012

Threats

Now redundant

Masterplan issues

None specific

Relevant policies

13 Relationship with external management organisations

21 Bushfire planning

22 Primary uses of the Siding Spring Observatory

23 Compatible uses

27 Maintenance planning and works

29 Condition monitoring

33 Removal of significant equipment

N034 - ROTSE Telescope

ANU ID Number	**N034**
HMP Number	**027**
Type	**Telescope**
Ownership	**UNSW**
Management	**UNSW**
Status	**Active**
Date constructed/ installed	**2003**
Level of significance	**Low**

(Source: Context 2014)

History

The Robotic Optical Transient Search Experiment (ROTSE) 0.45metre telescope located at Siding Spring Observatory was operated by the University of New South Wales until it was decommissioned in 2011. It is one of four telescopes that were part of a collaborative project between astrophysicists from the University of New South Wales, the University of Michigan, Los Alamos National Laboratory, Lawrence Livermore National Laboratory and the Max Planck Institute for Nuclear Physics in Germany. The network of telescopes is located in Australia, Namibia, Turkey and Texas, USA. The primary goal of the ROTSE project was to achieve observations in optical light of the massive deep-space explosions called gamma-ray bursts (GRBs) (ANU, 'ROTSE'; ROTSE website).

The ROTSE telescope is a fully automated, 0.45metre, wide-view, 3rd generation robotic telescope which has detected the transient optical emission from several GRB events. The first ROTSE Telescope was installed at Siding Spring Observatory, in March 2003 (Burton 2008:20).

Description

The Robotic Optical Transient Search Experiment (ROTSE) telescope is a 0.45metre telescope is contained within a small cylindrical metal structure with a remotely operable door at its top. The whole is supported on a steel pallet base which is levelled on four concrete posts.

Condition

Good externally but decommissioned 2011

Threats

Now redundant

Masterplan issues

None specific

Relevant policies

13 Relationship with external management organisations

21 Bushfire planning

22 Primary uses of the Siding Spring Observatory

23 Compatible uses

27 Maintenance planning and works

29 Condition monitoring

33 Removal of significant equipment

N036 - Tennis Court

ANU ID Number	**N036**
HMP Number	**028**
Type	**Recreation**
Ownership	**ANU**
Management	**ANU**
Status	**Active**
Date constructed/ installed	**Early 1980s?**
Level of significance	**Low**

(Source: Context 2014)

History

Not shown on 1970 plan or early 1980s photographs.

Description

A single tennis court surfaced in bitumen and surrounded by a chain link fence.

Condition

Poor – unused

Threats

Appears redundant

Masterplan issues

None specific

Relevant policies

23 Compatible uses

27 Maintenance planning and works

N037 - Prompt Telescope

ANU ID Number	**N037**
HMP Number	**029**
Type	**Telescope**
Ownership	**Univserity of North Carolina**
Management	**Univserity of North Carolina**
Status	**Active**
Date constructed/ installed	**2013**
Level of significance	**Low**

(Source: Context 2014)

History

The University of North Carolina operates 'Skynet', a control and scheduling software that operates an international network of robotic telescopes. PROMPT-Australia is located at Siding Spring Observatory and consists of four 17 inch telescopes: PROMPT A1, A2, A3 and A4 which were built in 2013 (Skynet University).

The network has been operating since 2004 and consists of fully automated telescopes that are both University owned and otherwise, located at Cerro Tololo Inter-American Observatory in Chile, the National Radio Astronomy Observatory in West Virginia and Morehead Observatory in North Carolina and Siding Spring Observatory. Skynet produces images for professional astronomers, students and the public (Skynet University).

Description

A sheet metal dome with central segments which retract to open the telescope enclosure within which are mounted four 17 inch telescopes. The dome sits on a circular concrete platform which is built into the prevailing slope.

Condition

Good (externally) – operational

Threats

None specific

Masterplan issues

None specific

Relevant policies

13 Relationship with external management organisations

21 Bushfire planning

23 Compatible uses

N039 - Golf ball water tower

ANU ID Number	**N039**
HMP Number	**030**
Type	**Infrastructure**
Ownership	**ANU**
Management	**ANU**
Status	**Active**
Date constructed/ installed	**By 1974**
Level of significance	**Moderate**

(Source: Context 2014)

History

The 'golf ball' water tower to the north-west of the Anglo-Australian Telescope was constructed by 1974 (Judy Over, photo collection).

Description

A water storage tank to provide site water designed to theme with the site with a spherical tank on a cylindrical post support that tapers outward at its base. It is constructed with a cast steel exterior. It has a steel balustrade at the top of the spherical top.

Condition

Fair but operational - needs repainting if it was originally painted

Threats

None specific

Masterplan issues

None specific

Relevant policies

22 Primary uses of the Siding Spring Observatory

27 Maintenance planning and works

29 Condition monitoring

30 Standards of Maintenance

31 Records of intervention and maintenance

38 Minor new works to existing structures

42 Interpretation planning

N821 - Residential Area #3

ANU ID Number	**N821**
HMP Number	**031**
Type	**Accomodation**
Ownership	**ANU**
Management	**ANU**
Status	**Active**
Date constructed/ installed	**c1964-65**
Level of significance	**Moderate**

(Source: Context 2014)

History

According to contemporary plans (ANU plans), the individual residences were designed by Architects and Town Planners Bunning and Madden as 'technician's houses' in c1964-5. A photo which appears to date to the 1960s (Figure 20) indicates that Residence no. 3 was one of the first to be constructed, with its different floor plan and construction (in 2014 the residence is not occupied). The photo also shows that the Director's Cottage had been built by this date, and that the residences were under construction.

A photo dating to c1973 confirms that the residences were built by this date (Figure 21) (Judy Over photo collection, N.D.), while drawings dating to 1969 and the 1970s further confirm that the residential area (labelled 'Technicians Houses' on plans) was completed by this date (ANU plan, 14 April 1969; 75/A/1582).

Description

A mid brown face brick residence constructed primarly on one level but with a sub-floor area at its eastern end. It has shallow pitch roof clad in metal profile sheeting. The residence is located close to the edge of the escarpment and features landscape elements such as stone terracing to the south and a tennis court to the north. There is an intrusive metal container located to its south.

Condition

Good condition - unoccupied

Threats

If it remans unoccupied and does not receive maintenance its condition could deteroriate.

Masterplan issues

None specific

Relevant policies

21 Bushfire planning

23 Compatible uses

27 Maintenance planning and works

29 Condition monitoring

30 Standards of Maintenance

31 Records of intervention and maintenance

37 New structures or major works to existing structures

38 Minor new works to existing structures

N822 - Residential Area #8

ANU ID Number	**N822**
HMP Number	**032**
Type	**Accomodation**
Ownership	**ANU**
Management	**ANU**
Status	**Active**
Date constructed/ installed	**c1964-65**
Level of significance	**Moderate**

(Source: Context 2014)

History

According to contemporary plans (ANU plans), the individual residences were designed by Architects and Town Planners Bunning and Madden as 'technician's houses' in c1964-5. A photo which appears to date to the 1960s (Figure 20) indicates that Residence no. 3 was one of the first to be constructed, with its different floor plan and construction (in 2014 the residence is not occupied). The photo also shows that the Director's Cottage had been built by this date, and that the residences were under construction.

A photo dating to c1973 confirms that the residences were built by this date (Figure 21) (Judy Over photo collection, N.D.), while drawings dating to 1969 and the 1970s further confirm that the residential area (labelled 'Technicians Houses' on plans) was completed by this date (ANU plan, 14 April 1969; 75/A/1582).

Description

Residences Nos 4-8 are very similar with minor changes in plan form and some minor differences since construction. Designed by Bunning & Madden and constucted c1965 the residences are in the Post-War International style. The residences are rectangular in plan form and of a single level and constructed with light brown face brickwork in double cavity contrustion. Roofs are shallow gable forms with dark brown glazed tile cladding. A design feature of the residences are brick blade walls at the ends and recessed porch entries. Typically the residences have windows in the longer frontages with a single window in the end walls.

Condition

Good condition - occupied

Threats

Lack of maintenance if it becomes unoccupied. Also bushfires.

Masterplan issues

None specific

Relevant policies

21 Bushfire planning

23 Compatible uses

27 Maintenance planning and works

29 Condition monitoring

30 Standards of Maintenance

31 Records of intervention and maintenance

37 New structures or major works to existing structures

38 Minor new works to existing structures

N823 - Residential Area #7

ANU ID Number	**N823**
HMP Number	**033**
Type	**Accomodation**
Ownership	**ANU**
Management	**ANU**
Status	**Active**
Date constructed/ installed	**c1964-65**
Level of significance	**Moderate**

(Source: Context 2014)

History

According to contemporary plans (ANU plans), the individual residences were designed by Architects and Town Planners Bunning and Madden as 'technician's houses' in c1964-5. A photo which appears to date to the 1960s (Figure 20) indicates that Residence no. 3 was one of the first to be constructed, with its different floor plan and construction (in 2014 the residence is not occupied). The photo also shows that the Director's Cottage had been built by this date, and that the residences were under construction.

A photo dating to c1973 confirms that the residences were built by this date (Figure 21) (Judy Over photo collection, N.D.), while drawings dating to 1969 and the 1970s further confirm that the residential area (labelled 'Technicians Houses' on plans) was completed by this date (ANU plan, 14 April 1969; 75/A/1582).

Description

Residences Nos 4-8 are very similar with minor changes in plan form and some minor differences since construction. Designed by Bunning & Madden and constucted c1965 the residences are in the Post-War International style. The residences are rectangular in plan form and of a single level and constructed with light brown face brickwork in double cavity contrustion. Roofs are shallow gable forms with dark brown glazed tile cladding. A design feature of the residences are brick blade walls at the ends and recessed porch entries. Typically the residences have windows in the longer frontages with a single window in the end walls.

Condition

Good condition - occupied

Threats

Lack of maintenance if it becomes unoccupied. Also bushfires.

Masterplan issues

None specific

Relevant policies

21 Bushfire planning

23 Compatible uses

27 Maintenance planning and works

29 Condition monitoring

30 Standards of Maintenance

31 Records of intervention and maintenance

37 New structures or major works to existing structures

38 Minor new works to existing structures

N824 - Residential Area #6

ANU ID Number	**N824**
HMP Number	**034**
Type	**Accomodation**
Ownership	**ANU**
Management	**ANU**
Status	**Active**
Date constructed/ installed	**c1964-65**
Level of significance	**Moderate**

(Source: Context 2014)

History

According to contemporary plans (ANU plans), the individual residences were designed by Architects and Town Planners Bunning and Madden as 'technician's houses' in c1964-5. A photo which appears to date to the 1960s (Figure 20) indicates that Residence no. 3 was one of the first to be constructed, with its different floor plan and construction (in 2014 the residence is not occupied). The photo also shows that the Director's Cottage had been built by this date, and that the residences were under construction.

A photo dating to c1973 confirms that the residences were built by this date (Figure 21) (Judy Over photo collection, N.D.), while drawings dating to 1969 and the 1970s further confirm that the residential area (labelled 'Technicians Houses' on plans) was completed by this date (ANU plan, 14 April 1969; 75/A/1582).

Description

Residences Nos 4-8 are very similar with minor changes in plan form and some minor differences since construction. Designed by Bunning & Madden and constucted c1965 the

residences are in the Post-War International style. The residences are rectangular in plan form and of a single level and constructed with light brown face brickwork in double cavity contrustion. Roofs are shallow gable forms, generally with dark brown glazed tile cladding, but No. 6 that has a white metal profile roof. A design feature of the residences are brick blade walls at the ends and recessed porch entries. Typically the residences have windows in the longer frontages with a single window in the end walls.

Condition

Good condition - occupied

Threats

Lack of maintenance if they become unoccupied and also bushfires.

Masterplan issues

None specific

Relevant policies

21 Bushfire planning

23 Compatible uses

27 Maintenance planning and works

29 Condition monitoring

30 Standards of Maintenance

31 Records of intervention and maintenance

37 New structures or major works to existing structures

38 Minor new works to existing structures

N825 - Residential Area #5

ANU ID Number	**N825**
HMP Number	**035**
Type	**Accomodation**
Ownership	**ANU**
Management	**ANU**
Status	**Active**
Date constructed/ installed	**c1964-65**
Level of significance	**Moderate**

(Source: Context 2014)

History

According to contemporary plans (ANU plans), the individual residences were designed by Architects and Town Planners Bunning and Madden as 'technician's houses' in c1964-5 [Geoff to confirm source of this date and confirm it was these architect's that designed them – as there are two architect t drawings]. A photo which appears to date to the 1960s (Figure 20) indicates that Residence no. 3 was one of the first to be constructed, with its different floor plan and construction (in 2014 the residence is not occupied). The photo also shows that the Director's Cottage had been built by this date, and that the residences were under construction.

A photo dating to c1973 confirms that the residences were built by this date (Figure 21) (Judy Over photo collection, N.D.), while drawings dating to 1969 and the 1970s further confirm that the residential area (labelled 'Technicians Houses' on plans) was completed by this date (ANU plan, 14 April 1969; 75/A/1582).

Description

Residences Nos 4-8 are very similar with minor changes in plan form and some minor differences since construction. Designed by Bunning & Madden and constucted c1965 the residences are in the Post-War International style. The residences are rectangular in plan form and of a single level and constructed with light brown face brickwork in double cavity contrustion. Roofs are shallow gable forms with dark brown glazed tile cladding. A design feature of the residences are brick blade walls at the ends and recessed porch entries. Typically the residences have windows in the longer frontages with a single window in the end walls.

Condition

Good condition - occupied

Threats

Lack of maintenance if it becomes unoccupied. Also bushfires.

Masterplan issues

None specific

Relevant policies

21 Bushfire planning

23 Compatible uses

27 Maintenance planning and works

29 Condition monitoring

30 Standards of Maintenance

31 Records of intervention and maintenance

37 New structures or major works to existing structures

38 Minor new works to existing structures

N826 - Residential Area #4

ANU ID Number	**N826**
HMP Number	**036**
Type	**Accomodation**
Ownership	**ANU**
Management	**ANU**
Status	**Active**
Date constructed/ installed	**c1964-65**
Level of significance	**Moderate**

(Source: Context 2014)

History

According to contemporary plans (ANU plans), the individual residences were designed by Architects and Town Planners Bunning and Madden as 'technician's houses' in c1964-5. A photo which appears to date to the 1960s (Figure 20) indicates that Residence no. 3 was one of the first to be constructed, with its different floor plan and construction (in 2014 the residence is not occupied). The photo also shows that the Director's Cottage had been built by this date, and that the residences were under construction.

A photo dating to c1973 confirms that the residences were built by this date (Figure 21) (Judy Over photo collection, N.D.), while drawings dating to 1969 and the 1970s further confirm that the residential area (labelled 'Technicians Houses' on plans) was completed by this date (ANU plan, 14 April 1969; 75/A/1582).

Description

Residences Nos 4-8 are very similar with minor changes in plan form and some minor differences since construction. Designed by Bunning & Madden and constucted c1965 the

residences are in the Post-War International style. The residences are rectangular in plan form and of a single level and constructed with light brown face brickwork in double cavity contrustion. Roofs are shallow gable forms with dark brown glazed tile cladding. A design feature of the residences are brick blade walls at the ends and recessed porch entries. Typically the residences have windows in the longer frontages with a single window in the end walls.

Condition

Good condition - occupied

Threats

Lack of maintenance if it becomes unoccupied. Also bushfires.

Masterplan issues

None specific

Relevant policies

21 Bushfire planning

23 Compatible uses

27 Maintenance planning and works

29 Condition monitoring

30 Standards of Maintenance

31 Records of intervention and maintenance

37 New structures or major works to existing structures

38 Minor new works to existing structures

Stellan A & B Telescopes

ANU ID Number	**None**
HMP Number	**047**
Type	**Telescopes**
Ownership	**LCOGT (Las Cumbres Observatory Global Telescope Network)**
Management	**LCOGT (Las Cumbres Observatory Global Telescope Network)**
Status	**Active**
Date constructed/ installed	**2013**
Level of significance	**Low**

(Source: Context 2014)

History

Las Cumbres presence at the SSO site was recently expanded with the addition of the two Stellan A and Stellan B telescopes, immediately to the south-west of the Faulkes Telescope South. The two 1-meter telescopes comprise a node of the southern hemisphere telescope network that Las Cumbres is currently deploying, with others at the Cerro Tololo Inter-American Observatory (CTIO) in central Chile and at the South African Astronomical Observatory in Sutherland, South Africa. The term 'Stellan', which is common to all of the telescopes in the network, applies to the Las Cumbres Observatory 1-meter enclosures. These are walls married to modified Ash-Dome (manufacturer) domes that are highly integrated with the telescope and electrical and software systems.

Description

These two 1-meter telescopes are nodes of the Las Cumbres southern hemisphere telescope network. The term 'Stellan', which is common to all of the telescopes in the network, applies to the Las Cumbres Observatory 1-meter enclosures within which the telescopes are each

contained. These circular structures comprise standing-seam walls married to modified Ash-Dome dome that are highly integrated with the telescope and electrical and software systems.

Condition

Good – operational

Threats

None specific

Masterplan issues

None specific

Relevant policies

13 Relationship with external management organisations

21 Bushfire planning

23 Compatible uses

Director's cottage site

ANU ID Number	**None**
HMP Number	**048**
Type	**Accomodation**
Ownership	**ANU**
Management	**ANU**
Status	**Site (destroyed by 2013 bushfire)**
Date constructed/ installed	**Early 1960s**
Level of significance	**Low**

(Source: Context 2014)

History

A photo which appears to date to the 1960s indicates that the Director's Cottage had been built by this date. The cottage was desctroyed by the 2013 bushfire.

Description

The remains of the Director's Cottage, which stood between the AAT and the Lodge before it was destroyed by the fires, comprise a single section of brick wall supporting a concrete verandah and steps built around a stone rubble core and with a crazy paving stone façade. This is approached from Observatory Road by a fragment of concrete path. The terrace on which the bulk of the brick veneer house sat remains open, although at the time of writing it was used as a storage area occupied by containers and other equipment. It is possible that some foundation elements survive but nothing is apparent on the surface.

Condition

Destroyed by the bushfire of January 2013. Foundations in poor condition

Threats

Erosion of remains

Masterplan issues

None specific

Relevant policies

21 Bushfire planning

23 Compatible uses

27 Maintenance planning and works

37 New structures or major works to existing structures

42 Interpretation planning

Cattle grids

ANU ID Number	**None**
HMP Number	**043**
Type	**Infrastructure**
Ownership	**ANU**
Management	**ANU**
Status	**Active**
Date constructed/ installed	**Not known**
Level of significance	**Low**

(Source: Context 2014)

History

Following the arrival of European squatters in the mid 19th century, the area within which the site lies has historically been used for pasture, and that to the east (outside the National Park) continues to be used as such.

Description

Two metal cattle grids on Observatory Road ot the eastern approach to the site.

Condition

Fair – operational

Threats

Masterplan issues

None specific

Relevant policies

27 Maintenance planning and works

29 Condition monitoring

30 Standards of Maintenance

31 Records of intervention and maintenance

34 Relationship to Warrumbungle National Park

35 Relationship to the broader landscape

42 Interpretation planning

Road culverts

ANU ID Number	**None**
HMP Number	**045**
Type	**Infrastructure**
Ownership	**ANU**
Management	**ANU**
Status	**Active**
Date constructed/ installed	**From 1962**
Level of significance	**Low**

(Source: Context 2014)

History

From 1962 there was intense activity on the mountain and its approach. By 1963 the road to Siding Spring Mountain was constructed, mainly funded by Coonabarabran Shire Council (Whitehead 2008:275). In 1968, plans were approved for an improved access road to Blackburn's Hill, to be constructed by Coonabarabran Shire Council.

Description

The roads within the site are generally fairly superficial constructions, as permitted by the underlying geology, and related structures are few. But a number of culverts facilitate the flow of small rivulets beneath the roadway, and one larger example in the east of the site, just before the road to the UK Schmidt Telescope branches from Observatory, incorporates a large concrete pipe surrounded by a built stone facing at either end.

Condition

Good – operational

Threats

None specific

Masterplan issues

None specific

Relevant policies

27 Maintenance planning and works

29 Condition monitoring

30 Standards of Maintenance

38 Minor new works to existing structures

Crazy paving revetment in Western Telescope Area

ANU ID Number	**None**
HMP Number	**044**
Type	**Infrastructure**
Ownership	**ANU**
Management	**ANU**
Status	**Active**
Date constructed/ installed	**Post-1984**
Level of significance	**Low**

(Source: Context 2014)

History

The paving would appear to have been installed following construction of the ATT.

Description

Crazy paving revetment lining the slightly terraced roadways between the 24 inch Telescope building and the 2.3m ATT.

Condition

Good – operational

Threats

None specific

Masterplan issues

None specific

Relevant policies

27 Maintenance planning and works

Site information shelter

ANU ID Number	**None**
HMP Number	**046**
Type	**Landscape element**
Ownership	**ANU**
Management	**ANU**
Status	**Active**
Date constructed/ installed	**Post-1974**
Level of significance	**Low**


(Source: Context 2014)

History

Erected to the north-east of the Tourist Centre following construction of that facility.

Description

A simple wooden structure comprising a double sided glass faced notice board supported at standing height within a wooden frame and sheltered by a pitched corrugated metal roof. At the time of survey this displayed information and timetables relating to various astonimical programs at the site. It is not clear whether the audience was visitors or operatives.

Condition

Moderate – largely unused

Threats

Lack of obvious purpose

Masterplan issues

None specific

Relevant policies

43 Updating interpretation

47 Visitor offering

Transport casing & cradle for AAT mirror & dummy testing mirror

ANU ID Number	**None**
HMP Number	**049**
Type	**Telescope equipment**
Ownership	**ANU**
Management	**ANU**
Status	**Redundant [installation]**
Date constructed/ installed	**1972-1974**
Level of significance	**Moderate-High**

(Source: Context 2014)

History

The mirror was made by Owens-Illinois in Toledo, USA before being transported to Newcastle, England where Grubb, Parsons and Co took two years to grind and polish its surface. The dummy testing mirror was used to calibrate the mounting built by Mitsubishi Electric in August 1973 until the proper mirror was installed in early 1974

Description

The transport casing for the AAT mirror, its cradle and a dummy testing mirror have been retained and are on display immediately south of the AAT.

Condition

Good

Threats

Robust but unprotected

Masterplan issues

None specific

Relevant policies

43 Updating interpretation

47 Visitor offering