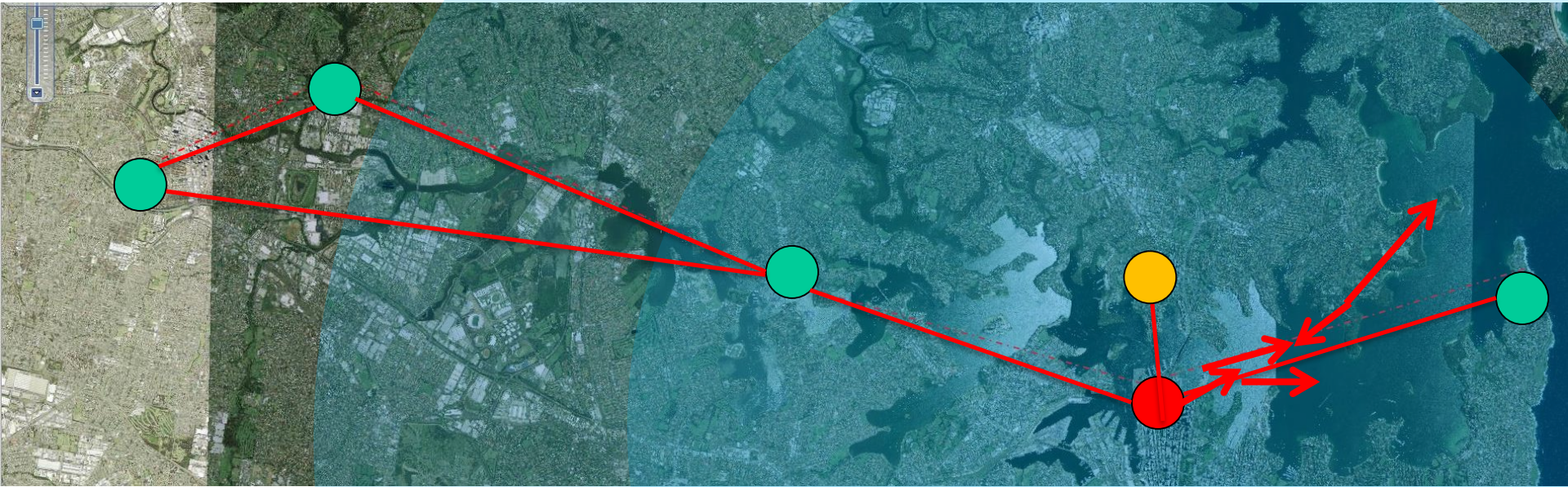


# The Sydney Observatory Site (Intangible) Cultural Heritage Sightlines Within the Cultural & Natural Landscape of Sydney Harbour



**This paper investigates the intangible cultural heritage of the Sydney Observatory site, beyond its legal site boundary through analysis of its historic themes of milling, defence, communications, timekeeping, astronomy, meteorology and surveying .**

**The Sydney Observatory site demonstrates all the NSW Heritage Council 2006 publication defined curtilages of Lot Boundary, Reduced Heritage Curtilage, Expanded Heritage Curtilage and Composite Curtilage, however intangible cultural heritage of the site extends into Observatory Hill and Millers Point, and beyond.**

**The paper commences by presenting the various curtilage examples that apply to the site and widens this perspective of the site to explore related intangible cultural heritage sightlines in the landscapes of the site within the wider cultural and natural landscape of Sydney Harbour, as well as within the world context in relation to astronomical heritage.**

**The paper then looks briefly at how some of these intangible values can be appreciated today and concludes with the idea that a view shed analysis of the harbour can provide ‘proof’ of these intangible values over time and potentially a management approach for rediscovering and conserving and interpreting these values.**

# **The Sydney Observatory Site**

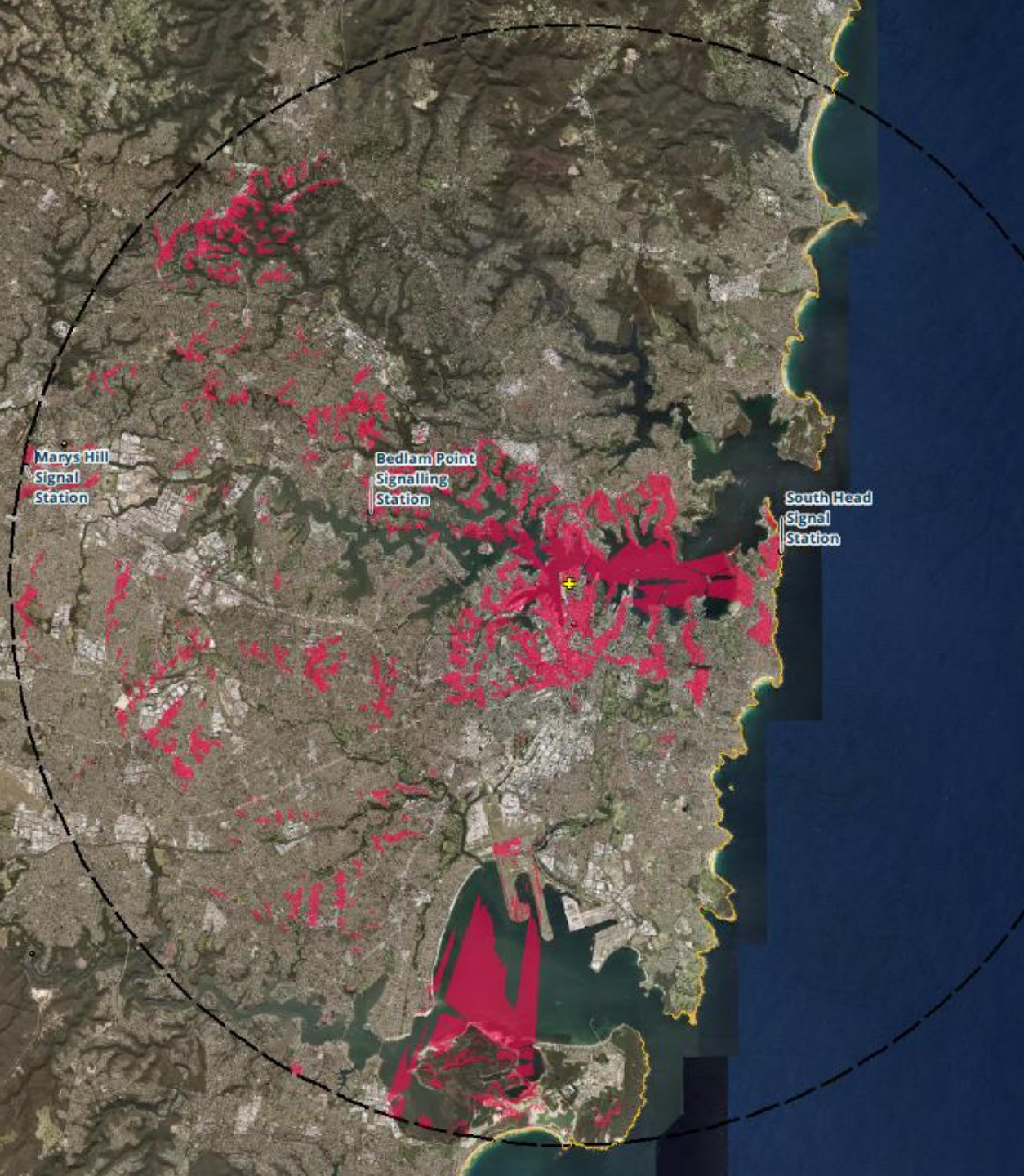
**Intangible cultural landscapes and sightlines**

**Within the cultural & natural landscape of Sydney Harbour**

- **SYDNEY HARBOUR CONTEXT and THE SITE**
- **HISTORIC OVERVIEW** - historic themes of milling, defence, communications, timekeeping, astronomy and surveying.
- **CURTILAGE** - NSW Heritage Council defined curtilage types
- **VIEW and SIGHT LINES** - Broader cultural landscapes and sightlines beyond the boundary
- **CURRENT APPRECIATION** - How the sightlines can be appreciated today
- **VIEW SHED ANALYSIS** rediscovery and management of significance

**Sydney Observatory site**





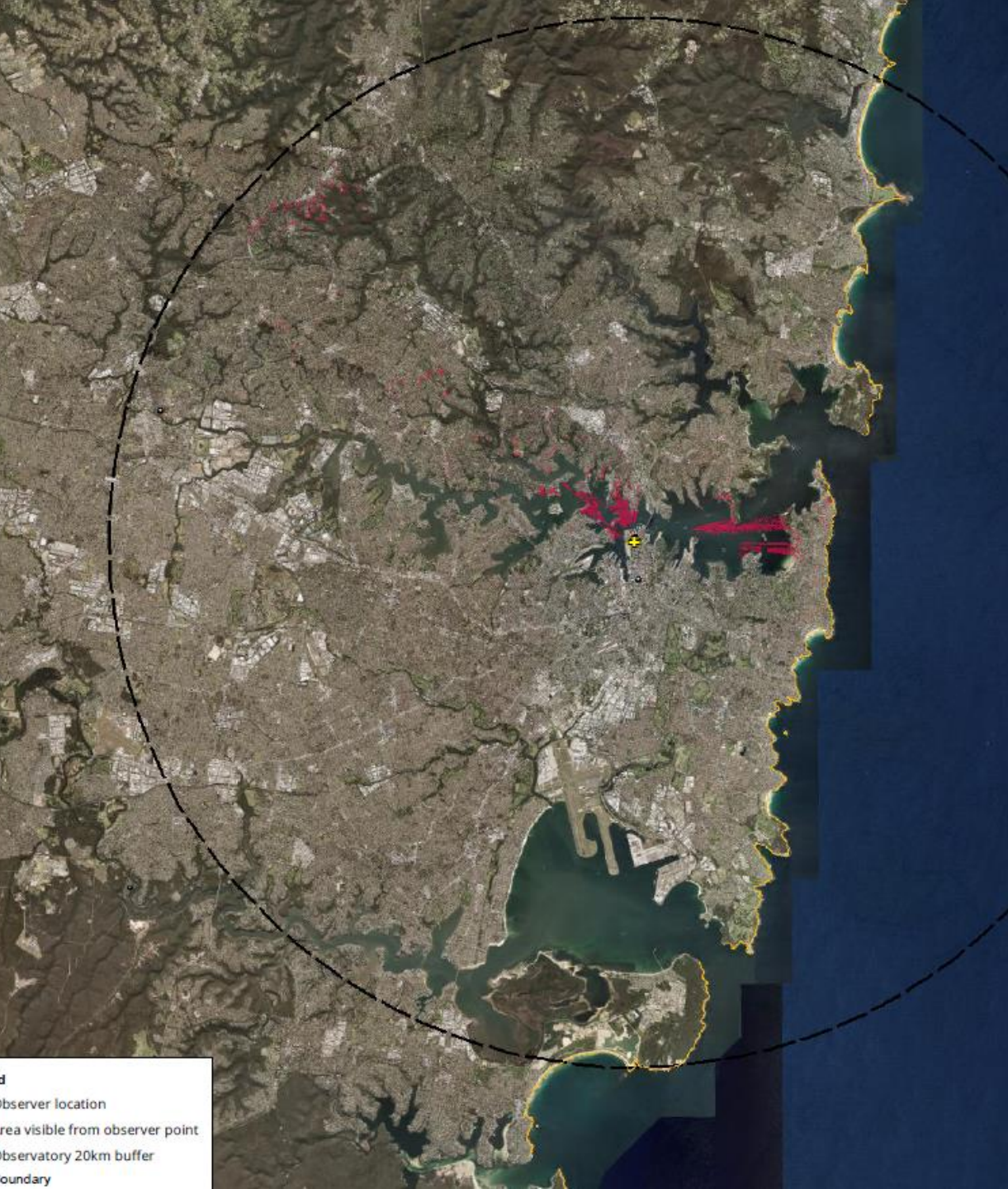
View shed

From eye height at the  
highest point on the  
hill (RL 46.74)

Sydney  
Observatory site

1788





**View shed**

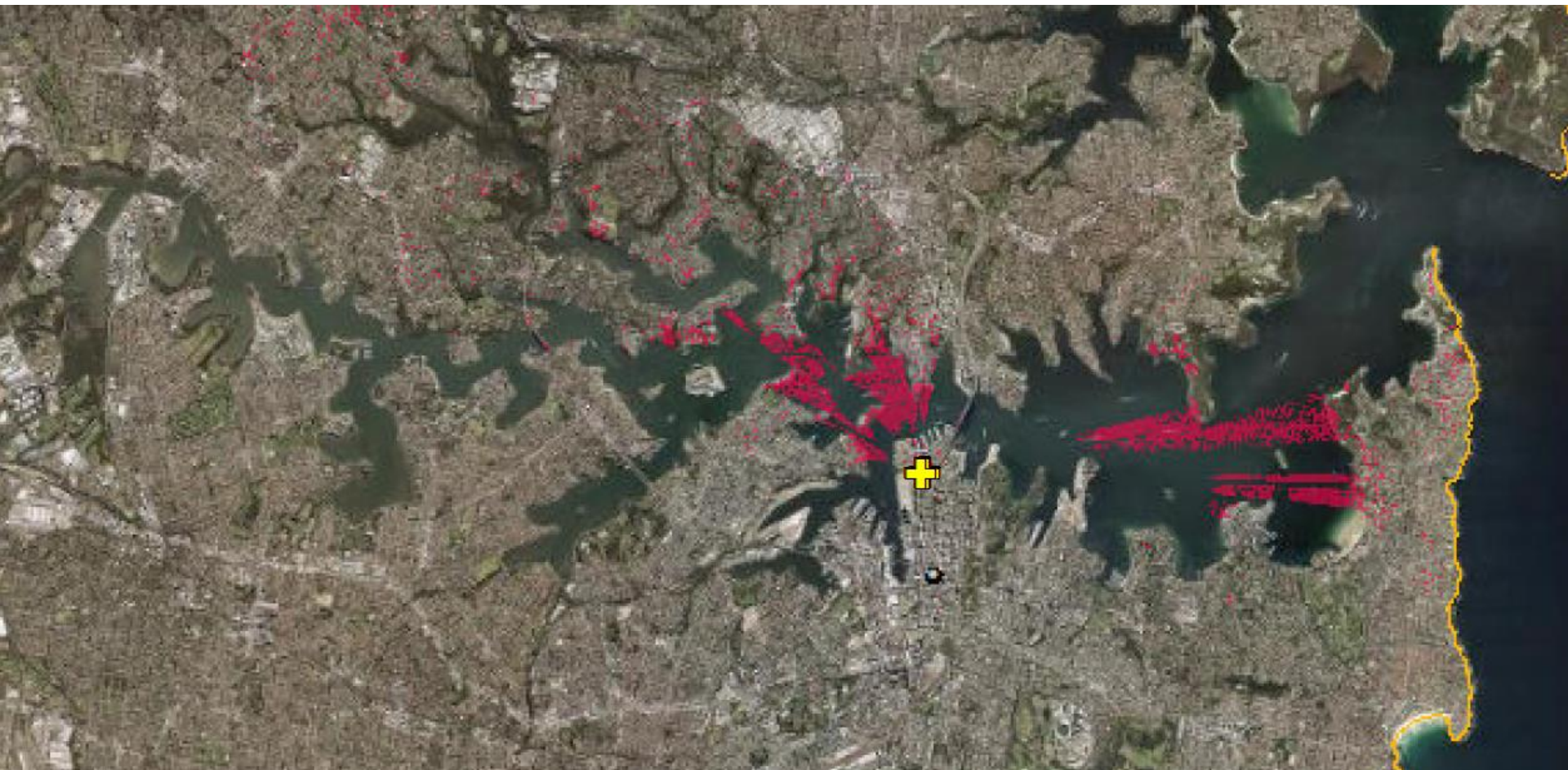
**From eye height at the  
highest point on the  
hill (RL 46.74)**

**Sydney  
Observatory site**

**2013**

**d**  
observer location  
area visible from observer point  
observatory 20km buffer  
boundary





**View shed ZOOM**

**From eye height at the  
highest point on the  
hill (RL 46.74)**

**Sydney Observatory site**

**2013**





**Sydney Observatory site**

**2018**





**Sydney  
Observatory site  
2018**



# Sydney Observatory site

2018





**Sydney  
Observatory site**

**2018**



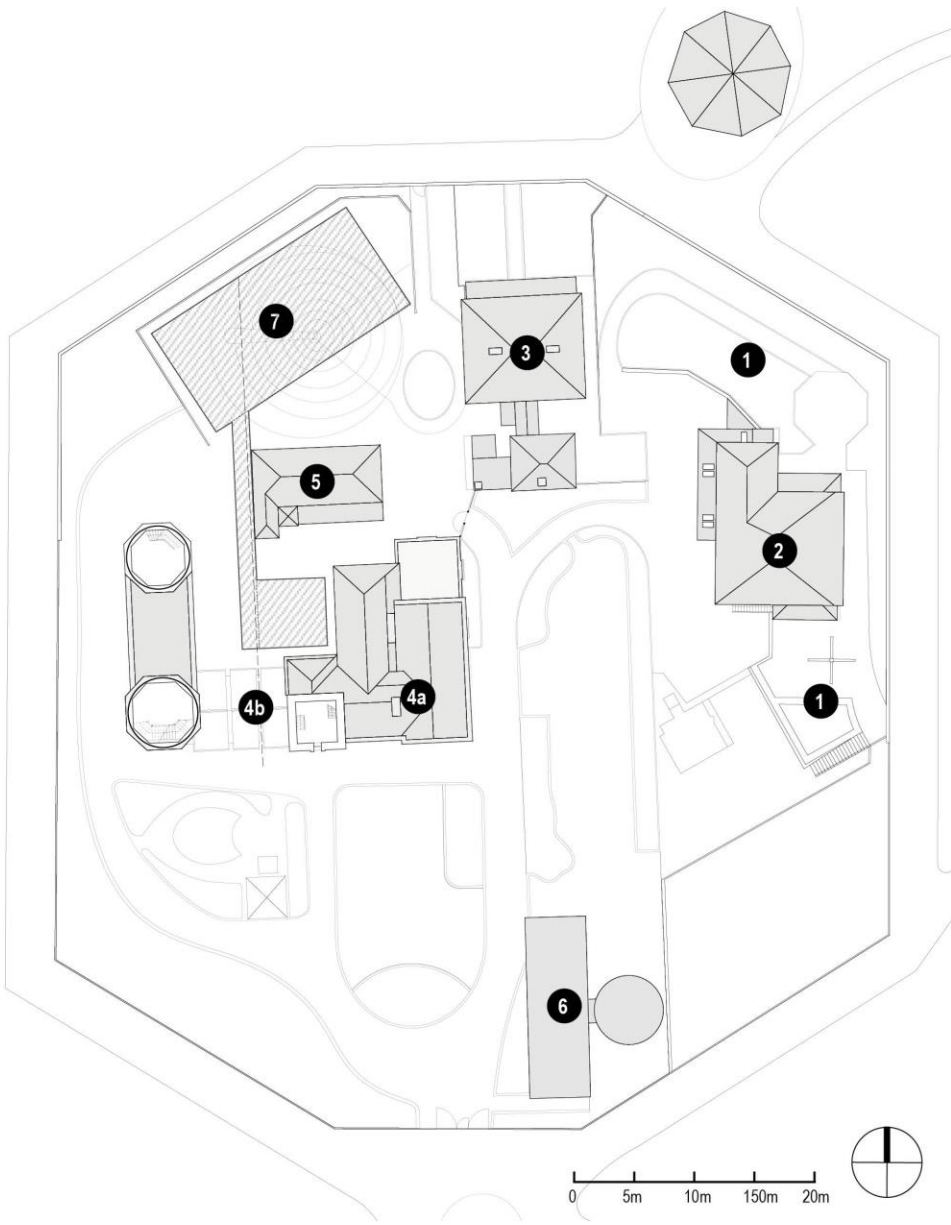
# Sydney Observatory site

2018



**Sydney  
Observatory site**

**2018**

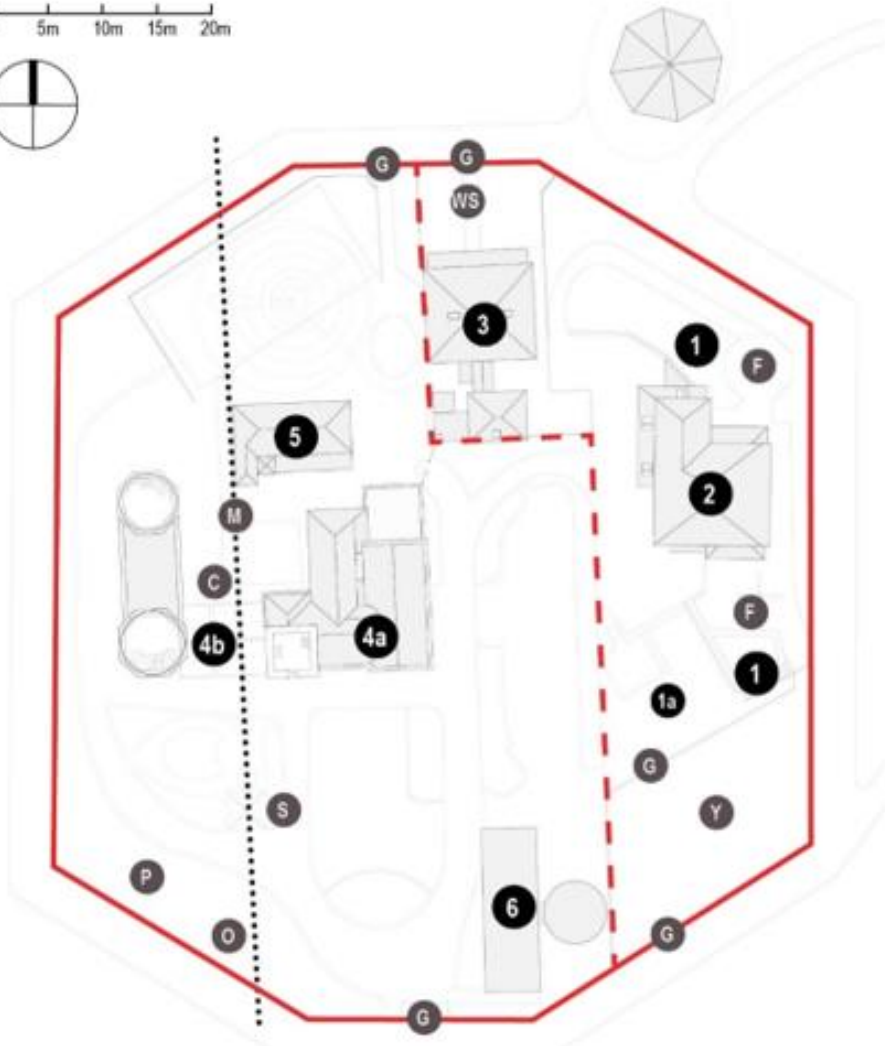


# Sydney Observatory site

2018



0 5m 10m 15m 20m



## KEY

### Fort and Signal Station

- 1 The Fort
- 1a The Fort Bombproof
- 2 The Signal Master's Cottage
- 3 The Messenger's Cottage

### Sydney Observatory

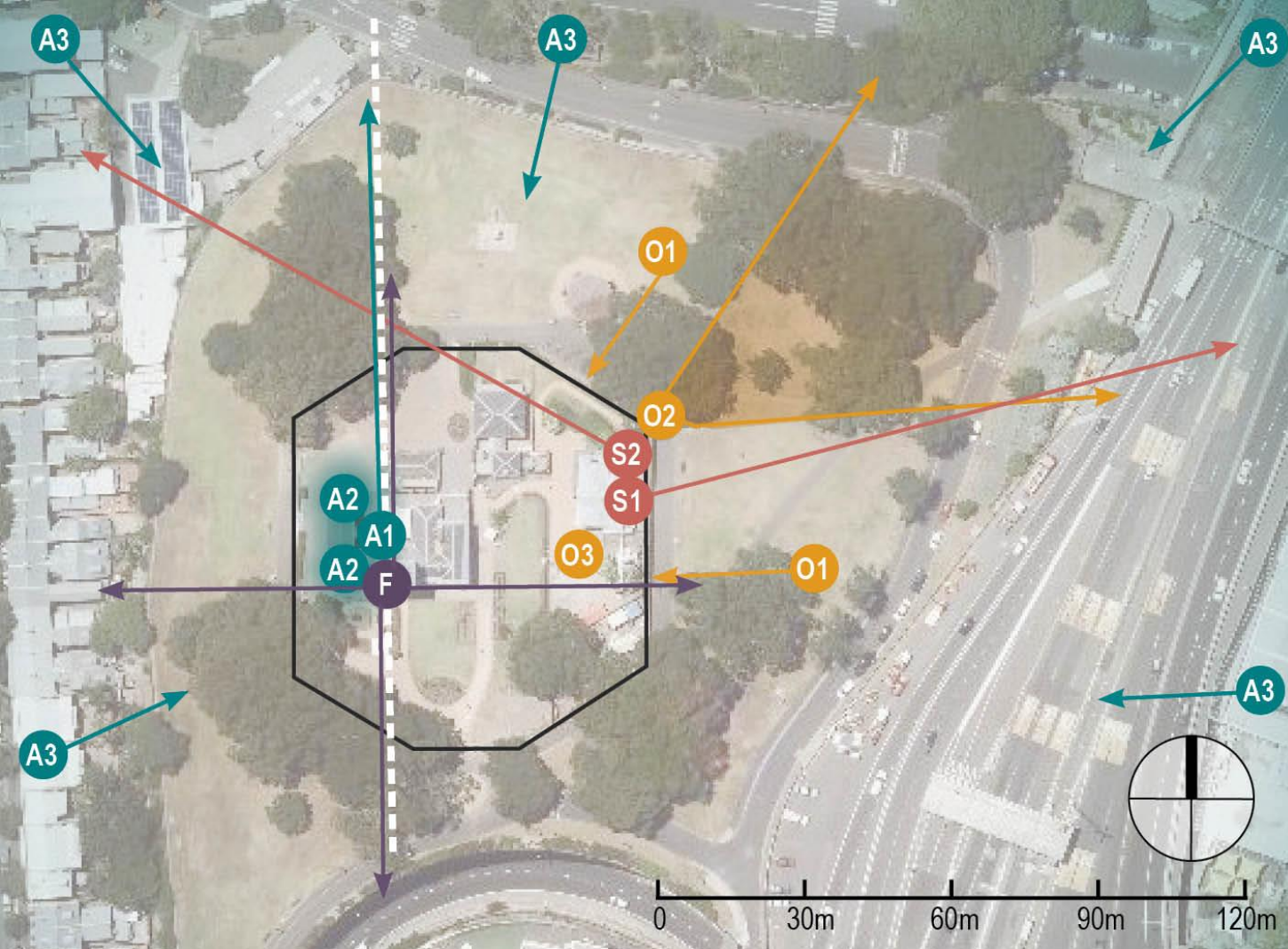
- 4a The Residence
- 4b The Observatory
- 5 Amenities (former Workshop)
- 6 The East Dome

### Site Features

- F Flagstaff
- S1 South Stone & S2 Trig Survey
- C Collimation Mount
- WS Weatherstation equipment
- Y Service / Access Yard
- G Gate
- P Stone Pillar ([42 inch](#) Transit)
- O Stone telescope mount
- M Meridian alignment

# Sydney Observatory site

2018



# Sydney Observatory site

2018





**Views south from the time ball tower**

**Sydney Observatory site**

**Freeman Brothers 1864 (ML) / 2018**



Views west from the time ball tower

**Sydney Observatory site**

**Freeman Brothers 1864 (ML) / 2018**



Views north from the time ball tower

**Sydney Observatory site**

**Freeman Brothers 1864 (ML) / 2018**





Views east from the time ball tower

**Sydney Observatory site**

**Freeman Brothers 1864 (ML) / 2018**

**Historical Overview**  
**Sydney Observatory site**

# Aboriginal activity at Observatory Hill ?



**Aboriginal Country**





Joseph Lycett, 1822

Sydney's early colonial landscape was filled with windmills, which were the 'tallest structures around Sydney Cove from the late 18<sup>th</sup> century'.  
(Gilchrist, 2013)

**MILLING**

**Windmill Hill 1797-1810**

# GRIMES'S PLAN OF SYDNEY.

1800

Cap. S. B. & C.



REFERENCE

LOT	Name	LOT	Name
1	Alex. McDonald	70	M <sup>r</sup> Black
2	James Callum	71	M <sup>r</sup> Turnbull
3	Fred. Markett	72	Capt. Thomson
4	Nick. Divine	73	M <sup>r</sup> Burns
5	Nath. Franklin	74	M <sup>r</sup> Laycock
6	M <sup>r</sup> M. Boyan	75	Capt. Foveaux
7	— Shaw	76	Capt. Paterson
8	Capt. Collins	77	M <sup>r</sup> Kent
9	M <sup>r</sup> Aiken	78	R. Coers
10	M <sup>r</sup> Wilkinson	79	Capt. Johnston
11	Ann Parsley	80	M <sup>r</sup> Bayly
12	M <sup>r</sup> M. Kellar	81	M <sup>r</sup> Laing
13	M <sup>r</sup> Nichol	82	Capt. Waterhouse
14	M <sup>r</sup> Johnson	83	M <sup>r</sup> Raven
15	Ann Sherwin	84	M <sup>r</sup> White
16	J. Flemming	85	M <sup>r</sup> Baldwin
17	— Wilson	86	J. Baughan
18	M <sup>r</sup> Kemp	87	Capt. Waterhouse
19	W. Jameson		



G. Grimes  
May 1800

True N.

Drawn and Printed in the Office of the Surveyor-General, Sydney, N.S.W., Sept 1860  
No. 1000 2104

1. Sydney's first windmill was built within the present Sydney Observatory site boundary in 1797

2. 1797 – near Wynyard

3. 1806 –Fort St School

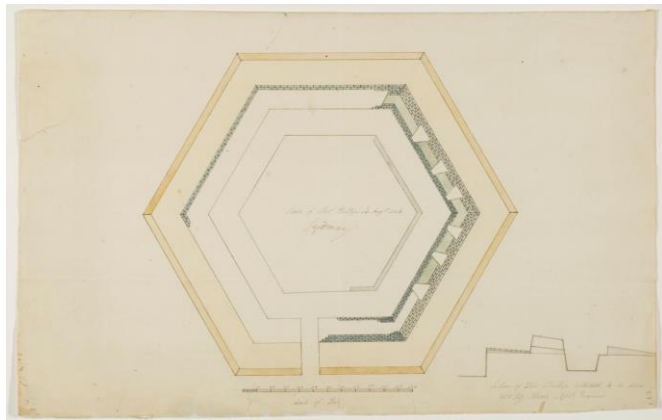
**MILLING**

Grimes, 1800

Windmill Hill 1797-1810



Taylor, c1819-21

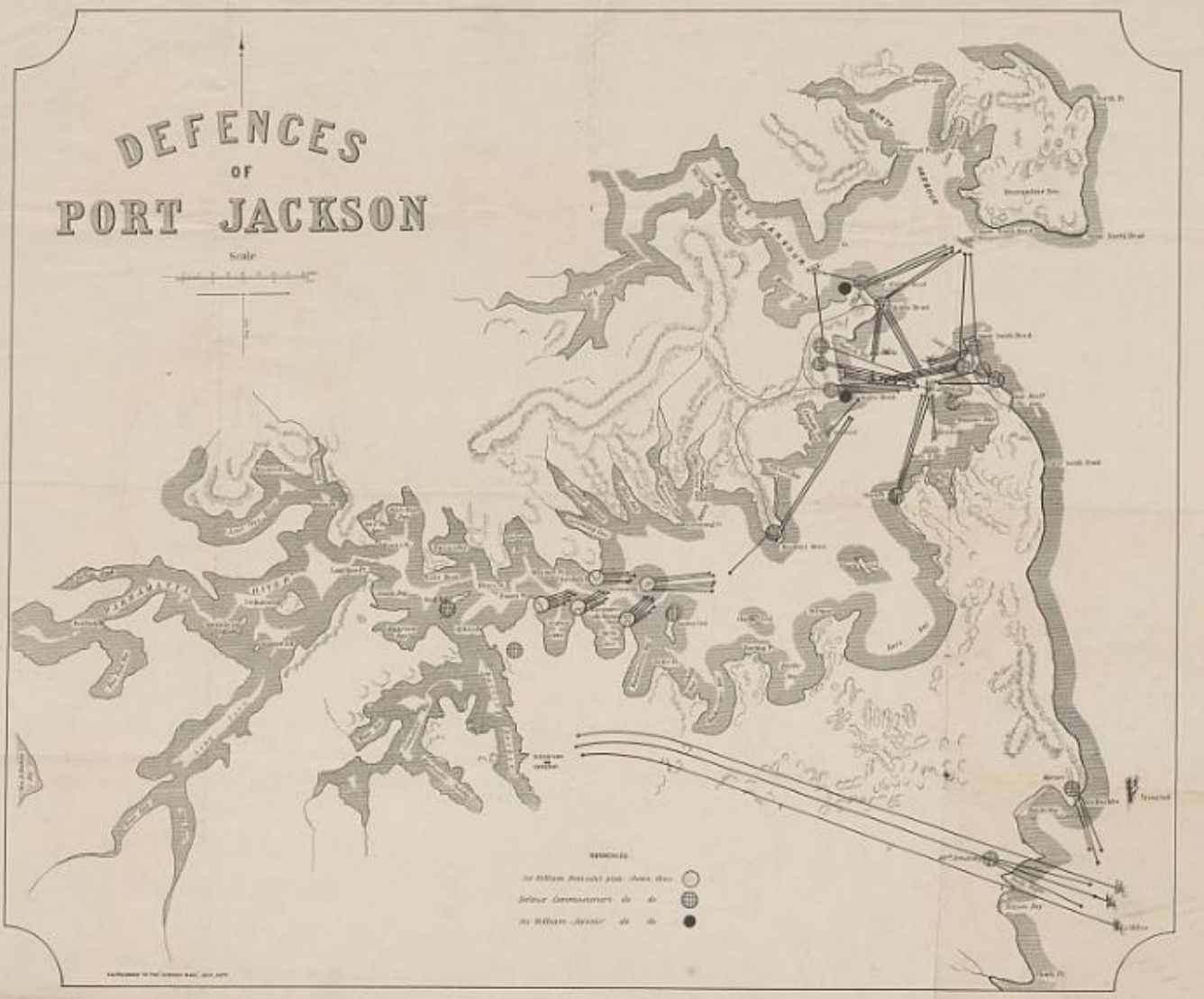


Construction of Fort Phillip commenced in 1804, but ceased by 1806, partially completed

**DEFENCE**

**Fort Phillip 1804 - 1852**



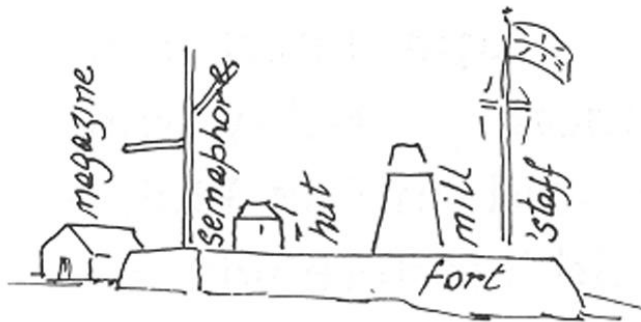


Fort Phillip - part  
a network of  
citadels and  
fortifications  
within Sydney  
Harbour

1877

DEFENCE

Fort Phillip 1804 - 1852



“By 1810 the first signal station was in place on the eastern rampart of Fort Phillip (and the) signal station closed in 1939” (Jacobs)

## COMMUNICATIONS

Fort Phillip Signal Station 1808 - 1847

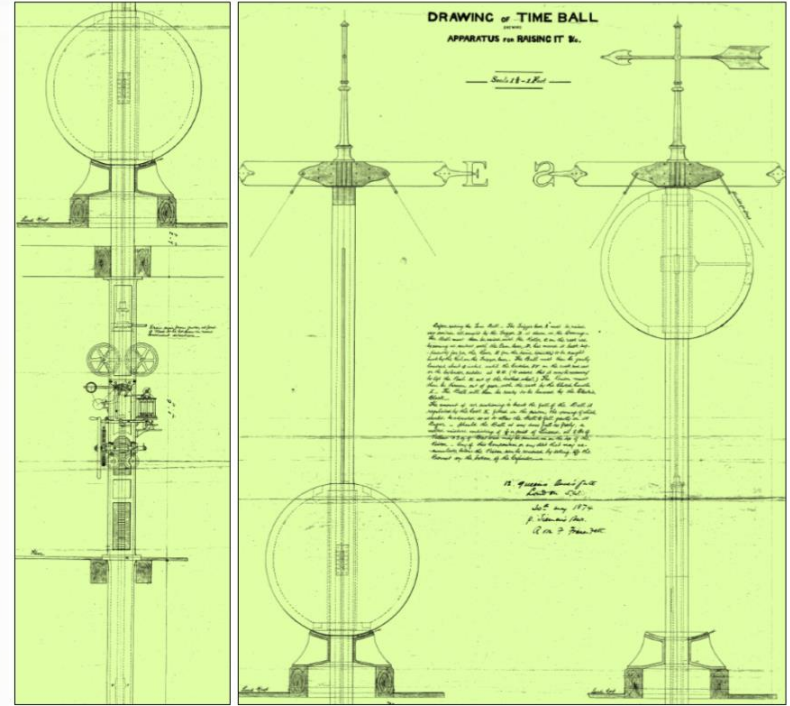
## Fort Phillip Signal Station and the network of signal stations in Sydney Harbour



COMMUNICATIONS

Fort Phillip Signal Station 1808 - 1847





“Sydney Observatory’s primary role was to provide a time service by dropping the yellow time ball on top of its tower. Each day the astronomer used the transit circle to observe the Sun passing due north .. This indicated the exact time of noon... The mean-time clock kept time for the rest of the day” (Jacobs)

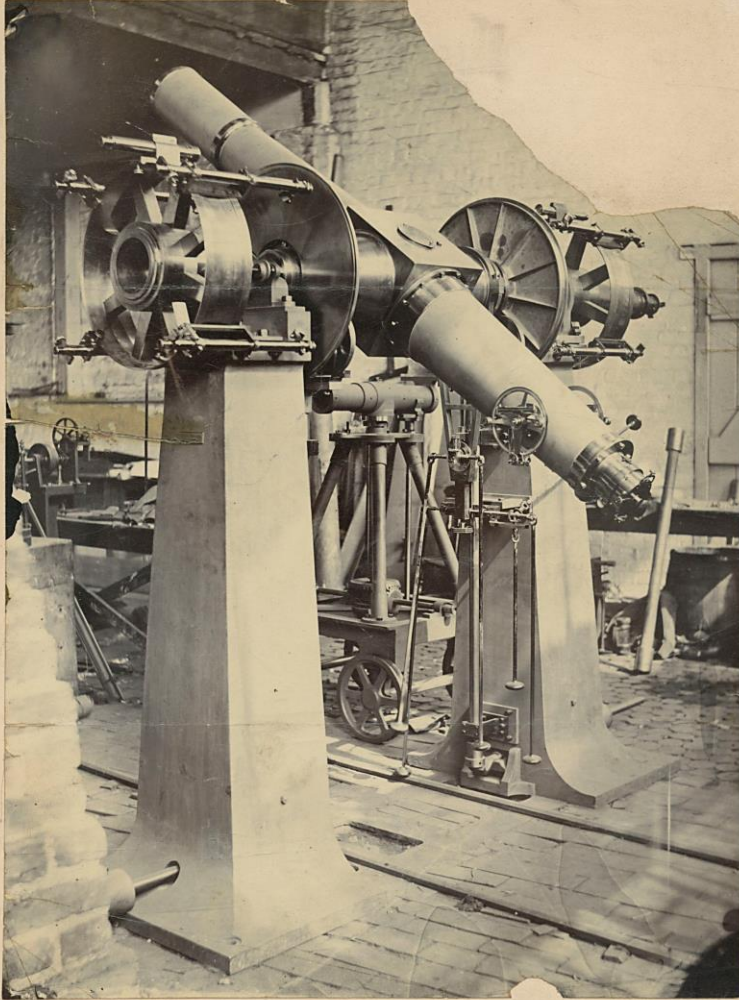
Visibility of the 1858 time ball was important

**ASTRONOMY - Timekeeping**

**Sydney Observatory 1858 - present**

B

Sydney Transit Circle. — 1874.



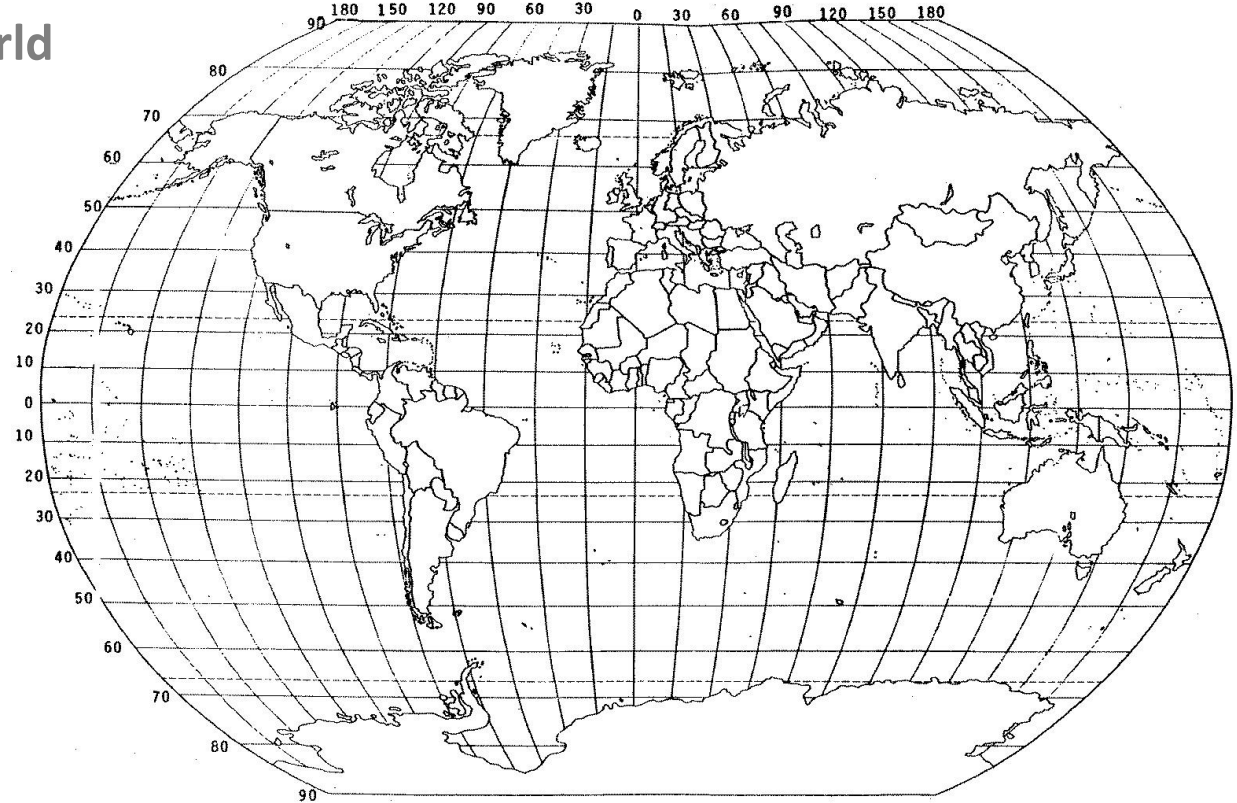
*Sydney Transit Circle 1874 in  
Frothingham & Sims's factory*

“By timing the passage of stars overhead, the relative longitudes of places on Earth are found. Many observations from the Observatory’s transit circle in the 1800s eventually established the building’s – and therefore Sydney’s – precise relative location to the rest of the world.”  
(Jacobs)

**ASTRONOMY - Surveying**

**Sydney Observatory 1858 - present**

# Sydney, Australia in relation to Greenwich and rest of the world



**Sydney Observatory**

**33.8596° S, 151.2047° E**

**Levuka 17°41'5" S, 178°50'4" E**

**Tavenui 180° E international date line**

**ASTRONOMY - Surveying**

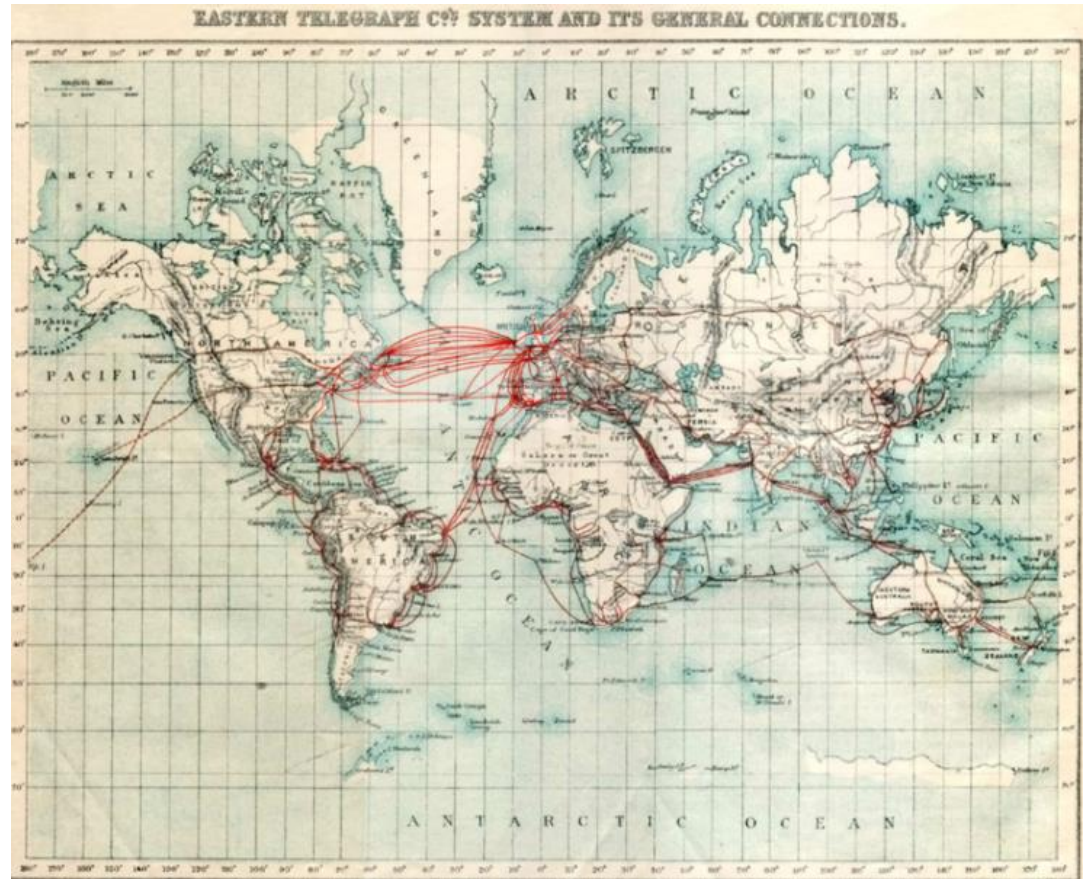
**Sydney Observatory 1858 - present**



The time ball became a marker for the survey of Sydney.

More distant locations were surveyed by transmitting time signals via the telegraph.

Time signals from the Observatory's clocks were distributed via the telegraph also - to the GPO, the railways and the Newcastle time ball (Jacobs)

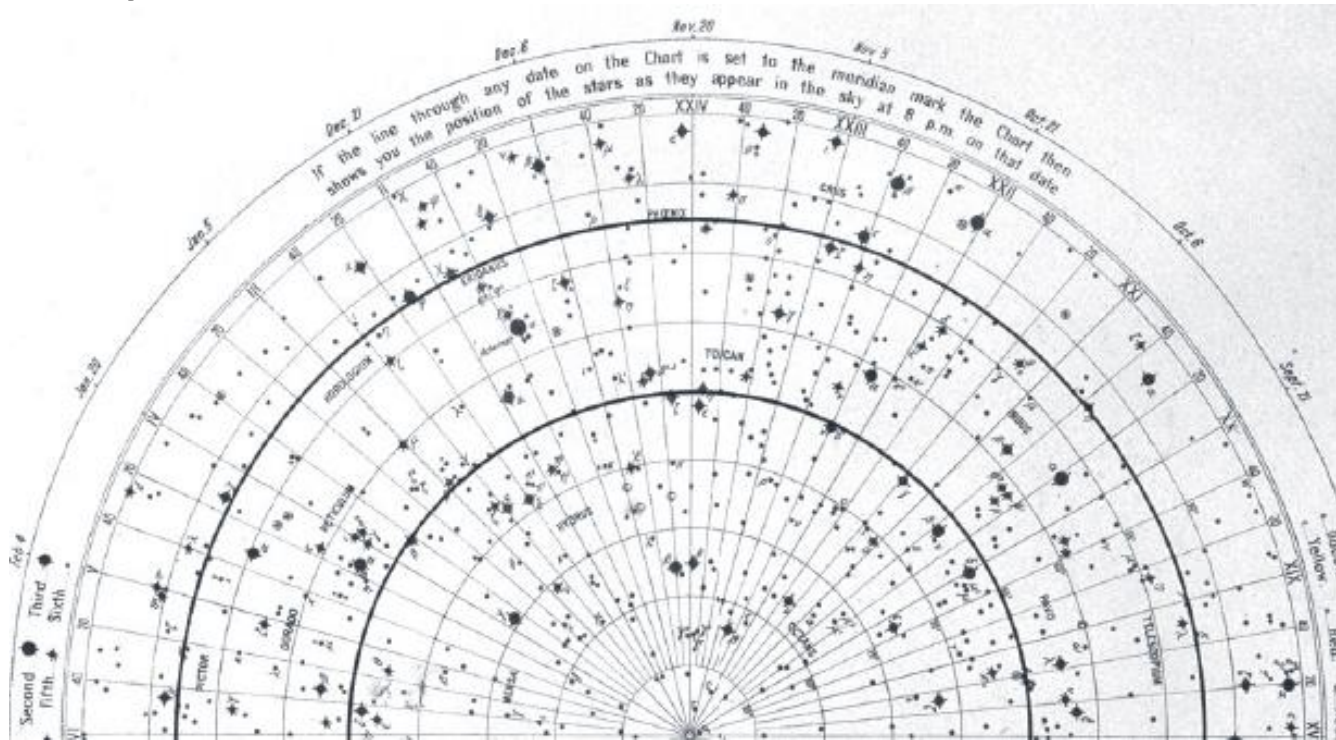


**ASTRONOMY / COMMUNICATIONS – Surveying & Timekeeping**

**Sydney Observatory 1858 - present**



“In 1887 the Observatory joined the Astrographic Catalogue project, an international collaboration of 23 observatories ... to map the entire sky”  
(Jacobs)



**ASTRONOMY – Mapping the Stars**

**Sydney Observatory 1887 - 1971**



# Meteorology

## Recording the weather in NSW

In 1858, Astronomer Scott established 11 other meteorological stations around NSW – at the same time as at Sydney Observatory.

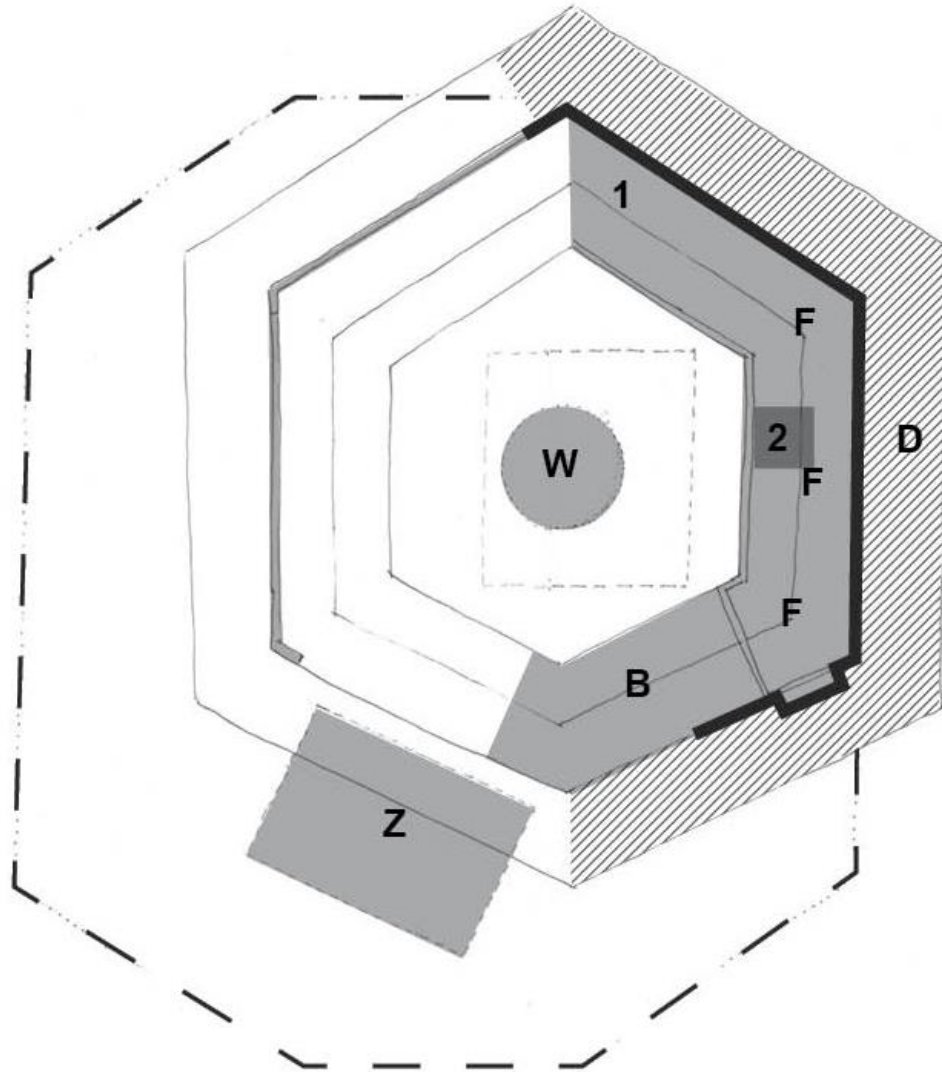
Stations were located at:

Albury, Armidale, Bathurst, Cooma, Deniliquin, Goulburn, Maitland, Parramatta, Gabo Island and Newcastle.

**METEOROLOGY**

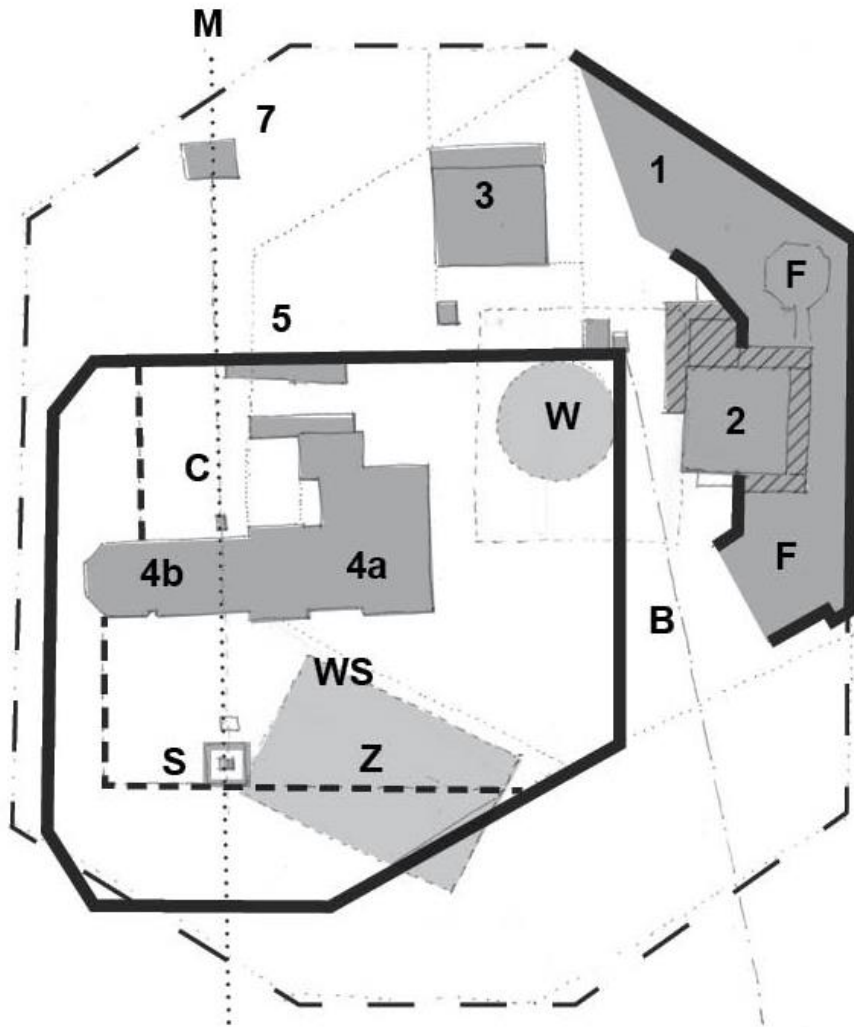
**Sydney Observatory 1858 - present**

**Site Evolution (built)**  
**Sydney Observatory site**

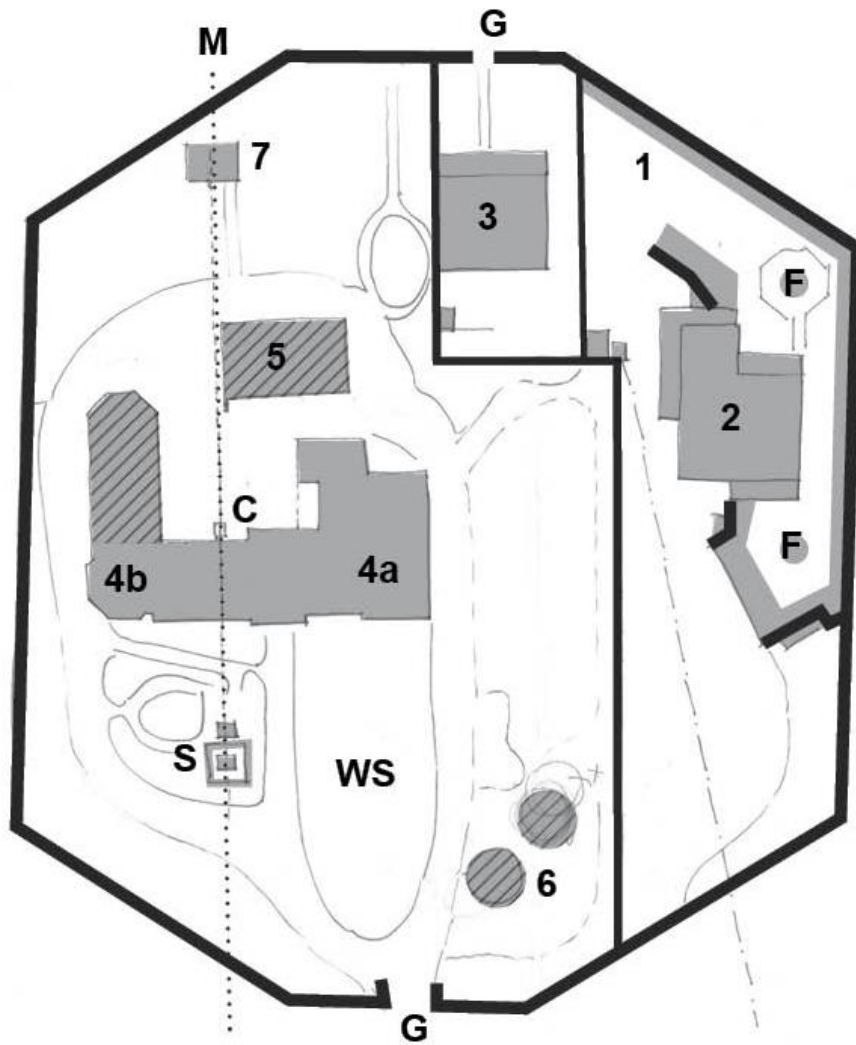


Evolution 1797-1847

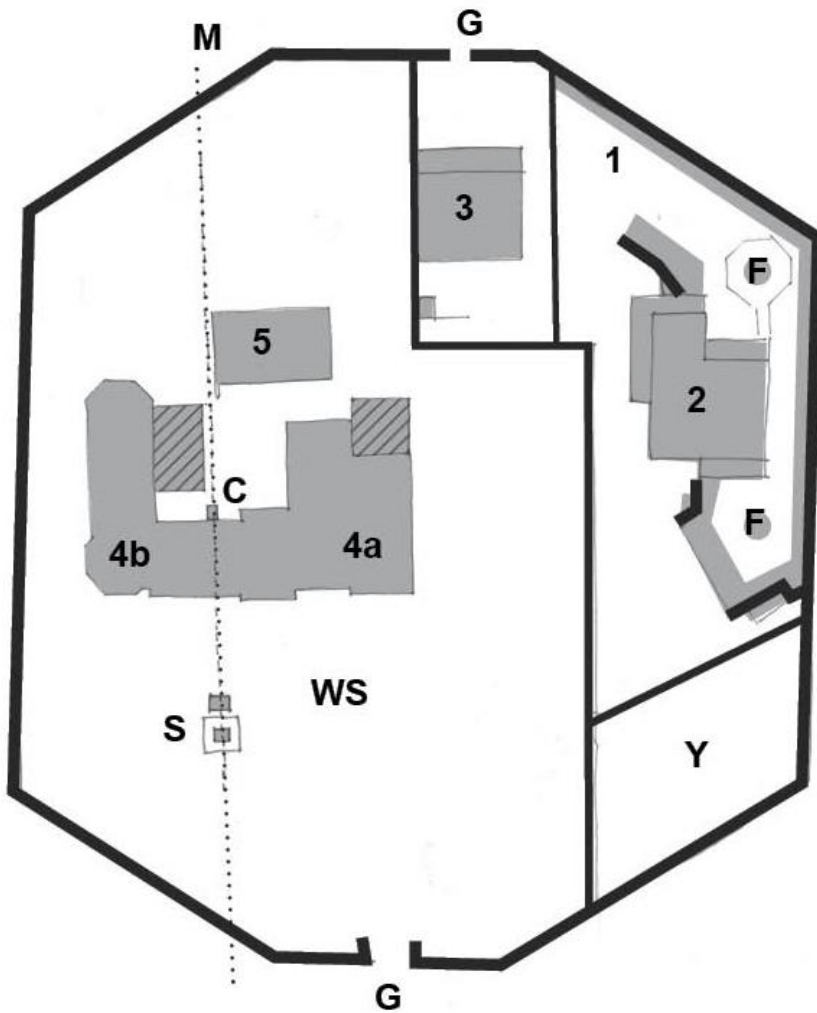




Evolution 1847-1871



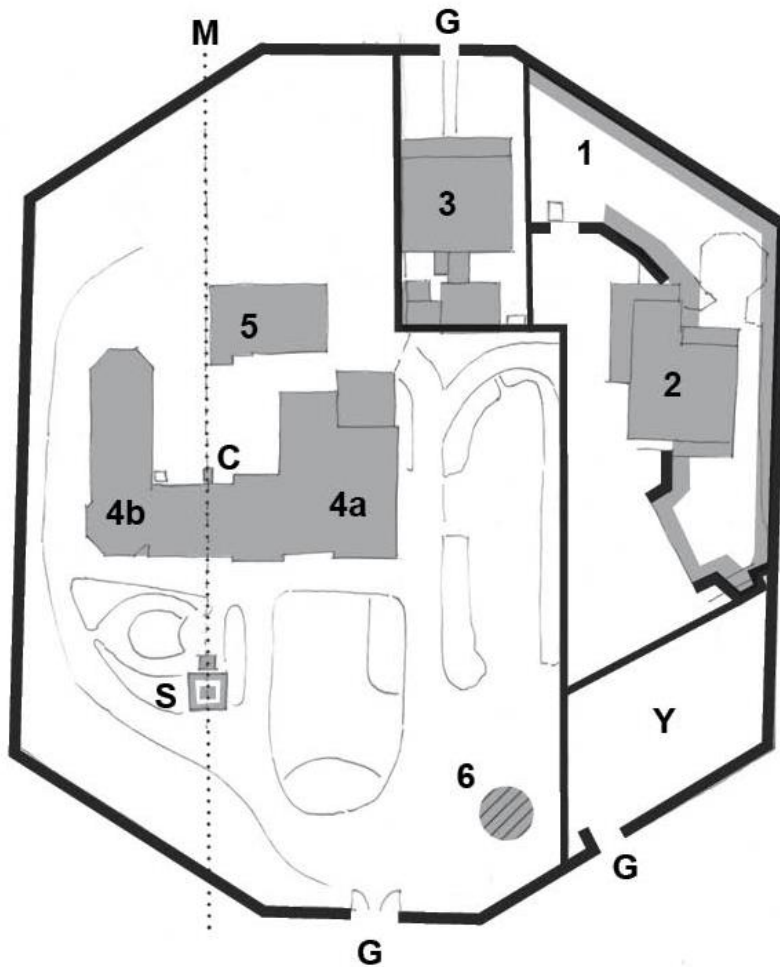
Evolution 1871-1880s



Evolution: 1880-1899

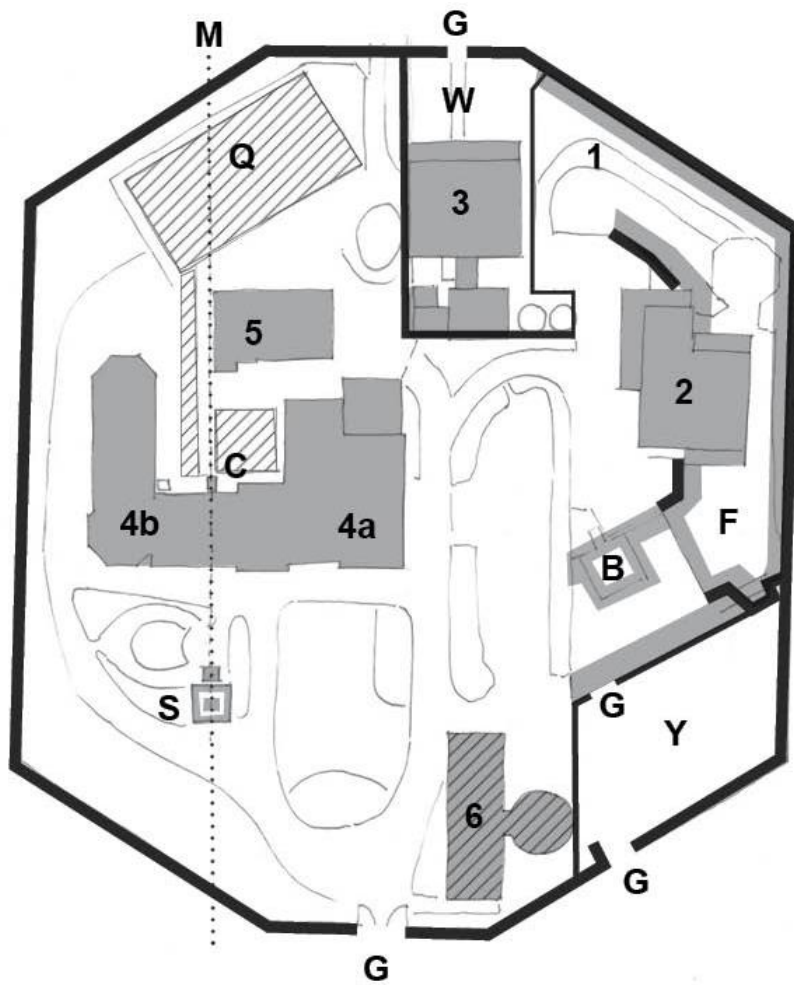
Evolution 1899-1912





Evolution: 1900-1930s

Evolution 1912-1982

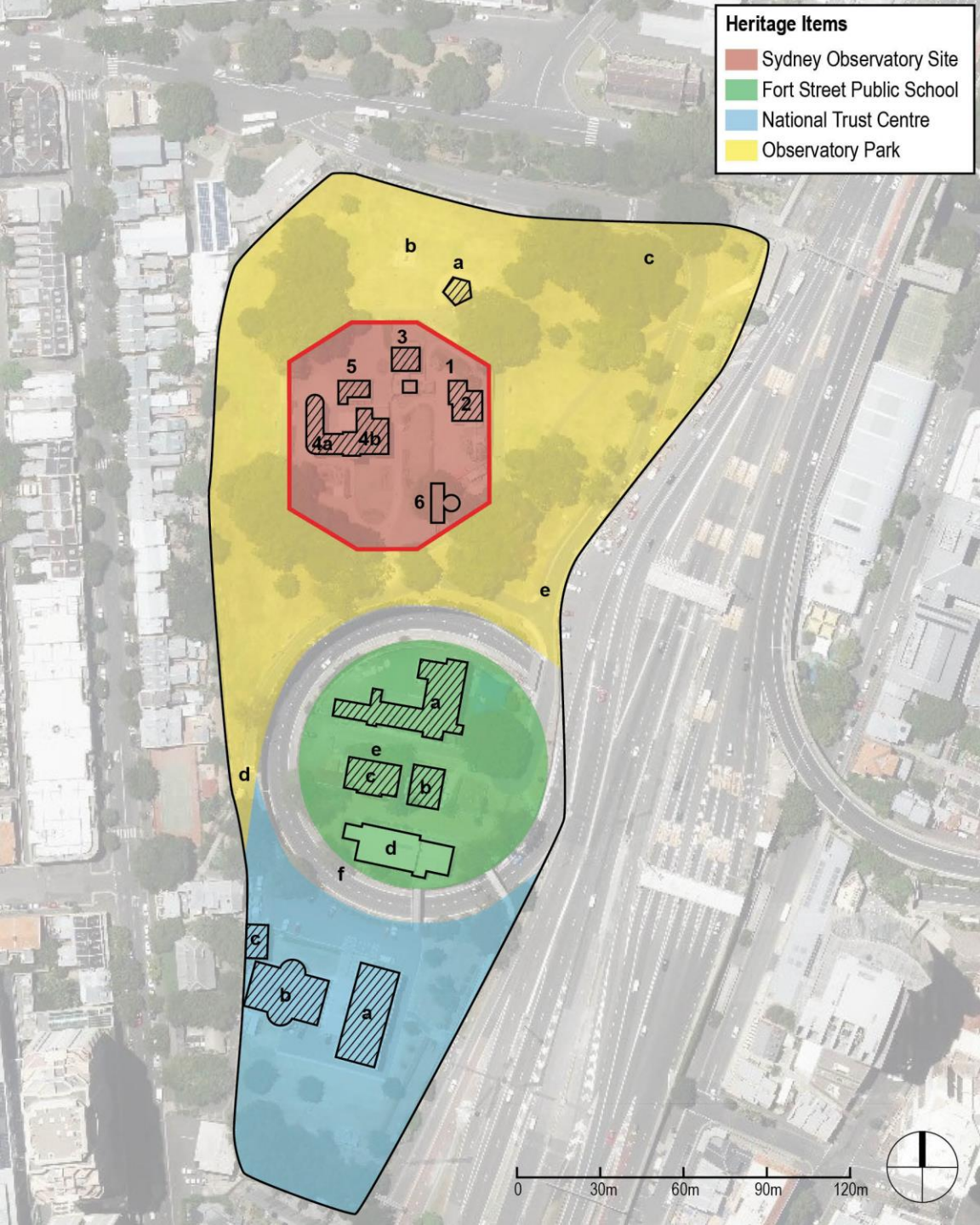


Evolution 1982-present

**Curtilage**

**Sydney Observatory site**





Heritage Items	
<span style="color: red;">■</span>	Sydney Observatory Site
<span style="color: green;">■</span>	Fort Street Public School
<span style="color: blue;">■</span>	National Trust Centre
<span style="color: yellow;">■</span>	Observatory Park

### Legal boundary

- Red outline

### Reduced curtilage

- The Observatory
- The Signal Station

### Expanded curtilage

- Flagstaff Hill Reserve (overlay of 1880s Russell landscape)
- Observatory Hill

## Curtilage



## Legal boundary

- Red outline

## Reduced curtilage

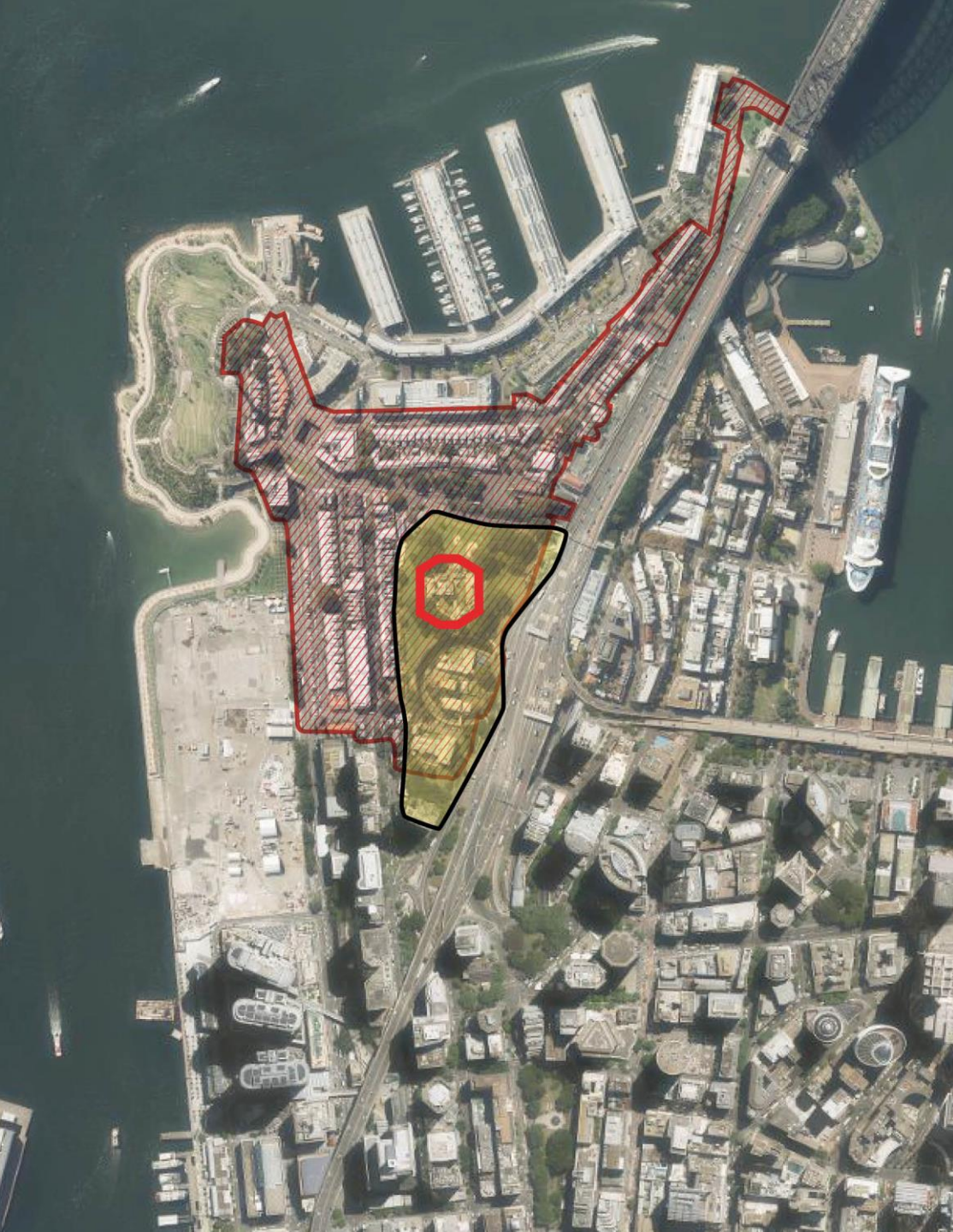
- The Observatory
- The Signal Station

## Expanded curtilage

- Flagstaff Hill Reserve (overlay of 1880s Russell landscape)
- Observatory Hill

**Curtilage**





## Legal boundary

-Red outline

## Expanded curtilage

- Observatory Hill

- Millers Point and Dawes Point Village

Curtilage



**Views and sightlines**

**Intangible cultural values ?**

**Within broader natural and cultural landscapes**

**Sydney Observatory site**

# Intangible cultural heritage in the cultural landscape of Sydney Harbour

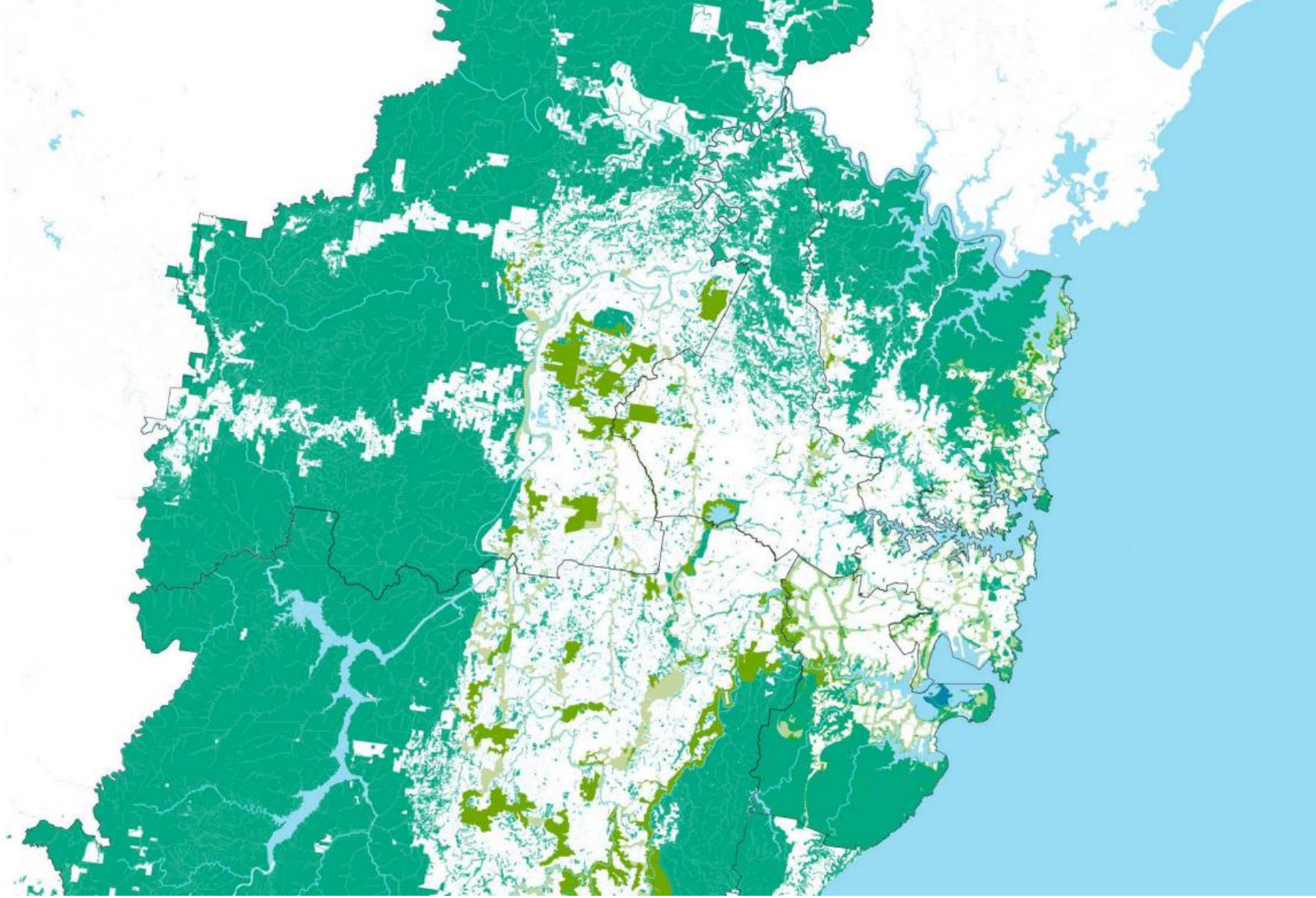
“Associative cultural landscapes are landscapes or landscape features that represent religious, artistic, sacred or other cultural associations to individuals or communities.”

(Understanding Cultural Landscapes, Australia ICOMOS)

“In Australia, forms of intangible cultural heritage arise from every cultural group – from the cultures of Indigenous Australians, the cultures transmitted and adapted through each wave of migrant settler groups, and home-grown cultural practices that reflect peoples' response to the environment, history and cultural settings. “

(Intangible cultural heritage and place, Australia ICOMOS practice note)

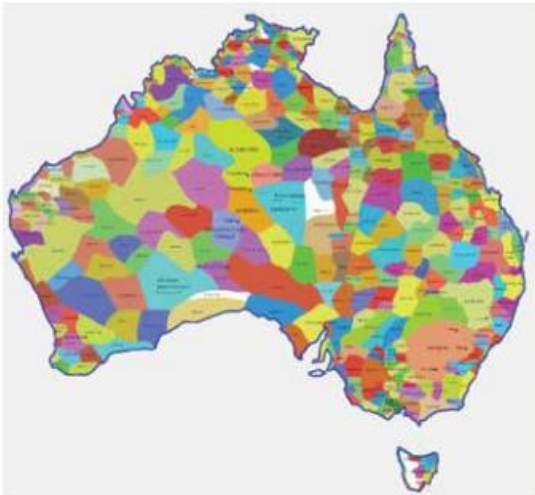
**Sydney Harbour**



**The Green Grid**

**Natural and cultural setting  
Sydney Harbour**





#### Identifying the missing maps

Many types of maps of the Sydney landscape are used to inform planning and design decisions across the city. They include layers of roads and transport, land use and zoning, heritage, waterways, ecological lands, geological and topographic maps, among others.

Mapping layers include various categories of the physical and social landscape, but do not represent an Aboriginal understanding of the landscape. In current maps Aboriginal values are identified only in specific locations of archaeological and heritage value. This provides protection for specific known sites of significance, but does not address broader Aboriginal understanding of the landscape. As a result, current planning and design approaches do not take Aboriginal understanding of the landscape into consideration during the planning process or design of the built environment.

Several Aboriginal community groups have begun to map this type of information. All of these projects are valuable, however, they occur only at a very local level, they are not consistent across Sydney, and do not map values at a metropolitan scale.

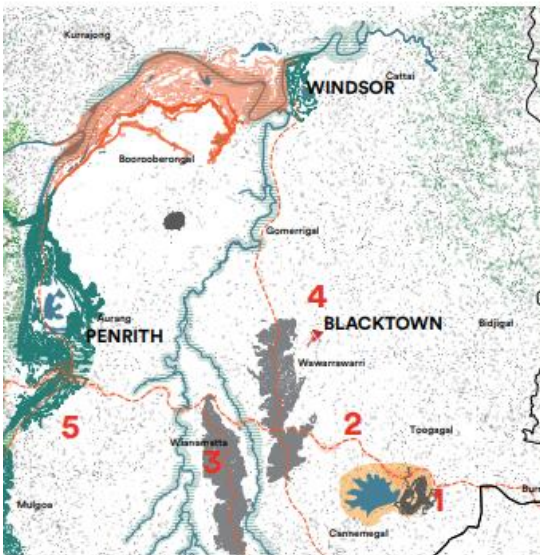
One of the first steps in developing the Ochre Grid will be to identify the work completed and understand how this information could be used as a basis for a broader mapping project.

#### Using digital processes to map knowledge

The digitising of mapping using geographic information system (GIS) data is now an important part of the planning and design process. It is important that Indigenous values are identified and represented in this process. The power of GIS data allows for the collection and presentation of multiple values and complex information.

#### Mapping at multiple scales

Many people now appreciate how mapping occurs simultaneously at multiple scales. The interactivity of mapping, the increasing use of Google Maps and other global positioning system (GPS) software means

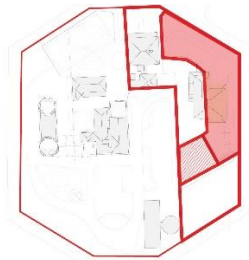
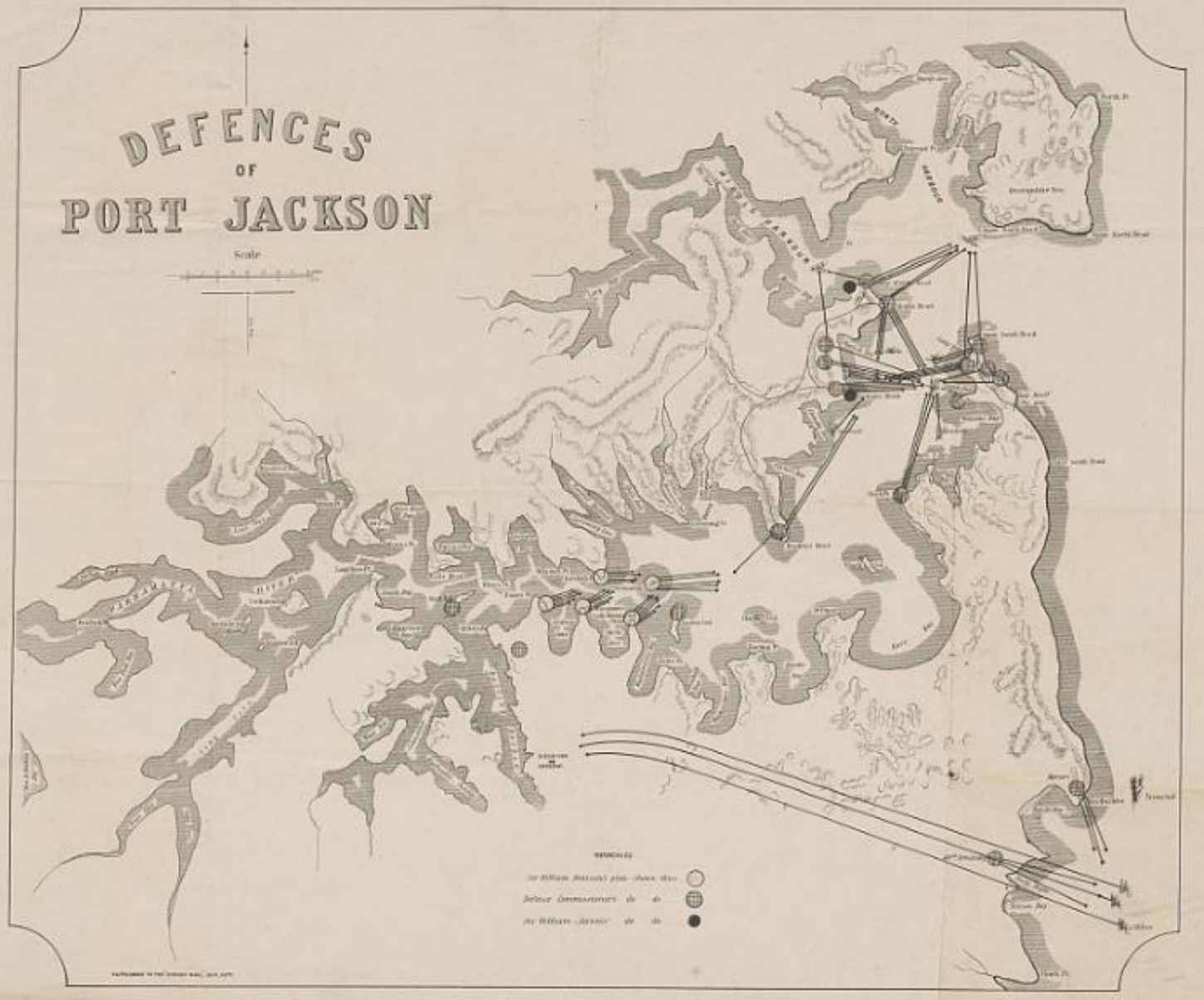


The Ochre Grid

Aboriginal values in the landscape  
Sydney Harbour

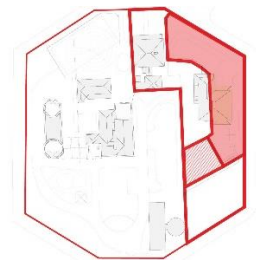
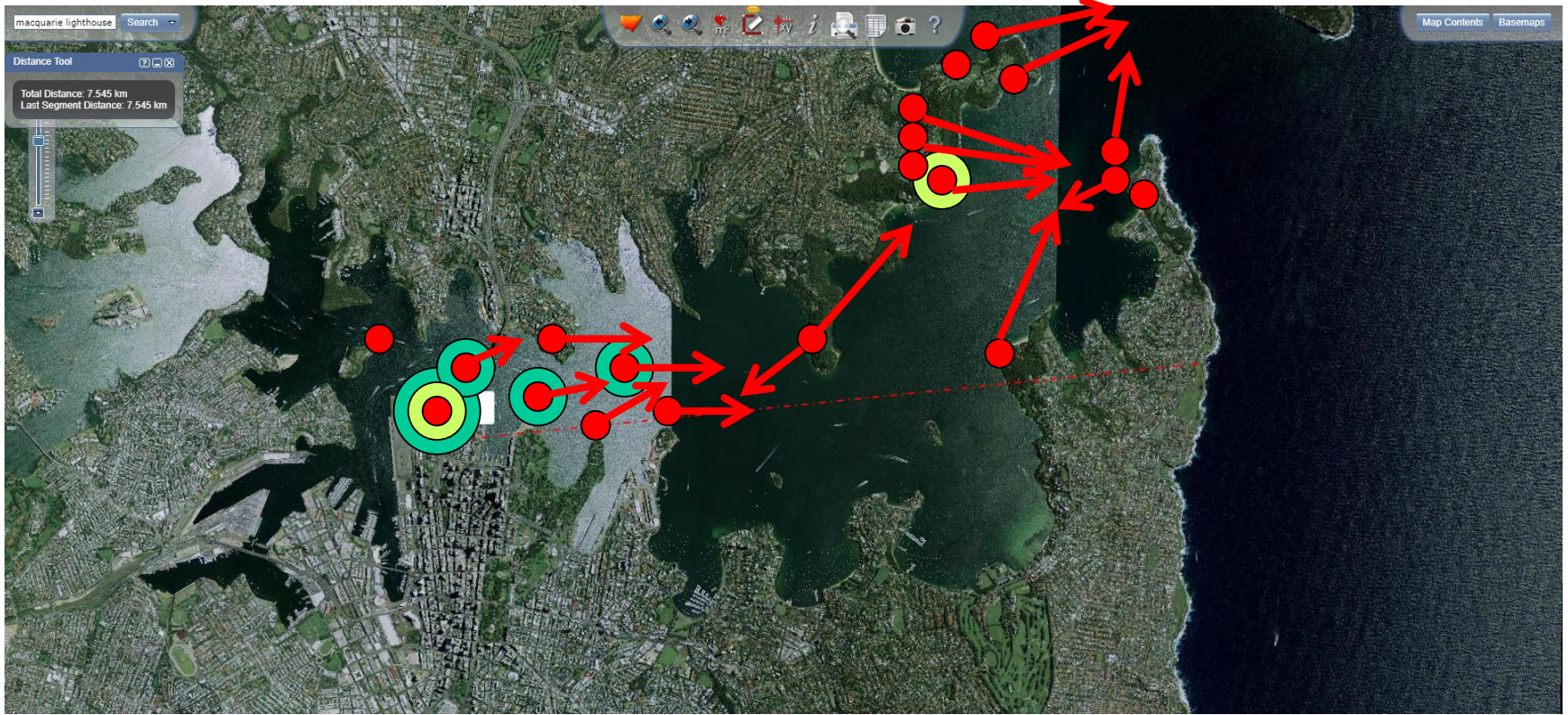


**Intangible values in  
Sydney Harbour**



**DEFENCE**  
**Sydney Harbour**

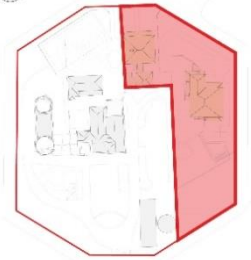




Firing lines and firing distance from citadels and fortifications

Intangible cultural values ? (Defence)

**DEFENCE**  
**Sydney Harbour**



Fort Phillip Signal Station, a network of signal stations and their sight lines

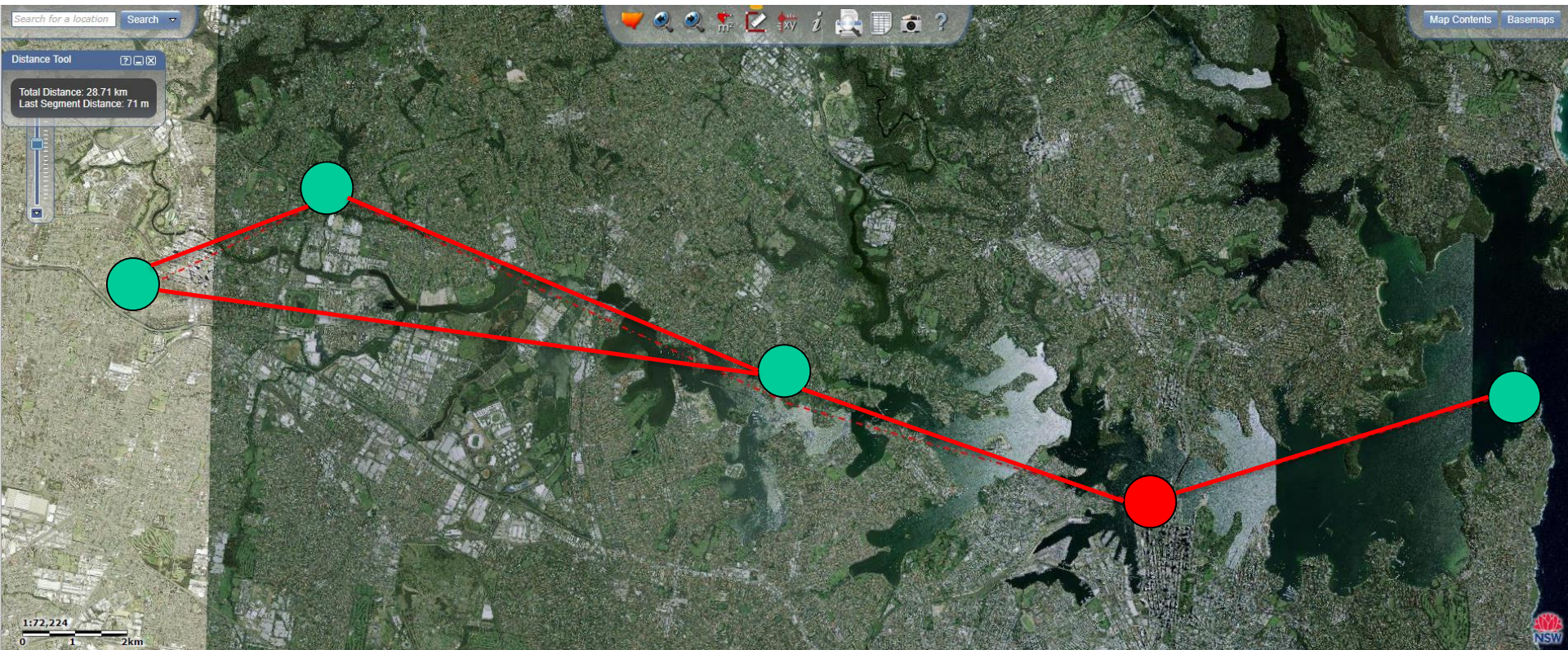
Intangible cultural values ?

COMMUNICATIONS

Sydney Harbour and Parramatta River



# Fort Phillip Signal Station and the network of signal stations



May's Hill -- One Tree Hill -- Bedlam Point -- Fort Phillip -- South Head

**COMMUNICATIONS**  
Sydney Harbour and Parramatta River



## Fort Phillip Signal Station and the network of signal stations



Sight line

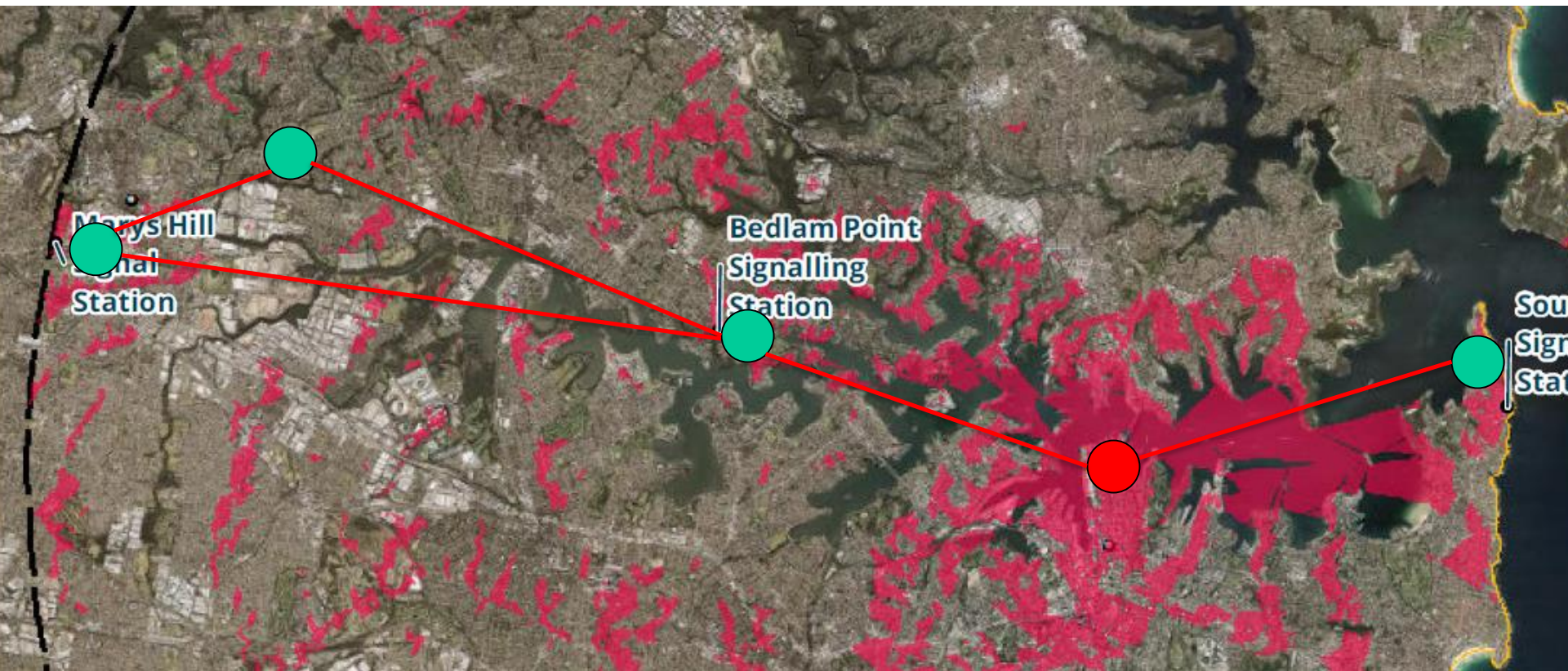
1788 image

Fort Phillip - South Head Signal Station

COMMUNICATIONS

Sydney Harbour and Parramatta River

## Fort Phillip Signal Station and the network of signal stations



Sight line

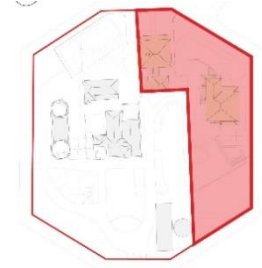
1788 image

Fort Phillip - South Head Signal Station

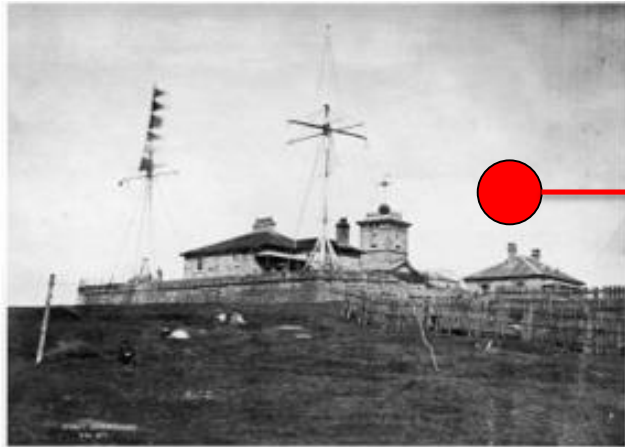
COMMUNICATIONS

Sydney Harbour and Parramatta River





## Fort Phillip Signal Station and the network of signal stations



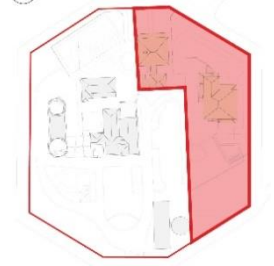
## Sight lines to and from Fort Phillip Signal Station

**COMMUNICATIONS**  
**Sydney Harbour and Parramatta River**



# Sight line

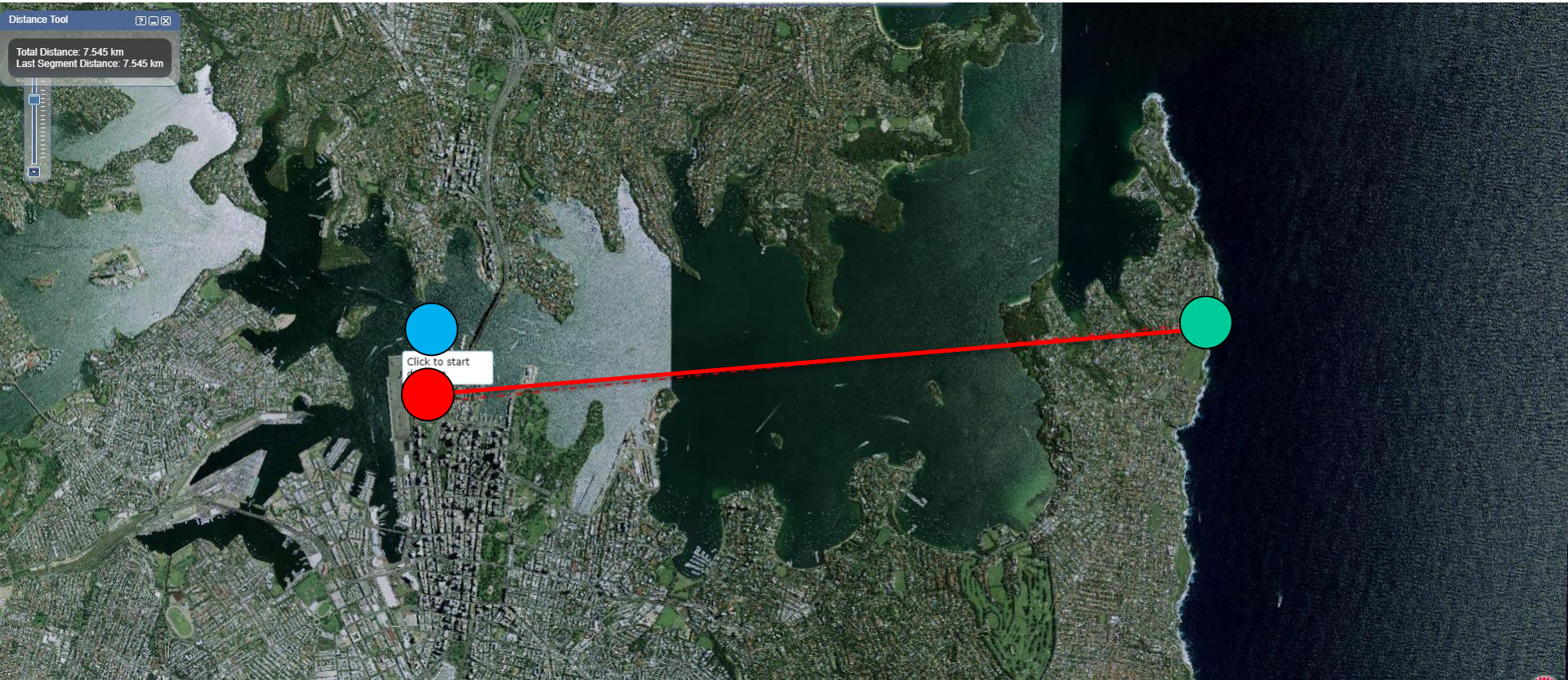
## Fort Phillip - South Head



**COMMUNICATIONS**

**Sydney Harbour and Parramatta River**

# Fort Phillip Signal Station and the network of signal stations



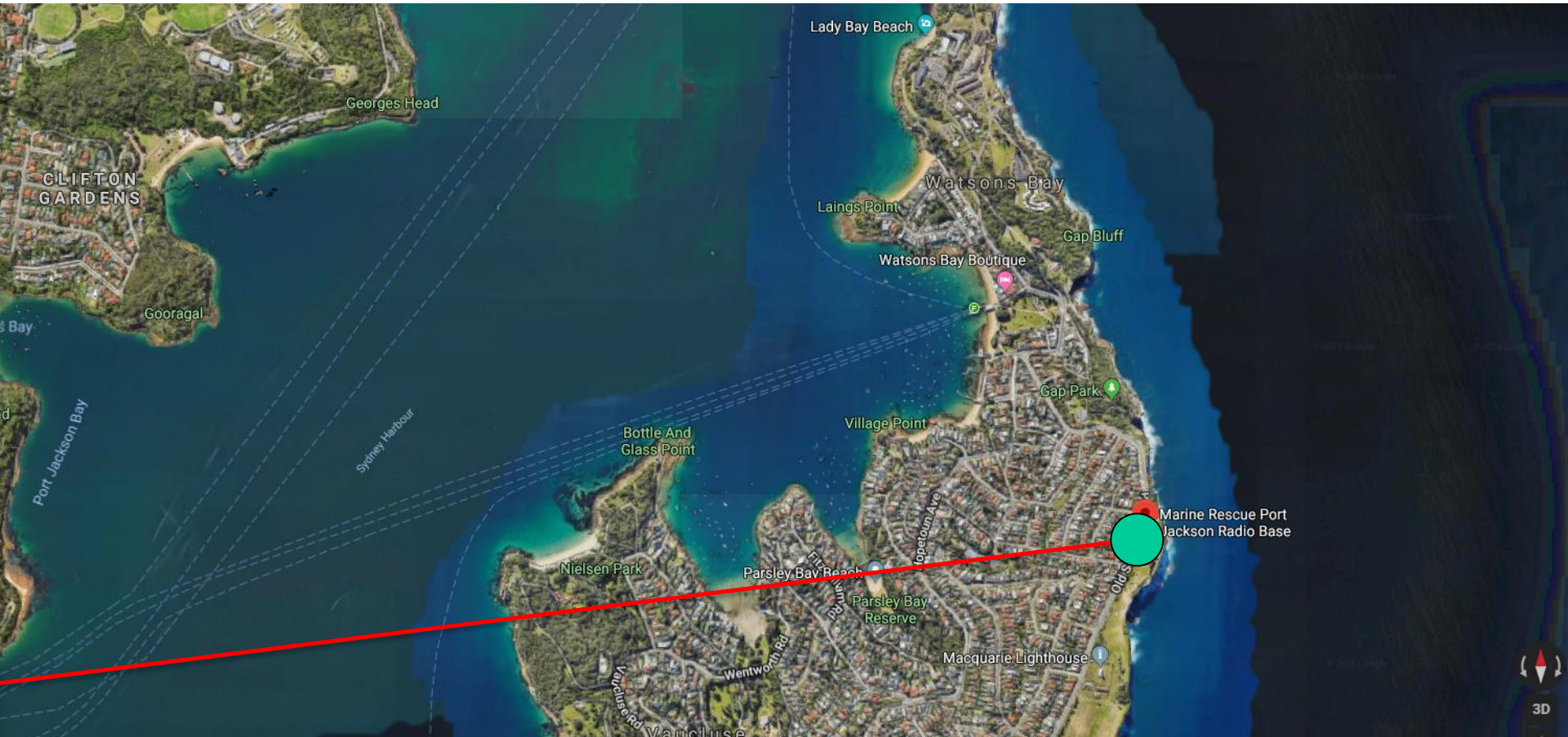
Sight line - Fort Phillip - South Head

COMMUNICATIONS

Sydney Harbour and Parramatta River



# Fort Phillip Signal Station and the network of signal stations



**Sight line**

**Fort Phillip - South Head**

**COMMUNICATIONS**

**Sydney Harbour and Parramatta River**



# Fort Phillip Signal Station and the network of signal stations

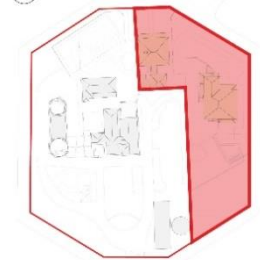


Sight line

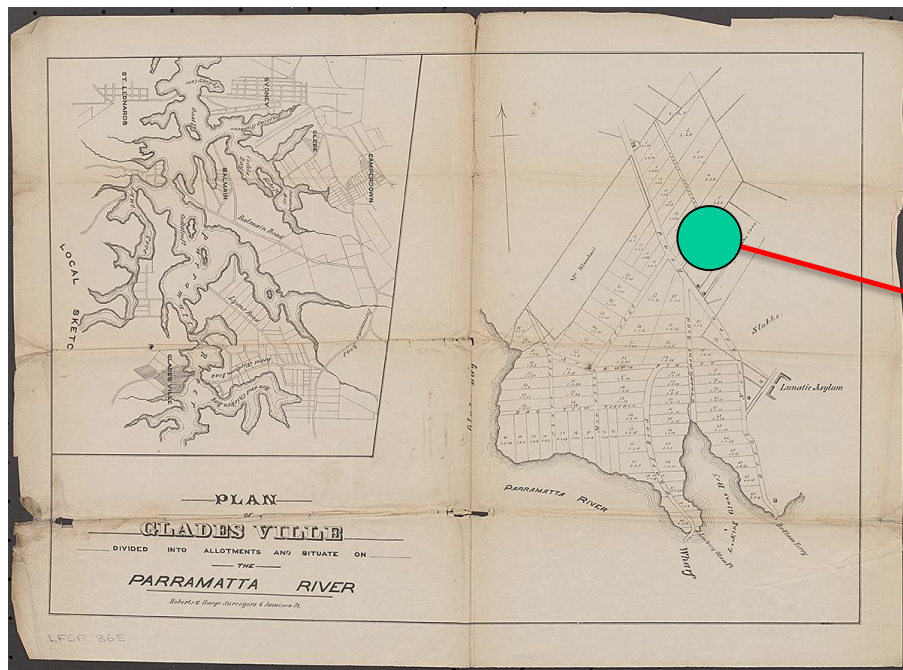
Fort Phillip - South Head

COMMUNICATIONS

Sydney Harbour and Parramatta River



# Fort Phillip Signal Station and the network of signal stations



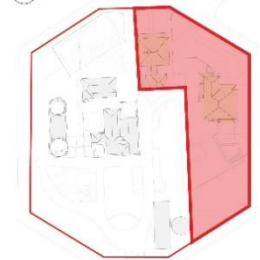
**Sight line**

**COMMUNICATIONS**

**Bedlam Point - South Head**

**Sydney Harbour and Parramatta River**





# Fort Phillip Signal Station and the network of signal stations

TRUST JOURNAL

PAGE 4

## How Flagstaff Street was named

Flagstaff Street takes its name from the signaling station which was operated at the site as a military signaling station in the early days of the colony of New South Wales.

In the 1820s a lunatic asylum (later to become Gladesville Hospital) was established on a headland of the Parramatta River which was named Bedlam Point. The asylum adjoined land owned by John Glade and Thomas Stubbs.

The lunatic asylum was guarded by a detachment of soldiers, lunatics at the time being considered criminals. Some had been sent to New South Wales as Imperial Convicts.

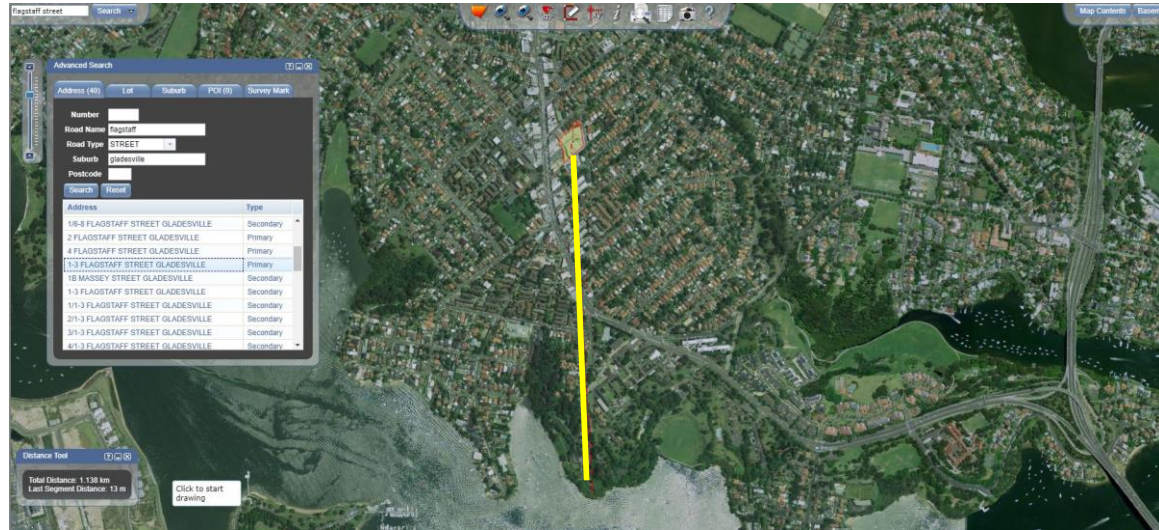
The soldiers operated one of five military signal stations that relayed semaphore signals and military and government information between Sydney and Parramatta. The flagstaff was on the

highest ground near the asylum. In 1829 the Bedlam Point asylum was closed and a new building was erected three-quarters of a mile east on Tarban Creek. At this time a punt began operations from Bedlam Point to Abbotsford. The soldiers were still operating the signal station in 1842, according to a reference in Teggs Almanac of a "signal staff named the Bedlam Telegraph ... situated about 3/4 mile beyond the punt".

The signal flagstaff is shown on a plan produced in 1841 for the auction of land owned by J. Terry Hughes adjoining the asylum. Thomas Stubbs was the auctioneer. The land was called "Battersea". Roads in the area today do not carry the names suggested in the subdivision. However the plan indicates that the flagstaff was in a position approximating the eastern end of today's Flagstaff Street.

An advertisement in the Sydney Herald in 1841 said the land for sale was "on a line of that road nearly to the Flagstaff".

remain unchanged. The removal only of intrusive items is to be recommended. The method is in line



Location @ ¾ mile beyond the punt

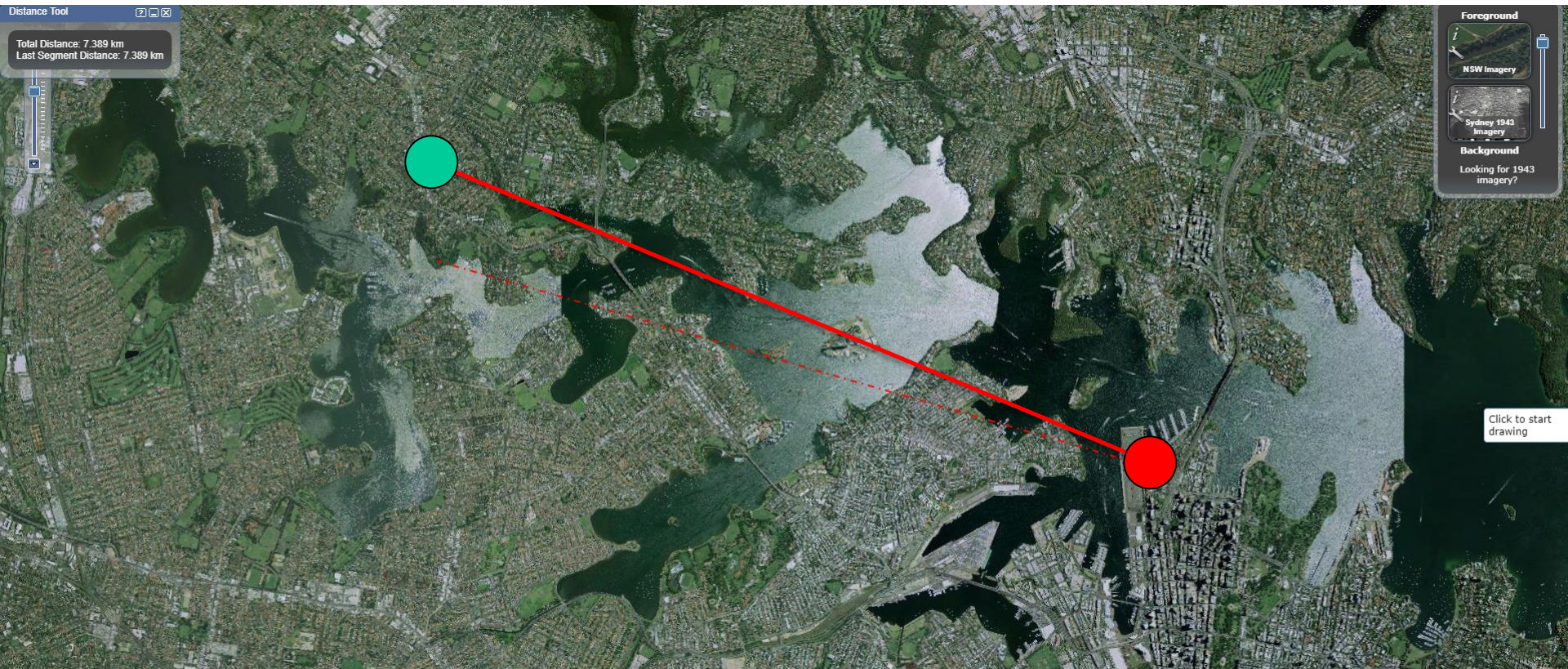
Bedlam Point - South Head

COMMUNICATIONS

Sydney Harbour and Parramatta River



# Fort Phillip Signal Station and the network of signal stations



Sight line

Bedlam Point - South Head

COMMUNICATIONS

Sydney Harbour and Parramatta River



## Fort Phillip Signal Station and the network of signal stations



Sight line

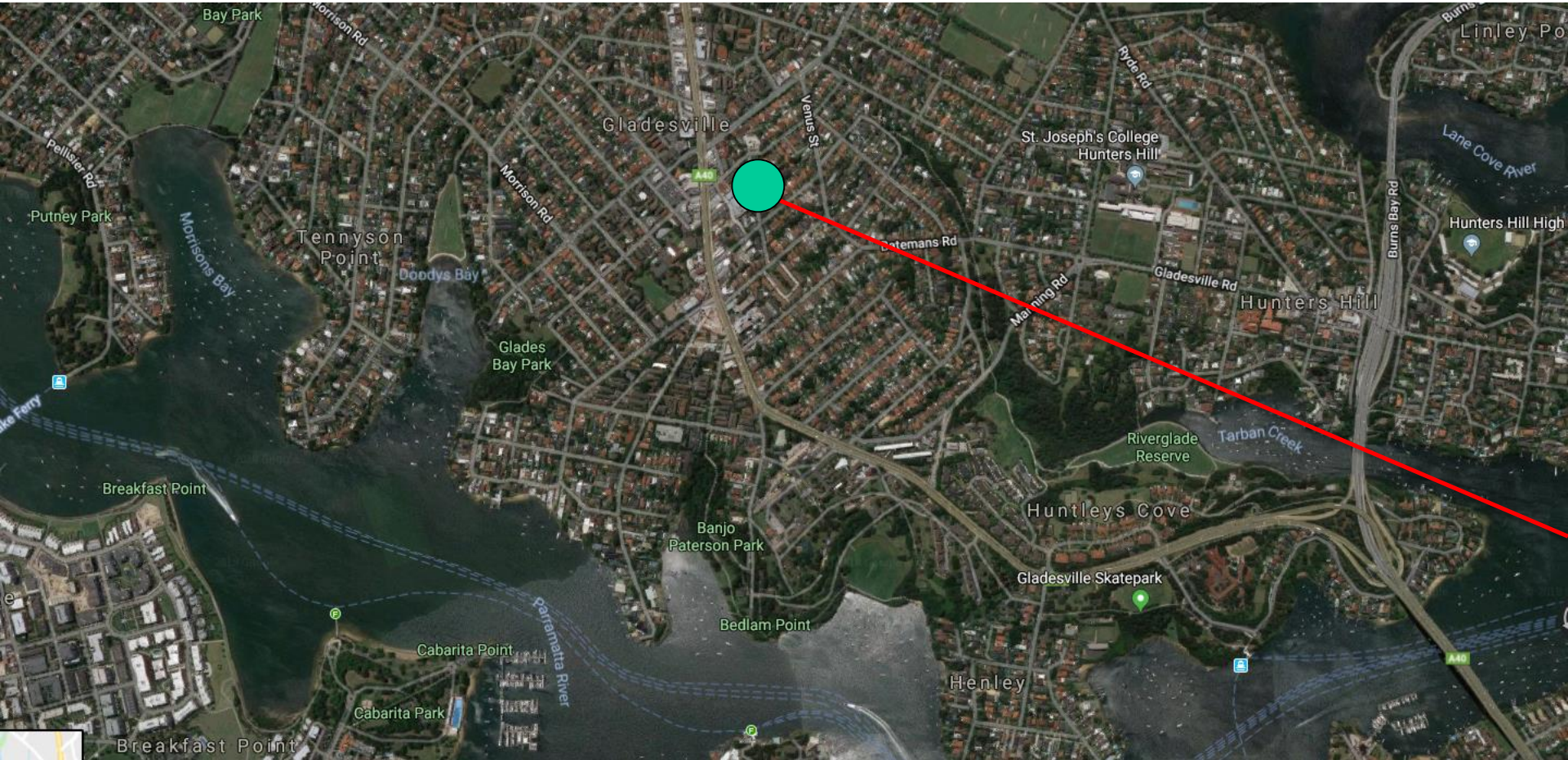
1788 image

Bedlam Point – Sydney Observatory

COMMUNICATIONS

Sydney Harbour and Parramatta River

# Fort Phillip Signal Station and the network of signal stations



Sight line

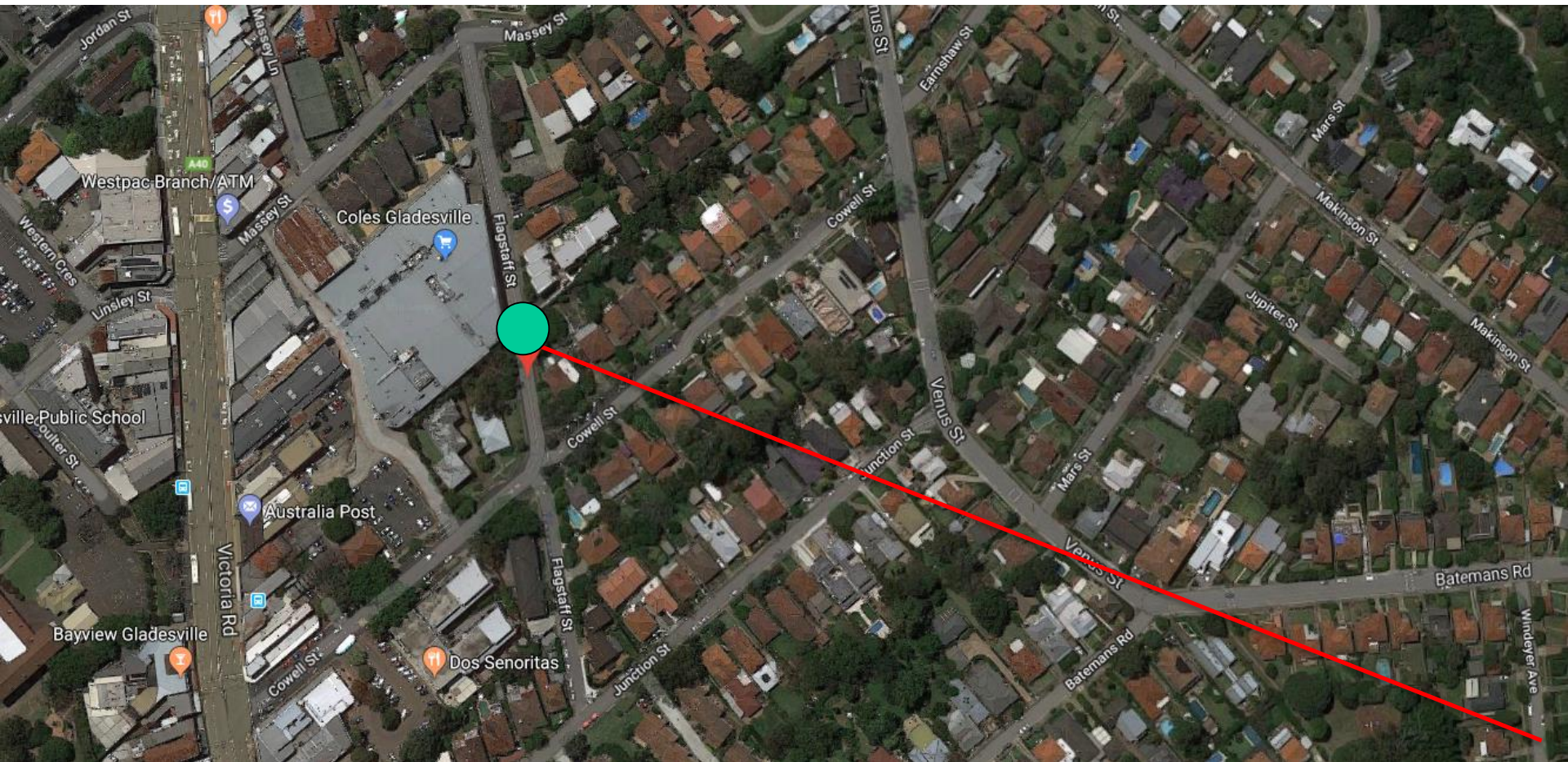
Bedlam Point - South Head

COMMUNICATIONS

Sydney Harbour and Parramatta River



# Fort Phillip Signal Station and the network of signal stations



Sight line

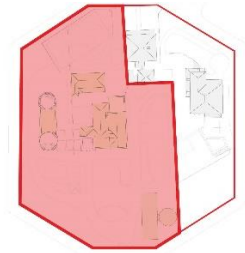
Bedlam Point - South Head

COMMUNICATIONS

Sydney Harbour and Parramatta River

Latitude 33° 50' 55" S

Longitude 151° 12' 4" E – South Marker



LOCATION KEY	DATE	SUMMARY OF CHANGE
	1858 ?	South Marker established
	1858 - 2018	Various Thermometer house structures over the South Marker. <sup>73</sup> 1864 – 12 feet square thermometer shed to the design of Smalley, which survived until WW1. 1986 – a similar structure was constructed on the same site.



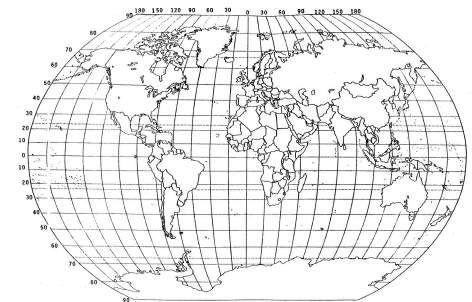
Figure 3.228 Stone Trig Survey Mark and Thermometer House protecting the South Stone (GML, 2017).



Figure 3.229 South Stone (GML 2017)



Figure 3.230 Colimation Mount (GML 2017)



Sight line TO south marker

Sydney Observatory

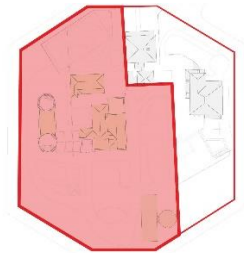
ASTRONOMY

Sydney's North-South Meridian



Latitude 33° 50' 55" S

Longitude 151° 12' 4" E – North Marker



LOCATION KEY	DATE	SUMMARY OF CHANGE
		First Sydney GPO in George Street constructed—6 columns part of original design
	1863	First Sydney GPO demolished.
	1866	One GPO column relocated to the gardens of Alexander Berry's 'Crows Nest House', Bay Road, Waverton. It was located here as the north marker for the collimation telescope of Sydney Observatory.
	1871	Another GPO column was relocated to Bradley's Head to mark one nautical mile from the centre of Martello Tower at Fort Denison, to provide accurate sea trial measurements.
	1933	Crows Nest House and gardens demolished. North Sydney Demonstration School built in this location.
	1937	The GPO column was relocated to Bradfield Park.
	1988	Harbour Tunnel constructed and the GPO column was moved to Mount Street Plaza, Corner Pacific Highway and Miller Street, North Sydney
	2017	Plaza refurbished and the GPO column was deaccessioned to City of Sydney Council, and is located at ...



Sight line TO north marker

Sydney Observatory – Crows Nest

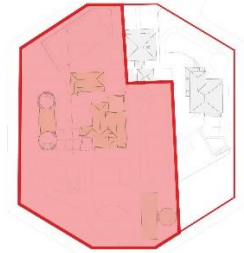
ASTRONOMY

Sydney's North-South Meridian

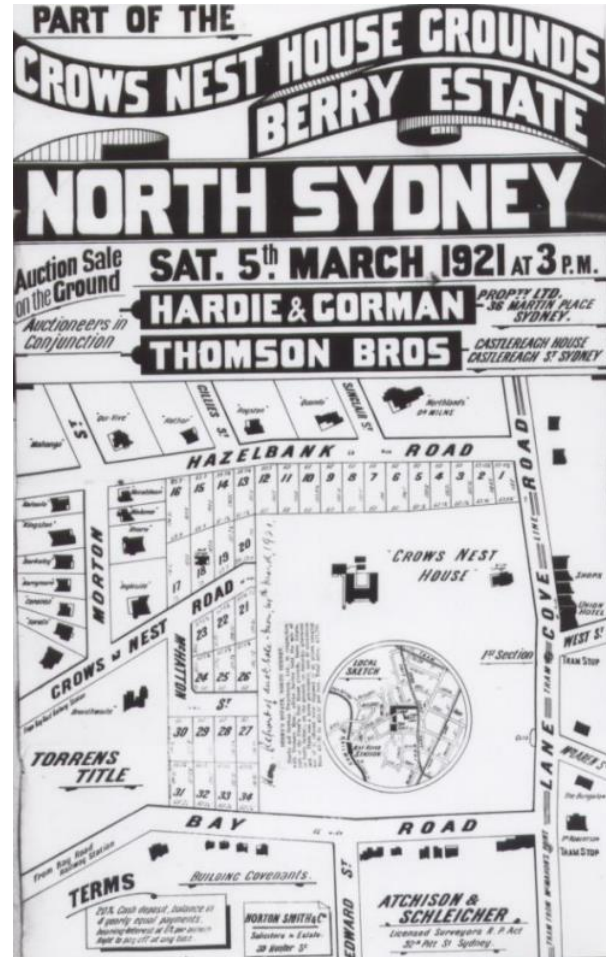


Latitude 33° 50' 55" S

Longitude 151° 12' 4" E – North Marker



1921 subdivision plan of the Berry / Lady Hay Estate showing new and older lots along Hazelbank Rd. Crows Nest Road is yet to be extended and the old home is still standing (North Sydney Heritage Centre, PF2993)



Sight line TO north marker

Sydney Observatory – Crows Nest

ASTRONOMY

Sydney's North-South Meridian



Latitude  $33^{\circ} 50' 55''$  S

Longitude  $151^{\circ} 12' 4''$  E – North Marker



Sight line TO north marker

Sydney Observatory – Crows Nest

**ASTRONOMY**

Sydney's North-South Meridian



Latitude 33° 50' 55" S

Longitude 151° 12' 4" E – North Marker



Sight line TO north marker

Sydney Observatory – Crows Nest

ASTRONOMY

Sydney's North-South Meridian



Latitude  $33^{\circ} 50' 55''$  S

Longitude  $151^{\circ} 12' 4''$  E – North Marker



Sight line TO north marker

Sydney Observatory – Crows Nest

ASTRONOMY

Sydney's North-South Meridian

Latitude  $33^{\circ} 50' 55''$  S

Longitude  $151^{\circ} 12' 4''$  E – North Marker



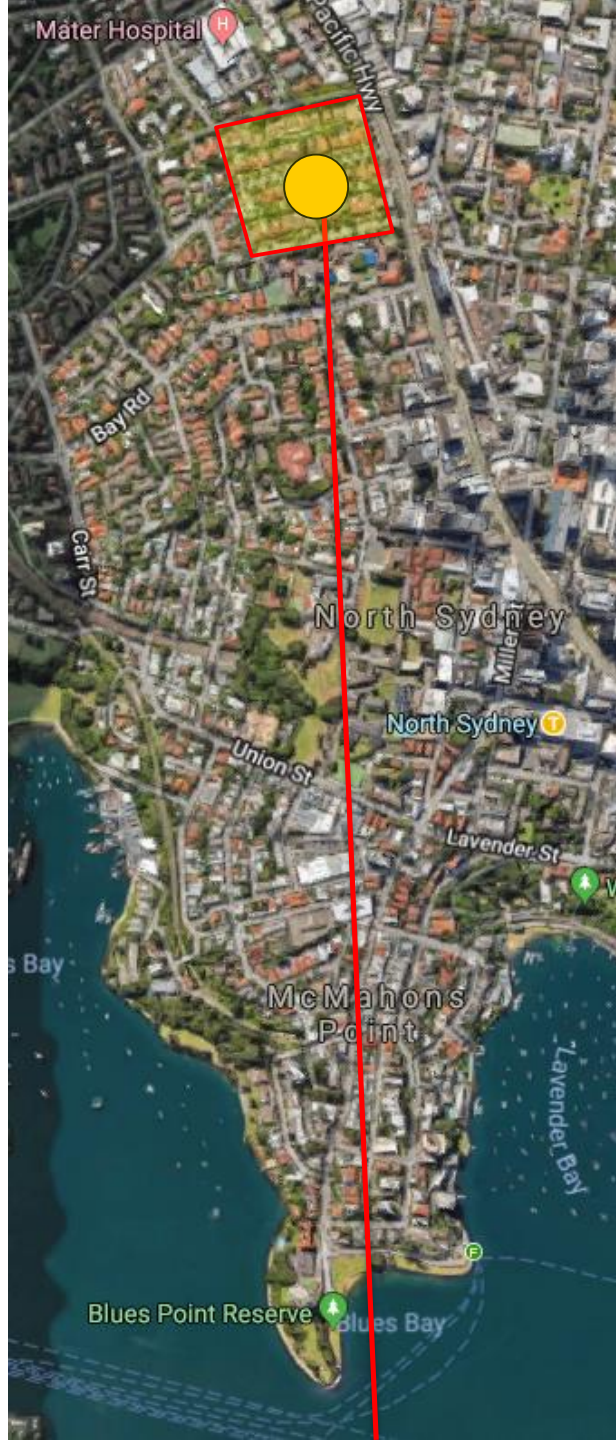
Sight line TO north marker

Sydney Observatory – Crows Nest

ASTRONOMY

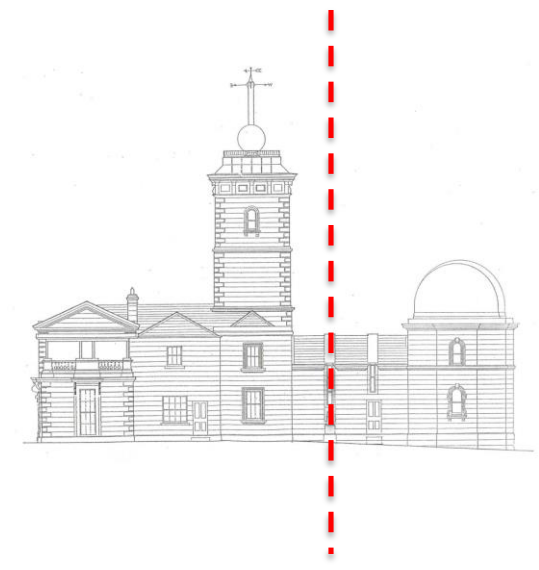
Sydney's North-South Meridian





## Sight line

Sydney Observatory – Crows Nest



## ASTRONOMY

Sydney's North-South Meridian



Sydney Observatory North Marker  
Latitude  $33^{\circ} 50' 55''$  S  
Longitude  $151^{\circ} 12' 4''$  E



Longitude

Sydney Observatory – Crows Nest -  
Royal Observatory Greenwich

Royal Greenwich Observatory  
Latitude  $51.4769^{\circ}$  N,  
Longitude  $0.0005^{\circ}$  W



ASTRONOMY

Sydney's North-South Meridian

## IAU - Outstanding Astronomical Heritage

The IAU has begun to compile its own list of astronomical heritage sites that are outstanding in the history of astronomy but do not necessarily demonstrate potential [Outstanding Universal Value](#) which would be needed for inscription on the World Heritage List. For example, the period from the [European Renaissance to the middle of the 20th century](#) was an extremely rich one for the history of astronomy, with many observatories from this period playing a significant role because of the cutting-edge scientific research carried out there. However, the actual buildings may be damaged or destroyed and the original instruments may no longer exist in situ or at all.

The IAU's initial **Outstanding Astronomical Heritage** (OAH) list focuses on such 'classical observatories'. It includes, for example, [Tycho Brahe's observatory at Uraniborg](#), which is completely destroyed although a few of the instruments have been preserved or reconstructed. The OAH list was launched at the IAU's 2018 General Assembly in Vienna and information will gradually be added on this Portal in the coming months. You can view OAH sites on their own or alongside our other case studies by choosing the relevant filter options in the [Heritage Finder](#).

IAU members who are interested in proposing new sites to the OAH list are invited to [contact Gudrun Wolfschmidt](#), the President of IAU Commission C4 (World Heritage and Astronomy), in the first instance. The OAH List is not open to members of the public, but we invite anyone who is interested to submit one or more [Places connected to the Sky](#) on this Portal.



**Sydney Observatory in context of outstanding astronomical heritage throughout the world (UNESCO, ICOMOS and the International Astronomical Union)**

**ASTRONOMY**

# Timekeeping in Sydney and NSW



The time ball

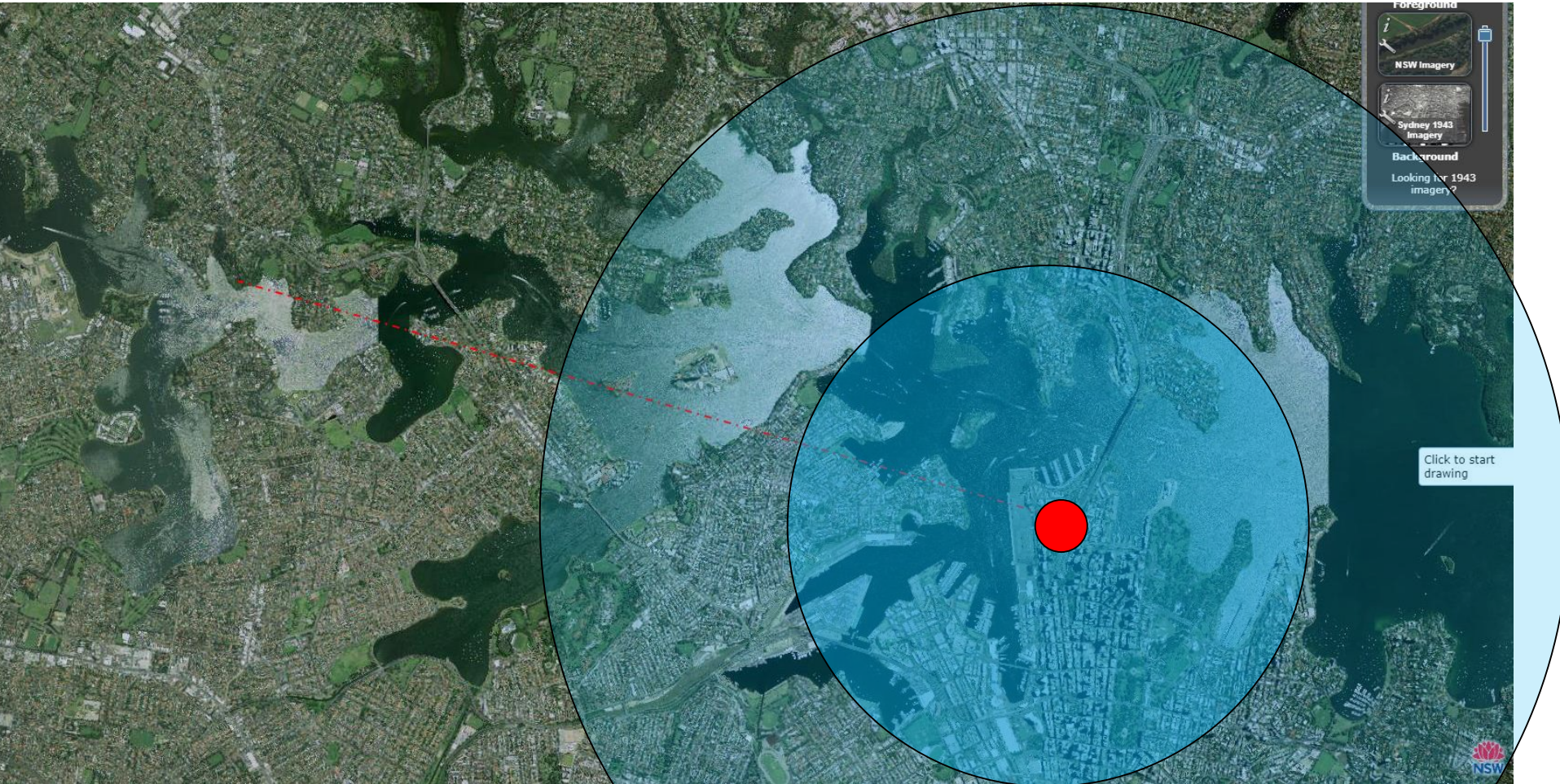
Trig "E" on tower

Newcastle time ball

**ASTRONOMY**  
Time keeping



# Timekeeping in Sydney and NSW



**VIEWS TO Sydney Observatory time ball from the Harbour and early settlement**

**TRANSMISSION of time TO GPO, Trains, Newcastle time ball by telegraph and radio.**

**ASTRONOMY  
Time keeping**





View west from the time-ball tower to Hunters Hill Signal Station



View west from the time-ball tower to Hunters Hill Signal Station (Bedlam Point approximate location circled (green))

**COMMUNICATIONS**  
Viewing the flagstaff

**ASTRONOMY** Viewing  
the time ball



View east from the time-ball tower to South Head Signal Station (Signal Station—flagstaff/semaphore).



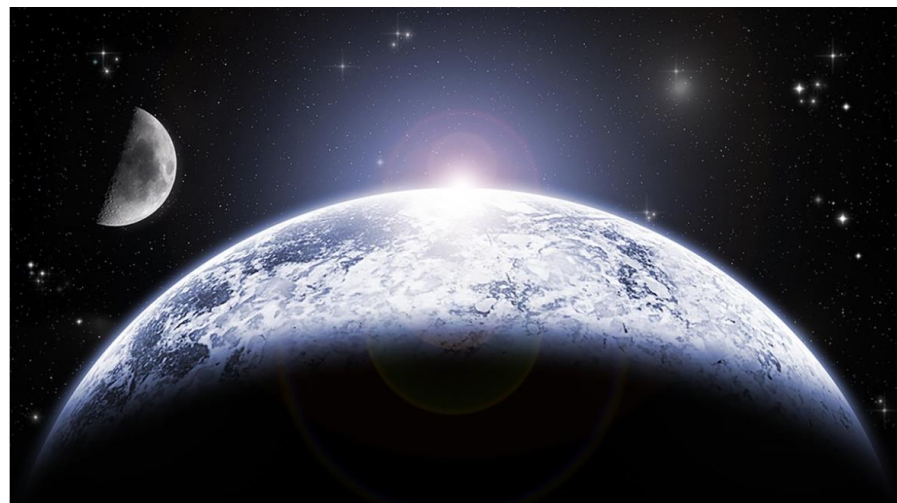
View east from the time-ball tower to South Head Signal Station

**COMMUNICATIONS**  
Viewing the flagstaff

**ASTRONOMY**  
Viewing the time ball



## Astronomical observation from Sydney Observatory



Clear views to the sky

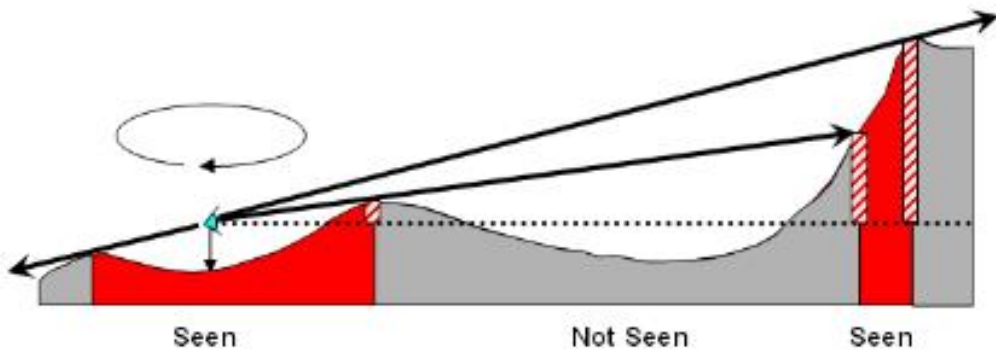
Light spill

**ASTRONOMY**  
sky views

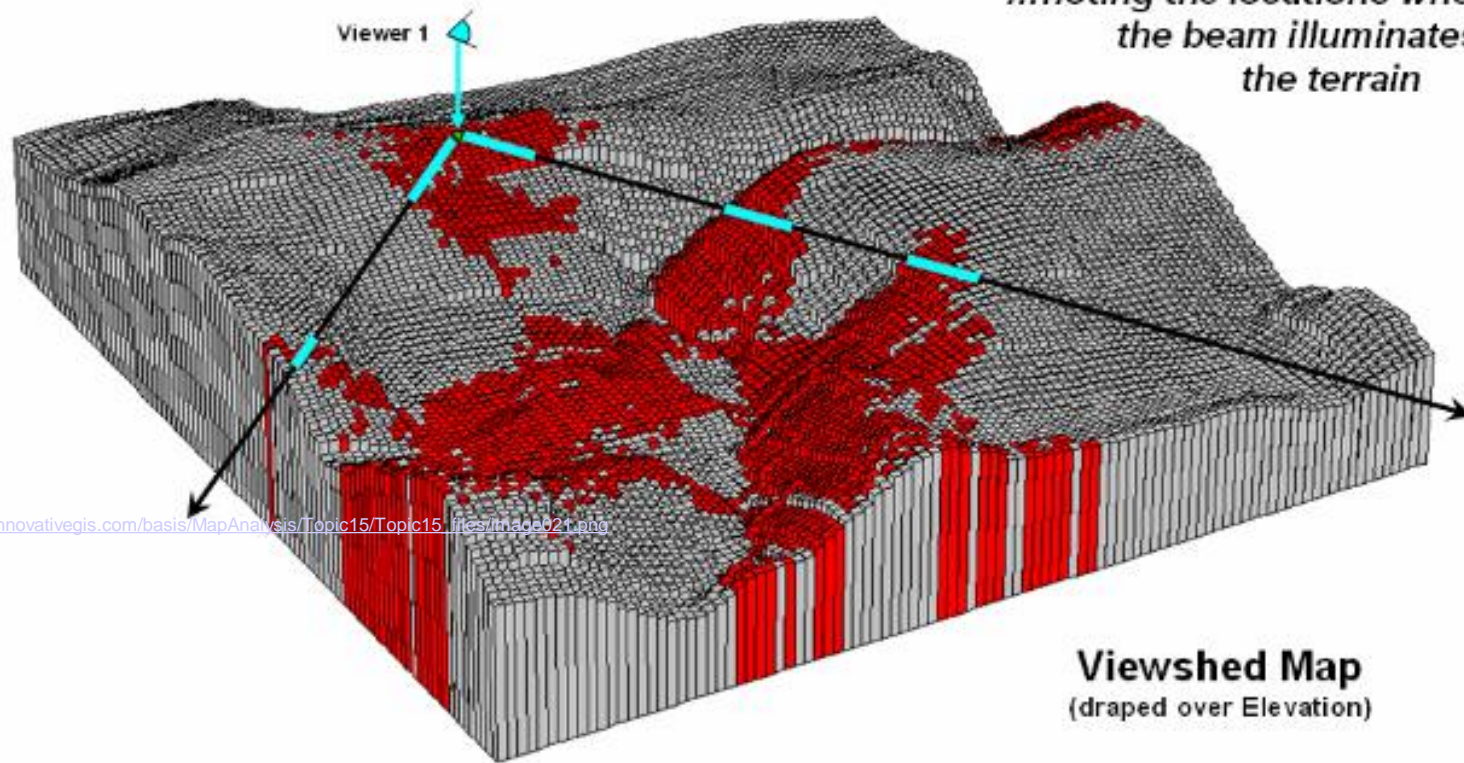
**View Shed Analysis**

**Rediscovery, confirmation and management of  
(intangible) significant sightlines**

**Sydney Observatory site**



...a viewshed is like a search light rotating at a "viewer" location...



...noting the locations where the beam illuminates the terrain

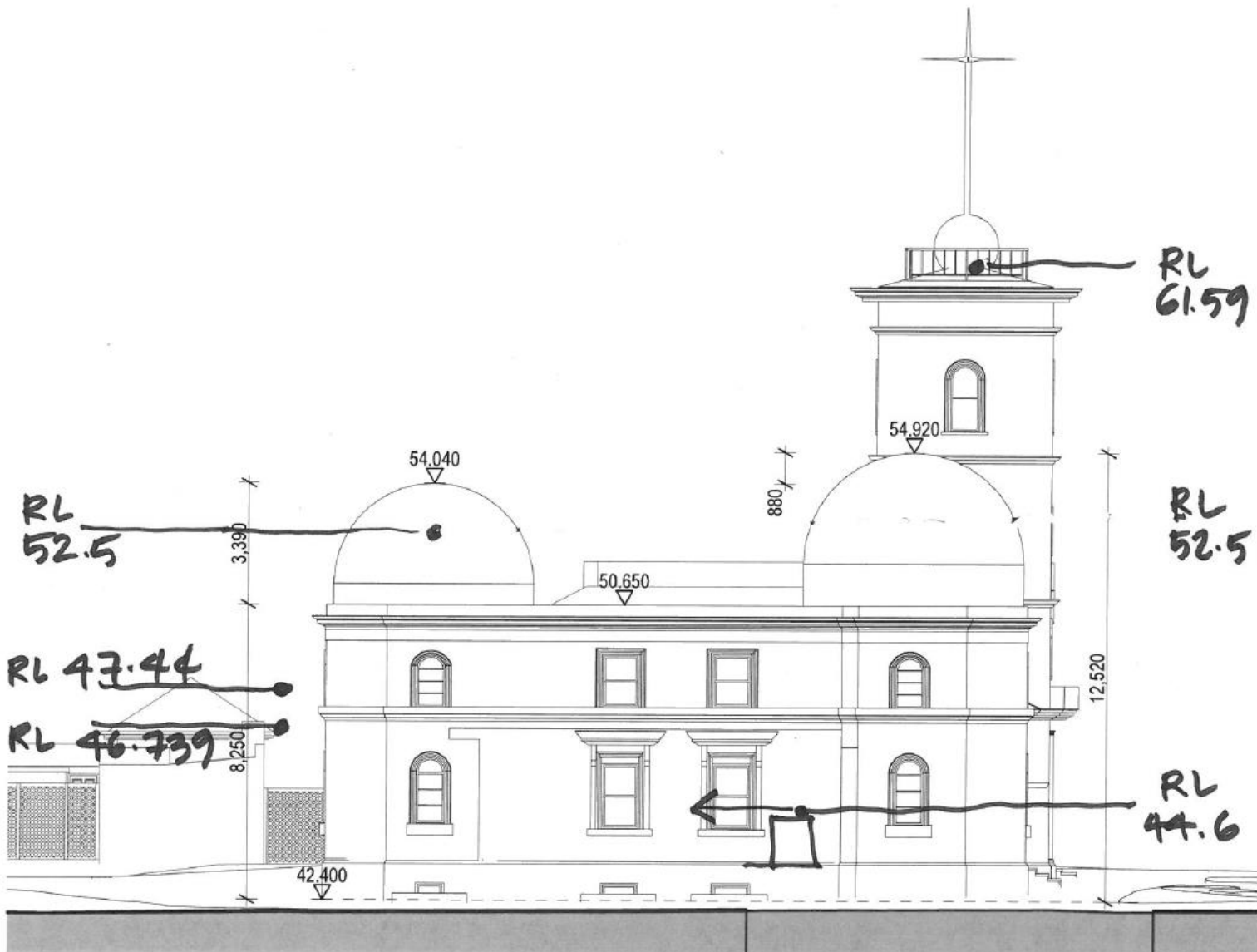
**Viewshed Map**  
(draped over Elevation)

# VIEWSHED Concept

[http://www.innovativegis.com/basis/MapAnalysis/Topic15/Topic15\\_files/map0021.png](http://www.innovativegis.com/basis/MapAnalysis/Topic15/Topic15_files/map0021.png)

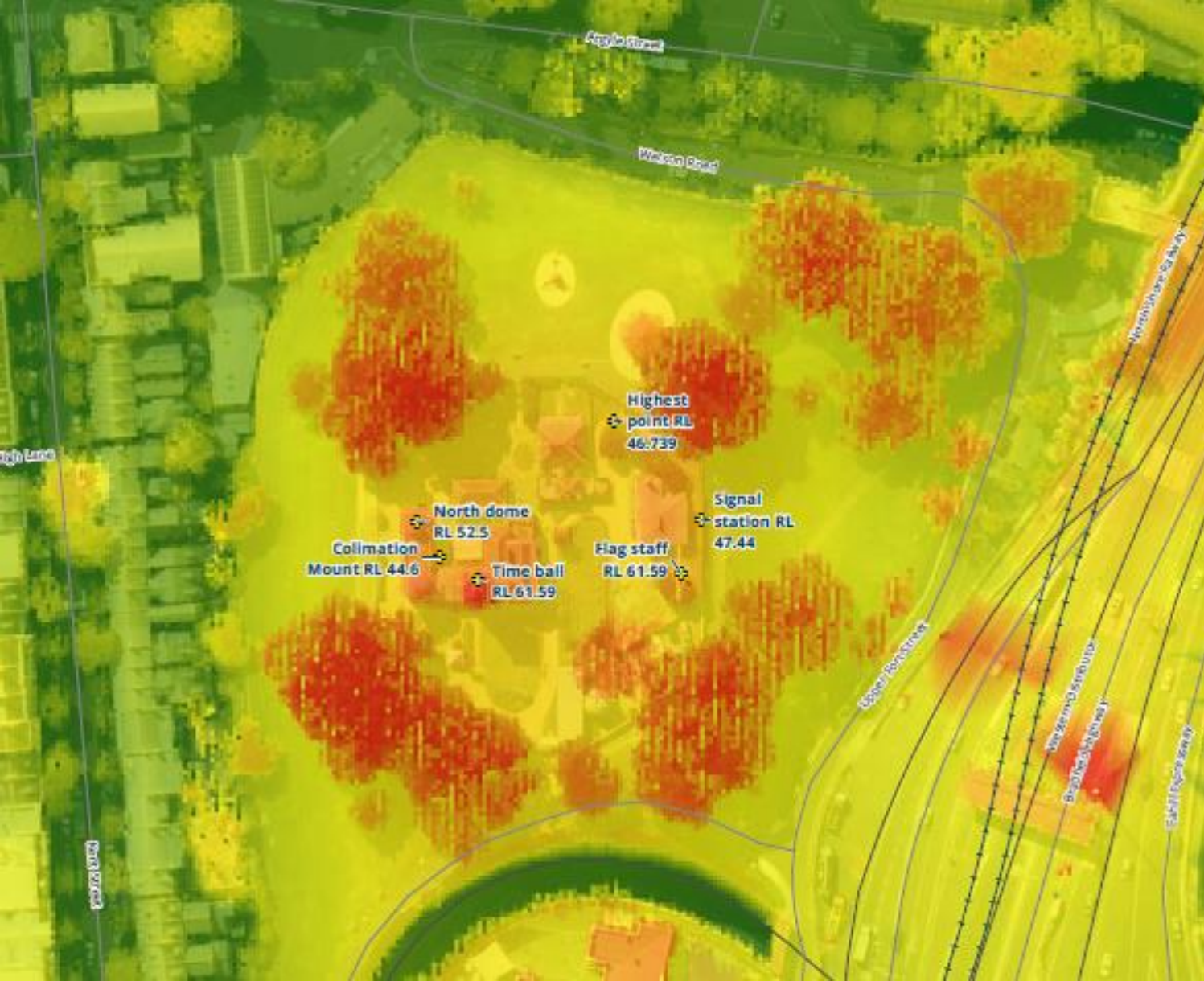






VIEWSHED

Observer location RLs



## VIEWSHED Analysis





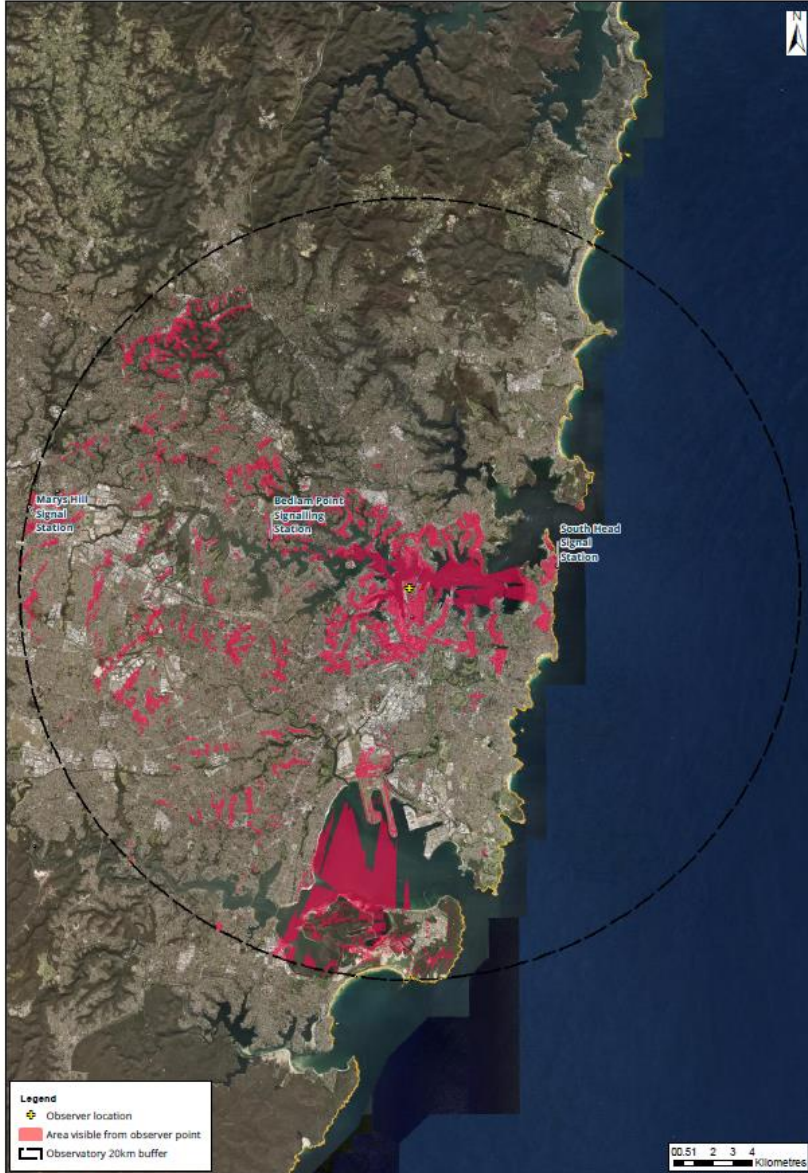
Pre 1788



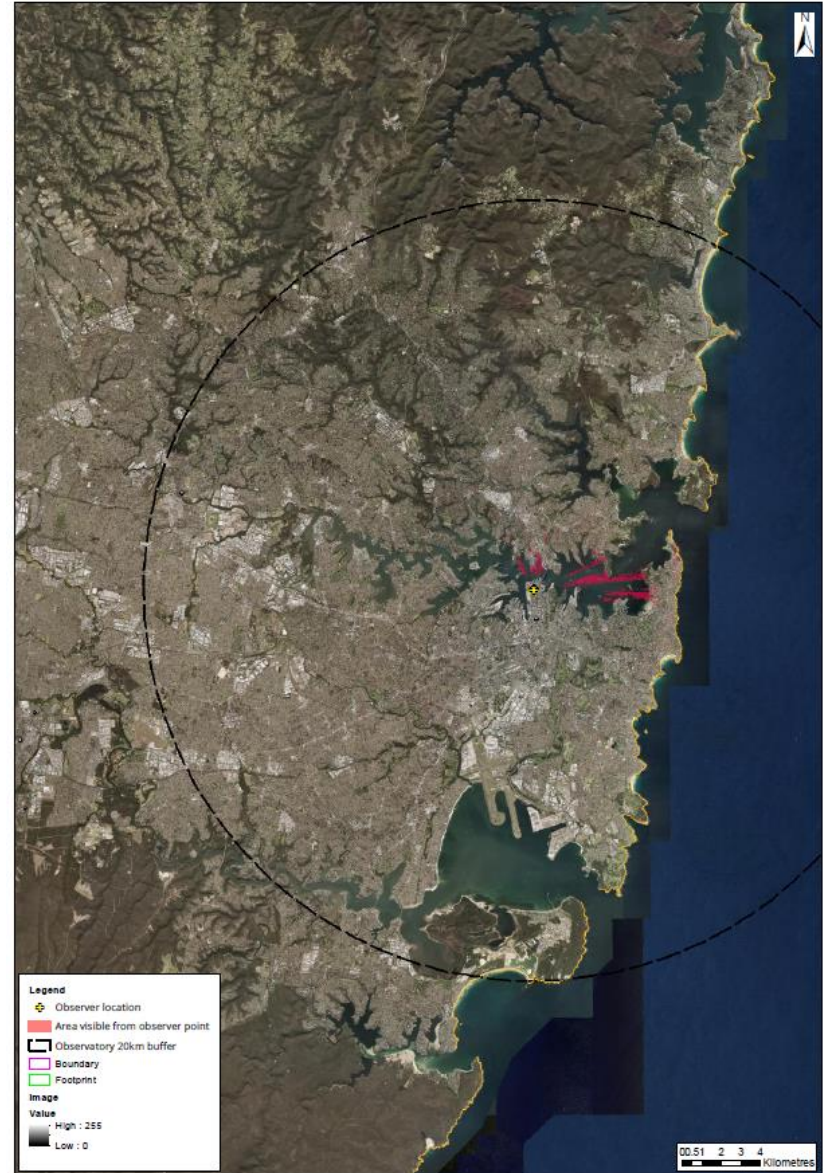
2013

Potential outlook by Aboriginal people from Observatory Hill – from eye height @ natural high point.





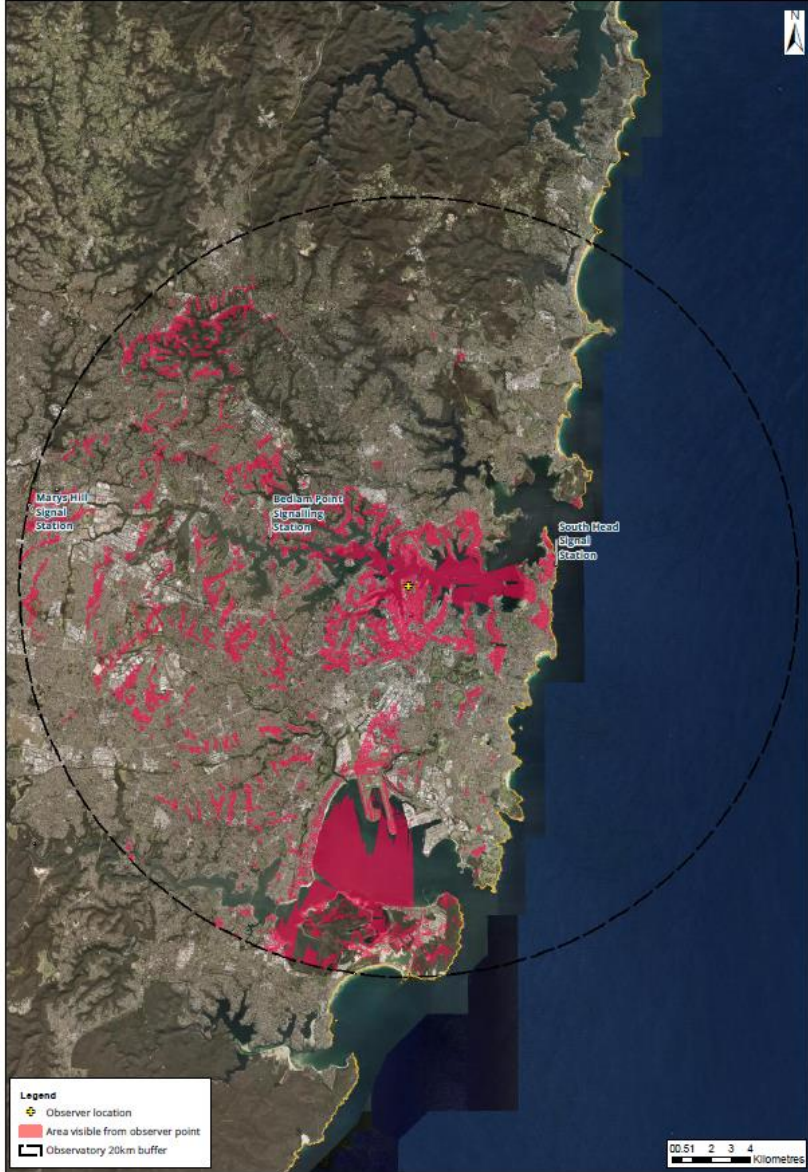
Pre 1788



2013

Views FROM the Signal Station





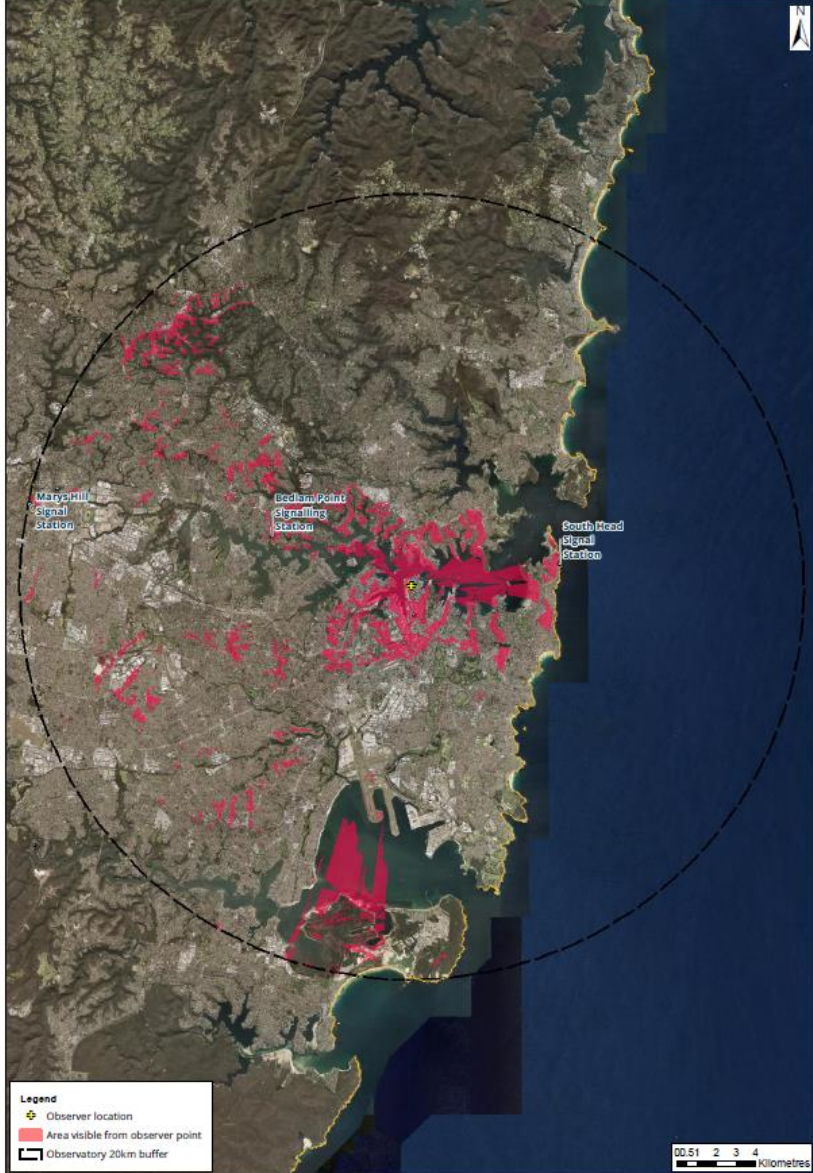
Pre 1788



2013

Views TO the Flagstaff and Timeball





Pre 1788



2013

## Views FROM the Colimation Mount Telescope



**MANAGEMENT**  
encroaching development





**MANAGEMENT**  
**Council boundaries**



# Intangible Cultural Heritage in the Cultural and Natural Landscape of Sydney Harbour and Parramatta River

## THEME

- Aboriginal activity and outlook
- Windmills
- Defence
- Communications
- Astronomy
  - Longitude & time
  - Surveying Sydney & NSW
  - Mapping the stars
  - Time keeping
- Meteorology

## INTANGIBLE

(View Shed)

Wind and ridges

Sight lines along the harbour

Sight lines TO signal stations

Sight line along N-S meridian

Transit trajectory and trig points

Availability of sky view

Views TO time ball drop

Telegraph TO GPO & trains

Ongoing local observation