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24 July 2020

Key Sites Assessments  
Department of Planning, Industry & Environment  
GPO Box 39  
Sydney NSW 2001

To whom it may concern,

## **TARONGA ZOO UPPER AUSTRALIA PRECINCT - ABORIGINAL CULTURAL HERITAGE ASSESSMENT COVER LETTER**

Urbis has been commissioned by Taronga Conservation Society Australia (the Proponent) to produce an Aboriginal Cultural Heritage Assessment Report (ACHAR) in accordance with the Secretary's Environmental Assessment Requirements (SEARs) for the State Significant Development (SSD 10456).

As agreed in the Scoping Meeting with the Department of Planning Infrastructure and Environment (DPIE) held on 20 April 2020, a draft ACHAR is acceptable for the lodgement of the EIS.

The draft ACHAR has been prepared and currently is in Stage 4 under the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Department of Environment, Climate Change and Water (DECCW), 2010)* (the Consultation Guidelines) and will be sent to the Registered Aboriginal Parties for comments.

The conclusions and recommendations have been provided to all Registered Aboriginal Parties (RAPs) through Stage 2 and Stage 3 of the consultation and all information has been discussed on a site visit as well. The RAPs have agreed with all conclusions and recommendations and did not raise any objections to the findings of the ACHAR.

The finalised ACHAR will be available approximately by the 28<sup>th</sup> August 2020.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Balazs Hansel".

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The URBIS logo consists of the word "URBIS" in a bold, white, sans-serif font. To the right of the text is a white square frame that is open on the top and right sides, with the text "URBIS" positioned to its left.

**URBIS**

# **INTERIM ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT**

Upper Australia Precinct,  
Taronga Zoo

Prepared for

**TARONGA CONSERVATION SOCIETY AUSTRALIA**

23 July 2020

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Project Code	P0022459
Report Number	D001

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**We acknowledge, in each of our offices the Traditional Owners on whose land we stand.**

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# CONTENTS

<b>Executive Summary.....</b>	<b>6</b>
<b>1. Introduction .....</b>	<b>9</b>
1.1. Proposed Activity .....	9
1.2. Statutory Controls .....	10
1.2.1. Response to SEARs.....	10
1.3. Objectives .....	11
1.4. Authorship .....	11
<b>2. Archaeological context.....</b>	<b>16</b>
2.1. Location .....	16
2.2. Aboriginal Archaeological Background .....	16
2.2.1. Aboriginal Heritage Information Management System (AHIMS) .....	16
2.2.2. Regional Archaeological Context .....	21
2.2.3. Local Archaeological Context .....	25
2.2.4. Summary .....	26
2.3. Geology and Soils.....	27
2.4. Vegetation and Resources .....	29
2.5. Hydrology .....	29
2.6. Landform .....	29
2.7. Past Aboriginal Land Use .....	33
Establishment of Taronga Zoo and La Souef's Directorship (1912–1940).....	35
Hallstrom's Directorship (1941–1967) .....	37
Strahan's Directorship (1967–1986) .....	37
Kelly's Directorship to Present (1987-Present).....	43
2.8. Historic aerial analysis .....	45
2.9. Predictive Model .....	47
<b>3. Consultation Process .....</b>	<b>52</b>
3.1. Stage 1: Notification of Project Proposal and Registration of Interest.....	53
3.1.1. Government Organisation Contact .....	53
3.1.2. Registration of Interest .....	53
3.1.3. Public Notice.....	54
3.2. Stage 2: Presentation of Information about the Project .....	54
3.3. Stage 3: Gathering Information About the Proposed Project .....	55
3.4. Site Inspection .....	58
<b>3.5. Stage 4: Review of Draft ACHA report .....</b>	<b>59</b>
<b>4. Cultural Heritage Values and Statement of Significance .....</b>	<b>60</b>
4.1. Methods of assessing Heritage Significance .....	60
4.2. assessment Framework.....	60
4.2.1. Social or cultural value .....	60
4.2.2. Historic value .....	60
4.2.3. Scientific (Archaeological) value .....	61
4.2.4. Aesthetic value .....	61
4.3. Identifying values .....	61
4.4. Assessing Values and Significance .....	62
<b>5. Assessment of Identified Values .....</b>	<b>63</b>
<b>6. Impact Assessment.....</b>	<b>64</b>
6.1. The Propopsed Activity .....	64
6.2. Potential Harm .....	64
6.3. Likely Impacted Values .....	65
6.4. Justification .....	65
<b>7. Avoiding and Minimising Harm .....</b>	<b>66</b>

<b>8.</b>	<b>Conclusions and Recommendations .....</b>	<b>67</b>
<b>9.</b>	<b>Bibliography .....</b>	<b>69</b>
	<b>Disclaimer .....</b>	<b>70</b>

<b>Appendix A</b>	<b>Architectural Plans</b>
<b>Appendix B</b>	<b>AHIMS Basic and Extensive Search Results</b>
<b>Appendix C</b>	<b>Consultation Documents</b>
<b>Appendix D</b>	<b>COnsultation Log</b>

## FIGURES

Figure 1 – Regional location .....	12
Figure 2 – Location of the subject area .....	13
Figure 3 -Demolition Plan .....	14
Figure 4 Proposed excavation within the Wetland Ponds and west of the entrance of the Nocturnal House.....	15
Figure 5 – AHIMS search results (Client Service ID: 497886) .....	17
Figure 6 – Registered Aboriginal sites in search area.....	19
Figure 7 – Historical heritage constraints. ....	20
Figure 8 – Aboriginal archaeological management zones .....	26
Figure 9 – Soils landscapes and hydrology .....	28
Figure 10 – Landform type.....	31
Figure 11 – Landform pattern .....	32
Figure 12 – historic parish map of Willoughby, c. 1850s. Subject area indicated in red outline. ....	34
Figure 13 – 1893-94 Parish Map indicating resumption of land for military purposes .....	35
Figure 14 – 1917 Parish Map showing Crown Land, previously part of Ashton Park, which had been rededicated as a zoological park .....	36
Figure 15 -1916 plan of Taronga Zoological Park, subject area indicated in red outline. Structures within the subject area as follows: 2 (north) – Baboon Pit; 2 (south) – Monkey Pit; 2 (west) – Orangutan and Monkey House; 15 – Waterfowl Ponds; .....	36
Figure 16 – 1940 Guidebook indicating changes to paths and configuration of enclosures as well as the erection of the Bandstand building to the east of the Baboon Pit .....	37
Figure 17 - Demolition plan for the provision of the Australian Sections at Taronga Zoo, c. 1967 indicating demolition of stairs to south of Baboon Pit, Anteaters and Bandstand buildings.....	39
Figure 18 -1969 Demolition Plan indicating location of Duck Ponds and extent of demolition within Baboon Pit .....	40
Figure 19 – 1970 site plan indicating Nocturnal House in the location of the former Baboon Pit and Platypus House in the location former location of the former Bandstand and Anteaters buildings.....	41
Figure 20 -1969 Waterfowl Enclosure concept plan indicating replacement of the northern and western Duck Ponds within expansive wetland exhibits .....	42
Figure 21 – waterfowl exhibit prior to redevelopment, a series of circular ponds. ....	43
Figure 22 – waterfowl exhibit prior to redevelopment, a series of circular ponds. ....	43
Figure 23 – bridge over the wetlands ponds section. ....	43
Figure 24 – waterfowl section, 1970s. ....	43
Figure 25 - 2016 Guidebook indicating extent of Wetland Ponds and addition of koala, wombat and echidna enclosures within the eastern component of the site .....	44
Figure 26 – Historic Aerials.....	46

## TABLES

Table 1 – SEARs and relevant report sections .....	10
Table 2 – AHIMS search results (Client Service ID: 497886) .....	17
Table 3 – AHIMS search results – Site characteristics (Client Service ID: 497886) .....	18
Table 4 – Summary of previous publications relevant to the Mosman regional archaeological context .....	22
Table 5 – Landform definitions .....	29
Table 6 – Analysis of historical aerials .....	45
Table 7 – Predictive Model .....	48
Table 8 – Contacted Organisations .....	53
Table 9 – Stage 1 Consultation – Registration of Interest.....	54
Table 10 – Stage 1 Consultation – Public Notice .....	54
Table 11 – Response to Stage 2 and 3 documents .....	55
Table 12 – Stage 3 Site Visit – Registration of Interest.....	58
Table 13 – Stage 3 Site Visit – Participants .....	58
Table 14 – Scientific (archaeological) significance criteria .....	61
Table 15 – Summary of identified values .....	63

# EXECUTIVE SUMMARY

This report presents the findings of an Aboriginal Cultural Heritage Assessment (ACHA) for the proposed redevelopment of facilities within the Upper Australia Precinct at Taronga Zoo, 2A Bradleys Head Road, NSW (hereafter referred to as 'the subject area'), (see Figure 1 and Figure 2).

Urbis has been commissioned by Taronga Conservation Society Australia (the Proponent) to produce an Aboriginal Cultural Heritage Assessment Report (ACHAR) in accordance with the Secretary's Environmental Assessment Requirements (SEARs) for the State Significant Development (SSD 10456). This ACHAR will accompany an Environmental Impact Statement (EIS) for the proposed works.

This assessment has been prepared for the proposed redevelopment of Lot 22 DP843294 (partial), which is Crown Land managed by the TCSA (the Zoological Park Board). The proposed works will upgrade the existing Upper Australia Precinct, including a new exhibit design and layouts. This will include demolition of existing structures and some excavation works, while still remaining sympathetic to the design intent of the original 1970s exhibits. The Upper Australia Precinct will display critically endangered Australian animals that form part of Taronga's wildlife conservation and education programs and upgrade "star" attractions including kangaroo, koala, platypus, wombat and emu exhibits.

The proposal will incorporate the demolition of:

- road, associated kerbing and retaining wall for Heritage item 'Wombat Enclosure' (123L);
- section of boundary wall associated with heritage item 07L;
- heritage item 'Timber Boardwalk' (53L); and
- heritage item 'Platypus House' (93B) and associated ground slab and footings.

The proposal will incorporate the following works:

- Refurbishment of the existing Nocturnal House.
- Construction of a new Koala encounter and canopy walk.
- Extension of the existing Macropod walkthrough.
- Creation of a new eastern plaza and western pavilion.
- Upgrades to back of house facilities for animal care.
- Additional toilets and amenities for staff and visitors.
- Other supporting infrastructure and walkways.
- Modifications to the existing ropes course including a new entrance.

This assessment addresses the relevant requirements of the Department of Planning's Secretary's Environmental Assessment Requirements (SEARs) and has been carried out in accordance with the following guidelines:

- *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (Department of Environment, Climate Change and Water (DECCW), 2010) (the Consultation Guidelines).
- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (Office of Environment and Heritage 2011) (the Assessment Guidelines).
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010).

The ACHAR concluded that:

- There are no registered Aboriginal objects and/or places within or in close proximity to the subject area.

- There are no landscape features with potential for Aboriginal objects or archaeological deposits located within the subject area.
- The subject area has experienced high levels of disturbance due to historical land use, including the establishment of the zoo in the early 20<sup>th</sup> century
- **INSERT COMMENTS FROM RAPS ONCE STAGE 4 OF THE CONSULTATION IS CLOSED.**

The proposed development can proceed in accordance with the following recommendations:

### **Recommendation 1 – Aboriginal Cultural Heritage Induction**

It is recommended that induction materials be prepared in consultation with the Registered Aboriginal Parties (RAPs) for inclusion in the construction management plan and site inductions for any contractors working at the subject area. The induction material should include an overview of the types of sites and artefacts to be aware of (i.e. stone tools, concentrations of shells that could be middens and rock engravings and grinding grooves), under the NPW Act, and the requirements of an 'archaeological chance find procedure' (refer below). This should be prepared for the project and included in any site management plans.

The induction material may be paper based, included in any hard copy site management documents; or electronic, such as "PowerPoint" for any face to face site inductions.

### **Recommendation 2 – Archaeological Chance Find Procedure**

In concurrent of the recommendations of the Historical Archaeological Assessment (Urbis 2020) for monitoring of earthworks for any potential historical archaeological resources, it is recommended that the monitoring applied for Aboriginal objects and archaeological resources. Although considered highly unlikely, should any Aboriginal objects, archaeological deposits be uncovered during any site works, a procedure must be implemented. The following steps must be carried out:

1. All works stop in the vicinity of the find. The find must not be moved 'out of the way' without assessment.
2. The archaeologist and Aboriginal representative on site examine the find, provides a preliminary assessment of significance, records the item for the AHIMS register and decides on appropriate management. Such management may require further consultation with the Aboriginal Cultural Heritage Regulation Branch of the Department of Premier and Cabinet (DPC), preparation of a research design and archaeological investigation/salvage methodology and decision on temporary care and control.
3. Depending on the significance of the find, reassessment of the archaeological potential of the subject area may be required, and further archaeological investigation undertaken.
4. Reporting may need to be prepared regarding the find and approved management strategies. Any such documentation should be appended to this ACHAR and revised accordingly.
5. Works in the vicinity of the find can only recommence when all management measure all implemented, and the find is removed from the activity area. Should the find be an unmovable item such as an engraving or grinding groove located on a sandstone surface, further management measures will need to be introduced to avoid harm to the find.

### **Recommendation 3 – Human Remains Procedure**

In the unlikely event that human remains are uncovered during any site works, the following must be undertaken:

1. All works within the vicinity of the find immediately stop.
2. Site supervisor or other nominated manager must notify the NSW Police and DPIE.
3. The find must be assessed by the NSW Police, and may include the assistance of a qualified forensic anthropologist.
4. Management recommendations are to be formulated by the Police, DPIE and site representatives.
5. Works are not to recommence until the find has been appropriately managed.

### **Recommendation 4 – RAP consultation**

A copy of the final ACHAR must be provided to all project RAPs. Ongoing consultation with RAPs should occur as the project progresses. This will ensure ongoing communication about the project and key



milestones and ensure that the consultation process does not lapse, particularly with regard to consultation should the Chance Find Procedure be enacted.

# 1. INTRODUCTION

This report presents the findings of an Aboriginal Cultural Heritage Assessment (ACHA) for the proposed redevelopment of facilities within the Upper Australia Precinct at Taronga Zoo, 2A Bradleys Head Road, NSW (hereafter referred to as 'the subject area'), (see Figure 1 and Figure 2).

Urbis has been commissioned by Taronga Conservation Society Australia (TCSA) to produce an Aboriginal Cultural Heritage Assessment Report (ACHAR) in accordance with the Secretary's Environmental Assessment Requirements (SEARs) for the State Significant Development (SSD 10). This ACHA will accompany an Environmental Impact Statement (EIS) for the proposed works.

## 1.1. PROPOSED ACTIVITY

The Upper Australia Precinct will complete the redevelopment of the entire Australian Habitat section of Taronga Zoo and will represent central and northern Australia with animal species and landscapes that reflect the central Australian deserts and top end wetlands.

The proposed works will upgrade the existing Upper Australia Precinct, including a new exhibit design and layouts. This will include demolition of existing structures and some excavation works, while still remaining sympathetic to the design intent of the original 1970s exhibits. The Upper Australia Precinct will display critically endangered Australian animals that form part of Taronga's wildlife conservation and education programs and upgrade "star" attractions including kangaroo, koala, platypus, wombat and emu exhibits.

The proposal will incorporate the demolition of (Figure 3):

- road, associated kerbing and retaining wall for Heritage item 'Wombat Enclosure' (123L);
- section of boundary wall associated with heritage item 07L;
- heritage item 'Timber Boardwalk' (53L); and
- heritage item 'Platypus House' (93B) and associated ground slab and footings.

The proposal will incorporate the following works:

- Refurbishment of the existing Nocturnal House.
- Construction of a new Koala encounter and canopy walk.
- Extension of the existing Macropod walkthrough.
- Creation of a new Western pavilion which will provide the formal entrance to the Precinct.
- Creation of the Escarpment Walk and Southern Link.
- Upgrades to back of house facilities for animal care.
- Additional toilets and amenities for staff and visitors.
- Other supporting infrastructure and walkways.
- Augmentation and extension of existing electrical, mechanical, hydraulic, stormwater and dry fire systems.
- Landscaping works including the removal of 37 trees.

The proposal will incorporate excavation (Figure 4) of areas, including:

- The inside the wetland ponds (within vicinity of heritage items 08L & 107L), where base will be excavated and walls will remain intact.
- A small section of the western side of the existing entrance of the Nocturnal House.
- Conversion of footpaths to boardwalks, which will involve spot excavations for pylons within the Australian wildlife enclosure (123L) where a boardwalk will be installed to minimise surface footprint of the development.

## 1.2. STATUTORY CONTROLS

Management of Aboriginal objects is under the statutory control of the *National Parks and Wildlife Act 1974* (NPW Act) further regulation of the process is outlined in the *National Parks and Wildlife Regulations 2009* (NPW Reg). This ACHA has been carried out in accordance to Part 6 of the NPW Act and Part 8A of the NPW Reg. The ACHAR was prepared the statutory guidelines under the NPW Act including:

- *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (Department of Environment, Climate Change and Water (DECCW), 2010) (the Consultation Guidelines).
- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (Office of Environment and Heritage 2011) (the Assessment Guidelines).
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010).
- *The Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013* (Burra Charter).

The ACHA is required to inform the Environmental Impact Statement (EIS) which will be submitted to support a State Significance Development Application (SSDA). The ACHA will also address the relevant requirements of the Department of Planning's Secretary's Environmental Assessment Requirements (SEARs).

### 1.2.1. Response to SEARs

The ACHAR is guided by the Secretary's Environmental Assessment Requirements (SEARs) for the State Significant Development (SSD 10456). Identifies the relevant SEARs and the corresponding sections of this ACHAR.

Table 1 – SEARs and relevant report sections

SEARs Item	Report Section
<i>Identify and describe the Aboriginal cultural heritage values that exist across the whole area that would be affected by the development and 3 document these in an Aboriginal Cultural Heritage Assessment Report (ACHAR). This may include the need for surface survey and test excavation. The identification of cultural heritage values must be conducted in accordance with the Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (OEH 2010), and guided by the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (DECCW, 2011)</i>	An assessment of the tangible component of Aboriginal cultural heritage values of the subject area is contained in Section 2 and the intangible cultural heritage aspect is provided from the comments of the Registered Aboriginal Parties in Section 3 of this report.
<i>Consultation with Aboriginal people must be undertaken and documented in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW). The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the ACHAR.</i>	The consultation process which was undertaken in the preparation of this ACHA is outlined in Section 2.
<i>Impacts on Aboriginal cultural heritage values are to be assessed and documented in the ACHAR. The ACHAR must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR must outline measures proposed to mitigate impacts. Any objects recorded as part of</i>	The ACHA process confirmed that there is no impact proposed for known Aboriginal cultural heritage values and that there is a very low potential for Aboriginal cultural heritage

SEARs Item	Report Section
<i>the assessment must be documented and notified to OEH. Note that due diligence is not an appropriate assessment, an ACHAR is required.</i>	resources within the subject area. Recommended mitigation measures, are outlined in Section 8 of this report.

## 1.3. OBJECTIVES

The objectives of this ACHA are to:

- Investigate the presence, or absence, of Aboriginal objects and/or places within and in close proximity to the subject area, and whether those objects and/or places would be impacted by the proposed development.
- Investigate the presence, or absence, of any landscape features that may have the potential to contain Aboriginal objects and/or sites and whether those objects and/or sites would be impacted by the proposed development.
- Document the nature, extent and significance of any Aboriginal objects and/or place and sites that may located within the subject area.
- Document consultation with the Registered Aboriginal Parties (RAPs) with the aim to identify any spiritual, traditional, historical or contemporary associations or attachments to the subject area and any Aboriginal objects and/or places that might be identified within the subject area.
- Provide management strategies for any identified Aboriginal objects and/or places or cultural heritage values.
- Provide recommendations for the implementation of the identified management strategies.
- Prepare a final Aboriginal Cultural Heritage Assessment Report (ACHAR) to be included in the Environmental Impact statement (EIS) for the proposed redevelopment.

## 1.4. AUTHORSHIP

This ACHA has been prepared by Aaron Olsen (Assistant Archaeologist), Meggan Walker (Consultant Archaeologist), Alexandra Ribeny (Consultant Archaeologist) and Andrew Crisp (Senior Archaeologist), with review and quality control undertaken by Balazs Hansel (Associate Director Archaeology).



**Project No:** P0022459  
**Project Manager:** Balazs Hansel

**Subject Area**

## REGIONAL LOCATION

Taronga Zoo (Upper Australia Precinct)  
 Taronga Conservation Society Australia

Figure 1 – Regional location





GDA 1994 MGA Zone 56

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Project No:P0022459

Project Manager: Balazs Hansel

Subject Area Contours Hydrology

**LOCATION OF THE SUBJECT AREA**  
Taronga Zoo (Upper Australia Precinct)  
Taronga Conservation Society Australia

Figure 2 – Location of the subject area











## 2. ARCHAEOLOGICAL CONTEXT

### 2.1. LOCATION

Taronga Zoo is located at Bradleys Head Road, Mosman and is situated in the Mosman Local Government area (LGA). The site is bounded by Bradleys Head Road to the east, Athol Wharf Road and Sydney Harbour to the south, Little Sirius Cove to the west and Whiting Beach Road to the north.

Taronga Zoo is legally described as Lot 22 on DP843294 and is Crown Land managed by the TCSA (the Zoological Park Board).

The proposed Upper Australia Precinct is located at the north-eastern corner of the Taronga Zoo site as shown in Figures 1 and 2. The site is surrounded on three sides by existing zoo facilities and adjoins Bradleys Head Road near the northern main zoo entrance. On the opposite side of Bradleys Head Road to the east of the site is Sydney Harbour National Park. The nearest residential areas to the proposal site are approximately 200m to the north on Bradleys Head Road and Whiting Beach Road. These areas are separated from the project site by the national park and the zoo's car parking, forecourt and main entrance building.

Existing uses and facilities in the Upper Australia Precinct area include:

- Avian wetland.
- Wild ropes course.
- Nocturnal House.
- Macropod walk-through.
- Koala experience.
- Platypus house.

The existing facilities largely comprise open air exhibits, pathways, landscaping and associated infrastructure/servicing areas.

### 2.2. ABORIGINAL ARCHAEOLOGICAL BACKGROUND

This section comprises the summary of the archaeological background research for Aboriginal cultural heritage resources. This includes the search of the Aboriginal Heritage Information Management System (AHIMS), previous archaeological investigations pertinent to the subject area and landscape analysis.

#### 2.2.1. Aboriginal Heritage Information Management System (AHIMS)

The AHIMS database comprises previously registered Aboriginal archaeological objects and cultural heritage places in NSW and it is managed by the Department of Planning, Industry and Environment (DPIE) under Section 90Q of the *National Parks and Wildlife Act 1974* (NPW Act).

Aboriginal objects are the official terminology in AHIMS for Aboriginal archaeological sites. From this point in the assessment forward the terms of 'Aboriginal sites', 'AHIMS sites' or 'sites' will be used to describe the nature and spatial distribution of archaeological resources in relation to the subject area.

The search of the AHIMS was carried out on 17 April 2020 (Client Service ID: 497886) for an area of approximately 8 km<sup>2</sup>. The search found no registered Aboriginal sites within or adjacent to the subject area.

Altogether 60 Aboriginal sites were identified within the search area. Open sites such as artefact scatters and Potential Archaeological Deposits (PAD) comprised 37% (n=22) of search results; while closed sites, such as shelters comprised 63% (n=38) of search results.

The search results are shown on Figure 6, discussed in Table 2 and Figure 5, and included as Appendix A.

Table 2 – AHIMS search results (Client Service ID: 497886)

Site Type	Number	Percentage
Shelter with Shell Midden	23	38%
Shell Midden	9	16%
Rock Engraving	8	13%
Shelter with Art	8	13%
Midden	3	5%
PAD	2	3%
Shelter with Art and Shell Midden	2	3%
Shelter with Midden	2	3%
Shelter	1	2%
Shelter with Art and Midden	1	2%
Shelter with Art, Shell Midden and Burial/s	1	2%
<b>Total</b>	<b>60</b>	<b>100%</b>

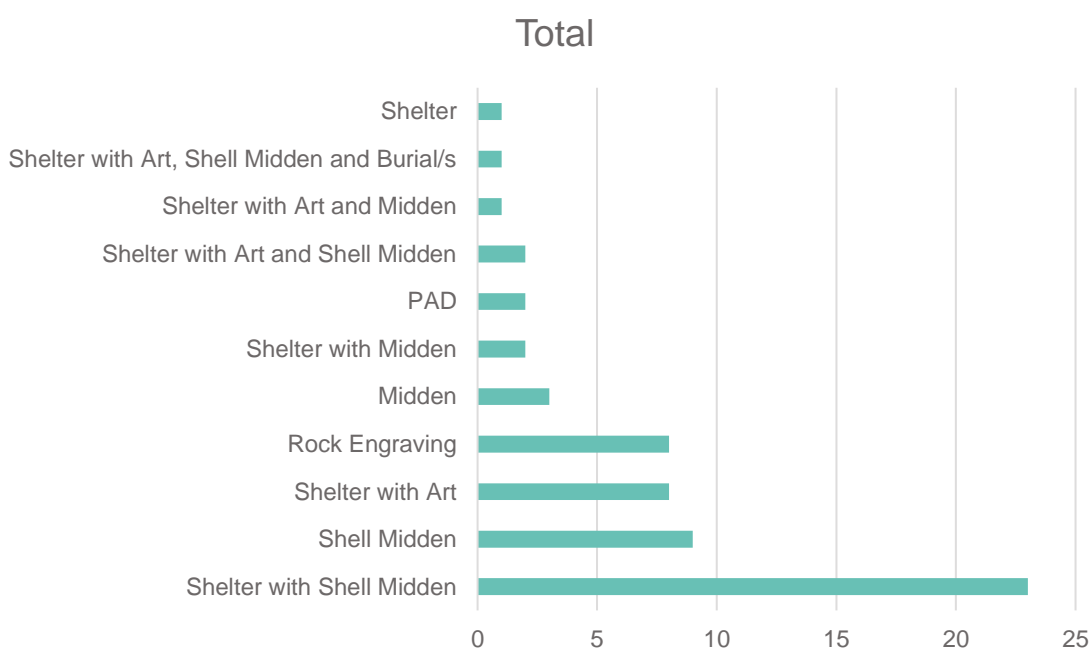


Figure 5 – AHIMS search results (Client Service ID: 497886)

The types of sites identified reflect the landscape and environment of the search area. Sites which include shelters encompass 63% of the total assemblage (n=38). These types of sites are dependent on two natural environment factors - the presence of sandstone outcrops and the proximity of waterways.

The former is reflected in the abundance of sites which have made use of local sandstone resources (77%, n=46). The sandstone bedrock which characterises the Mosman LGA was utilised extensively by local Aboriginal groups. Overhangs and outcrops provided an important source of shelter and protection. Sandstone also served a medium for the manufacture of tools and a surface for engravings and pigment art (AMBS 2002:14).

The latter is reflected in the abundance of sites which evidence the exploitation of marine resources (39, n=65%). A search of the AHIMS has revealed that sites are primarily registered in proximity to waterways, clustering around the shoreline of Bradley's Head and George's Head (see Figure 6). This observation has been reproduced in a number of studies (Attenbrow 1990, Koettig 1991, AMBS 2005).

Shelters with art comprised 21% (n=11) of the search results. Hand stencils are the most frequent motif found in the Mosman area, accounting for 84% (AMBS 2005:83).

Open rock engraving sites comprised 15% (n=8) of the search results. Previous studies (Bradley 2000, AMBS 2005) have identified rock engraving sites as displaying the highest degree of internal variation within the Mosman area. Unlike other site types, they also display no clear relationship with their environmental context, suggesting that they were neither systematic nor purposeful (AMBS 2005:99). Four clear zones of engraving activity have been identified in Mosman. The style which characterises the south-eastern zone, which encompasses Bradley's Head and was inhabited by the Borogegal, is distinguished from the north shore of Port Jackson, which was inhabited by the Cammeragal.

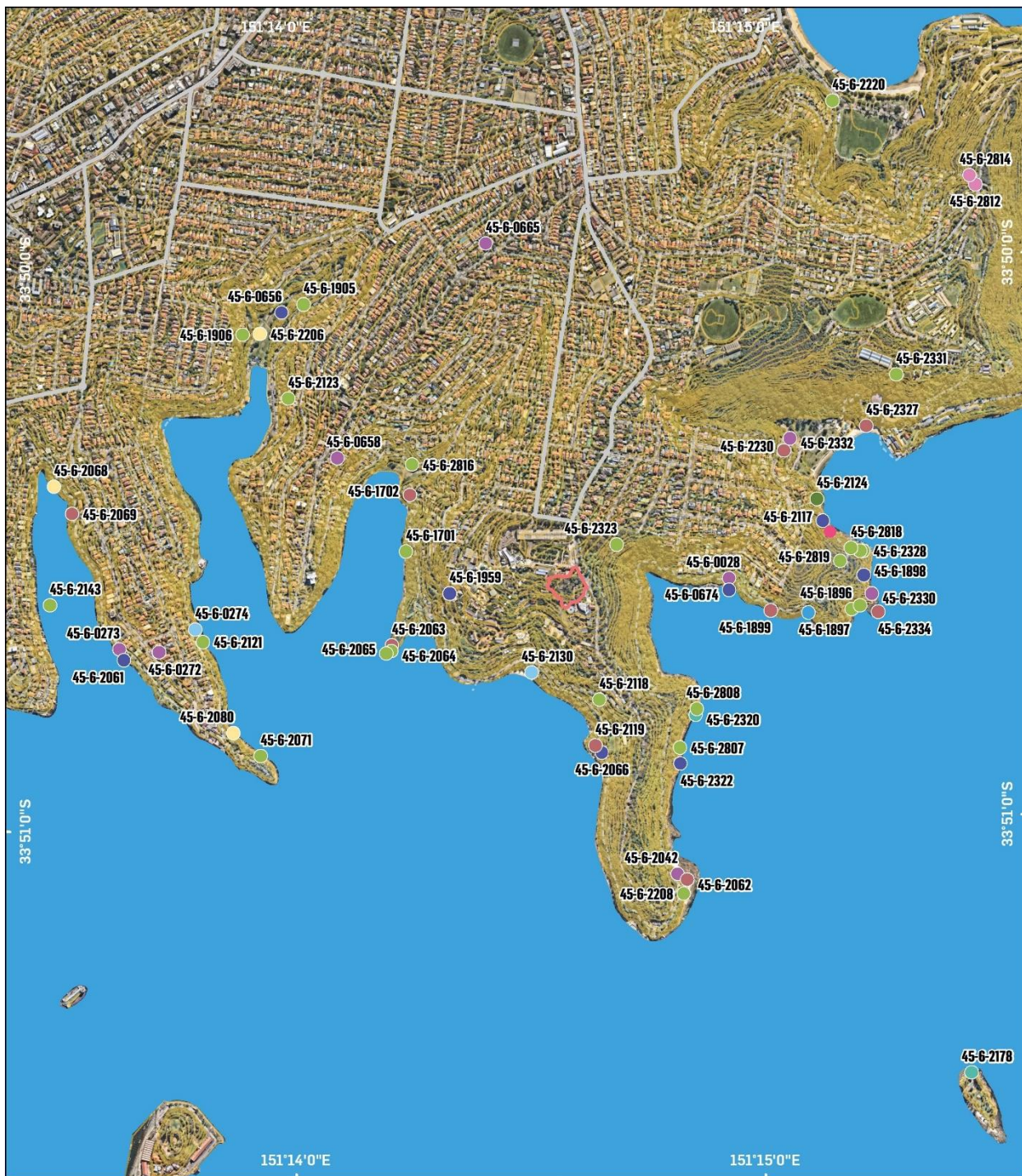
The impact of the expanding urban development within the Mosman LGA has had a major impact on the survival of Aboriginal archaeological resources and a large number of Aboriginal archaeological sites were disturbed or destroyed before the legislative protection of Aboriginal objects and places was introduced in 1974. Since the late 20<sup>th</sup> century, however, number of surveys have indicated that the rate of preservation of Aboriginal sites within the Mosman LGA is higher than had previously been assumed and 'exceptional' within the context of the Sydney Metropolitan Area (Koettig 1991, AMBS 2005).

It should be noted that the AHIMS register does not represent a comprehensive list of all Aboriginal objects or sites in a specified area. It lists recorded sites identified during previous archaeological survey effort. The wider surroundings of the subject area have experienced various levels and intensity of archaeological investigations during the last few decades. Most of the registered sites have been identified through targeted, pre-development surveys for infrastructure and maintenance works, with the restrictions on extent and scope of those developments.

Table 3 – AHIMS search results – Site characteristics (Client Service ID: 497886)

Site Characteristic	Number	Percentage
Open	22	37%
Closed	38	63%
Shelter with midden (any type)	47	78%
Sandstone	46	77%
Artefact	4	7%
Shell	39	65%
PAD	2	3%

It should also be important to understand that archaeological sites alone will not provide the full context of how Aboriginal people might have used the landscape in the past and how their every day and ceremonial activities shaped the landscape and provided the cultural connection to the natural environment. Archaeological resources comprise only one aspect (tangible) of Aboriginal cultural heritage and intangible cultural heritage provides a more holistic context of past and present Aboriginal life.



GDA 1994 MGA Zone 56

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400 Meters

Project No: P0022459

Project Manager: Balazs Hansel

Subject Area

Contours

Hydrology

Midden

PAD

Rock Engraving

Shell Midden

Shelter

Shelter with Art

Shelter with Art and Midden

Shelter with Art and Shell Midden

## ABORIGINAL HERITAGE CONSTRAINTS

Taronga Zoo (Upper Australia Precinct)  
Taronga Conservation Society Australia

Shelter with Art, Shell Midden and Burial/s

Shelter with Midden

Shelter with Shell Midden

Figure 6 – Registered Aboriginal sites in search area



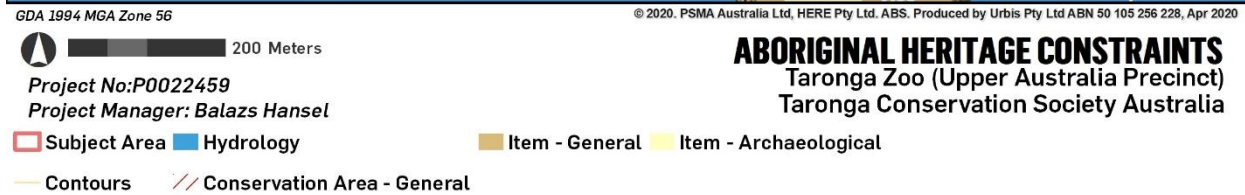


Figure 7 – Historical heritage constraints.

## 2.2.2. Regional Archaeological Context

Archaeological publications which relate to the Mosman area date back over 120 years, with W. D. Campbell's (1899) and R. H. Mathews (1898, 1899) systematic recordation of Aboriginal rock engravings around Sydney throughout the 1890s. The subsequent 50 years experienced a hiatus in the investigation of Aboriginal sites.

Mosman Council commissioned heritage studies for the municipality in the late 20<sup>th</sup> century (Haglund and Rich 1988; Koettig 1991). Haglund and Rich (1988) identified 21 Aboriginal sites within the LGA and, just 3 years later, Koettig (1991) identified 77.

Throughout the 1990s Attenbrow (1990, 1991, 1991, 1993, 1994, 1995) undertook a number of archaeological surveys and excavations within the Mosman LGA. Attenbrow identified a further 123 occupation sites (1990). Excavations of a rockshelter at Balmoral Beach (Attenbrow 1992, 1993, 1994 & 1995) revealed a continuous record of occupation from 2,500 BP.

In 2005 an Aboriginal Heritage Study (AHS) was prepared for the Mosman LGA by AMBS. This publication was commissioned by the NSW National Parks and Wildlife Service (NPWS), Metropolitan Local Aboriginal Land Council (MLALC), Mosman Council and Sydney Harbour Federation Trust (SHFT) for the purpose of clearly articulating the responsibilities of these agencies in respect of the Aboriginal heritage of the Mosman LGA. At the time of writing there were 92 recorded sites within the Mosman LGA and the AHS identified a further 15.

These publications are briefly summarised below in Table 4

Table 4 – Summary of previous publications relevant to the Mosman regional archaeological context

Report	Summary	Relevance to Subject Area
<i>Oakley, B. 1984. An Archaeological Survey of the Northbridge Golf Links</i>	Report commissioned by Willoughby Municipal Council in relation to a Masterplan for the proposed upgrade of existing walking trails and other upgrade works in Northbridge Park, which is under the ownership of Northbridge Golf Club.	<ul style="list-style-type: none"> <li>Established that none of the identified Aboriginal sites were in 'good' condition, having been subject to significant disturbance</li> <li>Recommended that public access to sites be prevented through the removal of trails and planting of shrubs.</li> </ul>
<i>Attenbrow &amp; Ross, 1990. Archaeological Site Survey: Bradley's Head</i>	Report prepared in relation to the proposed redevelopment of the HMAS Memorial at Bradley's Head in Sydney Harbour National Park. It established that no Aboriginal sites were located within the vicinity of the proposed works, with the exception of an artefact	<ul style="list-style-type: none"> <li>Although the landscape context would predict that middens, art sites and other site types were once abundant on the southern tip of Bradley's head, these would have been removed through the construction of fortifications and roads in the 19<sup>th</sup> and 20<sup>th</sup> centuries</li> <li>Identified a rock shelter site (45-6-1959) in addition to the 5 registered sites located on Bradley's Head peninsula.</li> </ul>
<i>Attenbrow, V. 1990. The Port Jackson Archaeological Project, Stage 1: a study of the Port Jackson Catchment</i>	This report encompassed a review of existing and potential Aboriginal sites throughout the Port Jackson area. It also attempted to address broader research questions relating to the subsistence strategy and material repertoire which were adopted by the Aboriginal people of Port Jackson.	<ul style="list-style-type: none"> <li>Established that the range and predominance of particular shellfish species varies according to distance from the harbour and that middens are located in relation to resources</li> <li>Established that 16% of middens were totally or highly disturbed, 31% were totally or partially disturbed and that in 53% of sites some in situ deposit had survived</li> <li>Established that Port Jackson retains a large number of middens which are suitable for scientific research purposes</li> </ul>
<i>Koettig, M. 1991. Mosman Municipality Heritage Study of Aboriginal Sites</i>	In 1990 Mosman Council commissioned a heritage study of Aboriginal sites across the Mosman municipality. The report provided detailed information in	<ul style="list-style-type: none"> <li>Identified a total of 77 Aboriginal sites</li> <li>Established that the majority of occupational deposits are associated with the foreshore and always contain shell middens</li> </ul>

Report	Summary	Relevance to Subject Area
<i>Attenbrow, 1992, 1993, 1994, 1995. Archaeological Excavation of a rockshelter at the southern end of Balmoral Beach, Mosman</i>	relation to identified sites as well as recommendations in relation to conservation policy.  This study documented the excavation of a shell midden at a rockshelter at Balmoral Beach. Excavation was undertaken both inside and outside of the rockshelter and revealed a continuous deposit containing stone artefacts, faunal remains, hearths and shell material dating back at least 2,500 BP.	<ul style="list-style-type: none"> <li>Established that art occurs both in open and closed contexts and in all areas of the landscape</li> <li>Identified two 'Art / Shelter' sites within the curtilage of the subject area</li> <li>Revealed a record of continuous occupation over a period of 2,500 years, as indicated by multiple hearths</li> <li>Shell material was located principally in the upper 65 cm of the deposit, suggesting a transition to a marine-based diet</li> <li>18 different species of shellfish were identified, suggesting varied exploitation of the marine resources.</li> </ul>
<i>GML, 2004, Taronga Zoo Archaeological Management Plan</i>	Report commissioned by Zoological Parks Board of New South Wales (ZPB NSW) in preparation for the redevelopment of numerous precincts throughout the zoo.  Consolidated information from a number of heritage and archaeological reports which GML had previously prepared for proposed works within Taronga Zoo.	<ul style="list-style-type: none"> <li>Subject area is comprised of the following two archaeological zones:</li> <li>Zone 4: Medium – low potential. Areas heavily modified by European development. Brief contractors if subsurface disturbance proposed and if relics exposed cease work and report to MLALC and NPWS and act as for Zone 3.</li> <li>Zone 5: Nil potential. Areas which have previously been excavated down to bedrock, or culturally sterile soil profiles. No further Aboriginal archaeological input required. Act as for Zone 3 if any relic is found (unlikely).</li> </ul>
<i>AMBS, 2005. Aboriginal Heritage Study of the Mosman Local Government Area.</i>	Study commissioned by the NSW National Parks and Wildlife Service (NPWS), Metropolitan Local Aboriginal Land Council (MLALC), Mosman Council and Sydney Harbour Federation Trust (SHFT). Aimed at outlining the responsibilities of these agencies in respect of the Aboriginal heritage of the Mosman LGA.	<ul style="list-style-type: none"> <li>Identified the Aboriginal heritage of the Mosman LGA as exceptional on the basis that the frequency and preservation of archaeological finds is almost unparalleled within the Sydney Metropolitan Area</li> <li>The majority of Aboriginal sites are located along the foreshore and lower slope areas, suggesting a preference for marine resources</li> <li>Middens, both open and closed, displayed the least variation of any Aboriginal site type in the Mosman LGA</li> </ul>



Report	Summary	Relevance to Subject Area
		<p>and reflect a preference for the coastal landscape, rather than a bias caused by development away from the immediate shorelines</p> <ul style="list-style-type: none"> <li>▪ The distribution and variation within Aboriginal sites in relation to topography revealed two primary areas of occupation: north-west and south-east</li> </ul>
<i>NSW Department of Environment, Climate Change and Water, 2010. Aboriginal Heritage of Mosman</i>	This document was prepared by DECC with the intention of providing an accessible guide to the Aboriginal heritage of the Mosman area.	<ul style="list-style-type: none"> <li>▪ Outlines principal site types which are found within the Mosman area; these being middens, archaeological deposits, engravings, pigment art, burials and grinding grooves.</li> </ul>
<i>GML, 2006, Taronga Zoo, Australian Coastline Precinct: Archaeological Monitoring Report</i>	<p>Commissioned by the ZPB NSW to monitor ground disturbance of works associated with the redevelopment of the 'Australian Coastline Precinct' (now known as the Great Southern Oceans Precinct').</p> <p>Uncovered remnant historical pathways and footings, however, these were highly disturbed.</p>	<ul style="list-style-type: none"> <li>▪ Approximately 100m south-west of subject area</li> <li>▪ No Aboriginal objects were uncovered during archaeological monitoring.</li> </ul>
<i>GML, 2010, Taronga Zoo Upper Entrance Precinct: Archaeological Monitoring Report</i>	<p>Commissioned by Taronga Zoo to monitor ground disturbance of works associated with the redevelopment of the 'Taronga Zoo Upper Entrance Precinct' in preparation for the construction of a multi-storey carpark in the area.</p> <p>Report responded to the AMP and HIS for the Upper Entrance Precinct which identified the potential for a number of Historical archaeological resources.</p>	<ul style="list-style-type: none"> <li>▪ Approximately 50m north of the subject area</li> <li>▪ High degree of disturbance with site filled and levelled in the late 20<sup>th</sup> century</li> <li>▪ No Aboriginal objects were uncovered during archaeological monitoring.</li> </ul>
<i>GML, 2011, Taronga Zoo Upper Entrance Precinct: Stage 2 Archaeological Monitoring Report</i>	Commissioned by the ZPB NSW to monitor ground disturbance of works associated with the redevelopment of the 'Taronga Zoo Upper Entrance Precinct'.	<ul style="list-style-type: none"> <li>▪ Approximately 50m north of the subject area</li> <li>▪ No Aboriginal objects were uncovered during archaeological monitoring.</li> </ul>

### 2.2.3. Local Archaeological Context

Although no previous archaeological investigations relate specifically to the subject area, it has been incorporated within a number of surveys which covered Port Jackson and the Mosman LGA.

The following publications are discussed specifically in relation to their implications for the subject area.

**Attenbrow, V. 1990. *The Port Jackson Archaeological Project, Stage 1: a study of the Port Jackson Catchment***

A publication of relevance for the present assessment was the *Port Jackson Archaeological Project*, prepared by Val Attenbrow on behalf of the Australian Museum in 1990. Stage 1 of this study involved a survey of Aboriginal archaeological sites throughout Port Jackson, which contributed significantly toward an increased understanding of the relationship between site type and landscape features. The study found that the majority of sites were located within proximity of water, Hawkesbury sandstone and on the lower points of ridgelines. Attenbrow (1990:46-47) attributed these findings to the reduced development and increased visibility afforded by these landscape features.

**Koettig, M. 1991. *Mosman Municipality Heritage Study of Aboriginal Sites***

Koettig's review of Aboriginal sites throughout the Mosman LGA found that site types were 'typical of those found in the Hawkesbury Sandstone Region', which is characterised by an absence of stone arrangements, grinding grooves and scarred trees (Koettig 1991:39). This is reflected also in the AHIMS search results for the present study in which none of these site types were observed (Table 2).

Koettig found that although Aboriginal sites could be found in all parts of the landscape, clear associations were observed between particular site types and landscape features, with engravings more likely to be found along ridgetops and middens within proximity of the shoreline.

**GML, 2004, *Taronga Zoo Archaeological Management Plan***

The Taronga Zoo AMP characterises the Zoo site as consisting of sloping sandstone topography which has been levelled through cutting and filling in association with the establishment of the Zoo in the early 20<sup>th</sup> century. Areas which have been excavated down to bedrock are thus identified as archaeologically sterile. Other areas in which soil profiles survived but which have been heavily disturbed by earthworks and construction are identified as having medium – low potential. Where sections of the natural topography survive, these are identified as having potential for the following Aboriginal site types:

- Rock shelters with art and/or shell midden.
- Middens.
- Rock engravings.
- Grinding grooves.
- Open campsites.
- Isolated finds.

The Taronga Zoo AMP identifies the subject area within the following zones (Figure 8):

- **Zone 4:** Medium – low potential. Areas heavily modified by European development. Brief contractors if subsurface disturbance proposed and if relics exposed cease work and report to MLALC and NPWS and act as for Zone 3.
- **Zone 5:** Nil potential. Areas which have previously been excavated down to bedrock, or culturally sterile soil profiles. No further Aboriginal archaeological input required. Act as for Zone 3 if any relic is found (unlikely).

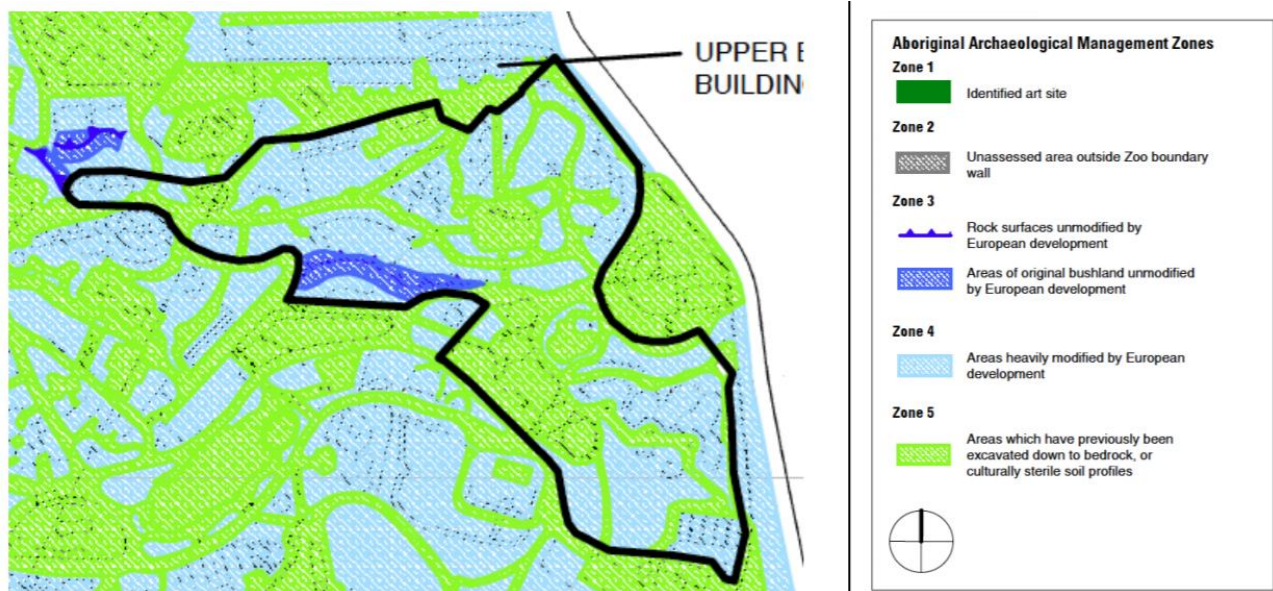


Figure 8 – Aboriginal archaeological management zones

Taronga Zoo AMP 2004

#### AMBS, 2005. *Aboriginal Heritage Study of the Mosman Local Government Area*

In addition to consolidating the findings of previous publications, the AHS undertook statistical analyses as a means of identifying smaller (archaeological sites) and general (cultural landscape) trends. The study determined that:

1. Highest frequencies of archaeological sites are around the foreshore; and
2. Lowest frequencies of archaeological sites occur on interconnecting ridgetops.

The study also found that the probability of the appearance of sites decreases as the elevation (or distance from water) increases (AMBS 2002:103). This outcome does not agree with Koettig's (1991:8) earlier assertion that 'it is not useful to use topographic or environmental variables as the basis for determining areas of higher or lower archaeological sensitivity'.

The absence of Aboriginal sites on ridgetops was interpreted as being a consequence of their being used as transit routes or for the exploitation of resources. The least sites were observed in association with interconnecting ridgetops, with the ends of ridgetops exhibiting the greatest potential because they 'provided the easiest access to water' (AMBS 2002:103).

The subject area is located almost at the apex of an interconnecting ridgetop which runs south to Bradley's Head, south-east to Georges Head and North-east to Middle Head. According to the AMBS predictive model, the location of the subject area therefore suggests that it has a low potential for Aboriginal archaeological sites.

#### 2.2.4. Summary

The conclusions from the summary of the AHIMS results and previous reports are the following:

- No Aboriginal objects and/or places are registered on AHIMS within the subject area or within proximity.
- Disturbance resulting from European occupation reduces the potential for intact soil profiles to remain within urban sites. In shallow soils profiles, this is likely to lower archaeological potential.
- While intact natural soils may be present within urban environments, they may not necessarily contain Aboriginal archaeological objects as landscape factors play a decisive role in Aboriginal utilisation of the land prior to European occupation.
- While disturbance may impact the likelihood for Aboriginal archaeological materials to survive on the surface, *in situ* deposits may remain below imported fill.

- Within the regional context of the subject area, registered Aboriginal sites tend to be located within proximity of the coastline and in areas where sandstone outcrops occur. The reduced occurrence of sites within inland, developed areas is not therefore only a consequence of high disturbance levels.
- Dominant site types within the region include shelters, shell middens and rock engravings.
- The *Taronga Zoo AMP* identifies the subject area as containing the following two zones:
  - Zone 4: Medium – low potential. Areas heavily modified by European development.
  - Zone 5: Nil potential. Areas which have previously been excavated down to bedrock, or culturally sterile soil profiles.

## 2.3. GEOLOGY AND SOILS

The subject area is located within the Sydney Basin Bioregion. The underlying geology of the Mosman area consists of Triassic Hawkesbury Sandstone, which is exposed along the shoreline (Chapman & Murphy 1989). The Hawkesbury Sandstone is a medium to coarse-grained quartz sandstone with minor shale and laminite lenses.

The subject area is located within the Gynea soil landscape (gy), which consists of undulating to rolling rises and low hills on Hawkesbury Sandstone. Soils consist of shallow to moderately deep (30-100 cm) Yellow Earths and Earthy Sands on crests and inside of benches, shallow (<20 cm) Siliceous Sands on leading edges of benches, localised Gleyed Podzolic Soils and Yellow Podzolic Soils on shale lenses and shallow to moderately deep (<100 cm) Siliceous Sands and Leached Sands along drainage lines (Figure 9).

The depth of natural soils is relevant to the potential for archaeological deposits to be present, especially in areas where disturbance is high. Most of the Mosman area is highly disturbed as a result of moderate density residential development during the 20<sup>th</sup> Century.

The subject area is characterised by the presence of intersecting sandstone ledges that sloped towards the harbour foreshore. The site has been subject to high levels of disturbance relating to its use as a zoo, which necessitated the creation of level building terraces by cutting and filling sections of the sandstone bedrock. The stratigraphy of the subject area is therefore comprised of alternating sections of shallow sandstone bedrock and fill.

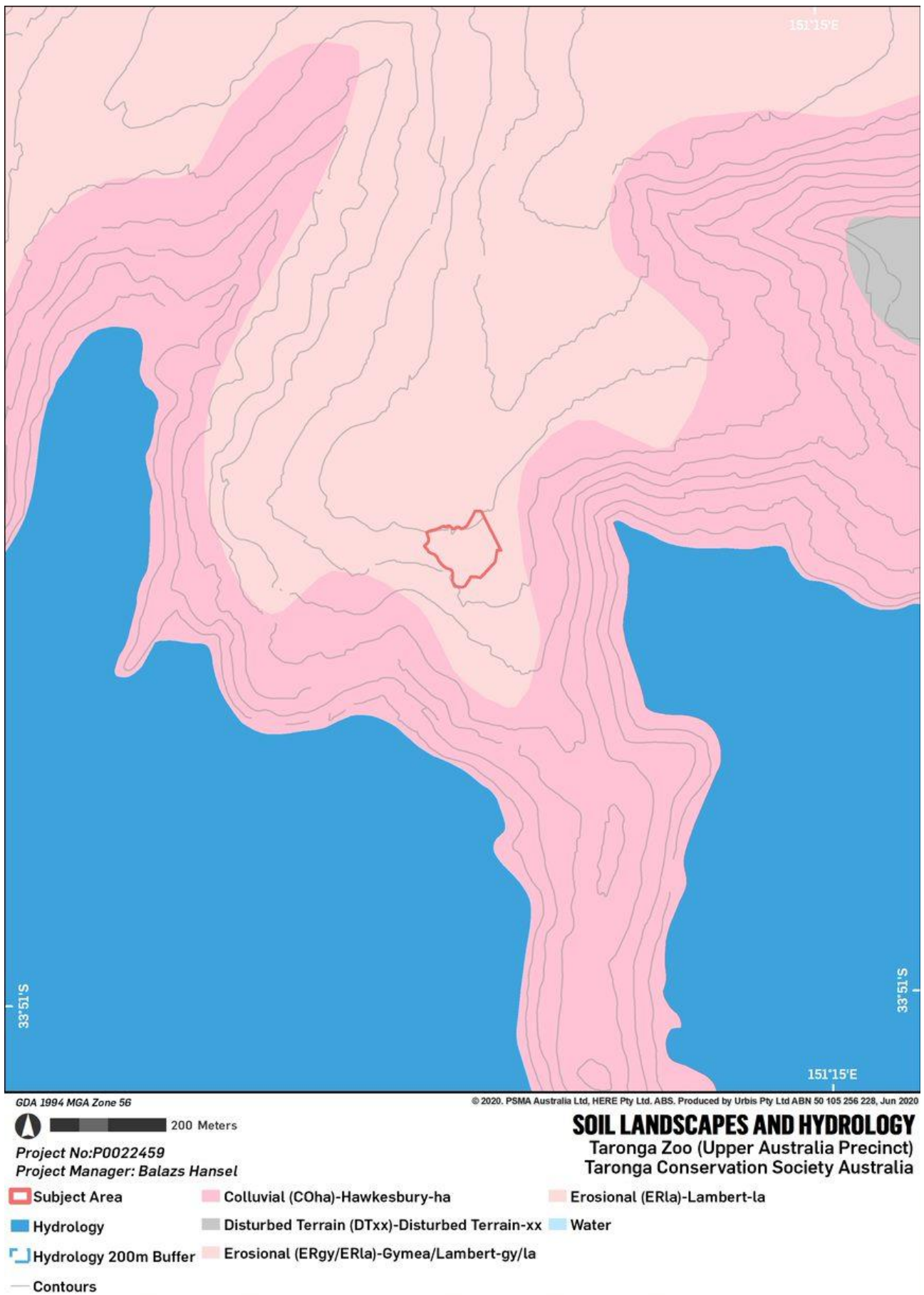


Figure 9 – Soils landscapes and hydrology



## 2.4. VEGETATION AND RESOURCES

The GyMEA soil landscape was originally characterised by dry sclerophyll woodland and open forest. Common species included red bloodwood *Eucalyptus gummifera*, yellow bloodwood *E. eximia*, scribbly gum *E. haemastoma*, brown stringybark *E. capitellata* and old man banksia *Banksia serrata*. On the more sheltered slopes, black ash *E. sieberi*, Sydney peppermint *E. piperita* and smooth-barked apple *Angophora costata* are common tree species. The dry sclerophyll understorey consisted of shrubs from the families Epacridaceae, Myrtaceae, Fabaceae and Proteaceae.

Whereas native forests have been extensively cleared to make way for residential development, Mosman retains a relatively large number of its native forests, particularly along its foreshores. This is the result of their original incorporation within military installations, which afforded them protection until they were transferred into the ownership of the State government in 1979 and became part of the Sydney Harbour National Park (AMBS 2005: 17).

## 2.5. HYDROLOGY

The subject area is located approximately 200m west of the nearest coastline at Taylors Bay and 75m above sea level (Figure 9). There are no waterways within proximity of the subject area.

## 2.6. LANDFORM

There are varying morphological types of Landform elements (see Figure 10 and Figure 11). The Australian Soil and Land Survey Field Handbook (CSIRO, 2009) identifies ten types. These types are as follows:

Table 5 – Landform definitions

Type	Definition
Crest (C)	Landform element that stands above all, or almost all, points in the adjacent terrain. It is characteristically smoothly convex upwards in downslope profile or in contour, or both. The margin of a crest element should be drawn at the limit of observed curvature.
Hillock (H)	Compound landform element comprising a narrow crest and short adjoining slopes, the crest length being less than the width of the landform element.
Ridge (R)	compound landform element comprising a narrow crest and short adjoining slopes, the crest length being greater than the width of the landform element.
Simple Slope (S)	Slope element adjacent below a crest or flat and adjacent above a flat or depression.
Upper Slope (U)	Slope element adjacent below a crest or flat but not adjacent above a flat or depression.
Mid Slope (M)	Slope element not adjacent below a crest or flat and not adjacent above a flat or depression.
Lower Slope (L)	Slope element not adjacent below a crest or flat but adjacent above a flat or depression.
Flat (F)	planar landform element that is neither a crest nor a depression and is level or very gently inclined (<3% tangent approximately).
Open Depression (vale) (V)	Landform element that stands below all, or almost all, points in the adjacent terrain. A closed depression stands below all such points; an open depression extends at the same elevation, or lower, beyond the locality where it is observed. Many depressions are concave upwards and their margins should be drawn at the limit of observed curvature.

Type	Definition
Closed Depression (D)	Landform element that stands below all, or almost all, points in the adjacent terrain. A closed depression stands below all such points; an open depression extends at the same elevation, or lower, beyond the locality where it is observed. Many depressions are concave upwards, and their margins should be drawn at the limit of observed curvature.

Mosman is located on a sandstone ridge which forms a peninsula between Port Jackson and Middle Harbour. The ridge rises to 80 m above sea level.

The subject area is located within an area of maximal upper slope (as depicted in Figure 11) adjacent to the crest of the ridgeline which runs north-east along Military Road. The slope descends gradually toward the peninsular which forms Bradleys Head to the south.

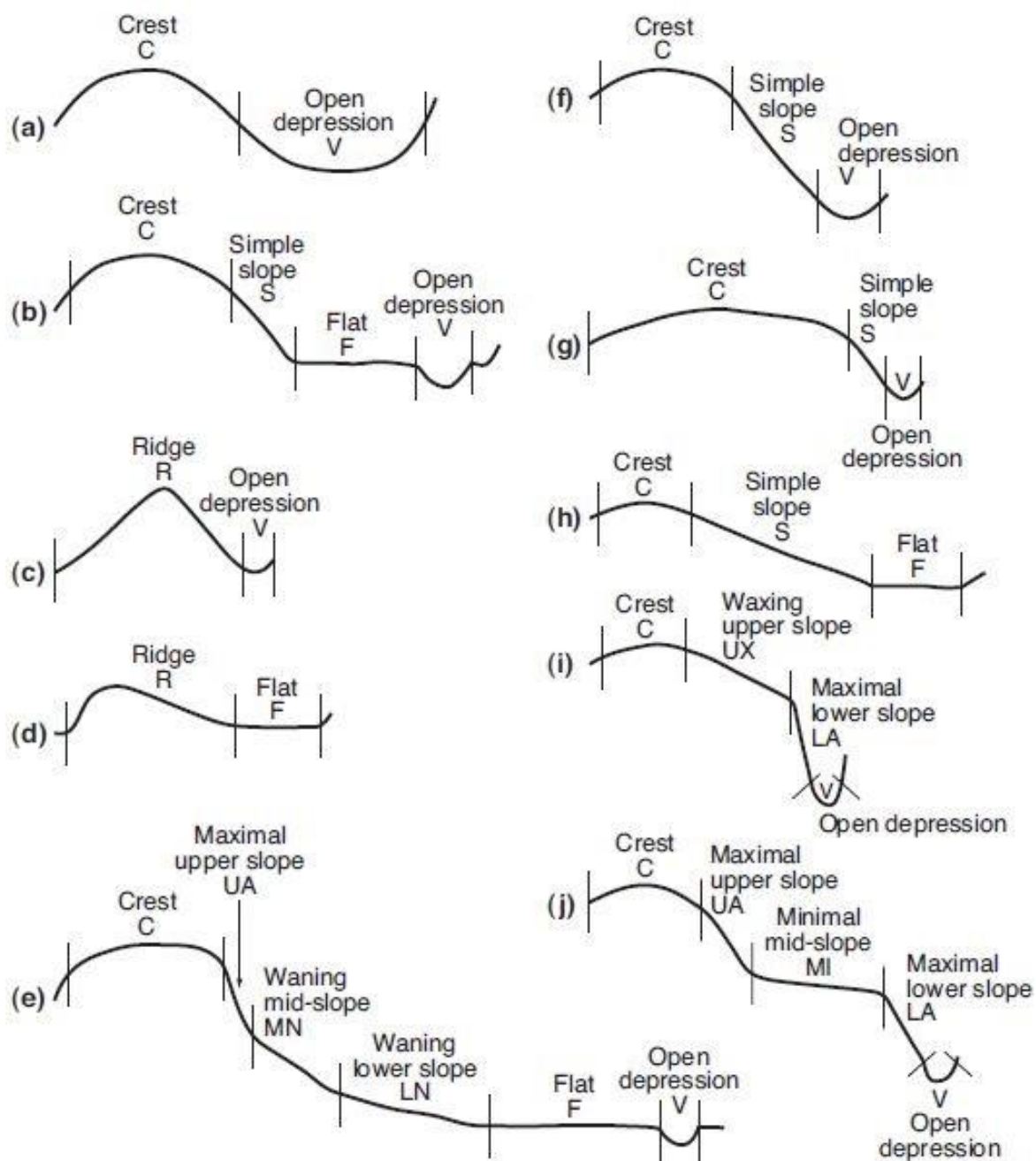


Figure 10 – Landform type



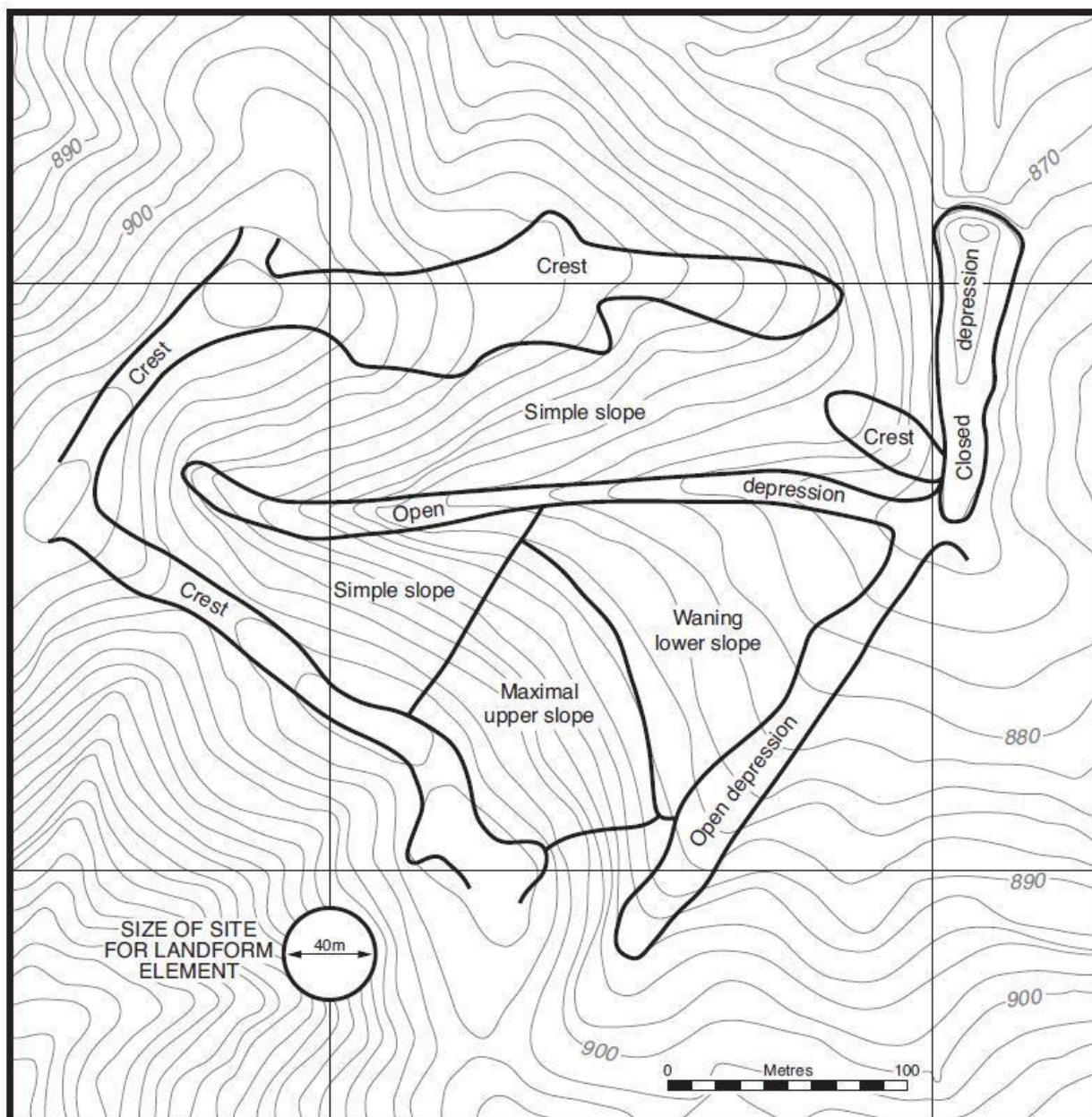


Figure 11 – Landform pattern

## 2.7. PAST ABORIGINAL LAND USE

The land upon which Taronga Zoo sits is within the traditional lands of the Kammeraalgal (Cammaraigal, Gamaraigal) people, of the Guringai language group. The name ‘*Taronga*’ is reported to be the local Aboriginal word for ‘sea view’ (Watsford, 1920). The Cammaraigal people were custodians of the land and waterways of Mosman and North Sydney, including Cammeray, Balls Head (*yerroulbine*), Balmoral, Kirribilli and Cremorne (*wulwarrajeung*). The Cammaraigal people formed part of the Eora tribe. Radiometric dating provides dates of at least 5,800 years ago for sites with the North Sydney (*Cammera*) area (Hoskins, 2019). Early settler accounts of the Cammaraigal describe them thus:

*Those who live on the north shore of Port Jackson are called Cam-mer-raygal, that part of the harbour being distinguished from others by the name of Cam-mer-ray. Of this last family or tribe we have heard Bennillong and other natives speak (before we knew them ourselves) as of a very powerful people, who could oblige them to attend wherever and whenever they directed. We afterwards found them to be by far the most numerous tribe of any within our knowledge. It so happened, that they were also the most robust and muscular”* (Collins, 1798).

Primarily a water-based people, the Cammaraigal lived along the coast and rivers, fishing and hunting in the waters and hinterland areas (AHO, 2006). They subsisted primarily on aquatic resources and the high of middens located around this area attests to the importance of shellfish in the diets of Cammaraigal people. This would have been supplemented by a variety of seeds, fruits, nuts, rhizome and tubers. The sandstone topography of the area was equally as important – with overhangs and cliffs providing shelters to camp within. Other floral species would have been utilised for medicinal purposes and for the creation of shelters where sandstone overhangs were not present (Currie, 2008).

Archaeologically, over 1,000 sites across the lands of the Cammaraigal people attest to the extent of occupation and habitation in this area (Hoskins, 1920). Within Taronga Zoo, a number of Aboriginal sites are known to occur, attesting to the use of the area by the Cammaraigal people. The most common identified site type in the area are shelters with middens, reflective of the coastal environment and subsistence on aquatic life, as well as the importance of sandstone. The sandstone topography of the northern Sydney area did not only provide shelter, but also a place to share stories and ceremonies through art. A Rock Engraving of a whale/fish with a human figure inside identified near Balls Head (*yerroulbine*) upon a sandstone platform was described in the 1990s by a Bundjalung man:

*This is a place of learning, a place of ceremonies, a place where the whales were sung in to shore. Whales beaching themselves in the Harbour were a great source of food. The man in the whale is a clever fella. It looks like he’s got a club foot, but that represents the feathers he wore on his feet so he did not make footprints... having no neck he was also the Creator”* (Gerry Bostock, 1990, in Hoskins, 1920)

The Cammaraigal People interacted widely with neighbouring tribes. Intermarriage between the Cadigal people of Sydney Harbour and the Cammaraigal people to the north were common and allowed Cammaraigal women to roam between the two territories even following European settlement. Barangaroo was one such notable Cammaraigal women who, prior to European settlement of the north side of the harbour, frequented Sydney Cove and interacted with the Europeans there (Hoskins, 1920). Marriage was not the only unifying ritual for Aboriginal groups around the harbour – they also came together peacefully for feasting on beached whales and tooth evulsion ceremonies, an initiation ceremony for young boys involving the removal of a front tooth (Currie, 2008).

The impacts of colonisation were devastating for all Aboriginal people, but particularly for those groups living around the coast. With colonisation, Aboriginal people were forced away from their lands and the resources they relied upon. Settlement around the coast drove faunal resources further inland, reducing the traditional hunting grounds of local Aboriginal groups (Evidence, 1835). Further to this, diseases including smallpox and conflicts between local Aboriginals and colonisers decimated their population. Some estimations identify that only 10% of the Cammaraigal population survived smallpox pandemics in the first 10 years following European settlement (University of Sydney, 2019). Some sources identify that the last surviving Cammaraigal man was named Tarpot and lived in a cave near the barn at the head of Mosman Bay and survived to at least 1888 (Currie, 2008).

The Taronga Conservation Society Australia has made a concerted effort over the past many decades to acknowledge and pay respect to the traditional Aboriginal owners of the land on which they operate. The Taronga Zoo website includes a description of the Aboriginal history of the site and provides in depth information regarding Cammaraigal people (Taronga Conservation Society Australia, 2020). As they

acknowledge. “Cammeriagal were governed by and belonged to the land and all that it held, above and beneath the sandstone. Cammeriagal people have lived in this area for thousands of years and continue to live nearby” (TCSA, 2020).

## Early European Development (1788-1911)

Taronga Zoo is located within the County of Cumberland, Parish of Willoughby. In 1837 a stone house known as ‘Athol’ was erected to the south of the subject area. This was later developed as a leisure destination with a hotel and pleasure garden. A Parish Map dating to c.1850s show that the subject area had by this time been incorporated within a land parcel granted in four allotments to Charles Jenkins and J. Holt (see Figure 12). There is no evidence of structures being erected within the subject area in association with this period.

In 1879, a quarantine station for imported stock occupied a portion of the land to the south. By 1891 two stations were operational within the vicinity of the subject area; one near ‘Athol’ and another on the corner of Whiting Beach and Bradley’s Head Road. A freight tramline was established from Athol Wharf to the stations, which was utilised during zoo construction (GML, 2001).

In the 1890s, large portions of the land surrounding Sydney Harbour were resumed for Military Purposes (Figure 13), including Bradley’s Head and the animal quarantine facilities which operated upon it. There is no evidence which suggests that any structures were established within the subject area in association with this period. Following federation in 1901, the Military Reserves were given to the Commonwealth. In 1908, Ashton Park, comprising 142 acres of public park land, was gazetted (Figure 14).

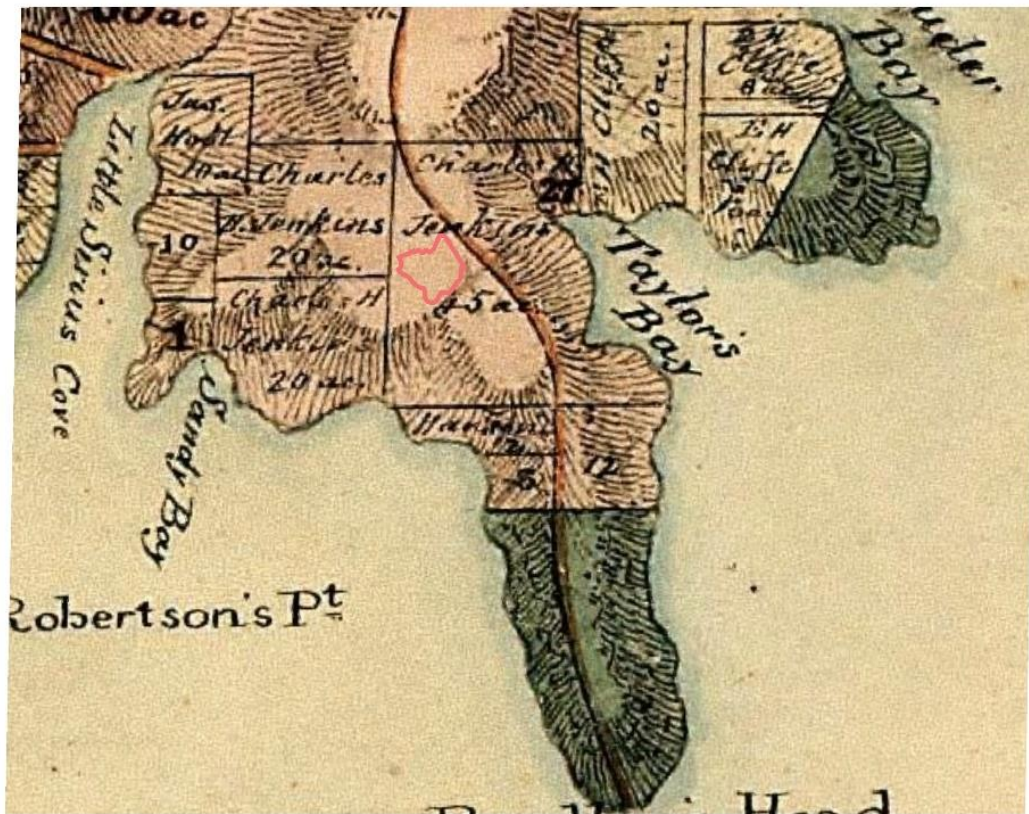


Figure 12 – historic parish map of Willoughby, c. 1850s. Subject area indicated in red outline.  
Source: HLRV



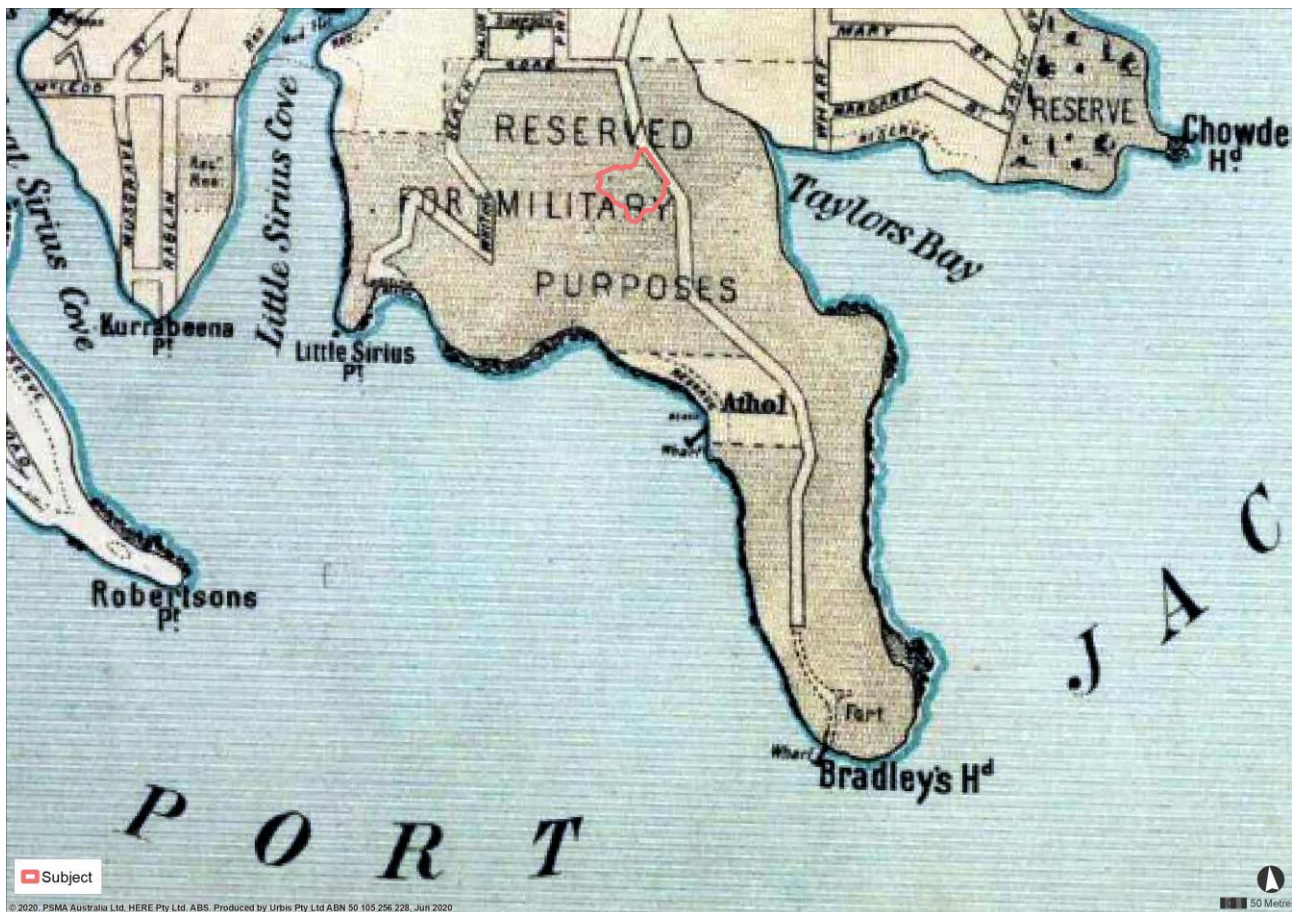


Figure 13 – 1893-94 Parish Map indicating resumption of land for military purposes

## Establishment of Taronga Zoo and La Souef's Directorship (1912–1940)

In April 1912 17 hectares of Crown Land within the north-western component of Ashton Park was rededicated as a zoological garden (Figure 14). Ground was broken on the site in October 1912 and continued until 1916. Prior to this much of the zoo lands was covered in natural Australian bushland. The Zoo officially opened on Saturday October 7<sup>th</sup> 1916 (The Sun, 1916).

Figure 15 demonstrates the Zoo in its original plan in 1916, with approximately 23 animal exhibits. The subject area contained a concreted and stark enclosure named the Baboon Pit, which had been deeply excavated with mounding in the centre for the Baboons to climb. A Monkey House was located to the south and Orangutan and Monkey house to the west. Excavation had also been undertaken within the northern section of the subject area for the purpose of establishing the Waterfowl Ponds. A path network had also been established which allowed access to these facilities.



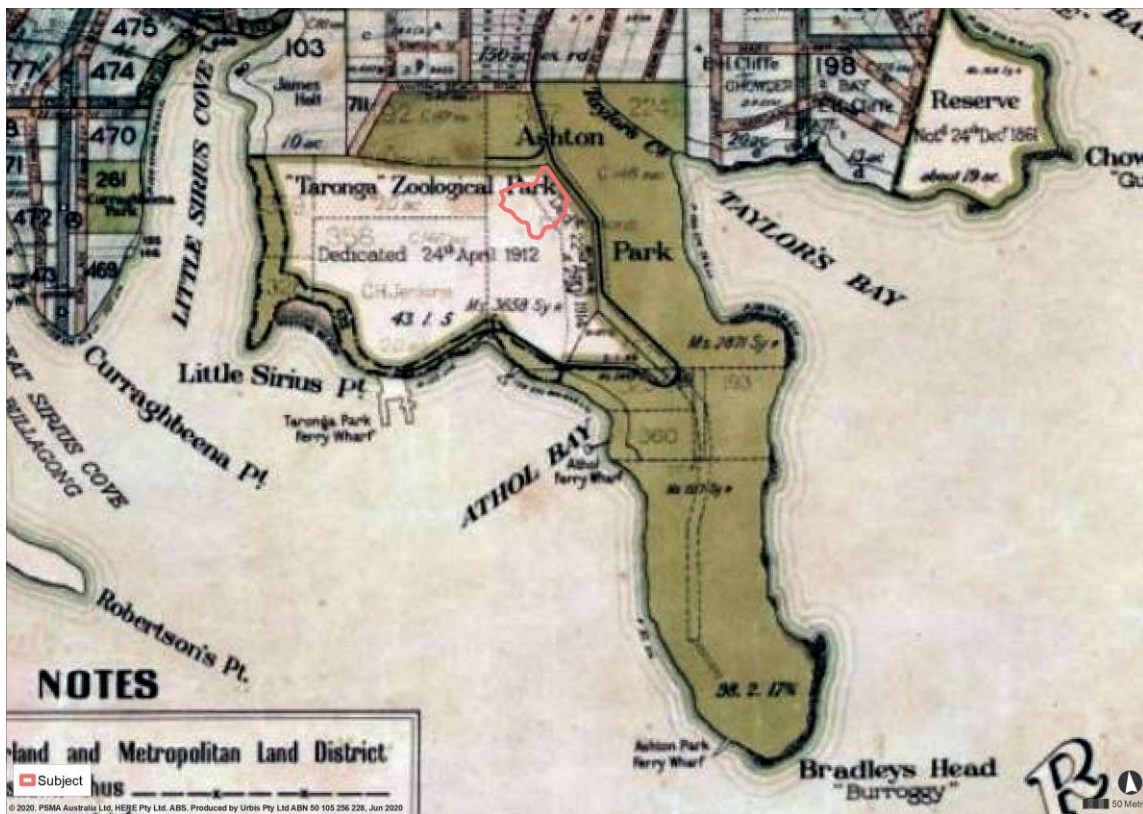


Figure 14 – 1917 Parish Map showing Crown Land, previously part of Ashton Park, which had been rededicated as a zoological park

Source: Taronga Zoo Archives

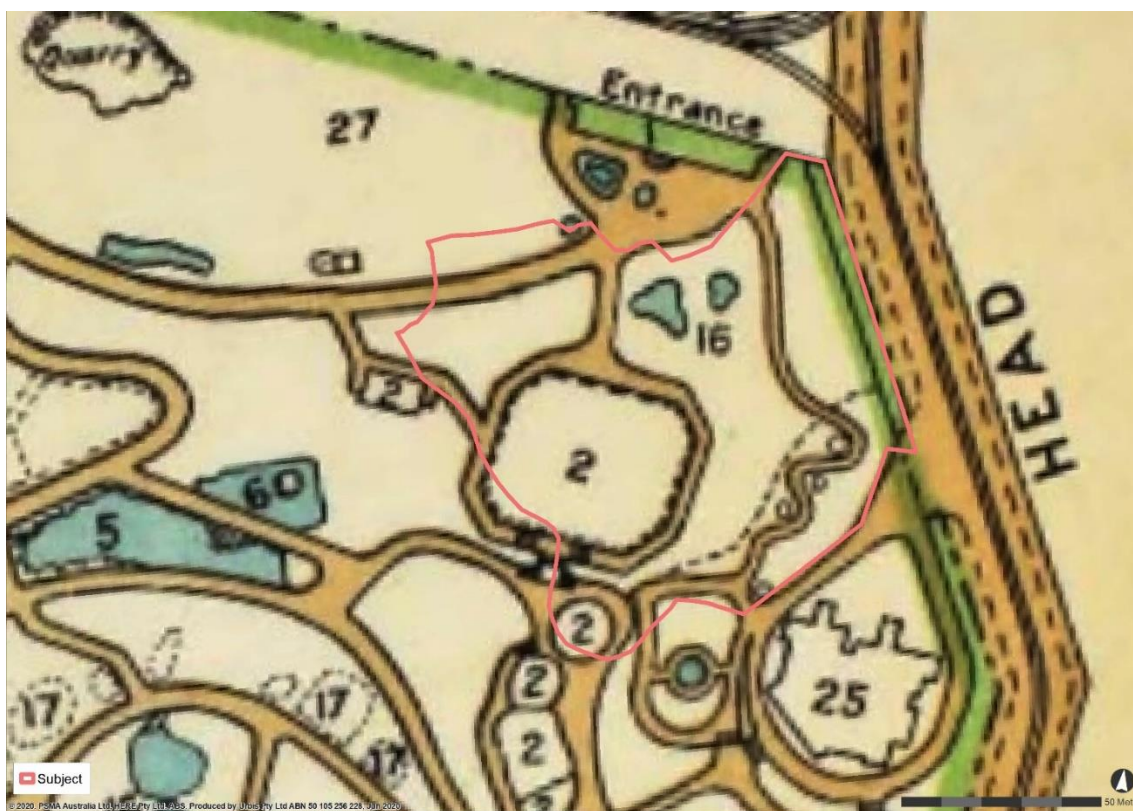


Figure 15 -1916 plan of Taronga Zoological Park, subject area indicated in red outline. Structures within the subject area as follows: 2 (north) – Baboon Pit; 2 (south) – Monkey Pit; 2 (west) – Orangutan and Monkey House; 15 – Waterfowl Ponds;



Source: Taronga Zoo Archives.

## Hallstrom's Directorship (1941–1967)

Following the departure of Le Souef in 1939, Taronga Zoo underwent a number of changes under the new director Sir Edward Hallstrom. Rather than the focus on barless exhibits with moats, the moats began to be filled in and chain and wire fences installed to allow visitors to get closer to the animals. Animal enclosures had concrete floors and walls installed (GML, 2006). Enclosures for swans, pelicans and tortoises had been established to the north and west of the Baboon Pit by this time and a Bandstand had been erected to the east. Some additional paths had also been established within the northern component of the subject area (Figure 16).

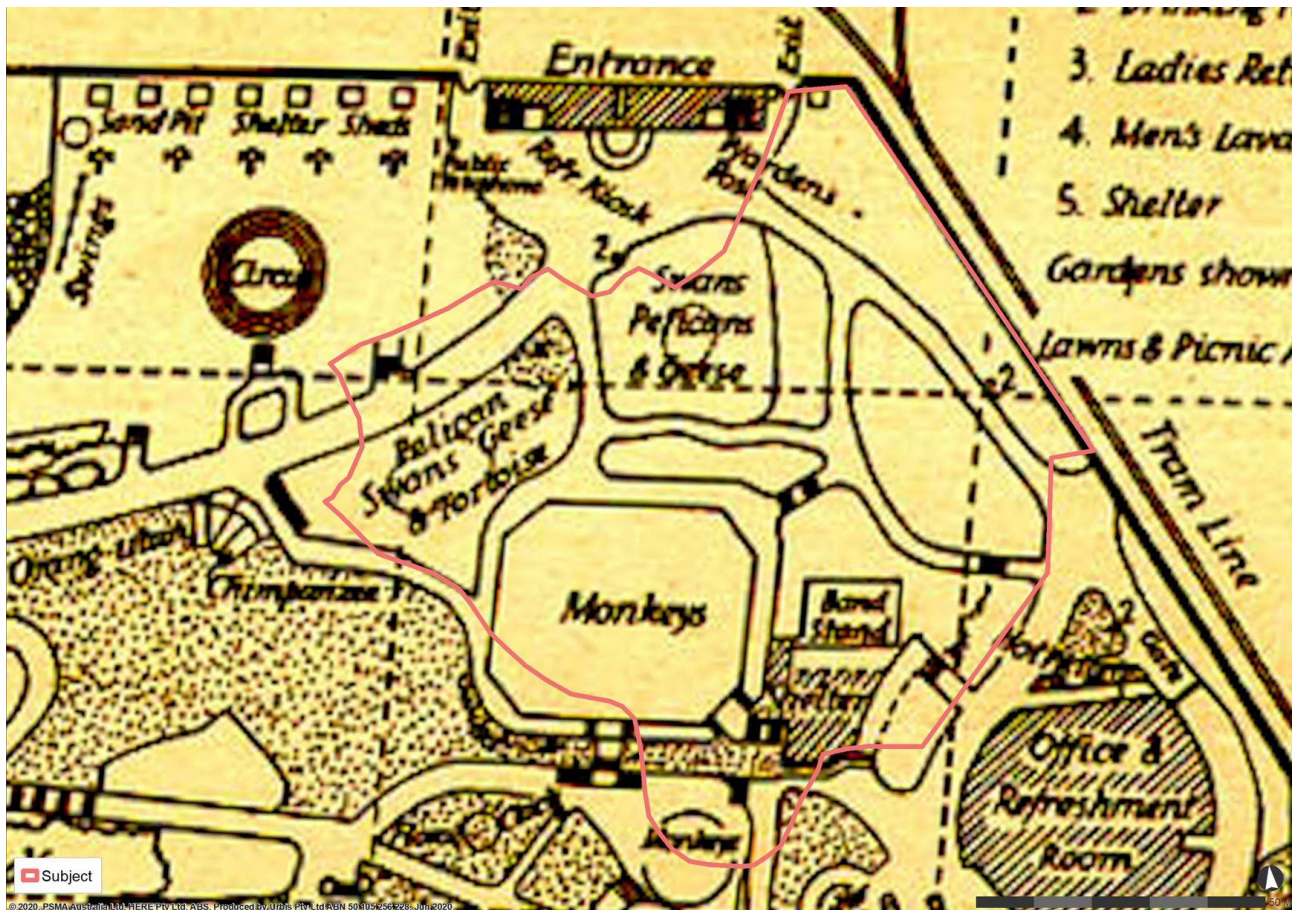


Figure 16 – 1940 Guidebook indicating changes to paths and configuration of enclosures as well as the erection of the Bandstand building to the east of the Baboon Pit

Source: Taronga Zoo Archives

## Strahan's Directorship (1967–1986)

Under Strahan's direction, the first exhibits to be upgraded were those in the Australian collection. The Nocturnal House, Platypus House, Koala Exhibit, Wetland Ponds and Rainforest Aviary were established within the subject area at this time.

### Nocturnal House and Platypus House

One of the first facilities to be upgraded under Strahan's masterplan was the Platypus facilities, resulting in the construction of the Platypus house. A 1967 demolition plan (Figure 17) indicates the demolition of the Anteaters and Bandstand buildings to the east of the Baboon Pit to make way for the construction of Platypus House. The lower section of a staircase to the south of the Baboon Pit was also removed at this time.

Another significant development at this time was the partial removal of the Baboon Pit and its replacement with Nocturnal House. A 1969 demolition plan (Figure 18) shows the extent of demolition. The southern, western and eastern concrete perimeter walls were demolished, as well as the southern component of the floor and understructure. An entrance tunnel and concrete shed were also demolished within the south-eastern section of the Baboon Pit. A 1970 site plan (Figure 19) indicates where the Nocturnal House was constructed in the former location of the Baboon Pit. This structure incorporated a northern section of the floor and understructure of the former Baboon Pit as well as the concrete northern perimeter wall. The floor of the Nocturnal House thus follows the floor level of the former Baboon Pit.









## Waterfowl / Wetlands Ponds

The Wetlands Ponds, originally known as Waterfowl Ponds, was the second area to be upgraded following under Ronald Strahan's upgrade initiatives across the zoo and was completed by 1972. The design was that of a series of connected pools and construction was underway by 1969 (Martyn, B. 1969). Prior to this, a waterfowl exhibit had existed in the area, however this was simply circular ponds (see Figure 15, Figure 21 and Figure 22).

The Waterfowl Ponds utilised part of the naturally occurring topography of Taronga, incorporating a projecting sandstone shelf. Other sections of the wetlands were artificially created, using granite blocks from Scotland. A wooden causeway was constructed which ran through the Wetlands Ponds (Strahan, 1991).

Figure 18 indicates the partial demolition of the northern Duck Pond, which was later incorporated within a 'boggy area' (Figure 20). The Duck Pond within the western section of the precinct (Figure 18) was removed completely and a larger pond excavated in this location. The outline of the western pond can still be made out in the 1969 concept plan (Figure 20). The footprint of the Waterfowl Ponds had thus significantly increased by this time, necessitating significant earthworks and disturbance within the north-western component of the subject area.

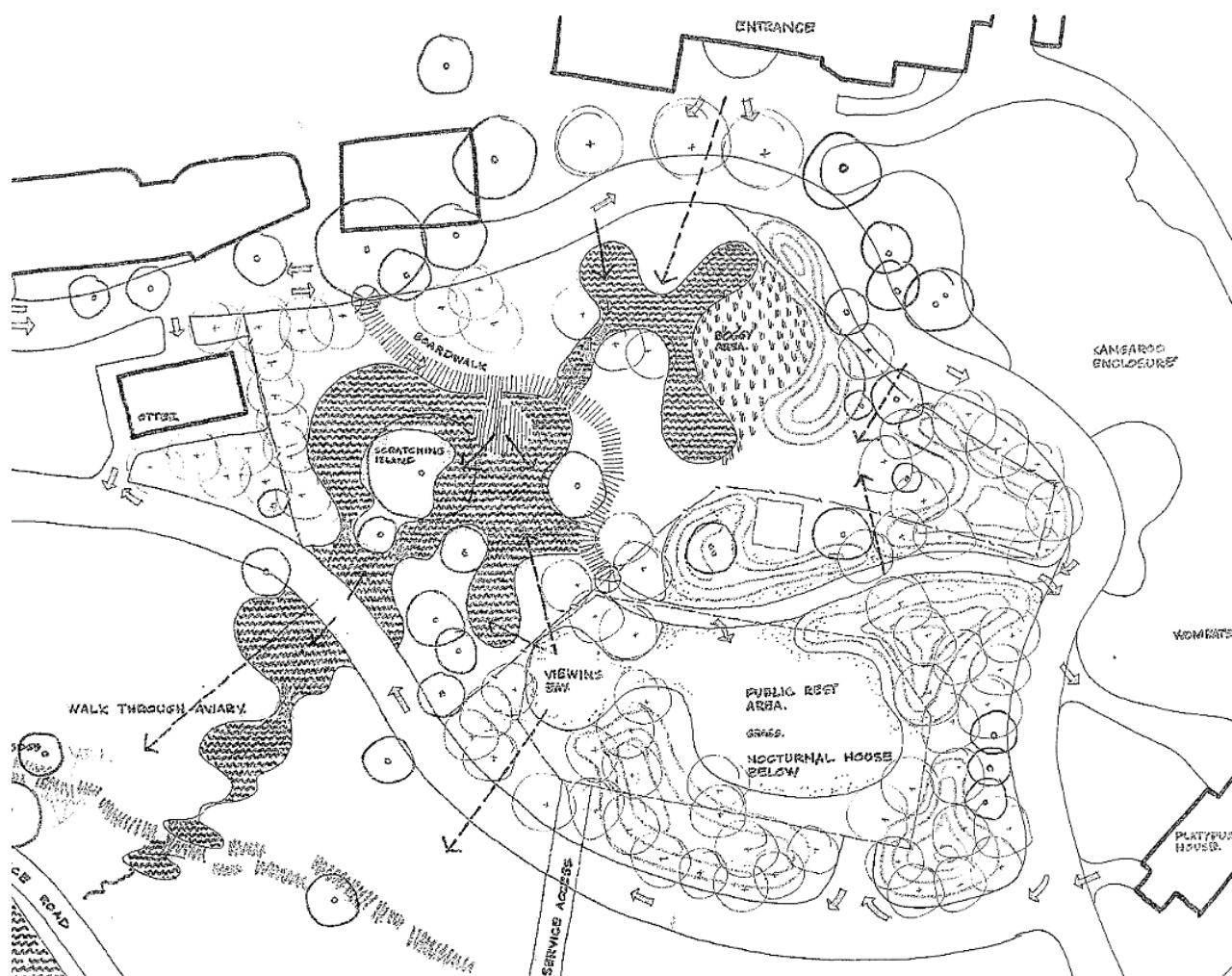


Figure 20 -1969 Waterfowl Enclosure concept plan indicating replacement of the northern and western Duck Ponds within expansive wetland exhibits

Source: Taronga Zoo Archives



Figure 21 – waterfowl exhibit prior to redevelopment, a series of circular ponds.

Source: Taronga Zoo Archives



Figure 22 – waterfowl exhibit prior to redevelopment, a series of circular ponds.

Source: Taronga Zoo Archives



Figure 23 – bridge over the wetlands ponds section.

Source: Taronga Zoo Archives



Figure 24 – waterfowl section, 1970s.

Source: Taronga Zoo Archives

## Kelly's Directorship to Present (1987-Present)

Under Dr John Kelly's directorship the Zoo underwent a significant capital works program. Although the Platypus House was upgraded and extended at this time, the majority of new structures which were erected were confined to parts of the Zoo outside of the subject area. Figure 25 provides the current layout of the structures within the subject area.

The majority of original paths were removed from the subject area during this period.





Figure 25 - 2016 Guidebook indicating extent of Wetland Ponds and addition of koala, wombat and echidna enclosures within the eastern component of the site

Source: Taronga Zoo Archives

## 2.8. HISTORIC AERIAL ANALYSIS

The development of facilities within the subject area has caused substantial levels of ground disturbance. This is demonstrated through the analysis of historic aerials. Historic aerial images from 1930, 1961, 1990 and 2020 were analysed to develop an understanding of disturbance (see Figure 26). A summary of this analysis is included in Table 6.

Table 6 – Analysis of historical aerials

Year	Observation
1930	Taronga zoo was established between 1912-1916. Prior to the establishment of the zoo, the subject area consisted of native bushland, such as that which can be observed to the east of Bradleys Head Road. By 1930 the subject area appears to have already undergone significant disturbance and clearance of vegetation. The network of paths reflects those observed in a 1916 map of the zoo (Figure 15). The Baboon Pit, which is described as a 'concrete and stark enclosure which had been deeply excavated with mounding in the centre for baboons to climb' is clearly visible at the centre of the subject area. The Anteater building is located to the east of the Baboon Pit. The path encircling the Monkey House to the south of the Baboon Pit is visible, however, the structure is not visible.
1961	The subject area does not appear to have undergone many significant changes between 1930-1961. The Bandstand and Anteater buildings had been constructed to the east of the Baboon Pit. The Monkey House structure is visible to the south of the Baboon Pit.
1990	The subject area appears more densely vegetated. The stark open concrete Baboon Pit had been partially removed and replaced with the Nocturnal House by this time. The Bandstand and Anteater buildings to the east of the Baboon Pit had been demolished and the Platypus House can be seen to the south-east of these. The extensive Waterfowl Ponds within the western component of the subject area are obstructed by vegetation. The reduced visibility of structures reflects Strahan's period of management (1967-1974) during which new exhibits were landscaped and moated, rather than fenced, and the erection of imposing structures avoided.
2020	There are no clear changes to the subject area in the years between 1990-2020.

In summary, the subject area has been subject to high to extreme level of disturbance as a result of development associated with the establishment and later adaptations of the zoo. An initial phase of disturbance took place in the early 20<sup>th</sup> century, with the erection of numerous structures, excavation for the baboon pit and associated landscaping works. In the late 20<sup>th</sup> century, the structures on the site were demolished and significant earthworks undertaken for the new exhibits, which included moats and wetlands.

It is considered likely that these high levels of disturbance will have impacted the archaeological potential of the subject area. The Taronga Zoo Archaeological Management Plan (AMP) identifies the subject area as being heavily modified by European development. The presence of the Blacktown Soil Landscape and the shallow nature of the natural soil profile, it is considered unlikely that intact natural soil deposits will occur.

The archaeological potential of the subject area is therefore determined to be low.



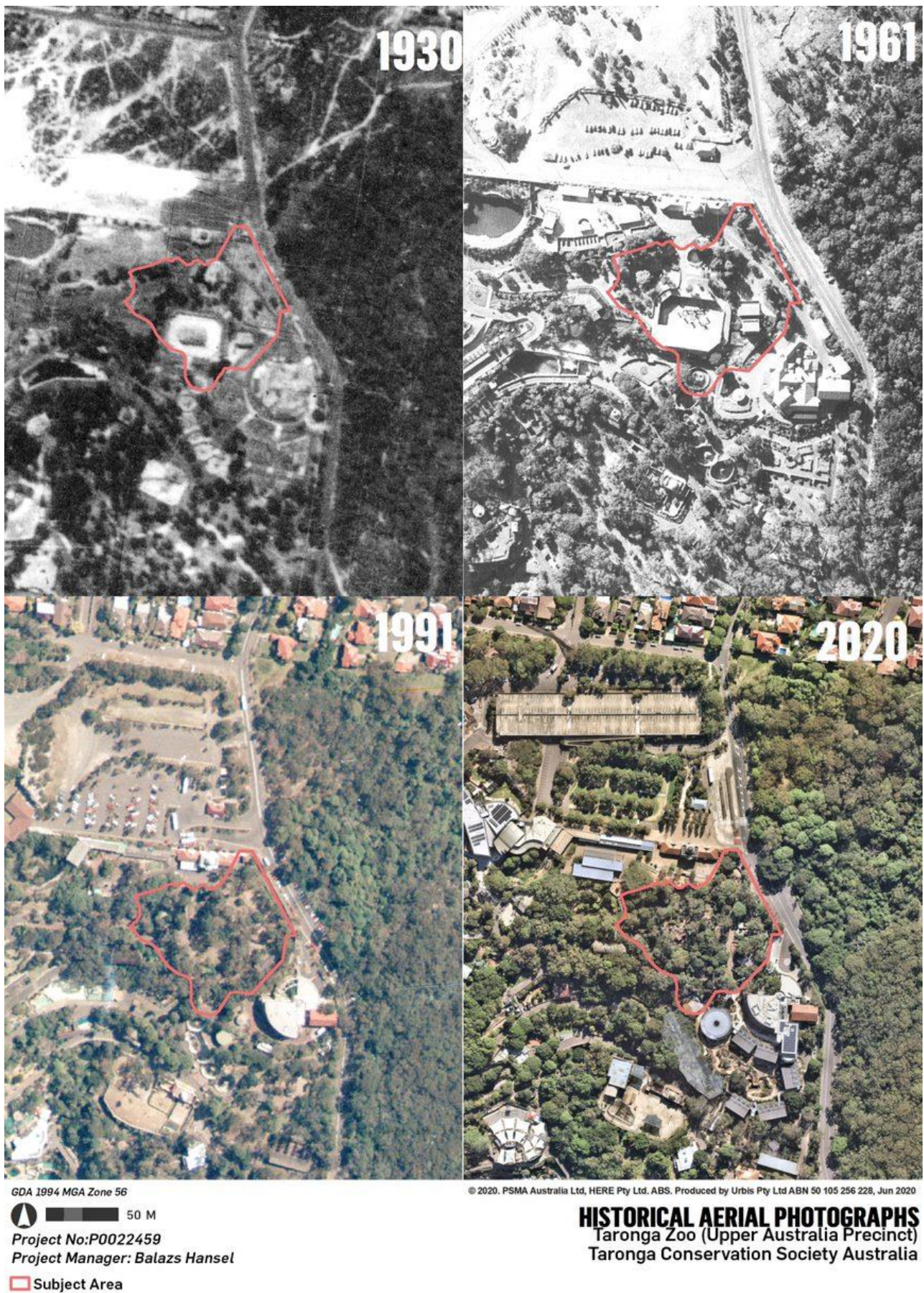


Figure 26 – Historic Aerials

## 2.9. PREDICTIVE MODEL

The following archaeological predictive model for the subject area have been formulated on the basis of previous assessments, regional models, the AHIMS data provided in Section 2.2.1 and the existing environment and level of disturbance.

There are several site types which are known to occur within the wider area. These site types and their likelihood to occur within the subject area are evaluated in Table 7 below.



Table 7 – Predictive Model

Site type	Description	Potential	Justification
Artefact Scatters/ Camp Sites	Artefact scatters/camp sites represent past Aboriginal occupation and possible stone knapping activities and include archaeological remains such as stone artefacts and potentially hearths. This site type usually appears as surface accumulation of stone artefacts in areas where vegetation is limited, and ground surface visibility increases. Such scatters of artefacts are also often exposed by erosion, agricultural events such as ploughing, and the creation of informal, unsealed vehicle access tracks and walking paths. These types of sites are often located on dry, relatively flat and elevated land along or adjacent to rivers and creeks.	Low	<ul style="list-style-type: none"> <li>▪ Significant disturbance associated with establishment of zoo have likely removed all original soil profile.</li> <li>▪ Some intact soil profiles may still present beneath superficial fill</li> </ul>
Isolated Finds	<p>Isolated finds represent artefactual material in singular, one off occurrences. Isolated finds are generally indicative of stone tool production, although can also include contact sites.</p> <p>Isolated finds may represent a single item discard event or be the result of limited stone knapping activity. The presence of such isolated artefacts may indicate the presence of a more extensive, in situ buried archaeological deposit, or a larger deposit obscured by low ground visibility. Isolated artefacts are likely to be located on landforms associated with past Aboriginal activities, such as ridgelines that would have provided ease of movement through the area, and level areas with access to water, particularly creeks and rivers.</p>	Low	<ul style="list-style-type: none"> <li>▪ Significant disturbance associated with establishment of zoo have likely removed all original soil profile.</li> <li>▪ Some intact soil profiles may still present beneath superficial fill</li> </ul>
PAD	Potential Archaeological Deposits (or PADs) are areas where there is no surface expression of stone artefacts, but due to a landscape feature there is a strong likelihood that the area will contain buried deposits of stone artefacts. Landscape features which may feature in PADs include proximity to waterways, particularly terraces and flats near 3rd order streams and above; ridge lines, ridge tops and sand dune systems.	Low	<ul style="list-style-type: none"> <li>▪ Significant disturbance associated with establishment of zoo have likely removed all original soil profile.</li> <li>▪ Some intact soil profiles may still present beneath superficial fill</li> </ul>
Scarred Trees	Scarred trees are the results of the stripping-off the bark by Aboriginal people for various reasons, including the construction of shelters (huts), canoes, paddles, shields, baskets and bowls, fishing lines, cloaks, torches and bedding, as well as being beaten into fibre for string bags or ornaments (sources cited in Attenbrow 2002:	Nil	<ul style="list-style-type: none"> <li>▪ No registered AHIMS sites of this type within the search area</li> <li>▪ Significant disturbance and vegetation clearance</li> </ul>

Site type	Description	Potential	Justification
	113). The removal of bark exposes the heart wood of the tree, resulting in a scar that can heal by the regrowth of the bark or remain an exposed scar for a prolonged period. Such scars, when they occur, are typically described as scarred trees. These sites most often occur in areas with mature, remnant native vegetation. The locations of scarred trees often reflect an absence of historical clearance of vegetation rather than the actual pattern of scarred trees. Carved trees are different from scarred trees, and the carved designs may indicate totemic affiliation (Attenbrow 2002: 204); they may also have been carved for ceremonial purposes or as grave markers.		associated with establishment of zoo.
Axe Grinding Grooves	Grinding grooves are the physical evidence of tool making or food processing activities undertaken by Aboriginal people. The manual rubbing of stones against other stones creates grooves in the rock; these are usually found on flat areas of abrasive rock such as sandstone. They may be associated with creek beds, or water sources such as rock pools in creek beds and on platforms, as water enables wet grinding to occur.	Low	<ul style="list-style-type: none"> <li>▪ Significant disturbance associated with establishment of zoo.</li> <li>▪ Buried exposures of sandstone might still have potential for grinding grooves.</li> </ul>
Bora/Ceremonial	Aboriginal ceremonial sites are locations that have spiritual or ceremonial values to Aboriginal people. Aboriginal ceremonial sites may comprise natural landforms and, in some cases, will also have archaeological material. Bora grounds are a ceremonial site type, usually consisting of a cleared area around one or more raised earth circles, and often comprised of two circles of different sizes, connected by a pathway, and accompanied by ground drawings or mouldings of people, animals or deities, and geometrically carved designs on the surrounding trees.	Nil	<ul style="list-style-type: none"> <li>▪ No registered AHIMS sites of this type within the search area</li> <li>▪ Significant disturbance associated with establishment of zoo.</li> </ul>
Burial	Aboriginal burial of the dead often took place relatively close to camp site locations. This is due to the fact that most people tended to die in or close to camp (unless killed in warfare or hunting accidents), and it is difficult to move a body long distances. Soft, sandy soils on, or close to, rivers and creeks allowed for easier movement of earth for burial; and burials may also occur within rock shelters or middens. Aboriginal burial sites may be marked by stone cairns, carved trees or a natural landmark. Burial sites may also be identified through historic records or oral histories.	Low	<ul style="list-style-type: none"> <li>▪ Significant disturbance associated with establishment of zoo</li> <li>▪ Subject area does not occur within landscape features which are predictive of burials.</li> </ul>

Site type	Description	Potential	Justification
Contact site	These types of sites are most likely to occur in locations of Aboriginal and settler interaction, such as on the edge of pastoral properties or towns. Artefacts located at such sites may involve the use of introduced materials such as glass or ceramics by Aboriginal people or be sites of Aboriginal occupation in the historical period.	Low	<ul style="list-style-type: none"> <li>Significant disturbance associated with establishment of zoo.</li> </ul>
Midden	Midden sites are indicative of Aboriginal habitation, subsistence and resource extraction. Midden sites are expressed through the occurrence of shell deposits of edible shell species often associated with dark, ashy soil and charcoal. Middens often occur in shelters, or in eroded or collapsed sand dunes. Middens occur along the coast or in proximity to waterways, where edible resources were extracted. Midden may represent a single meal or an accumulation over a long period of time involving many different activities. They are also often associated with other artefact types.	Low	<ul style="list-style-type: none"> <li>Significant disturbance associated with establishment of zoo</li> <li>Most abundant site type within vicinity of subject area, although most are located within proximity of the shoreline</li> </ul>
Art	Art sites can occur in the form of rock engravings or pigment on sandstone outcrops or within shelters (discussed below). An engraving is some form of image which has been pecked or carved into a rock surface. Engravings typically vary in size and nature, with small abstract geometric forms as well as anthropomorphic figures and animals also depicted (DECCW, 2010c). In the Sydney region engravings tend to be located on the tops of Hawkesbury Sandstone ridges where vistas occur. Pigment art is the result of the application of material to a stone to leave a distinct impression. Pigment types include ochre, charcoal and pipeclay. Pigment art within the Sydney region is usually located in areas associated with habitation and sustenance.	Low	<ul style="list-style-type: none"> <li>No registered AHIMS sites of this type within the search area</li> <li>Significant disturbance associated with establishment of zoo.</li> <li>Shelters or overhangs with painted art and/or rock engravings on sandstone surfaces might still exist buried under imported fill.</li> </ul>
Shelters	Shelter sites are places of Aboriginal habitation. They take the form of rock overhangs which provided shelter and safety to Aboriginal people. Suitable overhangs must be large and wide enough to have accommodated people with low flooding risk. Due to the nature of these sites, with generic rock overhangs common particularly in areas with an abundance of sandstone, their use by Aboriginal people is generally confirmed through the correlation of other site types including middens, art, PAD and/or artefactual deposits.	Low	<ul style="list-style-type: none"> <li>Shelters or overhangs might still exist buried under imported fill.</li> </ul>

Intensive historical land use resulted in high, in some areas extreme level of disturbance. It is highly likely that original soil has been almost entirely removed from the subject area and has been replaced by imported fill and landscaping elements, creating an artificial environment for the various structures of the Zoo. The survival of archaeological resources is highly unlikely and only very low potential exists for the following archaeological site types:

- Isolated stone artefacts or artefact scatter, most likely in highly disturbed context.
- Grinding grooves and/or rock engravings in context with sandstone outcrops and platforms buried under imported fill and landscape elements.
- Shelters and/or overhangs with deposit or art buried under imported fill and landscape elements.



### 3. CONSULTATION PROCESS

In administering its statutory functions under Part 6 of the *NSW National Parks and Wildlife Act 1974*, the Department of Planning, Industry and Environment (DPIE) requires that Proponent consult with Aboriginal people about the Aboriginal cultural heritage values (cultural significance) of Aboriginal objects and/or places within any given development area in accordance with Clause 80c of the *NSW National Parks and Wildlife Regulation, 2009*.

The DPIE maintains that the objective of consultation with Aboriginal communities about the cultural heritage values of Aboriginal objects and places is to ensure that Aboriginal people have the opportunity to improve ACHA outcomes by (DECCW 2010a):

- providing relevant information about the cultural significance and values of Aboriginal objects and/or places.
- influencing the design of the method to assess cultural and scientific significance of Aboriginal objects and/or places.
- actively contributing to the development of cultural heritage management options and recommendations for any Aboriginal objects and/or places within the proposed subject area.
- commenting on draft assessment reports before they are submitted by the Proponent to the DPIE.

Consultation in line with the Consultation Requirements (DECCW 2010) is a formal requirement where a Proponent is aware that their development activity has the potential to harm Aboriginal objects or places. The DPIE also recommends that these requirements be used when the certainty of harm is not yet established but a Proponent has, through some formal development mechanism, been required to undertake a cultural heritage assessment to establish the potential harm their proposal may have on Aboriginal objects and places.

Consultation for this assessment, has been undertaken in accordance with the Consultation Requirements as these meet the fundamental tenants of the 2004 consultation requirements (NSW Department of Environment and Conservation [DEC] 2004), while meeting current industry standards for community consultation.

The Consultation Requirements outline a four-stage consultation process that includes the following:

- Stage 1 – Notification of project proposal and registration of interest.
- Stage 2 - Presentation of information about the proposed project.
- Stage 3 - Gathering information about the cultural significance.
- Stage 4 – Review of draft cultural heritage assessment report.

The document also outlines the roles and responsibilities of the DPIE, Registered Aboriginal Parties (RAPs) including Local and State Aboriginal Land Councils, and Proponents throughout the consultation process.

To meet the requirements of consultation it is expected that Proponents will:

- Bring the RAPs, or their nominated representatives, together and be responsible for ensuring appropriate administration and management of the consultation process.
- Consider the cultural perspectives, views, knowledge and advice of the RAPs involved in the consultation process in assessing cultural significance and developing any heritage management outcomes for Aboriginal objects(s) and/or places(s).
- Provide evidence to the DPIE of consultation by including information relevant to the cultural perspectives, views, knowledge and advice provided by the RAPs.
- Accurately record and clearly articulate all consultation findings in the final cultural heritage assessment report.
- Provide copies of the cultural heritage assessment report to the RAPs who have been consulted.

The consultation process undertaken to seek active involvement from relevant Aboriginal representatives for the Project followed the current NSW statutory guideline, namely, the Consultation Requirements. Section 1.3 of the Consultation Requirements describes the guiding principles of the document. The principles have been derived directly from the principles section of the *Australian Heritage Commission's Ask First: A guide to respecting Indigenous heritage places and values* (Australian Heritage Commission 2002).

The following outlines the process and results of the consultation conducted during this assessment to ascertain and reflect the Aboriginal cultural heritage values of the subject area. Further information in regard to the Aboriginal community consultation processed is outlined in Appendix C and Appendix D.

### 3.1. STAGE 1: NOTIFICATION OF PROJECT PROPOSAL AND REGISTRATION OF INTEREST

#### 3.1.1. Government Organisation Contact

The aim of Stage 1 is to identify, notify and register Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places in the subject area.

A search of the Native Title Tribunal was undertaken on 15<sup>th</sup> April 2020. This search identified the subject area as freehold tenure which extinguishes native title.

To identify Aboriginal people who may be interested in registering as Aboriginal parties for the project, the organisations stipulated in Section 4.1.2 of the Consultation Guidelines were contacted (refer to Table 8).

Table 8 – Contacted Organisations

Organisation	Date notification sent	Date Response Received
Office of the Registrar, Aboriginal Land Rights Act 1983	27/04/2020	N/A
Department of Planning, Industry and Environment, Greater Sydney Branch, Communities and Greater Sydney Division	27/04/2020	8/05/2020
NTS Corp	27/04/2020	N/A
Metropolitan Local Aboriginal Land Council	27/04/2020	12/05/2020
Local Land Services, Greater Sydney	27/04/2020	N/A
Mosman Council	27/04/2020	14/05/2020
National Native Title Tribunal	16/04/2020	17/04/2020

The template for the emails sent to the above-mentioned organisations is at A total of 42 Aboriginal groups and individuals with an interest in the subject area were identified following this stage. These groups were contacted, with further information presented at Section **Error! Reference source not found.** below.

#### 3.1.2. Registration of Interest

In accordance with Section 4.1.3 of the Consultation Guidelines, letters were sent to the 43 Aboriginal groups and individuals on 15<sup>th</sup> May 2020, via email or post (depending on the method identified by each group), to notify them of the proposed project. A total of 40 were sent via email, with 3 sent by express post. The letters afforded a response time of over 14 days, being 3<sup>rd</sup> June 2020, in accordance with the 14-day minimum requirement. The letter template is shown at Appendix C and includes a brief introduction to the project and the project location.

A total of ten groups registered interested in the project as a result of this phase within the nominated timeframe. Acknowledgement emails or telephone calls were made by Urbis to respondents, to confirm registration had been received (refer Table 9).

Table 9 – Stage 1 Consultation – Registration of Interest

Organisation / Individual	Contact Person
A1 Indigenous Services	Carolyn Hickey
Butucarbin	Lowanna Gibson
Dennis Foley	Dennis Foley
DNC	Lilly Carroll
Goobah Developments	Basil Smith
Metropolitan Local Aboriginal Land Council	Selina Timothy
Merrigarn	Shaun Carroll
Taronga Aboriginal Advisory Group	Simon Duffy
The Gaimaragal Group	Susan Moylan-Coombs
Wailwan Aboriginal Group	Phil Boney

### 3.1.3. Public Notice

In accordance with Section 4.1.3 of the Consultation Guidelines, Urbis sought to publish an advertisement in one local newspapers. However, due to the Coronavirus pandemic which had dramatic impacts on early 2020, public newspapers were no longer publishing at this time. As a result a public notice was place in the KooriMail, which was identified as the most appropriate alternative.

The notice was published on the 20<sup>th</sup> May 2020, and registration remained open until 3<sup>rd</sup> June 2020, providing 14 days to register an interest in accordance with the Consultation Requirements. A copy of the advertisement is included at Appendix C.

1 response was to the newspaper advertisement was received (Table 10).

The list of Registered Aboriginal Parties (RAPs) was provided to DPIE and the Metropolitan Local Aboriginal Land Council on the 9 June 2020 (see Appendix C).

Table 10 – Stage 1 Consultation – Public Notice

Organisation / Individual	Contact Person
Merrigarn	Shaun Carroll

## 3.2. STAGE 2: PRESENTATION OF INFORMATION ABOUT THE PROJECT

The aim of Stage 2 is to provide registered Aboriginal parties with information about the scope of the proposed project, and the proposed cultural heritage assessment process. A Stage 2 Information Pack which included a brief introduction to the project, the project location, and AHIMS search result to provide understanding of the registered cultural sites in the local area, was sent to registered Aboriginal parties via email on the 5 June 2020. Request for response to the Stage 2/3 Information Packet was set to 6 July 2020. Follow-up phone calls were made to all RAPS on 22 June 2020.

The Information Pack was prepared as a combination of Stage 2 and 3 of the Consultation Guidelines, and included the following information:

- Project overview, location and purpose.
- Proposed works.
- Brief environmental and historical background.
- Notification of the site inspection.
- Protocol of gathering information on cultural heritage significance.
- Request for comment on methodology and recommendations for site investigation, and request for any cultural information the respondent wished to share.

The letter is included at Appendix C of this report.

### 3.3. STAGE 3: GATHERING INFORMATION ABOUT THE PROPOSED PROJECT

Stage 3 is concerned with gathering feedback on a project, proposed methodologies, and obtaining any cultural information that registered Aboriginal parties wish to share. This may include ethno-historical information, or identification of significant sites or places in the local area. Three responses were received to the Stage 2 and 3 Information Pack.

These responses are included in Appendix C and addressed in Table 11 below.

Table 11 – Response to Stage 2 and 3 documents

RAP	Response	Urbis Response
Dennis Foley	<p>1. <i>Location; correct this area is a fragment of a large ceremonial ground that occupied the ridge-line at the area known as Mosman Junction and splinters off to several beaches and gullies however for the purpose of this development it is important to understand the geographic overlay and lattice frameworks of important sites which overlays and joins the specific area in this case, and it extends to Bradleys Head and Athol Bay. Noted Figure 2 is accurate. it also includes the site location where the current double story car-park and adjoining land exists.</i></p> <p>2. <i>Description of Development; you have been commissioned to produce a Aboriginal Cultural Heritage Assessment Report yet none of your staff addressed the Taronga Trust Society's Aboriginal Advisory Board. In lieu of a copy of your document and a cut off date for comment it would have been far more prudent to have addressed the Advisory Groups members in a conciliatory manner by a</i></p>	<p>1. Acknowledged. We are aware of the fact that Aboriginal cultural heritage comprising both tangible and intangible components and that the latter can't be assessed thoroughly without looking in a broader context of the subject area we are assessing for actual physical impacts on tangible resources. Natural features and their connection to people's everyday life and customs do overlay several different landscape features within and in the vicinity of the subject area and the cultural connection is much more holistic compared to the physical signs of human occupation archaeologists can assess and draw conclusions from. We would be very interested to learn more of what you already expressed during the site visit and meeting and we'd encourage you and the Zoo to explore opportunities to</p>



RAP	Response	Urbis Response
	<p><i>member of your staff rather than being a cold external consultant. May I suggest in future projects treat the Aboriginal community with increased professionalism and we will work with you rather than ignore you. Overall your description of the development is accurate.</i></p> <p>3. <i>3.1 Taronga Zoo Archaeological Management Plan; whilst there is no direction under the relevant legislation the author should realise this is the home, the cemetery, the university of countless generations of Aboriginal people. Where is your compassion to show this as Aboriginal land/and or an Aboriginal site? An Australian High Court judgement determined what is an Aboriginal person, in the infamous High Court Mabo and Wik judgments our precolonial tenure on the land was recognised; perhaps in documents such as this there could also be the recognition of Elders past, present and emerging for the Aboriginal spirit is within the matrix of any Archaeological Management Plan.</i></p> <p>4. <i>3.2 Aboriginal Heritage Information System. A clinical representation, you are correct in showing that the AHIMS register is not comprehensive. Are you aware a cave / sandstone overhang once existed on this area together with a broad flat stone shelf containing several important engraving depicting the Tachyglossus Aculeatus - the short beaked echidna. Which designates this site as one of many woman's resting, educating and sit down sites. In addition oral history states that several bones were removed from this area in approximately 1918 or 20 that were Aboriginal, thought to be remains of smallpox deaths and these were located in the old minerals collection under the southern end of the Harbor Bridge and later transferred to the</i></p>	<p>include these in future interpretation and education resources.</p> <p>2. Thank you for your advice on this Dennis. Please note that due to our situation as an archaeological consultancy, we had to treat everyone equal in our approach to consultation to ensure that we minimise risk to our Proponent the Zoo. We will definitely do this in a different way next time and would be more than happy to work out a protocol for any upcoming works. However, we also have to adhere to the legislative requirements of the day and ensure that all processes are run in a transparent and consistent way.</p> <p>3. Thank you again for the advice and raising this issue. As we discussed on our meeting, we are well aware of the facts you raised and would be more than happy to receive more information on this from you. However, I have to reinforce it again that our scope, budget and objectives should be to ensure that that Aboriginal cultural heritage is investigated, assessed and managed for the proposed development and we do all the legislative requirements that needs to be complied with in order to ensure that appropriate management of cultural heritage and provide a robust advice to the Zoo. Stage 2 and 3 has been designed to receive intangible cultural heritage information from registered Aboriginal parties and provide additional information to our technical/archaeological approach.</p>

RAP	Response	Urbis Response
	<p>5. <i>'Macleay Collection' at Sydney University.</i></p> <p><i>There is no mention of Intangible Cultural Heritage which is a major flaw in not only this but all similar reports. Rarely does a non-indigenous consultancy firm understand or apply this concept even though there is a plethora of academic literature on the subject</i></p>	<p>4. Thank you for the information. Obviously, there are a lot of archaeological information is not captured by AHIMS and we all know that it comprises only the fraction of the resources that still exist out there or have been destroyed by historical land use. Please provide additional information including details – if appropriate – of these sites.</p> <p>5. Stage 2 and 3 of the consultation processes is designed for receiving the intangible heritage information from the registered Aboriginal Parties. As an archaeologist, I always stick to the methodology where we provide the technical information, a very high level intangible cultural heritage information into the Aboriginal History section and ask the Aboriginal stakeholders to provide the intangible component as in my view it would be inappropriate to include assumption without involving the registered Aboriginal parties. Unfortunately, the scope and budgets of most of these ACHAs are not robust enough for academic level of research and discussion on intangible cultural heritage resource. We'd appreciate if you can send through those publications you listed in the bibliography to include them in our next assessment and learn more about the subject.</p>
DNC/Lilly Carroll	Expressed her approval for the proposed methodology and Stage 2 information package in the follow up phone call on 22 June.	Acknowledged and entered into consultation log.

### 3.4. SITE INSPECTION

Site inspection opportunity was provided for all RAPs on the 8 July 2020. Communication was initiated on the 1 July and request was sent for providing all necessary documentation and information to the Proponent by the end of 3 July and the 7 July was nominated for the site visit. Due to the tight time frame, follow-up phone calls were made to all RAPs on the 2 July to ensure that all have the opportunity to respond. Request was made by RAPs to move the site inspection to the 8 July and following consultation with the Proponent the request was approved. The following RAPs have responded to the invitation and provided the necessary documentation.

Table 12 – Stage 3 Site Visit – Registration of Interest

Organisation / Individual	Contact Person
A1 Indigenous Services	Brayden McDougall
Butucarbin	Lowanna Gibson
Dennis Foley	Dennis Foley
DNC	Frank Smith
The Gaimaragal Group	Susan Moylan-Coombs
Wailwan Aboriginal Group	Phil Boney

To comply with the relevant social distancing measures under the COVID 19 policies of the Commonwealth and State Government, in line with the relevant policies of the Zoo and also the requirements of the Job Safety Assessment prepared by Urbis; the site visit was organised in a roster system to keep the number of participants manageable in context with the visitor numbers of the recently re-opened Zoo. There were two time slots provided for the RAPs, the first group at 9 am and the second at 11:30am.

The site inspection was carried out on the 8 July 2020. The conditions were favourable and following a short walkover of the subject area and discussion of the proposed development as well as the low potential of Aboriginal objects within the subject area all RAPs have provided opportunities to provide feedback on site. The following RAPs and representatives of the Proponent and Urbis took part in the site inspection.

Table 13 – Stage 3 Site Visit – Participants

Organisation / Individual	Contact Person
A1 Indigenous Services	Brayden McDougall
Dennis Foley	Dennis Foley
DNC	Frank Smith
Urbis	Balazs Hansel
Taronga Conservation Society Australia	Kristine Marshall
Taronga Conservation Society Australia	Lucinda Cveticanin
Wailwan Aboriginal Group	Phil Boney

No additional feedback has been received from the RAPs apart from those that have been provided during Stage 2 and 3. All RAPs have acknowledged that the high impact from historical land use activities likely removed all potential for Aboriginal objects in the subject area and that the proposed recommendations will be sufficient for the development. Dennis Foley have provided additional information in relation to the cultural history and connections of the subject area and the wider surroundings. The representatives of the Proponent and Urbis acknowledged the additional information and discussed the opportunities with Mr Foley on how the cultural heritage information might be used on interpretation and education material for the Zoo.

### **3.5. STAGE 4: REVIEW OF DRAFT ACHA REPORT**

The aim of Stage 4 is to prepare and finalise an ACHAR with input from registered Aboriginal Parties.

This Draft ACHAR will be provided to all groups who registered, and a minimum 28 days is stipulated for receiving submissions. It is noted that the time allowed for comment should reflect the size and complexity of the project. Submissions may be made in writing, or verbally, and are to be included in the final ACHAR. Responses from the Proponent are also required to be included in a final ACHAR in Appendix C.

Following inclusion of comments from the Aboriginal Parties, the final ACHAR is to be provided to DPIE, in conjunction with an AHIP application as required.



## 4. CULTURAL HERITAGE VALUES AND STATEMENT OF SIGNIFICANCE

### 4.1. METHODS OF ASSESSING HERITAGE SIGNIFICANCE

Heritage significance is assessed by considering each cultural, or archaeological site, against the significance criteria set out in the Assessment Guidelines. In all case, the assessment of significance detailed below is informed by the Aboriginal community, which is documented in this report. If any culturally sensitive values were identified they would not be specifically included in the report, or made publicly available, but would be documented and lodged with the knowledge holder providing the information.

### 4.2. ASSESSMENT FRAMEWORK

The Burra Charter (Australia ICOMOS 1999) defines the basic principles and procedure to be observed in the conservation of important places. It provided the primary framework within which decisions about the management of heritage sites should be made. The Burra Charter defines cultural significance as being derived from the values listed below.

#### 4.2.1. Social or cultural value

Social or cultural value refers to the spiritual, traditional, historical or contemporary associations and attachments the place or area has for Aboriginal people. Social or cultural values is how people express their connection with a place and the meaning that place has for them.

Places of social or cultural value have associations with contemporary community identity. These places can have associations with tragic or warmly remembered experiences, periods, or events. Communities can experience a sense of loss should a place of social or cultural value be damaged or destroyed.

There is not always a consensus about a place's social or cultural value. When identifying values, it is not necessary to agree with or acknowledge the validity of each other's values, but it is necessary to document the range of values identified.

Social or cultural values can only be identified through consultation with Aboriginal people. This could involve a range of methodologies, such as cultural mapping, oral histories, archival documentation and specific information provided by Aboriginal people specifically for the investigation.

When recording oral history:

- Identify who was interviewed and why.
- Document the time, place and date the interview was conducted.
- Describe the interview arrangements (the number of people present, recording arrangements, information access arrangements).
- Provide a summary of the information provided to the person being interviewed.
- Summarise the information provided by each person interviewed.

More information on conducting oral history projects can be found in OEH's publication *Talking history: oral history guidelines*.

Occasionally information about social value may not be forthcoming. In these circumstances, document the consultation process but make it clear in the discussions and conclusions about social value that this was the case.

#### 4.2.2. Historic value

Historic value refers to the associations of a place with a historically important person, event, phase or activity in an Aboriginal community. Historic places do not always have physical evidence of their historical importance (such as structures, planted vegetation or landscape modifications). They may have 'shared' historic values with other (non-Aboriginal) communities.

Places of post-contact Aboriginal history have generally been poorly recognised in investigations of Aboriginal heritage. Consequently, the Aboriginal involvement and contribution to important regional historical themes is often missing from accepted historical narratives. This means it is often necessary to collect oral histories along with archival or documentary research to gain a sufficient understanding of historic values.

### 4.2.3. Scientific (Archaeological) value

This refers to the importance of a landscape, area, place or object because of its rarity, representativeness and the extent to which it may contribute to further understanding and information (Australian ICOMOS 1988).

Information about scientific values will be gathered through any archaeological investigation undertaken. Archaeological investigations must be carried out according to OEH's *Code of practice for archaeological investigation of Aboriginal objects in NSW*.

Scientific significance, also referred to as archaeological significance, is determined by assessing an Aboriginal heritage site or area according to archaeological criteria. The assessment of archaeological significance is used to develop appropriate heritage management and impact mitigation strategies.

Criteria for archaeological significance have been developed in accordance with DPIE guidelines, as shown in Table 14 below.

Table 14 – Scientific (archaeological) significance criteria

Significance Criteria	Description
Research Potential	Does the evidence suggest any potential to contribute to an understanding of the area and/or region and/or state's natural and cultural history?
Representativeness	How much variability (outside and/or inside the subject area) exists, what is already conserved, how much connectivity is there?
Rarity	Is the subject area important in demonstrating a distinctive way of life, custom, process, land-use, function or design no longer practised? Is it in danger of being lost or of exceptional interest?
Education Potential	Does the subject area contain teaching sites or sites that might have teaching potential?
Condition	What is the condition of the site? Does it appear to have been impacted/alterd?

### 4.2.4. Aesthetic value

This refers to sensory, scenic, architectural, and creative aspects of the place. It is often closely linked with the social values. It may consider form, scale, colour, texture and material of the fabric or landscape, and the smell and sounds associated with the place and its use (Australian ICOMOS 1988).

## 4.3. IDENTIFYING VALUES

The information collected in the background review of the project can be used to help identify these values. The review of background information and information gained through consultation with Aboriginal people should provide insight into past events. These include how the landscape was used and why any identified Aboriginal objects are in this location, along with contemporary uses of the land.

Information gaps are not uncommon and should be acknowledged. They may require further investigation to adequately identify the values present across the subject area. It may be helpful to prepare a preliminary values map that identifies, to the extent of information available, the:

- Known places of social, spiritual, cultural value, including natural resources of significance.
- Known historic places.

- Known Aboriginal objects and/or declared Aboriginal places.
- Potential places/areas of social, spiritual, cultural value, including natural resources, historic or archaeological significance.

Places of potential value that are not fully identified or defined should be included as 'sensitive' areas to target further investigation.

## 4.4. ASSESSING VALUES AND SIGNIFICANCE

This stage is used to assess and discuss the cultural significance of the values identified during the identification and assessment of cultural significance by consulting Aboriginal people and to prepare a statement of significance. The assessment of values is a discussion of what is significant and why. An assessment of values is more than simply restating the evidence collected during the background review and identification of values stages of the project. Rather, the assessment should lead to a statement of significance that sets out a succinct summary of the salient values that have been identified.

The assessment and justification in the statement of significance must discuss whether any value meets the following criteria (NSW Heritage Office 2001):

- Does the subject area have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons? – social value.
- Is the subject area important to the cultural or natural history of the local area and/or region and/or state? – historic value.
- Does the subject area have potential to yield information that will contribute to an understanding of the cultural or natural history of the local area and/or region and/or state? – scientific (archaeological) value.
- Is the subject area important in demonstrating aesthetic characteristics in the local area and/or region and/or state? – aesthetic value.

Assessment of each of the criteria (above) should be graded in terms that allow the significance to be described and compared; for example, as high, moderate, or low. In applying these criteria, consideration should be given to:

- Research potential: does the evidence suggest any potential to contribute to an understanding of the area and/or region and/or state's natural and cultural history?
- Representativeness: how much variability (outside and/or inside the subject area) exists, what is already conserved, how much connectivity is there?
- Rarity: is the subject area important in demonstrating a distinctive way of life, custom, process, land-use, function or design no longer practised? Is it in danger of being lost or of exceptional interest?
- Education potential: does the subject area contain teaching sites or sites that might have teaching potential?

Then discuss what is significance and why – this should be summarised into a statement of significance. Thus, the statement of significance is a succinct summary of the salient values drawn from the identification of values.

## 5. ASSESSMENT OF IDENTIFIED VALUES

An assessment of cultural heritage significance and values incorporates a range of values which may vary for different individual groups and may relate to both the natural and cultural characteristics of places or sites. Cultural significance and Aboriginal cultural views can only be determined by the Aboriginal community using their own knowledge of the area and any sites present, and their own value system. All Aboriginal heritage evidence tends to have some contemporary significance to Aboriginal people, because it represents an important tangible link to their past and to the landscape.

Consultation with members of the local Aboriginal community (project RAPs) was undertaken to identify the level of spiritual/cultural significance of the subject area and its components. In acknowledgment that the Aboriginal community themselves are in the best position to identify levels of cultural significance, the project RAPs were invited to provide comment and input into this ACHAR and to the assessment of cultural heritage significance and values presented therein.

Summary of the identified values are provided in Table 15 below.

Table 15 – Summary of identified values

Criteria	Assessment
Social or Cultural Value	The RAPS have provided the following information on social and/or cultural values.
Historic Value	The RAPS have provided the following information on historic values.
Scientific (archaeological) Value	The scientific (archaeological) value of the subject area assessed as low. Historical land use activities such as clearing of vegetation, development of the Zoo since the early 20 <sup>th</sup> century and consequent high-level impact resulted in high, often extreme level of disturbance of the original environment. It is highly unlikely that archaeological resources survived these impacts and consequently the archaeological and scientific value of the subject area is low.
Aesthetic Value	The overall Aesthetic Value of the subject area has been rated as low due to the lack of presence of any elements that are listed under the relevant criteria. The results of the archaeological monitoring might alter this assessment should any Aboriginal artefacts or features such as engravings located under the fill.



## 6. IMPACT ASSESSMENT

### 6.1. THE PROPOSED ACTIVITY

The Upper Australia Precinct will complete the redevelopment of the entire Australian Habitat section of Taronga Zoo and will represent central and northern Australia with animal species and landscapes that reflect the central Australian deserts and top end wetlands.

The proposed works will upgrade the existing Upper Australia Precinct, including a new exhibit design and layouts. This will include demolition of existing structures and some excavation works, while still remaining sympathetic to the design intent of the original 1970s exhibits. The Upper Australia Precinct will display critically endangered Australian animals that form part of Taronga's wildlife conservation and education programs and upgrade "star" attractions including kangaroo, koala, platypus, wombat and emu exhibits.

The proposal will incorporate the demolition of (Figure 3):

- road, associated kerbing and retaining wall for Heritage item 'Wombat Enclosure' (123L);
- section of boundary wall associated with heritage item 07L;
- heritage item 'Timber Boardwalk' (53L); and
- heritage item 'Platypus House' (93B) and associated ground slab and footings.

The proposal will incorporate the following works:

- Refurbishment of the existing Nocturnal House.
- Construction of a new Koala encounter and canopy walk.
- Extension of the existing Macropod walkthrough.
- Creation of a new eastern plaza and western pavilion.
- Upgrades to back of house facilities for animal care.
- Additional toilets and amenities for staff and visitors.
- Other supporting infrastructure and walkways.
- Modifications to the existing ropes course including a new entrance.

The proposal will incorporate excavation (Figure 4) of areas, including:

- The inside the wetland ponds (within vicinity of heritage items 08L & 107L), where base will be excavated and walls will remain intact.
- A small section of the western side of the existing entrance of the Nocturnal House.
- Conversion of footpaths to boardwalks, which will involve spot excavations for pylons within the Australian wildlife enclosure (123L) where a boardwalk will be installed to minimise surface footprint of the development.

### 6.2. POTENTIAL HARM

This section identifies the potential impacts to cultural heritage arising from the proposal, including demolition, excavation, and construction phases. Harm can be direct or indirect, defined by the Assessment Guidelines as:

- Direct harm – may occur as the result of any activity which disturbs the ground including, but not limited to, site preparation activities, installation of services and infrastructure, roadworks, excavation, flood mitigation measures; and

- Indirect harm – may affect sites or features located immediately beyond or within the area of the proposed activity. Examples include, but are not limited to, increased impact on art in a shelter from increased visitation, destruction from increased erosion and changes in access to wild food resources.

It is noted that no Aboriginal objects or cultural sites have been identified within, or in close proximity to, the subject area.

There is low likelihood of any Aboriginal archaeological resources within the subject area and at this stage it is highly unlikely that the proposed development will directly or indirectly harm Aboriginal objects and archaeological resources. The recommendations of this ACHAR include the monitoring of excavations and earthworks to ensure that the Chance Find Procedure is followed through properly and appropriate management measures will be applied to any potential Aboriginal objects during those works.

### **6.3. LIKELY IMPACTED VALUES**

At this stage it is highly unlikely that the proposed development will impact on any tangible or intangible values of Aboriginal cultural heritage. Urbis has been in consultation of the Registered Aboriginal Parties and the Proponent to encourage the development and implementation of Aboriginal cultural heritage interpretation and education material for the new Upper Australia Precinct.

### **6.4. JUSTIFICATION**

The aim of the proposed development is to update one of the most popular section so of the Zoo and enhance the experience of visitors, as well as upgrading the environment of the flora and fauna located in the Upper Australia Precinct.

## **7. AVOIDING AND MINIMISING HARM**

This ACHA has concluded that there is only a low potential for Aboriginal objects to have survived within the subject area. Consequently, there is highly unlikely that the proposed development will harm Aboriginal objects or archaeological resources and no management measures for avoidance are warranted.

As an additional measure, monitoring of earthworks and excavations is proposed to ensure that the Chance Find Procedure is implemented in the event of identifying any Aboriginal objects or archaeological resource.

## 8. CONCLUSIONS AND RECOMMENDATIONS

The ACHAR concluded that:

- There are no registered Aboriginal objects and/or places within or in close proximity to the subject area.
- There are no landscape features with potential for Aboriginal objects or archaeological deposits located within the subject area.
- The subject area has experienced high levels of disturbance due to historical land use, including the establishment of the zoo in the early 20<sup>th</sup> century
- **TO INSERT ONCE STAGE 4 OF THE CONSULTATION IS CLOSED.**

The proposed development can proceed in accordance with the following recommendations:

### Recommendation 1 – Aboriginal Cultural Heritage Induction

It is recommended that induction materials be prepared in consultation with the Registered Aboriginal Parties (RAPs) for inclusion in the construction management plan and site inductions for any contractors working at the subject area. The induction material should include an overview of the types of sites and artefacts to be aware of (i.e. stone tools, concentrations of shells that could be middens and rock engravings and grinding grooves), under the NPW Act, and the requirements of an 'archaeological chance find procedure' (refer below). This should be prepared for the project and included in any site management plans.

The induction material may be paper based, included in any hard copy site management documents; or electronic, such as "PowerPoint" for any face to face site inductions.

### Recommendation 2 – Archaeological Chance Find Procedure

In concurrent of the recommendations of the Historical Archaeological Assessment (Urbis 2020) for monitoring of earthworks for any potential historical archaeological resources, it is recommended that the monitoring applied for Aboriginal objects and archaeological resources. Although considered highly unlikely, should any Aboriginal objects, archaeological deposits be uncovered during any site works, a procedure must be implemented. The following steps must be carried out:

6. All works stop in the vicinity of the find. The find must not be moved 'out of the way' without assessment.
7. The archaeologist and Aboriginal representative on site examine the find, provides a preliminary assessment of significance, records the item for the AHIMS register and decides on appropriate management. Such management may require further consultation with the Aboriginal Cultural Heritage Regulation Branch of the Department of Premier and Cabinet (DPC), preparation of a research design and archaeological investigation/salvage methodology and decision on temporary care and control.
8. Depending on the significance of the find, reassessment of the archaeological potential of the subject area may be required, and further archaeological investigation undertaken.
9. Reporting may need to be prepared regarding the find and approved management strategies. Any such documentation should be appended to this ACHAR and revised accordingly.
10. Works in the vicinity of the find can only recommence when all management measure all implemented, and the find is removed from the activity area. Should the find be an unmovable item such as an engraving or grinding groove located on a sandstone surface, further management measures will need to be introduced to avoid harm to the find.

### Recommendation 3 – Human Remains Procedure

In the unlikely event that human remains are uncovered during any site works, the following must be undertaken:

6. All works within the vicinity of the find immediately stop.
7. Site supervisor or other nominated manager must notify the NSW Police and DPIE.
8. The find must be assessed by the NSW Police, and may include the assistance of a qualified forensic anthropologist.



9. Management recommendations are to be formulated by the Police, DPIE and site representatives.
10. Works are not to recommence until the find has been appropriately managed.

#### **Recommendation 4 – RAP consultation**

A copy of the final ACHAR must be provided to all project RAPs. Ongoing consultation with RAPs should occur as the project progresses. This will ensure ongoing communication about the project and key milestones and ensure that the consultation process does not lapse, particularly with regard to consultation should the Chance Find Procedure be enacted.

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# APPENDIX A

# ARCHITECTURAL PLANS



## **APPENDIX B**

## **AHIMS BASIC AND EXTENSIVE SEARCH RESULTS**

## **APPENDIX C**

## **CONSULTATION DOCUMENTS**

**APPENDIX D**

**CONSULTATION LOG**

