

Taronga Zoo  
Institute of Science & Learning  
Heritage Impact Assessment  
9 December 2015

## Table of Contents

1.0	Introduction	3
1.1	Preamble	3
1.2	Background	3
1.3	Site Location	4
1.4	Methodology	5
1.5	Study Team	6
1.6	Terminology	6
2.0	Outline Historical Context & Physical Description	8
2.1	Character of the Study Area	8
2.2	Historical Context	8
2.3	Physical Description of the Study Area	28
3.0	Heritage Significance	35
3.1	Individual Elements of Significance	36
3.2	Archaeological Values	37
3.3	Indigenous Values	38
3.4	Table of Heritage Items and Items in the Vicinity	39
3.5	Heritage Statutory Context	43
3.6	Constraints & Opportunities	45
4.0	Heritage Impact Assessment	47
4.1	Project Documentation	47
4.2	Project Description	47
4.3	Impact of the Proposal on Taronga Zoo	50
4.4	Impact of the Proposal on Heritage Items	50
4.5	Compliance with Conservation Policies	52
4.6	Evaluation of Overall Heritage Impacts	53
5.0	Mitigative Measures	54
5.1	Preamble	54
5.2	Conclusion	54
5.3	Recommended Mitigative Measures	55

## **1.0 Introduction**

### **1.1 Preamble**

This report has been prepared for the CWI Division for the Taronga Conservation Society Australia (TCSA), to assess the heritage impact on the heritage values of the site, proposed to be developed. The subject area is to be redeveloped to provide improved research and education facilities. The proposed works will include the demolition of a heritage item.

The Taronga Zoo site as a whole has been identified as an item of State heritage significance and items within the zoo have been identified as individual heritage items. The area proposed to be redeveloped incorporates a building and landscape elements identified as having heritage significance in the Taronga Conservation Society Australia Section 170 Heritage and Conservation Register. The heritage items in the subject area are:

07L – Section of sandstone perimeter wall on former boundary

15M – ZPB Archives and Records (part housed in building 78B, part in Heritage Container)

78B – Former Staff Amenity Block (now retail offices and archives)

This document is in accordance with the conservation policies of the Taronga Zoo Conservation Strategy, July 2002. The history of the Zoo, including the subject area, is documented generally with detailed material available for some areas. Recent planning and redevelopment at the Zoo is another stage in the evolution of approach to the design and role of modern Zoo's focusing on wildlife conservation under the theme "For the Wild" and requiring alteration or removal of some heritage items. This project is to extend and improve the facilities for research and education at Taronga.

The proposal has been designed by architects Noel Bell Ridley Smith and Partners (NBRS).

### **1.2 Background**

#### **Masterplanning**

Since the Zoo opened in 1916, the planning of the site has continued to evolve in response to changing zoological philosophies and practices.

From 2000 Taronga Zoo has implemented a redevelopment program for the Zoo based on the Masterplan 2000, which provided guidance on planning, management and design issues for the upgrading of the site as a whole and established a new vision for Taronga Zoo. A new Masterplan is nearing completion.

#### **Heritage and Conservation Planning**

The Taronga Zoo Conservation Strategy 2002, endorsed by the NSW Heritage Office, was prepared to provide a policy framework for conservation, interpretation, management and use of the site as part of the implementation of the endorsed Masterplan 2000.

The Zoological Parks Board (ZPB) Section 170 Heritage and Conservation Register identifies over two hundred and fifty individual built and landscape heritage items within Taronga Zoo, including items within and in the vicinity of the proposed development.

The Zoo as a whole is identified in the Mosman Heritage Study as a place of State Significance. The Taronga Zoological Gardens is identified on the 2012 Mosman LEP (item I34) as being of local significance and the listing includes the Rainforest Aviary, the Elephant House, the bus shelter and office, the floral clock and the upper and lower entrance gates. None of the individual heritage items mentioned in the list in Part 1 of Schedule 5 of the Mosman LEP 2012 is affected by or in the vicinity of the proposed development.

There are no items, either within the subject precinct or in the vicinity of the precinct, identified on the Register of Significant Architecture in NSW, which is maintained by the Australian Institute of Architects (AIA). The Koala House is in the vicinity of the site and has been recommended by some for listing by the AIA and is also identified on the Section 170 register.



### 1.3 Site Location

Taronga Zoo is located on Sydney Harbour's northern foreshore at the head of Athol Bay. The land is under the ownership of the Taronga Conservation Society Australia (TCSA) and is in the municipality of Mosman.

The site is located in the northern part of the Zoo and straddles the original boundary wall (07L). The site is currently occupied by the Education Centre, which will be replaced by the proposed development. To the north of the site is the staff, contractor and bus parking area and an elevated naturally vegetated area maintained under a bush regeneration program. To the east is the top station of the cable car and to the west back of house facilities. To the south are the public areas of the Zoo including the Koala House and several aviaries (see Figures 1.1 and 1.2).



**Figure 1.1** Aerial photo of Taronga Zoo showing the location of the proposed Institute of Science and Learning, shaded in orange. Source: LPI SIX viewer annotated by Jean Rice Architect





**Figure 1.2** Aerial photograph of the existing site showing the area of the proposal shaded orange. Source: LPI SIX viewer annotated by Jean Rice Architect

## 1.4 Methodology

This HIS for the site is consistent with the Conservation Strategy recommendation:

*A Heritage Impact Statement (HIS) should be prepared for all new developments at Taronga Zoo to identify potential impacts on items in the vicinity, views, setting, original pathway layout, landscape and built elements, archaeology and the site as a whole.*

### Previous Reports

A number of previous reports for the Zoo have been used as the basis for the assessment of the proposed impacts on the heritage values of the place, including:

- Section 170 Heritage and Conservation Register, April 1998, prepared by the Heritage Group of the New South Wales Department of Public Works and Services and subsequently updated by TCSA;
- Taronga Zoo Conservation Strategy, July 2002, prepared by Godden Mackay Logan, endorsed by the NSW Heritage Office;
- Taronga Zoo Archaeological Management Plan (AMP), November 2002, prepared by Godden Mackay Logan, endorsed by the NSW Heritage Office;

- Taronga Zoo Heart of the Zoo Precinct, Strategic Heritage Advice, October 2003, prepared by Godden Mackay Logan; and
- Taronga Zoo Landscape Management Plan (LMP), November 2006, prepared by Design 5 Architects, Geoffrey Britton and Dr Ben Wallace.

Section 2.0 of this report provides a background to the cultural landscape, significance and conservation policies relating to the subject development area.

The methodology is based on the guidelines contained in the *NSW Heritage Manual* (DUAP and the Heritage Council of NSW, 1996) and the principles contained in the Australia ICOMOS *Burra Charter*.

## 1.5 Study Team

This report has been prepared by Jean Rice, of Jean Rice Architect and Senior Project Manager Heritage, with the Capital Works Infrastructure and Operations (CWI&O) Division of Taronga Zoo, assisted by Dr Noni Boyd, architectural historian.

## 1.6 Terminology

The terminology used within this report is consistent with the NSW Heritage Manual and the definitions contained in the Burra Charter of Australia ICOMOS. Throughout this report, the terms *place*, *cultural significance*, *fabric*, *conservation*, *maintenance*, *preservation*, *restoration*, *reconstruction*, *adaptation* and *compatible use* are used in accordance with the definitions of the Burra Charter.

The reference number identification for heritage items within the Zoo follows the existing terminology established in the Section 170 Heritage and Conservation Register, Conservation Strategy, Archaeological Management Plan and Landscape Management Plan.

## Abbreviations

AIA	Australian Institute of Architects
AMP	Archaeological Management Plan
C&LGJ	Construction & Local Government Journal
CMP	Conservation Management Plan
CMS	Conservation Management Strategy
CWI&O	Capital Works Infrastructure and Operations
DPWS	Department of Public Works & Services (now within the Department of Finance, Services & Innovation).
GAB	Government Architects Branch (now Government Architects Office)
GAO	Government Architects Office
GPO	Government Printer's Office (Videodisk held by the State Library of NSW)
HIS	Heritage Impact Statement
ICOMOS	International Council of Monuments and Sites
LEP	Local Environmental Plan
LHS	Left Hand Side
LMP	Landscape Management Plan

ML	Mitchell Library (State Library of NSW)
NSW	New South Wales
PWD	Public Works Department (now Public Works)
RHS	Right Hand Side
S170	Section 170 (Register) under the NSW Heritage Act
SLNSW	State Library of NSW
SMH	Sydney Morning Herald
TCSA	Taronga Conservation Society Australia
TZ	Taronga Zoo
ZPB	Zoological Parks Board

## 2.0 Outline Historical Context and Physical Description

### 2.1 Character of the Study Area

The study area is defined on the south by paths, a roadway on the west, the staff carpark and rockfaces on the north and the alligator exhibit and cable car top station on the east. Within this are located trees and natural features. These elements contribute to the visual character of the Zoo site. On the site is a range of modern buildings forming an enclosed courtyard – not heritage significant.

### 2.2 Historical Context

There are five key phases of historical development at Taronga Zoo since its initial construction began in 1913. These key phases correspond to tenures of key zoo Directors or Superintendents and generally reflect each director's philosophy of zoo management. The key periods are described below with a discussion of the site and items in the vicinity of the proposal during each period.

Nineteenth century maps, including the parish maps for Willoughby and surveys of Port Jackson give an indication of the landform prior to the Zoo's establishment. Three substantial portions of land were granted to Charles Jenkins. The Trigonometrical survey of Port Jackson, prepared by Sir Thomas Mitchell, shows that by the early 1850s paths led to the various harbour promontories. The path to Bradley's Head followed the ridge line and a path to Whiting Beach branched off to the west. A remnant of the rocky outcrops that characterised the site remains in the carpark, north west of the main entrance.



**Figure 2.1** Extract from Thomas Mitchell's Trigonometrical Survey of Port Jackson dated 1853 showing Bradley's Head. The later location of the Zoo is indicated. Source: SLNSW Z/M4/811.15/1853/1

In the 1870s additional fortifications were erected around Sydney Harbour and large portions of land adjacent the fortifications was reserved for Military Purposes, including land at Bradley's Head. This land was progressively transferred to the Commonwealth in the years following Federation.

The 1912 locality plan, prepared by the NSW Government Architect as part of a survey, only shows the watercourses and the animal quarantine station and tramway from Athol Bay. Neither of the two quarries is shown on the 1912 contour survey of the site, indicating they are likely to have been developed later, as part of the laying out of the Zoological Gardens.<sup>1</sup>

<sup>1</sup> Survey of the site prepared by the Public Works Department, NLA Map RM 3875, 1912





**Figure 2.2** Locality plan from the 1912 survey of the site of the Zoological Gardens prepared by the Public Works Department . Source: NLA Map RM 3875

### 2.1.1 Phase One: Initial Construction 1913-1916 (Designer Albert le Souef)

Land for the Zoological Gardens was excised from the land reserved for Military purposes and was dedicated as Zoological Gardens in 1912. A detailed contour survey was prepared by the Public Works Department (part at Figure 2.2). The transfer from Moore Park to Ashton Park at Bradleys Head had been under discussion since 1909. In November 1911 it was announced that

#### A START IN JANUARY

...The decision to move the Zoo from Moore Park to Ashton Park - that magnificent stretch of natural bush lying between Whiting Beach and Athol Gardens - has only just been arrived at; but assuming that it is gazetted without undue delay, it is hoped to make a start in preparing the new home for the denizens of the Zoo in January next - building, surveying, fencing and clearing. First, there will be a topographical survey and then part of the area - the site to be set apart for the Zoo is 60 acres in extent, the total area of the park being 140 acres - will be fenced, probably 40 acres of it. The other 20 acres will be kept as required for zoological purposes. As soon as the surveying and clearing of the land has been completed, the laying out of the grounds will be proceeded with. Paths will be made, and the quarters fixed for the various orders of animals: and when the money is available the buildings will be erected.<sup>2</sup>

During this period the basic infrastructure of the Zoo was constructed, including the network of pathways. The topography dictated the basic layout of the site from the start, with pathways largely constructed along the contours traversing east-west, and connected by staircases. The basic layout capitalised on the natural sandstone rock ledges across the site. In planning the zoo the Superintendent, Albert le Souef, was inspired by Hagenbeck Zoo in Germany, the most modern zoo in the world at that time. Taronga was designed around the concept of a bar-less zoo, with enclosures for

<sup>2</sup> SMH 11 November 1911

animals constructed with the most open plan possible, without a roof or bars where possible but with a surrounding concrete wall and moat separating the public from the animals.

In the works a better site could not have been found it is all so beautifully adaptable to the purpose for which it is being used that the observer wonders why it was not selected when New South Wales first conceived the idea of having a Zoo. A minimum of work gives a maximum of satisfaction. There are the rocky ledges and cliffs, the trees, the burrows, the open spaces, and the depressions waiting for water to turn them into ponds-all these await only the occupancy of the birds and animals, each to its particular liking.

The magnitude of the work however lies in the making and grading of roads and avenues, and the construction of cages, pits, and ponds, so that they will prevent their tenants overstepping the bounds of the portions allotted them, and so that they will be shown off to advantage and seen by the visitors at their best. The plan of the park provides space for all sorts of zoological specimens, with avenues interwoven, lawns, sports ground, store yard, keepers' houses, superintendent's and director's cottages...<sup>3</sup>

Construction work had commenced in 1912 and by early 1914 considerable work had been undertaken.

As far as possible the natural formation of the rocky ground is retained...

As the Park at Athol Bight is specially designed for the pleasure and instruction of Australians, the main object is to keep Australian flora and fauna in the foreground. Few, if any, exotics will be introduced in these Gardens...

While gangs of labourers are at work shattering rocky fortresses and levelling the ground, where necessary, to conform with the plan selected, the gardeners are industriously planting sprouting up with exuberant vitality, taking kindly to the soil from the start, and, in one instance, growth is recorded at the surprising rate of six inches a day... During the past year much of the work has been confined to the making of roads, embankments, drains, etc., but the scenic part is by no means neglected. Enough has been done to give some idea of what the completed Taronga Zoo will be like in two years time.

Wherever the contour of the Park lends itself to decorative effect with rocks, ferns, flowers and palms, it is turned to the most artistic use. A noticeable feature of the present stage of construction is the grouping of Christmas bush, Christmas bell, Flannel flower, Angophora and other beautiful indigenous flowers with clumps of haresfoot fern, bracken, birds nest palms, and stag and elk horns. While the shapelessly and fire wracked eucalyptus are being ruthlessly ejected from their stronghold there will be plenty of original trees left in the Zoo, and the culling of useless old trees is necessary.<sup>4</sup>

Following the outbreak of World War 1, Colonel Alfred Spain, a local architect and Vice-President of the new Zoological Gardens Trust, transferred the design and construction of the Zoological Gardens to the NSW Government Architect (within the NSW Public Works Department). In October 1916 it was reported that

The whole of the construction work has been carried out by the Public Works Department, under the Director-General of Public Works (Mr. J. Davis. M.I.C.E.) and the Government Architect (Mr. Geo. M'Rae), with the assistance of the trustees, who have also supervised the various works and devoted a considerable amount of their time since the commencement of this great work...

In its natural conformation the land presents several terraces, supported by ledges of rock and boulders, well covered with trees and shrubs. Four main roads run east and west, following the sweeping contour of the terraces, and one central avenue crosses these from north to south; while tracks and paths intersect them in many places, and give access to the glens and gullies which abound in many places. The park is well covered with native trees, principally angophoras, eucalyptus, eugenias [bush cherry], banksias, personias [sic], etc. Many of these have had to be thinned out to make room for roads and enclosures, but

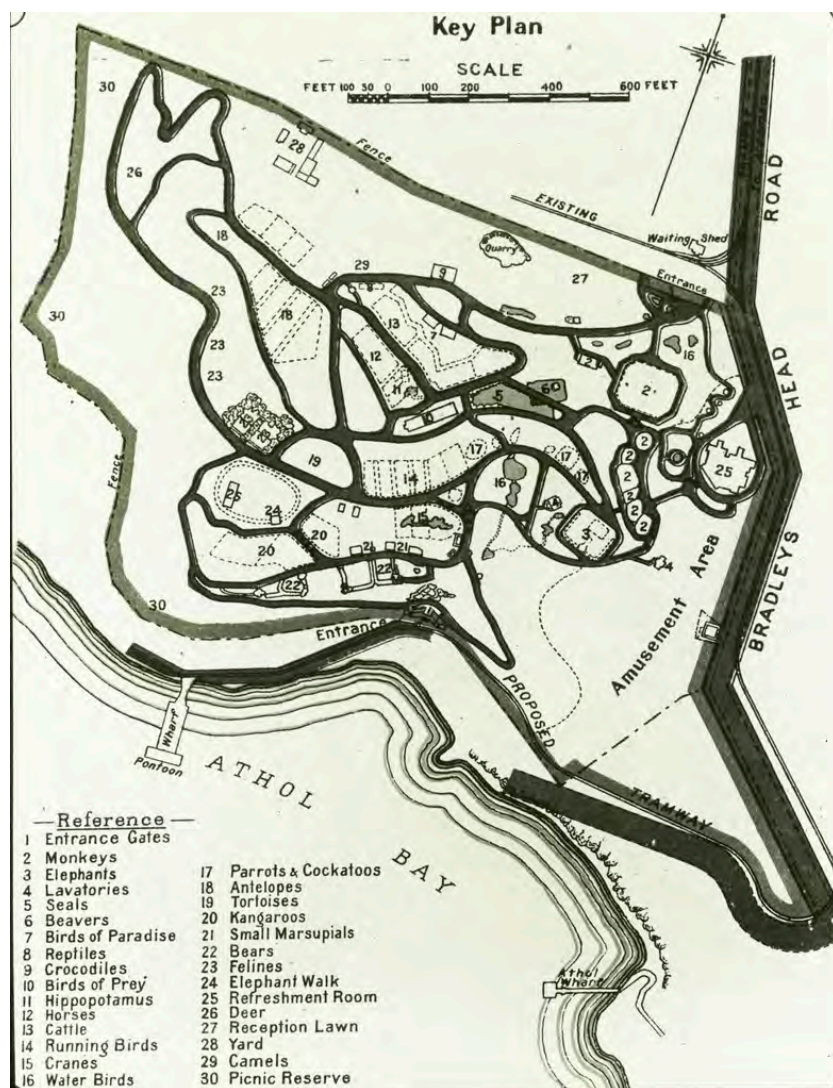
---

<sup>3</sup> SMH 7 Jan 1914

<sup>4</sup> The Gundagai Times and Tumut, Adelong and Murrumbidgee District Advertiser 13 Feb 1914

hundreds more have been planted. Apart from herbaceous plants, which are necessary to give colour effect, only Australian material has been used, this will give a special interest to the gardens.<sup>5</sup>

None of the early reports mention of building any stone perimeter walling. In 1930 the fencing, which was to be replaced, was described as being an old timber fence.<sup>6</sup> A number of previous studies have assumed that the sandstone boundary wall was contemporary with the initial layout of the Zoo however there is no documentary evidence to support this. The boundary is shown on early key plans as being a fence (figure 2.3).



**Figure 2.3** Lantern Slide of the Key Plan, Taronga Zoological Park Sydney, undated but c1916-18. Note the quarry at the top centre and the "fence". Source: Dunphy Collection, ML

<sup>5</sup> SMH 14 October 1916

<sup>6</sup> SMH 15 September 1930



There are two sites within the Zoological gardens referred to in later documents as being quarries, both of which appear to be contemporary with the creation of the Zoo and used to obtain sandstone for landscaping works. The published 1916 plan (above) shows that a quarry had been established adjacent to the 'reception lawn' beside the upper entrance. This sandstone quarry was later used as reservoir and subsequently the alligator enclosure. The exact dates of operation of the upper quarry have not been determined. The feature does not appear on the 1912 survey but is shown as being a large excavation by 1916. The adjacent site boundary is labelled on the 1916 plan as a fence.

A lower area that was also quarried was converted into the seal ponds in 1914-15. The Government Architect in his report noted that:

A large quarry excavation, now disused, is being adapted for seal and other ponds, and will be finished with ornamental balustrades and staircases &c. A great deal of work has been done in road making including kerbs and gutters, the conditions (rock excavation in parts and heavy filling in places) necessitating much labour.<sup>7</sup>

There are numerous photos of the seal ponds dating from when the Zoo first opened. No photographs of the upper quarry dating from prior to the construction of the perimeter wall in the late 1920s have yet been located indicating that there was probably no exhibits and no public access to this area.



**Figure 2.4** Feeding the Seals in the pond created out of a former quarry, February 1917, ML GPO 1 Still 18467

### **2.1.2 Phase Two: Consolidation 1916-1940 (Superintendent Albert le Souef)**

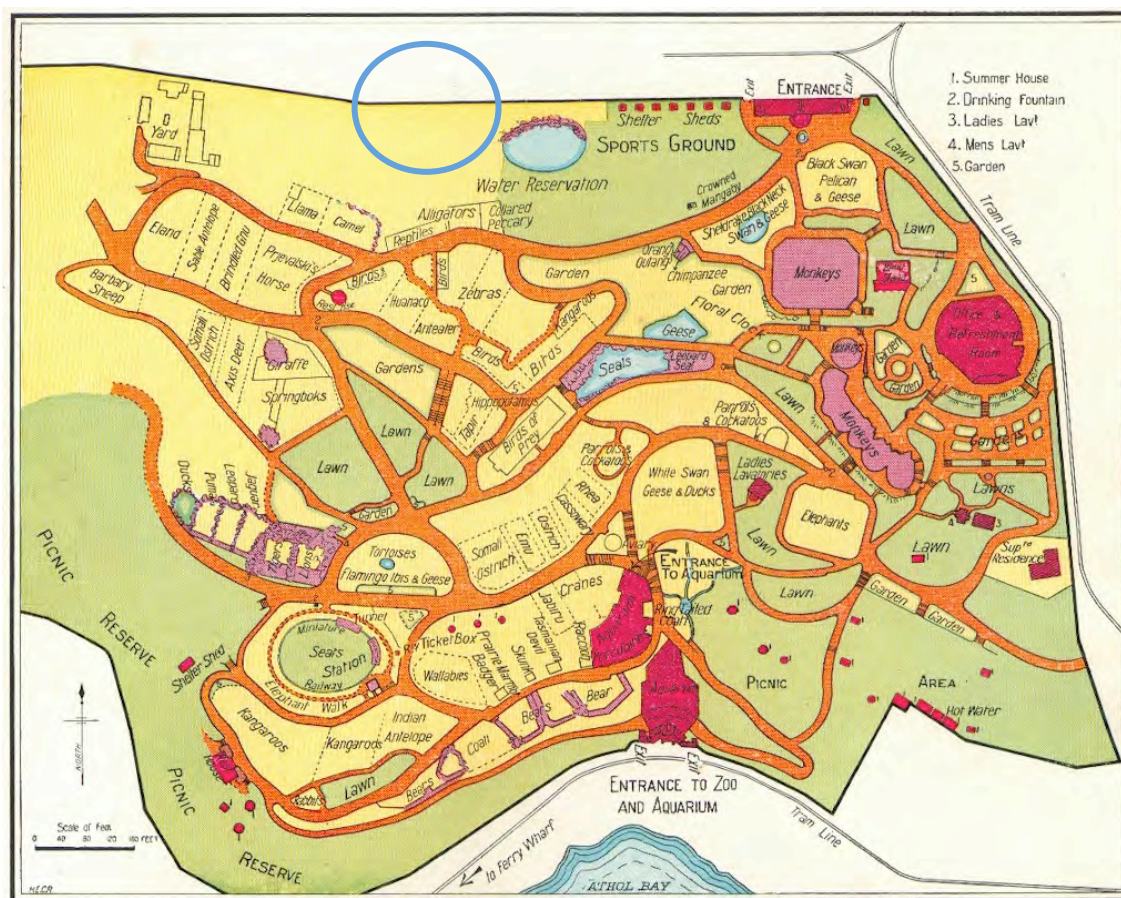
This period spans between the official opening of the Zoo in October 1916 and the departure of Albert le Souef as Superintendent of the Zoo in 1939. This period was characterised by a reinforcement of the juxtaposition of cultivated ornamental gardens within the setting of the bushland landscape. The 1920 plan does not show the quarry, and this may well have been deliberate. A 1924 view shows remnant vegetation to the south east of the former quarry. This area does not appear to have been utilised for exhibits during the 1920s.

<sup>7</sup> PWD Annual Report 1913-14





**Figure 2.5** Vegetation near the upper entrance to the Zoo. The quarry / reservoir would have been on the right and part of the water lily ponds is in the foreground. ML GPO 1 Still 19140



**Figure 2.6** Zoo plan from 1929 guide showing the former quarry as a water reservation. The location of the proposal is circled in blue. Source: Taronga Zoo archives



**Figure 2.7** Photograph entitled “Dawn over the Harbour”, showing the recently completed perimeter wall to the Zoo. Dated c. 1935, Source: RAHS Osborne Album

### **Zoo Sandstone Perimeter Wall 1929-34, 1946**

The sandstone perimeter wall was not an original feature of the Zoo. In July 1929 it was reported that:

At the lower end there is a short stone wall and eventually the park will be enclosed by walls which for strength will vie even with the best of Governor Macquarie's monuments.<sup>8</sup>

This refers to examples such as the Domain where part had been enclosed with stone walls on the orders of Governor Macquarie. Sections of the Zoos perimeter wall were built between 1932 and 1934 as unemployment relief works, as were walls to the park on North Head. In December 1932:

Under a grant from the Unemployment Relief Council a further addition is to be made to the outer wall at the Taronga Park Zoo.<sup>9</sup>

The stone source was adjacent to Neilsen's Lookout in Ashton Park, referred to in a newspaper article:

Removal of Stone for Walls.

In a letter to the Editor, a Mosman correspondent complains of the excavation and removal of sandstone from the part of the Ashton Park reserve facing the Zoological Gardens at Taronga Park, and in the vicinity of "Nielsen's Lookout," which, he says, provides one of the finest panoramic views of the harbour. He also deplores the damage being done to a beautiful recreation reserve, and asks why, if the use of stone is so necessary, the trustees do not utilise material taken from within Taronga Park itself.

<sup>8</sup> SMH 18 July 1929

<sup>9</sup> SMH 6 Dec 1932



Colonel Spain, chairman of trustees of Taronga Park and of Ashton Park, said yesterday, in reply, that the removal of stone from that portion of Ashton Park reserve adjoining the top entrance of Taronga Park served a dual purpose. Firstly, the trustees of Taronga Park had found that the number of visitors to the Zoo by motor car had so increased that it had been found necessary to extend the parking area. The Tramway Department had often complained of that congestion, and unless ample provision was made now, it was feared that further trouble would be experienced with increased numbers of vehicles after the opening of the harbour bridge.

Secondly, the stone and ballast removed had proved invaluable in the construction of walls and general development work in the gardens. There was no intention on the part of the trustees to interfere with Nielsen's Lookout or the approaches. The area of ground referred to, in the opinion of the trustees, was nothing more than a dumping site for spoil and other refuse...It was essential that the old timber fence enclosing the park should be replaced with stone, at present in progress, as some time ago dogs found an entrance through the fence and killed several valuable exhibits.<sup>10</sup>

Niels Nielsen had become secretary for lands after the 1910 State election. He quickly resumed several Sydney Harbour foreshores, including the large areas that became Taronga Park Zoo and Nielsen Park and it is assumed the lookout was named after him. Work on the stone wall continued into 1933 when:

About 50 men are engaged in continuing the outer wall at the Taronga Park Zoo, their wages being paid from the Unemployment Relief Fund.<sup>11</sup>

Works to erect new animal enclosures using relief funds were the subject of much criticism.

The allegation that £15,000 had been diverted from the unemployment relief fund and misused to provide permanent jobs for a favoured few at Taronga Park Zoo was made by the Minister for Labour and Industry (Mr. Dunningham) yesterday. The money, he said, had been used for the construction of elaborate monkey houses and mountains of concrete for a few billygoats at the Zoo. It seemed to him that the humbugging Lang catch cry of "Men before money" could properly and appropriately be varied to "monkeys before men."<sup>12</sup>

There was not the same anger at using relief labour to construct the perimeter walling or roadworks:

The Minister for Labour (Mr. Dunningham) yesterday declared open the new roadway circling around Nielsen's Lookout, at the top entrance of Taronga Park Zoo. The road has been constructed under the unemployment relief scheme by workmen residing in the Mosman electorate.

The new roadway was formerly thick scrub and it will prevent congestion at the Zoo entrance, and establish a one-way traffic system. It joins Whiting Beach-road, and thus enables motorists to leave the Zoo without being held up by traffic which has followed them into the parking area. Mr Dunningham congratulated Colonel A Spain, president of the Taronga Park Trust for availing himself of the offer to use local unemployed under the relief scheme, which was rejected by the Mosman Council. He said the Government would always assist the trust in its work Taronga Park was one of Australia's greatest national assets.<sup>13</sup>

Photos in Mosman Council library of the wall with the harbour beyond, dating from the 1930s and 1940s, were probably taken from Nielsen's Lookout. By December 1933 works around Nielsen's Lookout had been completed. A rock outcrop still exists in this area but is not generally accessible. The original extent of the perimeter walling can be seen on the 1934 plan and in the 1930s aerials, there were two main entrances with gates, upper and lower, and two gates in the eastern wall, one adjacent to the Refreshment Rooms and a second into the Picnic Area. The extent of works to create the carpark can be seen on the 1943 aerial (figure 2.13).

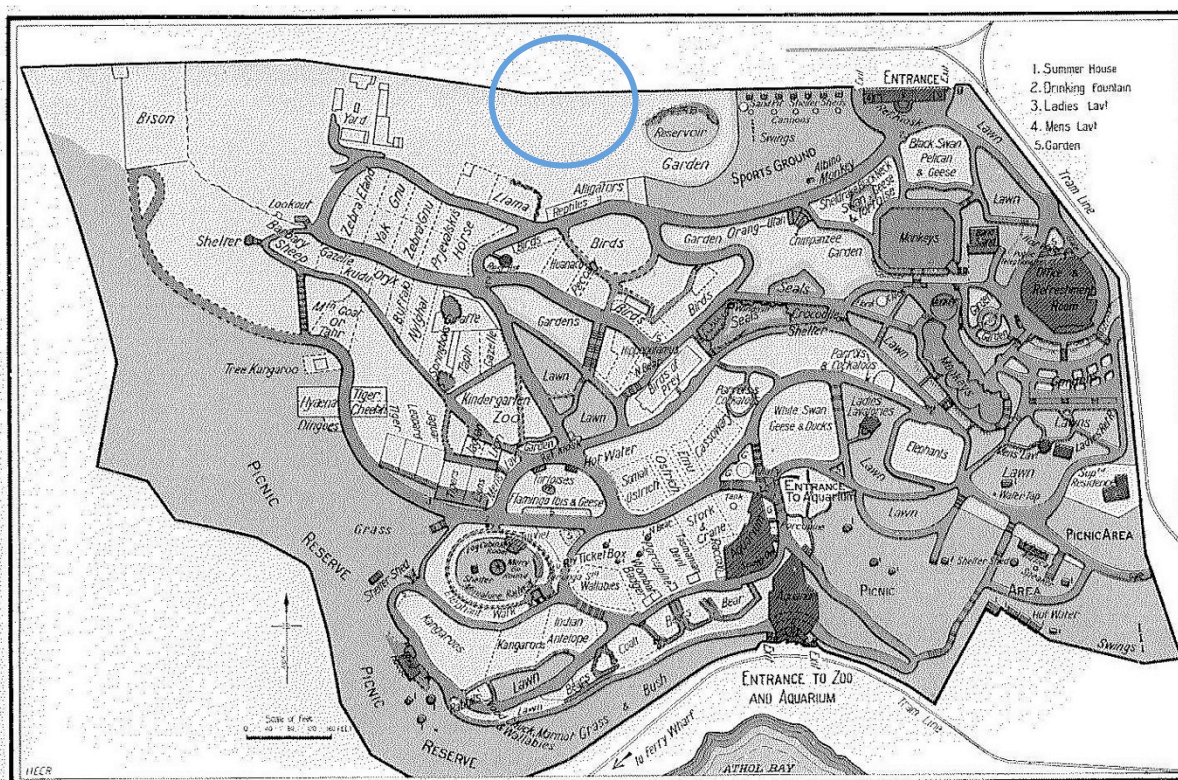
---

<sup>10</sup> SMH 15 September 1930

<sup>11</sup> SMH 10 Jan 1933

<sup>12</sup> Northern Star, 6 June 1932

<sup>13</sup> SMH 8 Dec 1933



PLAN OF TARONGA PARK, SHOWING LOCATION OF THE EXHIBITS.

**Figure 2.8** 1934 layout of the Zoological Gardens showing the extent of the perimeter, the location of the project is circled blue. Source: Taronga Zoo Archives

The presence of the wall is mentioned in the description of a tram crash in 1934:

A double tram was on its way from Balmoral to Athol and when opposite the stone wall to the Zoo collided head-on with a single tram car, which was conveying passengers from the ferry wharf.<sup>14</sup>

Similar sandstone perimeter walling was built to enclose Park Hill Reserve on North Head, much of which survives. Park Hill reserve was opened in 1933 and the wall separated the Quarantine Station from the Reserve. This work was also undertaken as an unemployment relief project generally using stone sourced on site or nearby. Sections of Park Hill Reserve were required for military purposes and the Commonwealth erected additional boundary walls to separate areas required for coastal defences.

In 1937 it was noted that the perimeter walling to the Zoological Gardens was complete.

The erection of a stone wall encircling the whole zoo was accomplished after a number of years, and is one of the most important works carried out by the Trust.<sup>15</sup>

The perimeter wall was extended after World War II, as additional land to the southeast, below the picnic area, was added to the Zoological Park. In January 1946 it was reported that 'the Trust is at present having built a stone boundary wall several hundred yards long'.<sup>16</sup>

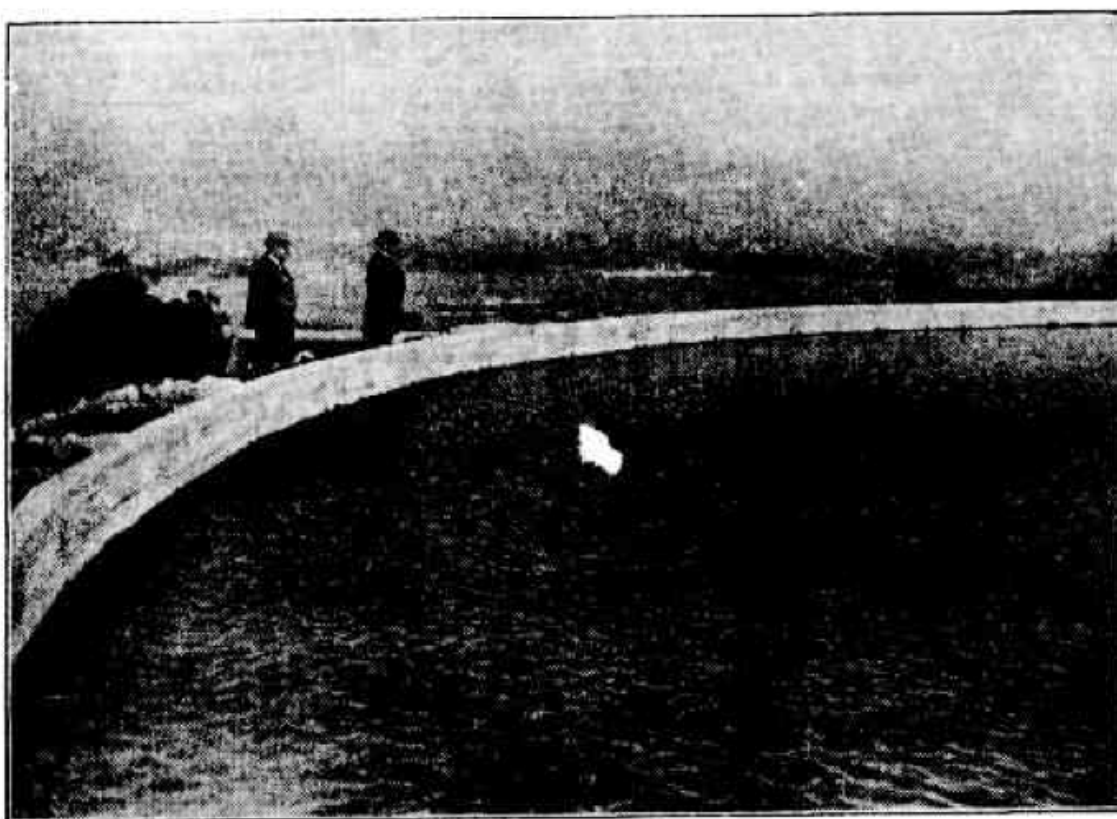
<sup>14</sup> SMH 16 April 1934

<sup>15</sup> Port Macquarie News, 3 July 1937

<sup>16</sup> Queensland Times, 2 Jan 1946



## NEW RESERVOIR AT TARONGA PARK ZOO.



For the purpose of increasing the water pressure, the Zoo authorities have completed this reservoir at Taronga Park. It has a depth of 30 feet.

**Figure 2.9** New Reservoir at Taronga Zoo. Source: SMH 18 July 1931

### The Reservoir

The quarry is shown on the 1929 plan of the Zoo as being a water reservation. The row of shelter sheds on the boundary next to the upper entrance is also shown. In 1930 it was reported that:

Taronga Park Trust is determined not be caught in the toiles of the present depression. According to the chairman, Colonel Spain, it is fighting bad times successfully with a vigorous policy of advancement. Its programme of improvements just now amounting to 5000 pounds. Works in hand include... a new water system for the aquarium; and a new reservoir at the top of the grounds to improve water supply of the area generally.<sup>17</sup>

The extent of works undertaken to convert the former quarry into a reservoir is unknown but the upper concrete wall shown in the photo above remains in part. In mid 1931 it was announced that:

For the purpose of increasing the water pressure, the Zoo authorities have completed this reservoir at Taronga Park. It has a depth of 30 feet.<sup>18</sup>

The early 1930s aerial shows a rockery created between the existing lawn and the reservoir. Such a feature may have been created as much as a barrier as for display. A series of exhibits had been installed to the south west of the reservoir including reptiles, alligators and the peccary. The existing water lily ponds to the east can be seen. On the opposite side of the wall, the cutting for the loop roadway which was completed in 1933 is evident in the photo.

<sup>17</sup> Evening News 23 September 1930

<sup>18</sup> SMH 18 July 1931



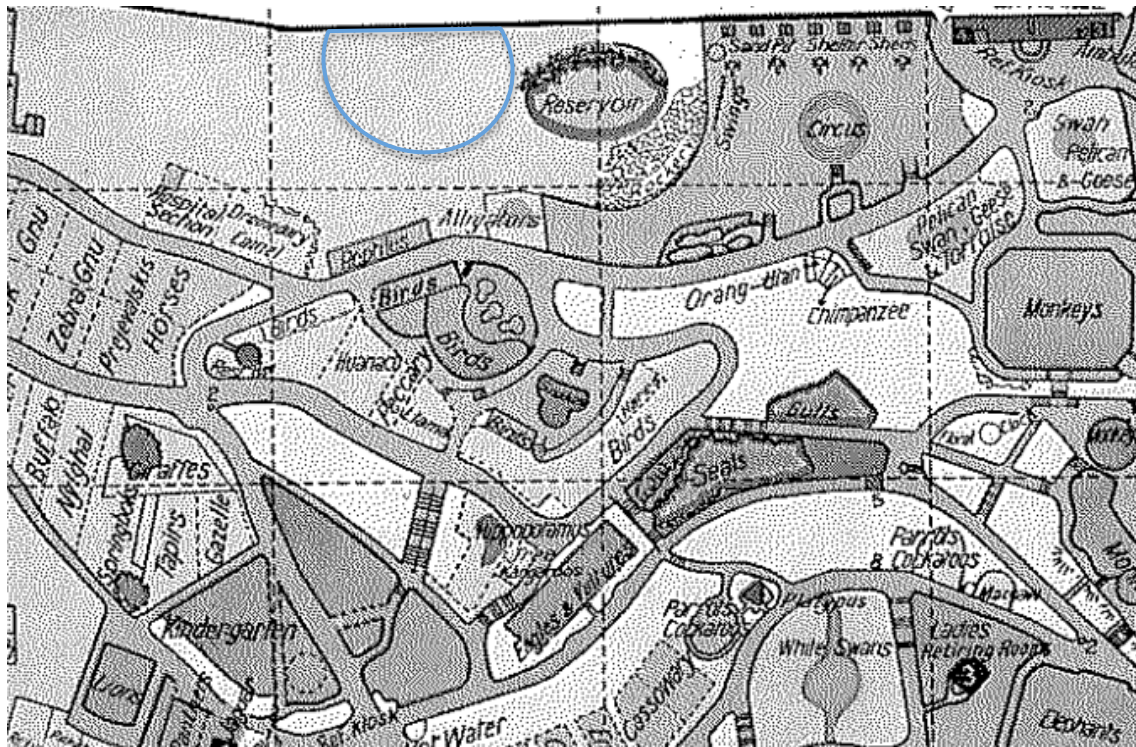
**Figure 2.10** This extract of a c1930 aerial photo shows the reservoir and the rockery below it. To the right is what may be the waterlily ponds and the alligator exhibit is a kidney shaped pool below the reservoir. The Zoo boundary wall runs diagonally across the photo. Source Rephotographed from c.1930 aerial, copy held by the GAO.



**Figure 2.11** Extract from a mid 1930s aerial of the Zoo viewed from the west. It shows the reservoir, the perimeter wall and the section of Ashton Park used as a source of materials to erect the perimeter walling. Source: NLA E .W. Searle Collection nla.obj-141915048/PIC P838/803a LOC Drawer Q43

The rockery is labelled as such on the 1939 plan and separated the picnic area or sports field near the entry from the reservoir. By 1939 the peccary had been relocated and the lawn extended as far as the Alligator's pond. This lawn can be seen in photographs from the 1950s.





### 2.1.3 Phase Three: The Hallstrom Era 1941-1967

During the period of Sir Edward Hallstrom's association with the Zoo, the refurbishment of many of the existing enclosures and the design of new animal enclosures continued to move away from the original design concept for the zoo, with the provision of functional enclosures with concrete floors and walls. This approach, while seen to be practicable, was not always sensitive, particularly by today's standards.







**Figure 2.14** View from the lookout in Ashton Park above the Zoo showing the former Staff Amenities building with its camouflage-painted roof – date unknown but after 1943. Source: Mosman Local Studies

By the mid 1950s a new building had been erected to the west of the reservoir, designed to blend into the surroundings. Although listed in the S170 register as dating from the 1930s or 40s, the building known as the former staff amenities block does not appear on plans until 1956 and is not on the 1943 aerial. Its purpose is not labelled so it was not built to house exhibits. A photograph at Mosman Local studies shows camouflage paint on roof, indicating that the building dated from the war (or utilised available materials). Other facilities at George's Heights and Bradleys Head were also painted with camouflage paint, including the Degaussing Station. The possibility that the building had a military function is not supported by research. There are no file references indicating that sections of the Zoo had been requisitioned though the Army had utilised part of Ashton Park.

Plans do not show clearly how this building was approached. Aerial photos (Fig. 2.18 and 1962 images) indicate an informal access road from the west, set in from the boundary wall. Initially there does not appear to have been any access from the path below. The alligator exhibit was below the building.



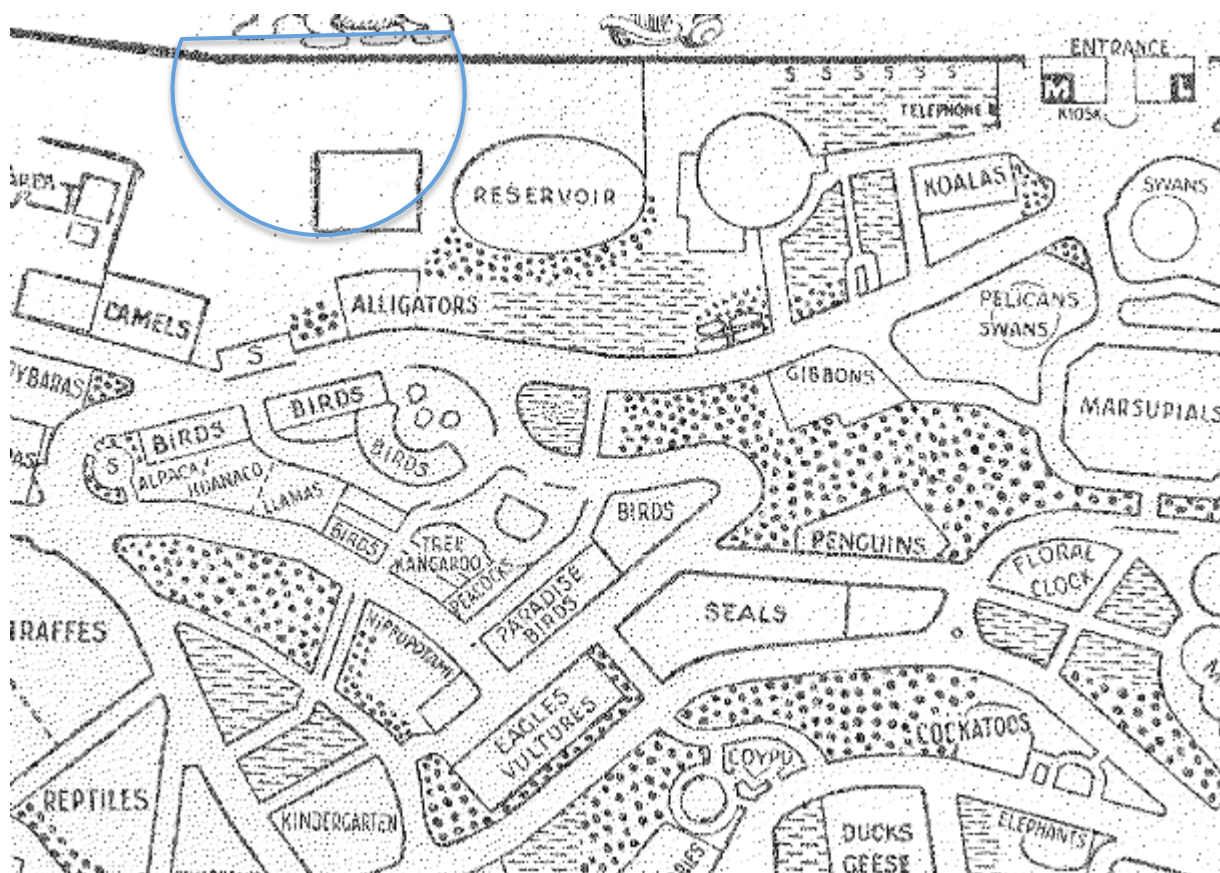
**Figure 2.15** View across the perimeter wall to the Harbour Bridge. Source: Mosman Local Studies, stitched together from five images. The centre image is that shown at Figure 2.14.





**Figure 2.16.** Source: One of the series of views of “Mosman tip” held in the Mosman Local Studies collection. It is clearly the Zoo wall but it is not clear where the tip was.

A photograph held by Mosman Council labelled Mosman tip also shows buildings within the zoological gardens just adjacent to the perimeter wall. The use as a tip was short-lived and appears to be outside the stone wall. 1962 aerial images show an extensive filled area that is the current staff carpark and this is likely to have been “the tip”.



**Figure 2.17** Extract from the 1950s diagrammatic plan from a visitor guide showing the area in the vicinity of the reservoir. The former Staff Amenities building is shown in outline to the left of the reservoir. The dots indicate gardens and the dashes grass / lawn. The area of the proposal is circled blue. Source: Taronga Zoo Archives





**Figure 2.18** Extract from the c1950 aerial image. The Staff Amenities building is shown with informal road access from the west. The stone boundary wall is intact and there is a roadway between the wall and the elevated bush remnant. Source: Framed print held at CWI, Taronga Zoo.



**Figure 2.19** Extract from a 1960 aerial image. It shows the Reservoir and the Staff Amenities building adjacent. There is dense vegetation between the amenities and the main path below but the parapet of the building can be seen clearly indicating that the tree tops are lower than today. Source: Taronga Zoo Archives



#### 2.1.4 Phase Four: Restructure 1968-1986

Following the retirement of Hallstrom as Director of the Zoo in 1968 and the recommendations of a number of reports on the conditions of animal enclosures, many of the Zoo's aging displays were replaced and a new emphasis was placed on the zoological and educational role of the place.

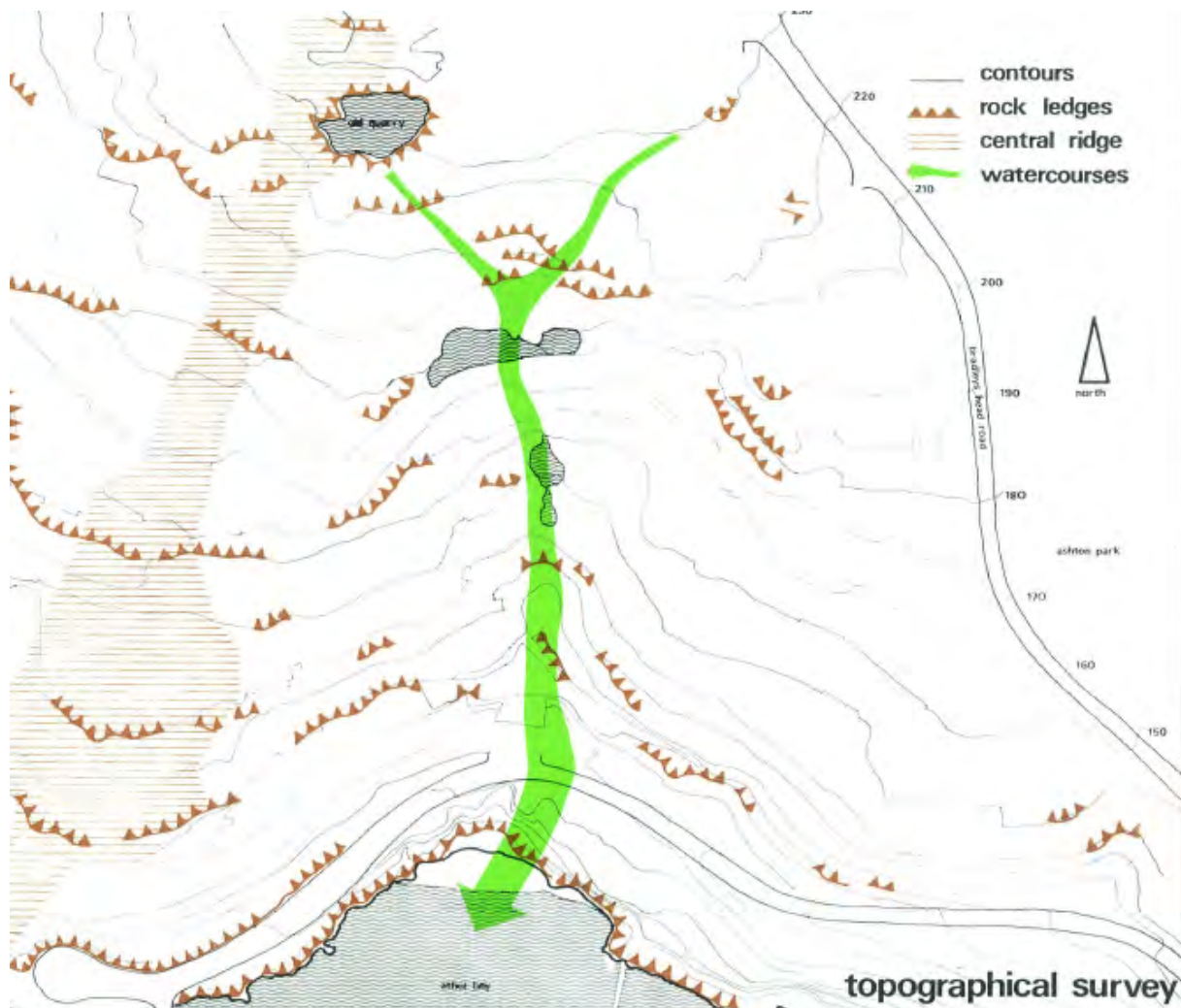


**Figure 2.20** Extract from the 1962 aerial photograph by Douglas Baglin showing the staff amenities building, reservoir, perimeter wall, carpark, loop road and the remnants of the lookout. Source: Taronga Zoo Archives

In 1970-71 a new Masterplan for the zoo was prepared by the Public Works Department, which sought to retain what remained of the natural topography and vegetation. New buildings were to be designed in the so called 'Sydney School' manner, which utilised a palette of natural materials and integrated the building into the landscape. This design approach is now termed Late Twentieth Century Sydney Regional. A new entrance was proposed at the centre of the north boundary - to the west of the reservoir. The analysis of the landform shows that the former quarry had been linked into the existing watercourses, and formed part of a series of water exhibits. Native scrub and forest is identified adjacent to the reservoir, with an unnatural straight edge to the north the result of the perimeter wall.

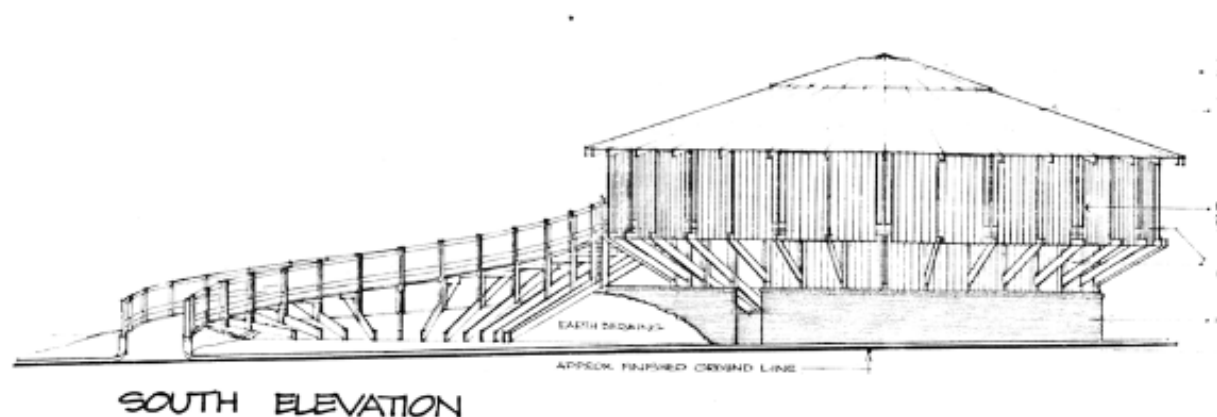


**Figure 2.21** 1970 masterplan, vegetation survey, Taronga Zoo Source: Architecture Australia December 1970



**Figure 2.22** 1970 Masterplan topographical survey, Taronga Zoo showing the series of ponds, the upper two of which are former quarries. Source: Architecture Australia December 1970

A new Koala exhibit was opened in the early 1970s replacing the old Alligator pond. This structure was designed by the Government Architect's Office in 1970 and was intended 'to provide structure that enables a visitor to look up at a Koala in a tree and also to be able to view a Koala at eye level'.<sup>19</sup> The exhibit took the form of a spiralling ramp and was under construction by Zoo staff in late 1970. A late 1960s proposal map shows the then proposed Koala exhibit at the same level on the site, but located further to the east. It was one of the last "Sydney School" structures to be built.



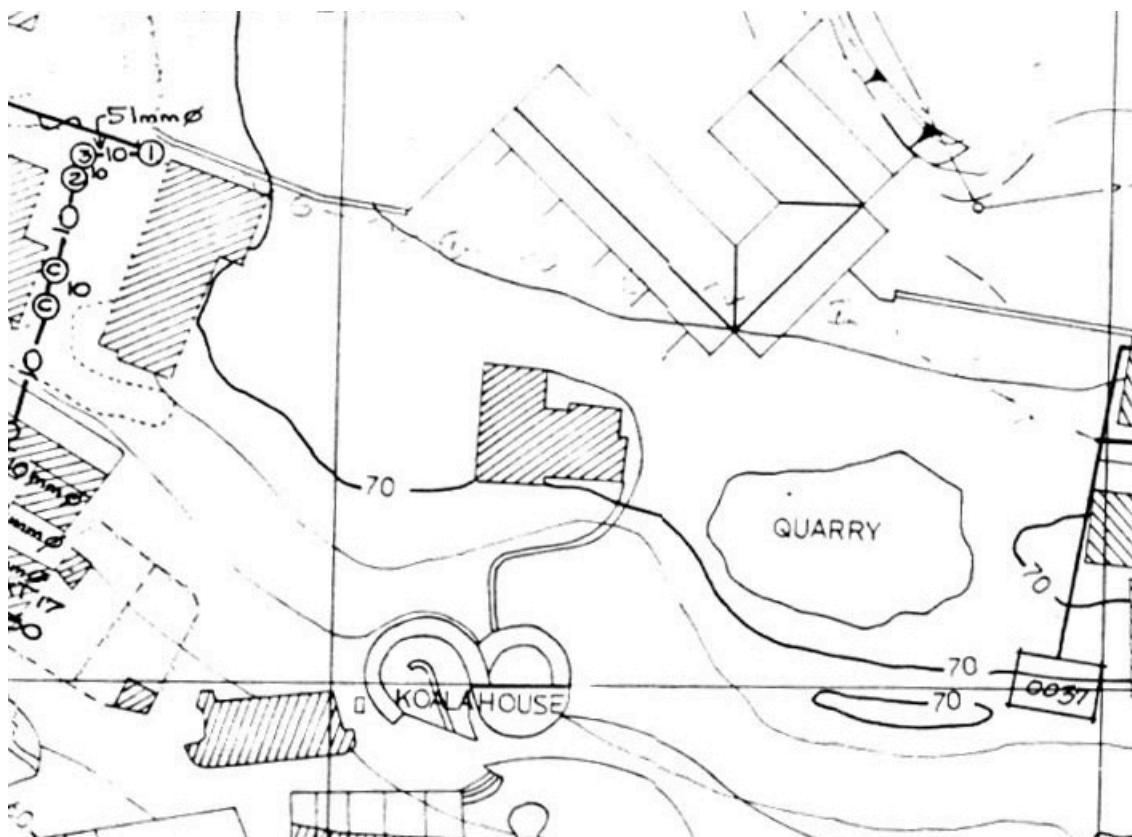
**Figure 2.23** Drawing of the proposed Koala house. Source: PWD Plan Room - Misc 198/135

<sup>19</sup> Koala House, Architecture in Australia, December 1970





**Figure 2.24** The newly constructed ramp to the Koala house. Note the tree top left which may be an *Angophora Costata* and the old *E. Botryoides* (172L) removed in 2009. Source: ML GPO2 still 39053

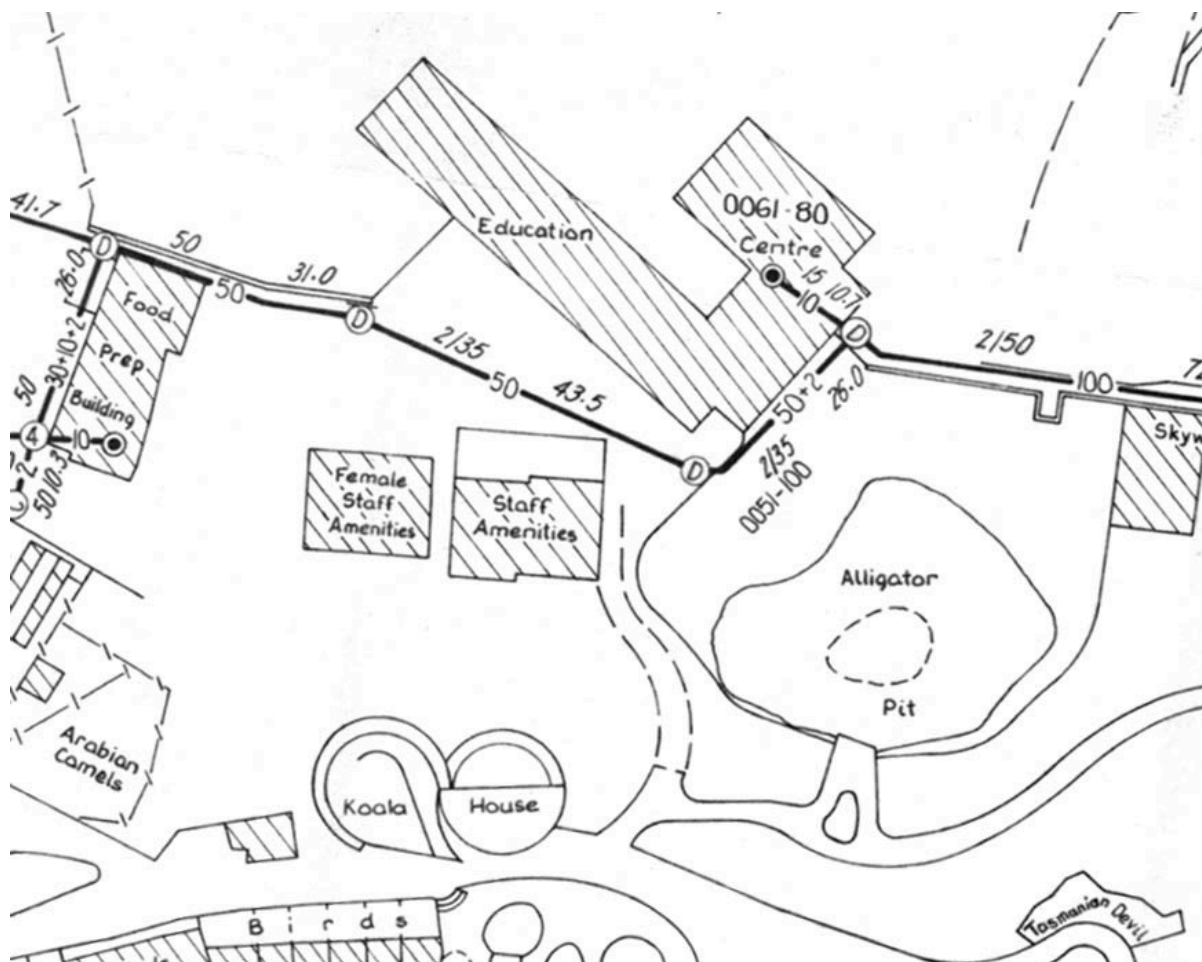


**Figure 2.25** This extract from the 1975 survey shows the Koala House and its ramp. The reservoir is shown as a quarry so was probably not the Alligator exhibit at this time. The staff amenities block is shown and a path between it and the Koala House. This path predated the Koala House. The site of the Education Centre is shown but as the roof is not hatched it may not have been built when the survey was done. Source: GAO

From the mid-1970s to the mid-1980s Taronga repositioned itself as an authority in animal management and developed its educational role. The Education Centre was built in 1975 and included Classrooms, an Administration wing and toilet facilities. It was initially single storey and its location and orientation required demolition of a section of the early stone boundary wall and this removal is shown on the construction drawings for the building. It was a “Sydney school” design in facebrick and timber with a pitched tiled roof.

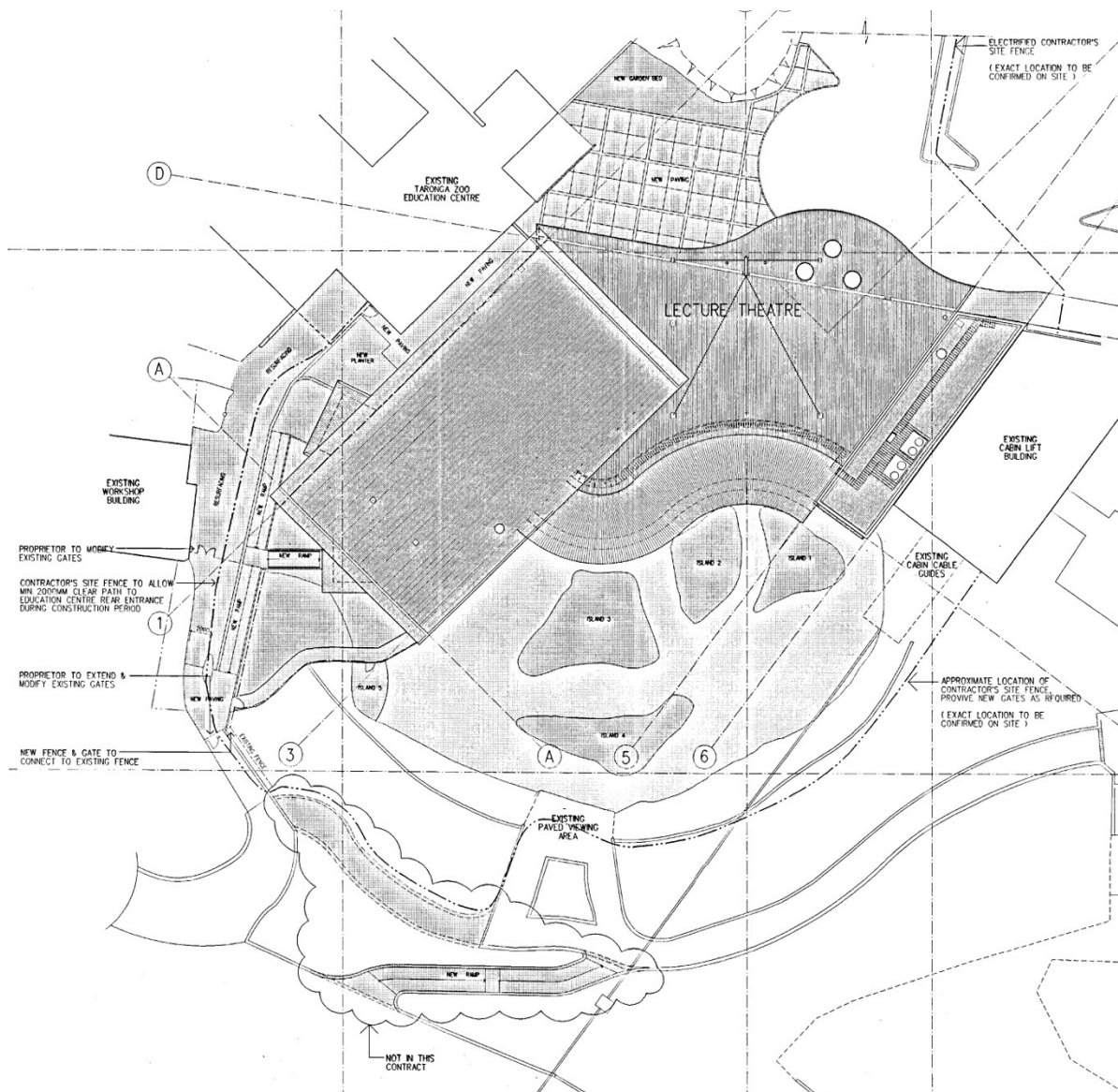
In 1982 a female amenities building was constructed to the west of the former Staff Amenities Building. By 1986 a wide bitumen path was also formed from the Education Centre, via the east side of the Staff Amenities building to the main path below – this is the path that remains today. At this time the Alligator Pit is shown in the former quarry / reservoir with a new low level viewing area in the concrete reservoir wall and a path parallel linking it to the entry area to the east and the vicinity of the Koala House in the west. At this time there was no vehicular roadway linking the upper level with the back of house facilities to the west. This road was built by 1995 along with a staff access gate in the present location.

By 1998 surveys show the classroom wing of the Education Centre with a longer footprint, possibly indicating the construction of the first floor of this now two storey wing. The last major structure to be built in this area was the Theatre, designed in 1996 and built in 1997. It altered part of the Alligator Pit (former reservoir and quarry) forming a S shaped curved wall and overlooking the exhibit. Part of the reservoir wall at the west end was also removed and substantial excavation carried out for the lower levels of the theatre. A substantial retaining wall was built to the east side of the access path from the Education Centre to the Zoo below.



**Figure 2.26** This extract from the 1988 survey shows Education Centre with a bigger footprint, the female staff amenities, the path to the east of the Staff Amenities and the Alligator Pit with its viewing window and path. Part of the skyway top station is also shown at the top right. Source: GAO





**Figure 2.27** This 1996 construction drawing shows the Theatre in relation to the Education Centre (top left) and the Staff Amenities (left but labelled Existing Workshop building) and to the Alligator Pit with the new S shaped curved edge. Also shown at the bottom is the then proposed altered access, which did not proceed as shown in this drawing but is similar to the current arrangement. Source: GAO

### 2.1.5 Phase Five: Planning for the New Millennium 1987-Present

The major goals during this period have been to develop all exhibits and visitor facilities to international standards, ensuring high standards in animal management. Major capital works have been undertaken throughout the zoo during this period however there was little change at the site of the proposal. Uses of some buildings have changed with the former Staff Amenities now used as offices including to house the Zoo archives and records. The space between the two amenities structures was infilled and a coolroom added to the southwest corner. The security portal was built and the temporary timber two storey building that houses the Capital Works Unit. There is also a range of adhoc structures for off display animals.

The Section 170 register was prepared in April 1998 preparatory to revised master planning and to meet statutory obligations. In recent years a considerable amount of research material has been made available online showing in more detail the earlier configurations of many of the exhibits and this is summarised with reference to the proposal in the Statement of Heritage Impact.

## 2.3 Physical Description

The area adjacent the site includes some remnant natural vegetation areas and rock shelves predating the opening of Taronga Zoo as a zoological park. The area is typified by the exploitation of the site's topography and the quarry (later used as a reservoir); a number of early built elements; modern structures; and the site's relationship to the harbour. The cultural landscape is discussed below.

### Existing Cultural Landscape Values

Cultural landscapes are those places that have been significantly modified by human activity and are highly valued by the community for their associations with the place. The cultural landscape of Taronga Zoo as a whole is significant and valued but the site of the proposal makes a limited contribution to the overall value.

As stated in the Conservation Strategy:

*The cultural landscape of Taronga Zoo reflects the evolution of particular cultural values, norms and attitudes towards both landscape design and the display of animals.*

The function of the education and research centre contributes to promulgating the aims of the Zoo but the buildings and spaces themselves do not make a significant contribution. The remnant boundary wall on the site, and, in the vicinity, the remnant natural vegetation, the Koala House and part of the original pathway are aspects of the site and its surrounds that contribute to the cultural landscape.

### 2.3.1 The Natural Landforms

When viewed from the Harbour, within the foreshore setting of Athol Bay and Little Sirius Cove, the cultural landscape of the Zoo provides the impression of a 'natural' setting that links it to similar adjacent landscapes along the harbour, which are now part of the Sydney Harbour National Park.

The subject site is located on the south facing central ridge of the zoo site and is at the top of the site. It was a back of house area until the recent developments. The natural landform of the site determined much of the layout of the circulation throughout the Zoo as a whole, with the path system running east-west along the natural sandstone terraces with staircases or steep paths connecting the different levels as in the subject site. The subject site is above the highest of the public pathways and is separated from it by the Koala House and a rock shelf above the Koala House.

Above the site is an elevated rock outcrop. It was once more extensive and well known as a lookout – Nielsen's Lookout. It was subsequently quarried for stone and to make roadways and carparking areas and the outer western edge of the carpark was filled. The remaining outcrop is the only remaining section resembling the natural landform.

The former quarry was carved out of sandstone outcrops and an earth wall built below to turn it into a reservoir - is not a natural feature. See later sections for descriptions of the vegetation.

### 2.3.2 Views

Views within the Zoo constitute an important part of the visitors' perceptual experience of the place and create vistas across the site providing orientation for visitors. There are iconic views of the city including the Opera House and the Harbour Bridge. The land falls away to the southwest enabling the city to be viewed over trees, structures and enclosures lower down the hill. Significant views are identified in the Conservation Management Strategy and the Landscape Management Plan. These views contribute to the heritage significance of Taronga Zoo. Views are included on the s170 Heritage Register and these are in following sections but the s170 numbers vary from those used in the studies mentioned below.

The CMP identifies no views at the site in the CMS. The LMP identified views shown on the plans following. Views 34 & 35 (534V & 535V in the s170 register) are identified as glimpses of the city skyline, Opera House and Harbour Bridge and rated as moderate significance. The LMP identifies two internal views (63 & 64) (563V & 564V in the s170 register) in the vicinity of the site. These are from the pathway to the Koala House and are outside the site and are not affected. They are rated as of Moderate to High significance. View 82 (582V) is identified as a lost view and was from the top of the rocky outcrop above the site.





General Views  
Framed Views  
Glimpses  
Filtered Views

**Figure 2.28** Extract of the map in the Landscape Management Plan showing significant views in the vicinity of the site. Views 34 and 35 are glimpses of the Harbour bridge and city from the access road. This is outside the site and is not affected. Source: Design 5 & Others.



**Figure 2.29** Extract of the map in the Landscape Management Plan showing internal views in the vicinity of the site. These are from the pathway toward the Koala House. They are outside the site and are not affected. Source: Design 5 & Others.



**Figure 2.30** Extract of the map in the Landscape Management Plan showing lost views in the vicinity of the site. View 82 was from the top of the rocky outcrop above the site. It is now blocked by the Education Centre. Source: Design 5 & Others.

### 2.3.3 Buildings

#### Former Staff Amenities Block (78B)

The Former Staff Amenities Block (78B) (now retail offices and archives) it is a later example and part of a series of buildings and exhibits on the site finished in “mock rock” to blend with the landscape. In this case the mock rock render is low relief and is only on the south face and sides, presumably intended to make it recessive when viewed from the public pathway below. It was never a prominent building or public exhibit and is a utilitarian structure rather than a design of high technical or aesthetic value. Design drawings have not been located. Early photos indicate it was built after 1943 but before 1950 and was initially painted in camouflage colours.

It is a single storey brick building with a skillion roof sloping to the north and now roofed in modern corrugated pre-finished metal sheeting. There is a parapet on the south and side walls hiding the roof from public areas. The double-hung timber windows are set within brick-edged window surrounds. Each window has horizontal glazing bars dividing each sash into two. There are modern crude security screens on the windows. The windows in the projecting bay of the south wall have a window hood over.

The floors are timber and there is a subfloor space, with access to the subfloor from doors on the south side. Ground levels have been raised around the building on the north and east partly blocking subfloor vents. Internally, the building has undergone some renovations. Some of the original features such as the high plaster dados remain intact. The wet areas, toilets and showers, have concrete floors.

The building structure is substantial and is generally sound and watertight. Parts of the render, rusted ferrous metal embedments (such as arch bars) and the window hood are in poor condition. The building is damp and musty due to blocked sub-floor ventilation and inadequate or blocked stormwater drains.

The building is currently used as offices and to house the records. The wet areas are no longer used and are blocked off. The Zoo does not consider the building is suitable for continuing use. In particular it is unsuitable for records storage.



**Figure 2.31** View of former staff amenities building from Koala House with remnant vegetation. Source: Jean Rice



**Figure 2.32** View of former staff amenities building in 2015. Source: Jean Rice



**Figure 2.33** General view of former staff amenities building in 2015. The brick retaining wall and railing is above the lower level entrance to the theatre. Source: Jean Rice

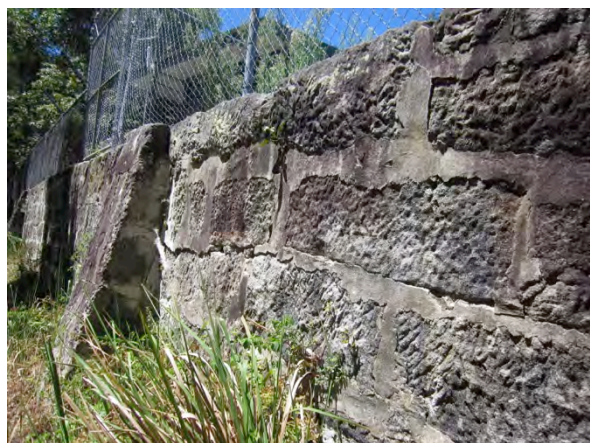


### 2.3.4 Other Built Elements

The early built elements of the Zoo were designed to enhance the visitor's experience as well as to enclose and define the site.

#### Stone Boundary Wall (07L)

The stone boundary wall (07L) was built in stages from 1929 to 1934 and added to on the east side in 1946 and possibly other years. It was built from stone quarried on site. Sections of the wall on the original northern boundary have been removed for the construction of the current Education Centre and the security portal. A remnant, reduced in height and extent, remains in the site and the proposal has been designed to retain it insitu. Stonework from the previously demolished section is used in garden beds and road edging in the area and this is proposed to be retained and reused in the area. The wall is generally two skins of stone with rubble and mortar fill with regular through stones. The faces are finished roughly with pick marks evident. Angled piers are at intervals along the exterior side. There is cement pointing, possibly added in many areas. Stone is deteriorating near the cement mortar which is also failing. The remnant in the site is in part about 1.5m tall and part reduced to garden bed height. Ground levels are raised in the area adjacent the wall remnant.



**Figure 2.34** View of typical section of stone boundary wall. Source: Jean Rice



**Figure 2.35** View of remnant section of stone wall within site. Source: Kristine Marshall



**Figure 2.36** View of remnant section of stone wall from the south showing it in relation to the two storey Capital Works office building. Source: Kristine Marshall



**Figure 2.37** North view of remnant section of stone wall from verandah of the two storey Capital Works office building Source: Kristine Marshall

### 2.3.5 Animal Enclosures and Aviaries

There are no heritage listed animal enclosures or aviaries on the site of the proposed development. Some modern enclosures are in the courtyard area of the Education Centre and some off exhibit enclosures on the south side of the existing Education Centre. These are not heritage significant and will be replaced with improved enclosures in the new development.

#### Enclosures in the Vicinity

Generally there is little heritage impact on the following heritage enclosures in the vicinity of the site.

#### 120B – Alligator Enclosure

The Alligator exhibit is listed in the Landscape Management Plan as part of a network of water features in the Eastern gully. The water feature is located in a former quarry - dating from the early years of the Zoo. A reservoir was created on the site by c1930. The feature was essentially a water body in the old quarry until at least 1962 when it is shown in aerial photos with a formalised rockery treatment to the reservoir wall. It was originally much deeper than it is today – the level has been reduced to create the current low level viewing area. It is believed to have become the Alligator enclosure some time before 1986 when the low level viewing area is first shown on site plans. There is a rock outcrop in the SW corner of the Alligator Enclosure that appears to be a natural rock outcrop. A section of the reservoir wall is over it and remnants of the rockery. This was partly removed to construct the theatre that the current proposal alters. The winding path leading to the Alligator Enclosure, the viewing area under a log roof and the mock rock along the path to the viewing area are modern structures dating from 1997. The proposed disabled access ramp and stairs does not affect the significant features of the former quarry and reservoir wall.

#### 77B – Koala House

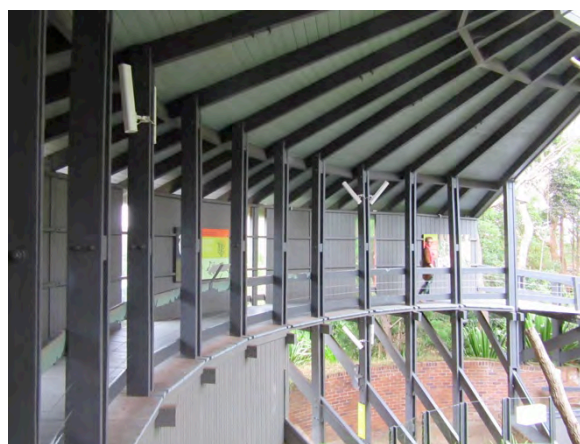
The Koala House was built in 1970 and is highly regarded as a work of architecture. This structure was designed by the Government Architect's Office and was intended 'to provide structure that enables a visitor to look up at a Koala in a tree and also to be able to view a Koala at eye level'. The exhibit took the form of a spiralling ramp. The structure is a figure "8" in plan with the ramp going up one level to view into the tree branches and the ramp then continuing down to return to ground level. Half of the upper viewing area is roofed. The base is a curved dry pressed facebrick wall with soldier course at the top. The columns are double hardwood sections with a diagonal bracing member between supporting the upper level floor joists. The roof is timber boarded and shingled.

The exhibit primary viewing area is designed to look north incorporating the natural rockface and so the remnant bushland and landscaped area forms a backdrop to the koalas which are in essentially bare tree trunks in the exhibit. A small section of ramp links the path above to the keepers area of the exhibit. This was probably added to facilitate access for keepers bringing fresh feed and may have been built when the coolroom adjacent the amenities was added.

The current institute proposal was redesigned and the entry location changed to the existing road/path to avoid impact on the Koala House.



**Figure 2.38** View of Koala House looking up the exhibit exit ramp. Source: Jean Rice



**Figure 2.39** View of interior of Koala House. It was originally unpainted. Source: Jean Rice



### 2.3.6 Botanic Estate

Of particular importance to the cultural landscape of the Zoo is the botanic estate of ornamental, native and functional vegetation, which establishes the 'natural' visual appearance of the place. Planted and remnant Australian species were used initially, particularly flowering species, side by side with ornamental floral plantings in rockeries. There was no early ornamental planting in this area as it was not a public area. From the late 1960s onwards there was a general emphasis on the revegetation of the entire Zoo site with Australian native plants.

No significant landscape items are identified within the site.

### Landscape Items in the Vicinity

Generally there is little or no heritage impact on landscape heritage items in the vicinity of the site. The LMP identifies significant remnant indigenous vegetation in the vicinity of the site.

### Angophora Costata Association

The Landscape Management Plan in 2006 described the Angophora Costata Association as follows:

This is a shrubby sclerophyll woodland. Two small representatives, or variations, of this ridgetop vegetation type occur at Taronga. One is on the western edge of the top entrance carpark, the other in the Koala Walkabout exhibit. Neither sample currently contains specimens of *Angophora costata*, the nominate dominant species, but the associate dominant species, subordinate species present, and the ridgetop Sydney sandstone ecology of the sites are indicative of this association. Three trees of *Eucalyptus piperita* and one of *Corymbia gummifera* in the top carpark are probably remnant on site, of this Association.

The top carpark site is currently dominated by *Kunzea ambigua*, a species indigenous in this Association, which becomes prominent in disturbed sites (fig 4.55). Small individuals of the medium tree *Corymbia gummifera* and the small tree *Acacia implexa* are also present in the dominant layer. Medium shrubs include *Acacia suaveolens*, *A. longifolia*, *Allocasuarina distyla*, *Notelaea longifolia*, *Cassinia quinquefaria*, *Breynia oblongifolia*, *Monotoca elliptica*, and *Corymbia hispida*; small shrubs *Crowea exalata* and *Epacris longiflora*; and herbs *Dianella caerulea*, *Lomandra longifolia*, *Microlaena stipoides*, *Eragrostis brownii*, *Entolasia marginata*, and *Poa affinis*.

The Koala Walkabout example is smaller again, relatively depauperate, and more weed infested (fig 4.35). It is dominated by *Eucalyptus botryoides*, introduced *Eucalyptus robusta* and downslope/gully-indigenous species, *Pittosporum undulatum*, *Polyscias elegans*, *Glochidion ferdinandi*, and *Omalanthus nutans*. Subordinates include *Crowea exalata*, *Epacris longiflora* and *Lomandra longifolia*, all indigenous on-site.

### 240L – Remnant Indigenous Vegetation and 123L – Australian Section Landscape

The area in the vicinity, between the former staff amenities building and the Koala House, is identified as important remnant indigenous vegetation (240L) (*Angophora Costata* Association), which is of high significance and is to be conserved. This natural feature is to the west of but overlaps and was partly incorporated into an area of Australian Section landscape (123L) in 1970 when the Koala House was built. The species planted were Australian but not necessarily local nor typical of the *Angophora Costata* Association. The additional endemic plantings in the area, including within the spiral ramp, are now mature. There are rock shelves and informal manmade rocks walls within the area. There is an informal bitumen keepers access path across this area leading from adjacent the coolroom to the Koala House.

### 105L – Remnant Indigenous Vegetation

Another area of remnant indigenous vegetation (105L) also survives on an elevated sandstone outcrop north of the site. The outcrop has been reduced in extent by quarrying and most recently the development of the three storey carpark to the north.

Note that there appears to be an *Angophora Costata* and also there is a *E. Botryoides* in the c1970 photo of the Koala House – possibly removed with the construction of the theatre and entrance to it. In 2015 one small *Angophora Costata* survives at the west of the remnant vegetation area. The *E. Botryoides* was immediately east of the Koala House and was on the heritage register, items 172L. It was removed in 2009 because of poor health.

The LMP recommended these areas be retained and conserved. For 105L continuing the current assisted regeneration program is the recommended action. For 240L the recommended action is to:

Remove invasive, overshadowing species to improve sun access. Ensure water runoff is controlled in this area to avoid additional input of nutrients. Enrich understorey plantings with species typical of this Alliance preferably using local provenance material.

The LMP has detailed recommendations for regeneration of these areas. There is also an intact original rock shelf and overhang running east west north of the Koala House which has landscape and possible Aboriginal heritage values.



**Figure 2.40** Area 240L above and west of the Koala House showing rock shelves and one small *Angophora costata* (arrowed). Source: Jean Rice



**Figure 2.41** This rockface adjacent the Koala House has plantings of orchids, ferns and a pittosporum (top right). Source: Jean Rice



**Figure 2.42** View of the rockshelf from the Koala House exit ramp. Source: Jean Rice



**Figure 2.43** View of the rockface adjacent the Koala House. The keepers access ramp top right is fixed to the top of the rock shelf. Source: Jean Rice

### 2.3.7 Movable Heritage

The heritage listed ZPB archives and records (15M) are in the building 78B which is proposed to be demolished. The archives are a movable item on the s170 register and described as an *“invaluable documentary resource of the Zoo’s historical evolution”* and assessed as having *“exceptional significance”*. Recommendations are to *“continue to catalogue items and materials stored at the office, with a view to compiling a Heritage Register of Movable Items”* and to *“formulate appropriate management policy for the care of these items”*. The archival materials include manuscripts, minutes, correspondences, reports, publications, plans, photographs, artefacts, and moveable items such as signage, roll of honour plaque, etc. Some items are stored elsewhere in the Zoo in the “Heritage Container” (a shipping container).

Building 78B is not suitable for storing the collection as it is damp and there is no environmental control. It is proposed that the archives and records will be rehoused appropriately. This rehousing including the new storage location, curation and storage details is being managed by the Records Manager / Archivist.



### 3.0 Heritage Significance

As stated in the Conservation Strategy, Taronga Zoo is a significant place for the state of New South Wales. The primary significance of Taronga lies in its unique and powerful cultural landscape; the place's ability to evidence the evolution of zoological approaches throughout the twentieth century at Taronga Zoo and in an international context; its continuity of use as a zoo of world-standing; its historic associations with earlier zoos in Australia and Carl Hagenbeck's zoo in Germany; and the iconic sense of place it has for the people of NSW and Sydney in particular.

The significance of Taronga Zoo as a whole is articulated in the Conservation Strategy as follows:

*Taronga Zoo is a place of national significance as an urban zoo with unique physical and associative attributes, including links with early modern zoo philosophy, a unique and powerful cultural landscape and a wide range of landscape elements, architectural styles and enclosure designs evidencing the development of zoos in Australia.*

*Features that contribute to Taronga's cultural landscape include the steeply sloping topography of the site; its location on the northern foreshore of Sydney harbour; the exploitation of the natural stone landforms and complimentary faux rock formations; the circulation layout and associated staircase and seating; the exotic and grand built elements used for public buildings and animal enclosures; the native and introduced vegetation on the site, the internal visual corridors within the site and expansive views from the site across Sydney Harbour to the city skyline.*

*The original fabric at Taronga demonstrates the earliest example in Australia of Carl Hagenbeck's and early twentieth-century European zoological philosophies. In the differing design and approaches to the animal enclosures and aviaries, Taronga also evidences key aspects of international zoological philosophy that have influenced the Zoo's development throughout the twentieth century.*

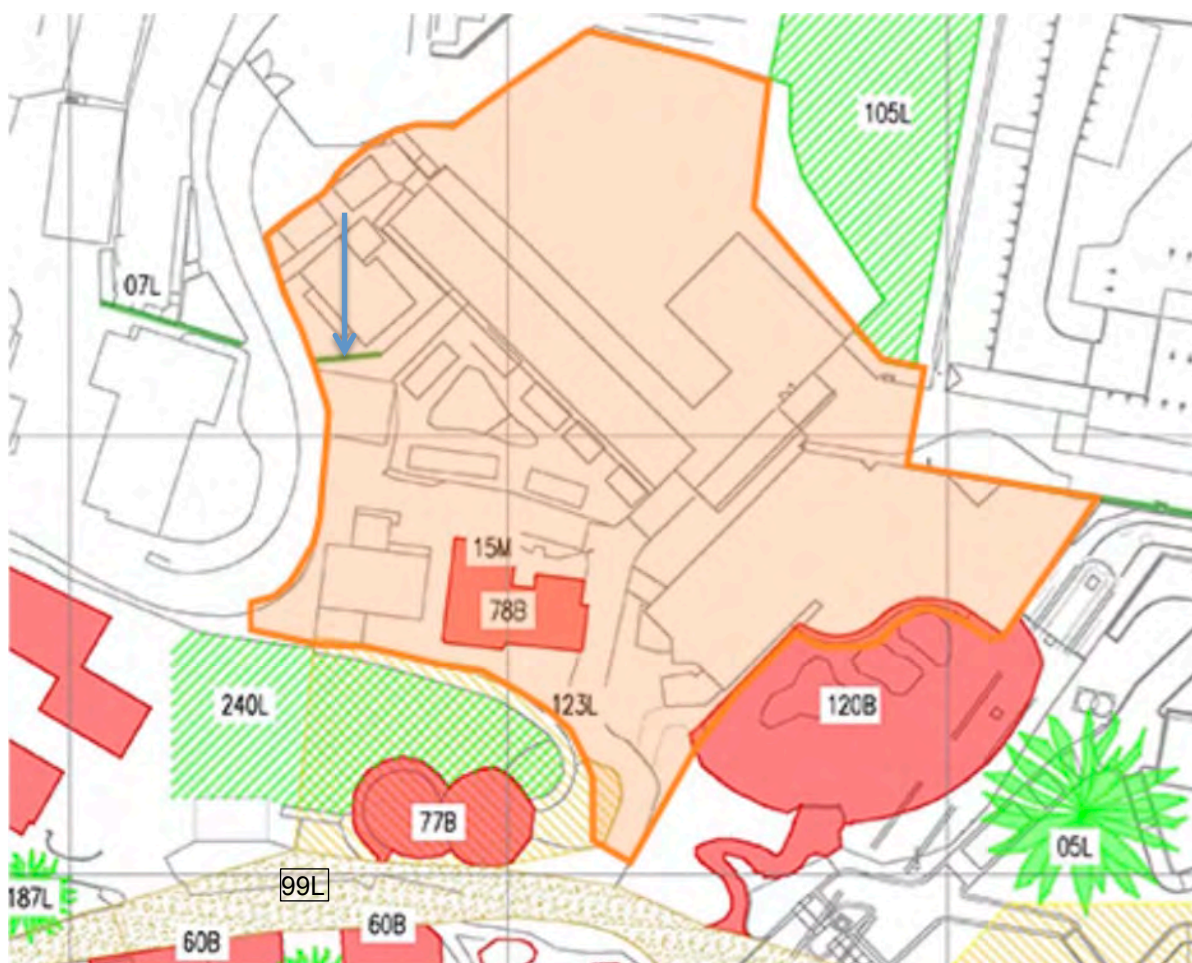
*As an educational, entertainment and recreational facility, Taronga is a highly-revered institution within Sydney's social fabric, evoking memories across generations of visitors.*

*The Zoo is also an important keystone in distinguishing Sydney's sense of place. For the zoological community, Taronga is internationally recognised as a leading centre of biodiversity conservation and for the Zoo's educational focus.*

*Taronga's archaeological resource has some potential to provide information about the Aboriginal community, the early use of the site as a quarantine station and the development of the zoo. In combination, the extensive archive collection, built structures, landscape features and archaeological features at Taronga have great potential for research and community education.*

### 3.1 Individual Elements of Significance in or in the vicinity of the Site

In addition to the overall values of the place, there are specific values attached to individual elements which are recognised in the Section 170 Heritage and Conservation register. The elements of significance within and in the vicinity of the aviaries are shown on the map below and listed in the table.



**Figure 3.1** Heritage Items in the vicinity of the proposal (site shown in orange). Note this plan is diagrammatic and does not accurately show individual structures. The wall (07L) alignment within the site is incorrect (arrowed blue). It is correctly shown on the drawings for the proposal. Source: Extract from s170 heritage register map.

Item #	Items in the Site	Map ref.
07L	Sections of sandstone perimeter wall on former boundary	All
15M	ZPB Archives & Records, part in building 78B, part in Heritage Container	F3
78B	Former Staff Amenity Block (now retail offices and archives)	F3

Item #	Items in the Vicinity	Map ref.
77B	Koala House	F3
99L	Early Pathway Alignment, dating from pre-1940	All
105L	Remnant indigenous vegetation, association	G2
120B	Alligator Enclosure	G3
123L	Australian Section Landscape	F3
240L	Remnant indigenous vegetation, Angophora Costata association	F3



### 3.2 Historical Archaeological Values


The survival of archaeological remains at Taronga Zoo is difficult to predict because of the several construction phases and reworking and redevelopment of areas. The Taronga Zoo Archaeological Management Plan, November 2002, examines in detail the nature and likelihood of archaeological features.

The Archaeological Management Plan identifies the site as an area where there is no potential for subsurface historical archaeological evidence to remain. The AMP does not identify in this precinct any potential Historical Archaeological features or Aboriginal Archaeological features

The Archaeological Management Zones within the area include

Zone B Areas of original zoo path layout (below the site to the south)

Zone D Areas where there is no potential for subsurface archaeological evidence to remain

 <div data-bbox="965 638 1364 1019"> <p><b>Historical Archaeological Management Zones</b></p> <p><b>Zone A</b></p> <p>Unassessed area outside Zoo boundary wall</p> <p><b>Zone B</b></p> <p>Areas of extant original Zoo path layout</p> <p><b>Zone C</b></p> <p>Areas where subsurface evidence of previous European activity has potential to remain</p> <p><b>Zone D</b></p> <p>Areas where there is no potential for subsurface archaeological evidence to remain</p> </div> <p>The project site is outlined in orange but the base map from the AMP is not accurate and some details do not align.</p>	
<p><b>Historical Archaeological Features</b></p>	
<p><b>Zone B (Zone 2) (Original path) (Not within site):</b></p> <p>Archaeological features identified in this zone should, where possible be retained in situ. Development plans should be designed to retain the features of this zone in their original condition. If the proposed development must destroy the features in this zone then provision needs to be made for an archaeological investigation, which may include monitoring, test or full excavation, prior to the commencement of work.</p>	<p>High archaeological sensitivity / potential and medium research potential.</p> <p>Avoid disturbance. Any excavation requires archaeological supervision in accordance with an excavation permit or exemption.</p>
<p><b>Zone D (Zone 4) (No potential):</b></p> <p>The advice of materials conservator may need to be sought if archaeological features are exposed. If uncovered, archaeological features would required archival recording and should be located on the site plan.</p>	<p>No archaeological sensitivity / potential.</p> <p>If excavation or disturbance exposes and archaeological feature call an archaeologist.</p>

### 3.3 Indigenous Archaeological and Intangible Values

The 2004 AMP identified Aboriginal cultural heritage values and consulted with Aboriginal people who have a cultural association. The records of this are in the AMP (provided separately). There is one recorded Aboriginal site within the boundaries of Taronga Zoo, hand stencils under a sandstone overhang. This is not in the vicinity of the proposal. In addition there is a rock shelter with a midden at Athol Bay (also with stencils) and a second midden at Little Sirius Cove. These sites are outside the Zoo but indicate that shellfish was collected and eaten along the foreshore. No midden sites have been discovered further up the slope. Within the zoo are the following Indigenous Archaeological Management Zones (Zone 2, lies outside of the boundary wall of the Zoo) shown on the map below:

Zone 1 Identified art site

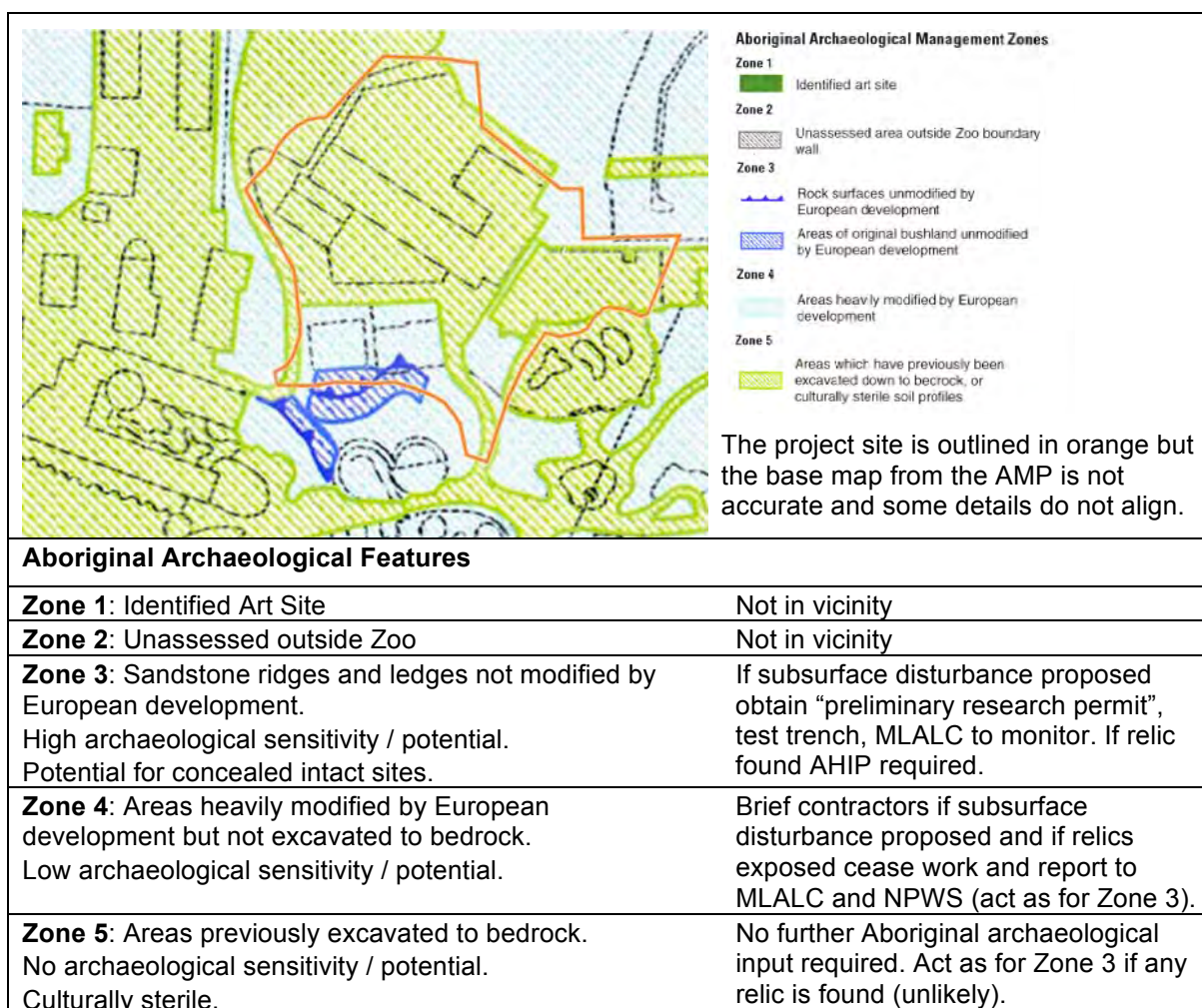
Zone 3 Rock Surfaces and areas of original bushland unmodified by European development

Zone 4 Areas heavily modified by European development

Zone 5 Previously excavated down to bedrock, or culturally sterile soil profiles.


The Institute site is zoned 4 or 5. In zone 4, excavation is proposed in part of the footprint of the two staff amenities buildings. This area was heavily modified for the construction of the buildings, now proposed to be demolished. A zone 4 area between these buildings and the Alligator Pit is already also already extensively excavated. Other zone 4 areas are west of the access road and between the site and the Koala House. These are outside the site and no work is proposed. The proposal is on the site of existing buildings and is zoned 5. These areas were quarried and levelled when the Zoo wall was constructed and then excavated for the footings and the lower floors of the existing buildings.

The natural bushland area between the amenities building and the Koala House is Zone 3, natural area unmodified by European development. This is generally outside the site and no work is proposed except removal of one tree. The plan is diagrammatic indicating general location, it incorrectly shows a rockface adjacent the amenities buildings. The main rockface is immediately above the Koala House and not within the site. No work is proposed to the rock face.



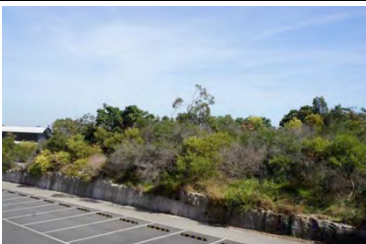







### 3.4 Table of Heritage Items & Items in the Vicinity (as identified in the S170 Register)

Heritage Items at the Site			
Item / Significance	Date/Original	Image	Comment
07L Perimeter Wall  High	1929-1934 & 1946 (s170 says 1913-1914)	No image in database	Sandstone perimeter wall. Incorporates the east, south, west and north walls (Items 47B, 72B, and 81B). Intact generally but already partly demolished in the site. Remnant remains.
15M Archives and records  Exceptional	From c1913 (and earlier)	No image in database	Zoological Parks Board collection Archives and Records (also earlier records from Moore Park Zoo)
78B former Staff Amenity Block  Some	Late 1940s (s170 incorrect, 1930s – 1940s)		Designed for staff facilities this was never intended to be a structure in the public realm and was finished to enable to be hidden behind the trees. Proposed to be demolished.

END OF TABLE

Heritage Items in the Vicinity of the Site			
Item / Significance	Date/Original	Image	Comment
77B Koala House  Exceptional	1970		Features S shaped winding ramp. Design has been altered to avoid impact on this structure.
99L Pathways (General)  Exceptional	Original and early path layout.  <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 10px; background-color: orange; margin-right: 5px;"></div> Original path layout  <div style="width: 15px; height: 10px; background-color: green; margin-right: 5px; margin-top: 5px;"></div> Early additions to path layout (pre 1940)  <div style="width: 15px; height: 10px; background-color: purple; margin-right: 5px; margin-top: 5px;"></div> 1970s paths in Australian Sections </div>		Early pathway alignment dating from pre-1940 Layout, including main paths following contours, paths and stairs linking levels, original balustrades and concrete kerb and gutters. Not affected.
105L Indigenous vegetation  Exceptional	Pre European		Remnant <i>Angophora costata</i> indigenous vegetation association. <i>Kunzea ambigua</i> most evident. Elevated sandstone outcrop, west of the carpark.

Heritage Items in the Vicinity of the Site			
Item / Significance	Date/Original	Image	Comment
120B Alligator enclosure  Local	Quarry c1913 Reservoir c1930 Exhibit 1986		The listing is actually for the quarry / reservoir features rather than the Alligator exhibit. The entry (in the photo) is not significant and is cut through the reservoir wall which formerly held water at a much higher level.
123L Australian Section Landscape  High	1960s-1980s		Australian Sections 1 and 2 landscaping, including grey-brown coloured brick paths, gutters, raised brick edges and brush fencing to Macropod Enclosure. In this area item consists of planting uphill of the Koala exhibit.
240L Indigenous vegetation  High	Pre European		Remnant <i>Angophora costata</i> indigenous vegetation Association. A small area remains between Serpentina and the Koala House. This is not directly affected but there are potential impacts through tree removal and adjacent works discussed in more detail later in this report.

The LMP identifies the remnant *Angophora Costata* Association as of high significance and notes that: Given the significance rating of the two *Angophora* Association sites at Taronga, most particularly that adjacent to the upper carpark, they are worthy of retaining, protecting and fully regenerating as examples of the local indigenous vegetation.

It further comments that:

The carpark site displays remarkable species diversity for its small size and exposure to disturbance. Its tenacity is demonstrated by its persistence through time as shown in historical aerial photographs.

Behind the Koala exhibit site, because of the uphill-moving invaders indigenous in lower environments, canopy density is much greater and brightness near ground level lower than in a typical example of this association. Thus considerable removal of invaders and planting of species indigenous in this association would be required to regenerate this site. Its relevance to the Koala exhibit as an example of a sclerophyll community, both notionally and aesthetically, is worth consideration.

It comments in detail that:

The koala exhibit contains a small but significant remnant of this association: a population of over ninety individual plants of *Crowea exalata* persists here, but is currently being overshadowed by invaders from gully communities such as *Pittosporum undulatum*, *Polyscias elegans*, and *Glochidion ferdinandii* (Cheese Tree). These species and others need to be removed to allow strong sunlight to reach the ground, vital in the ecology of this and other species of the association. Regenerating *Angophora* association vegetation including other typical species would not only form another core area for this community, but would also be thematically appropriate to the koala exhibit.








Part of the area of 240L coincides with Aboriginal Archaeological zone 3 - not modified by European development, with high archaeological sensitivity / potential and potential for concealed intact sites (see p65 AMP). Any disturbance would require Aboriginal Archaeological assessment as recommended in the AMP. The rock shelf adjacent the Koala exhibit is proposed to remain with no change. To the east of the Koala exhibit the path is proposed to be reduced in level. It is not known if the rock shelf continues under the path here but this is possible. If so it may have already been cut away, particularly as services are laid in this path.

It is intended that the area 240L remains undisturbed other than the bush regeneration recommended in the LMP. See later comment re possible tree removal and planting in and adjacent the area. The removal of the former staff amenities building will expose the area to more sunlight improving regeneration conditions.

<b>Archaeology at the Site</b>			
<b>Item / Significance</b>	<b>Date</b>	<b>Image</b>	<b>Comment</b>
Historical Archaeology	No sites identified in AMP		
Indigenous Archaeology	No sites identified		

<b>Archaeology in the Vicinity of the Site</b>			
<b>Item / Significance</b>	<b>Date</b>	<b>Image</b>	<b>Comment</b>
Historical Archaeology	Areas of original zoo path layout	See images in Internal Views below	Not affected
Indigenous Archaeology	No sites identified		

Views in the Vicinity of the Site			
View	Description	Image	Comment
General Views	None identified		
Framed View	None identified		
Filtered View	None identified		
Glimpses			
534V  Moderate	Glimpses of the city skyline, Opera House and Harbour Bridge.		Not affected
535V  Moderate	Glimpses of the city skyline, Opera House and Harbour Bridge.		Not affected
Internal Views			
563V  Moderate to High	View of Koala House along path from west		Not affected
564V  Moderate to High	View of Koala House along path looking from east		Not affected
Lost Views			
582V	View south west from rock outcrop in carpark obscured by Education Centre building (seat remains as evidence). Note: Only footing of seat remains in 2015		Existing building obscures. View will remain lost from rock but will be seen in new building.



### 3.5 Heritage Statutory Context

#### EP&A Act

The project is considered to be State Significant Development (SSD) under Part 4 of the Environmental Planning & Assessment (EP&A) Act. Information about State Significant Development is further set out in the State and Regional Development SEPP dated 1 October 2011. The Minister for Planning and Infrastructure may declare projects to the State Significant provided that advice has been sought from the Planning Assessment Commission.

This project has been submitted as an SSD and the Secretary's Environmental Assessment Requirements (SEARS) have been provided, dated 27 October 2015, with standards conditions as follows for heritage matters:

#### Heritage

Prepare a statement of heritage impact which identifies:

- all heritage items (state and local) including built heritage, landscapes and archaeology, and detailed mapping of these items, and why the items and site(s) are of heritage significance; and
- what impact the proposed works will have on their significance including reference to the Taronga Zoo Conservation Strategy.

Address Aboriginal cultural heritage impacts of the proposal, including:

- identifying and describing the tangible and intangible Aboriginal cultural heritage values that exist across the area affected by the development. This may require the need for surface survey and test excavation.
- where Aboriginal cultural heritage values are identified, consultation with Aboriginal people who have a cultural association with the land must be undertaken and documented in the EIS. Additionally, the significance of the cultural heritage values for Aboriginal people who have a cultural association with the land must be identified and documented in the EIS.
- impacts on Aboriginal cultural heritage values are to be assessed and documented in the EIS. The EIS must demonstrate attempts to avoid impacts upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the EIS must outline measure proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH.<sup>20</sup>

Prepare an archaeological assessment of the likely impacts of the proposal on any Aboriginal cultural heritage, European cultural heritage and other archaeological items including consideration of the Taronga Zoo Archaeological Management Plan, and outline proposed mitigation and conservation measures.

This report identifies all heritage items and the impact of works on them.

The previously prepared Archaeological Management Plan (AMP) (provided separately) identifies and describes Aboriginal cultural heritage values across the Zoo and extracts of this, relevant to the site of this proposal, are included in this Heritage Impact Statement. The Archaeological Management Plan identified Aboriginal cultural heritage values and consulted with Aboriginal people who have a cultural association. The records of this are in the AMP.

An identified Aboriginal art site is within the Taronga Zoo but is distant from the site of the Institute of Science and Learning. It is adjacent another proposal (Sumatran Tiger Experience) and that site has been considered in detail in an Aboriginal Archaeological and Cultural Heritage Assessment report prepared by Dominic Steele Consulting Archaeology. This included consultation with Aboriginal people about that site and this is included in that AHIP report.

This HIS includes an archaeological assessment of the likely impacts based on the AMP and outlines mitigation and conservation measures.

---

<sup>20</sup> SEARS, dated 14 January 2014 (updated 23 January 2015)

### **NSW Heritage Act 1977**

Taronga Zoo is not presently listed on the State Heritage Register. In 2002 as the site clearly met the relevant criteria the site was nominated following completion of then current Masterplan projects. The listing never proceeded and since has been managed and approvals sought as if the site is listed.

The Heritage Office endorsed a Conservation Strategy (CS), 2002, which provides an integrated, multi-disciplinary framework for the management of the heritage resources at Taronga. Similarly an Archaeological Management Plan (AMP) was endorsed by the NSW Heritage Office in January 2004 as a document to provide management principles and implementation strategies for the site's Aboriginal and historical archaeological resources.

In accordance with the CS, a Landscape Management Plan was prepared by Design 5 Architects in 2006 which further identified the site's significant trees, landscape elements and views. Together with this Heritage Impact Statement, these documents form the basis for the assessment of potential impacts arising from the subject proposal on the identified significance of individual heritage items and the site as a whole.

### **Section 170 Heritage and Conservation Register**

The proposal involves the partial demolition and modification to items from the Section 170 Register, requiring notice to be given to the Heritage Council of NSW. The items are:

Item #	Items in the Site	Map ref.
07L	Sections of sandstone perimeter wall on former boundary	All
15M	ZPB Archives & Records, part in building 78B, part in Heritage Container	F3
78B	Former Staff Amenity Block (now retail offices and archives)	F3

Generally items on the heritage register should not be demolished unless absolutely necessary and the Zoo as property owner is required to maintain heritage assets to a minimum standard. Some items on the register have previously been removed from the register and demolished and there is a process to do this. Generally efforts should be made to retain the heritage items and options developed in schemes for retention and adaptation to new use. If reuse is not feasible then this would be part of the reason to seek demolition along with issues such as structural integrity, financial burden or level of significance.

### **Archaeological Relics (Heritage Act)**

The Heritage Act 1977 affords statutory protection to 'relics' that form part of archaeological deposits. Sections 139-145 of the Act prevent excavation of a relic, except in accordance with a gazetted exemption or an excavation permit issued by the Heritage Council of NSW.

Within the subject area the Archaeological Management Plan has identified no historical archaeological sensitivity or potential. It recommends that the advice of materials conservator may need to be sought if archaeological features are unexpectedly exposed. If uncovered, archaeological features would require archival recording and should be located on the site plan. The section of original path adjacent the site has higher archaeological potential but it is outside the site and no works are proposed to it.

### **Mosman Local Environmental Plan**

Taronga Zoo is identified an Item of Local Environmental Heritage on Schedule 5 of the Mosman LEP.

Mosman Taronga Zoo (including landscape, bus shelter, office, upper and lower entrance gates, original Elephant House, Birds of Prey Aviary and floral clock). Bradleys Head Road, Lot 22, DP 843294 Local I34

The Heritage conservation objectives are

- (a) to conserve the environmental heritage of Mosman,
- (b) to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views,
- (c) to conserve archaeological sites,
- (d) to conserve Aboriginal objects and Aboriginal places of heritage significance.

The requirements for consent are:

Development consent is required for any of the following:



- (a) demolishing or moving any of the following or altering the exterior of any of the following (including, in the case of a building, making changes to its detail, fabric, finish or appearance):
  - (i) a heritage item,
  - (ii) an Aboriginal object,
  - (iii) a building, work, relic or tree within a heritage conservation area,
- (b) altering a heritage item that is a building by making structural changes to its interior or by making changes to anything inside the item that is specified in Schedule 5 in relation to the item,

None of the elements in the vicinity of the site are individually identified in the Mosman LEP 2012 Schedule of items of Environmental Heritage (Schedule 5) however the overall landscape is listed. Development Consent is therefore required on the basis of heritage.

### **3.6 Constraints and Opportunities**

#### **Operational and Zoological Requirements of the Zoo**

The upgrading of Taronga Zoo is consistent with its historical values as a place that has continued to evolve the presentation of its animals over the twentieth-century to emphasise the educational and conservation role of the Zoo.

The upgrade of Taronga Zoo has achieved a balance between the cultural heritage conservation objectives; the requirements for the physical well being of the animals and their keepers; the educational and research role; and visitor expectations of the place, to support the economic well-being of the Zoo and maintain Taronga's international reputation as a world-class zoo.

#### **Animals**

The project does not involve significant animal exhibits. Teaching exhibits are in the courtyard with back of house holding enclosures south of the building. These will be continue to be necessary in the future in similar locations and new holding enclosures are part of the proposal. Animals will be held elsewhere during the works while improved facilities are built.

#### **Physical Assets**

The design of the Zoo's animal exhibits remains a legacy of the place's changing zoological ideology and approach over the past century. The area of the proposal does not feature animal exhibits and the "typical" Taronga Zoo character but has new buildings in modern materials.

The proposal retains the substantial theatre building and integrates it into an expanded teaching and research facility. The site of the existing and expanded facility is ideally located with bus access from the adjacent carpark for large groups. There is an opportunity to improve links to the Zoo proper which is now via a steep path that does not comply with access standards.

#### **Landscape Character**

The character of the site is dominated by buildings and carparks and by the remnant natural vegetation associations adjacent. There are no historical ornamental plantings in the vicinity. Undisturbed indigenous vegetation areas have value in their own right as well as having rock shelves with potential for Aboriginal archaeology. Generally these sites are intended to remain undisturbed.

The Landscape Management Plan also noted that

there is a wide range of landscape character types apparent as numerous development layers and inherited indigenous rock forms and flora remnants are interwoven and juxtaposed throughout the site. The overall impression is of a rich and complex landscape where the upper canopy species still integrate the site with adjoining bushland areas, while the perennial focus of the Harbour is a continuing major component of the landscape setting.

#### **Visitors**

An objective of Taronga Zoo is to provide for a multi-sensory experience for the visitors, including the provision of a meaningful interpretation of the cultural significance of the place and individual items of heritage value to further enrich the visitors' appreciation of the Zoo. In addition there is a major role in education and research. This project is not directed to general Zoo visitors rather to specific groups for education and to researchers and scientists. The education and research role will be expanded in this project increasing the range of educational visitors and researchers / scientists to the Zoo.

### **Current Opportunities for Redevelopment / Conservation within the Subject Area**

The steep path between the Education Centre and the Zoo proper below is a barrier to equitable access. Projects over recent years have improved access in various parts of the Zoo and it is intended to use projects to gradually improve access to all areas of the Zoo over time. The proposal provides for disabled access.

There is a need for the revitalisation of the education facility at Taronga Zoo to accommodate increasing numbers of school children in more adequate conditions. The site is well located practically and does not feature highly significant heritage features as in other parts of the Zoo.

### **Conservation Policies**

There is an inherent tension between the requirements of the place as a major progressive urban zoo, its cultural significance (including the surviving animal enclosures) and the implementation of the Masterplan vision.

The Masterplan implementation has shown that, undertaken within a framework of appropriate conservation principles, the site's cultural significance can be retained and enhanced. The Conservation Strategy set out a series of detailed conservation policy provisions. In summary, the requirements of these provisions have been to:

- Recognise Taronga Zoo as a significant place for the state of New South Wales;
- Ensure the Zoo is conserved and adapted in accordance with the *Burra Charter* of Australia ICOMOS;
- Establish the requirements for further management plans and Heritage Impact Statements;
- Allow for adaptation of use of items no longer suitable for the original designed use;
- Facilitate retention, conservation, and adaption of items of Exceptional, High and Some significance;
- Enable relocation/demolition and alteration of some significant items;
- Provide appropriate procedures for new works;
- Provide for investigation of archaeological resources;
- Ensure records of significant items are made and placed in the Zoo archives; and
- Provide for the interpretation of the history and significance of the place.

The Conservation Strategy also included specific requirements for the individual heritage items identified throughout the Zoo. For items on this site policies are:

#### **07L**

*The wall will require periodic inspection to ensure that its fabric is not deteriorating. New breaks in the wall should be kept to a minimum. Site and existing entry points used wherever possible.*

*Maintain fabric. Works to be undertaken in accordance with heritage advice.*

*Generally conserve stone retaining walls and zoo boundary wall.*

#### **15M**

*Continue with the cataloguing of movable items and archival materials stored at the office, with the view of compiling into a Heritage Register of Movable Items. Formulate appropriate management policy for the care of these items.*

*Conserve in accordance with Archives Management Plan.*

#### **78B**

*Adaptation for continuous usage acceptable.*

*Conserve in accordance with heritage advice.*

The proposal is generally in accord with the conservation policies as assessed in detail in the following section.

The LMP appendices also provide detailed policies to achieve regeneration of the individual remnant natural areas.



## 4.0 Heritage Impact Assessment

### 4.1 Project Documentation

Heritage advice has been provided during this project with input into the possible relocation of the proposal to avoid the heritage item 78B (this was not possible), the relocation of yard structures to avoid the remnant section of sandstone boundary wall, the relocation of the entrance to avoid the Koala House and protection of the remnant indigenous vegetation from damage by changing site conditions or from construction damage.

This report refers to the proposal as documented in architectural drawings titled Draft Development Application dated October 2015 (individual drawing dated 3/11/2015) prepared by Noel Bell Ridley Smith as listed below:

00	Cover page
01	Location Plan
02	Site Analysis Plan
100	Existing and Demolition Plan
101	Level 1 (Lower Ground)
102	Level 2 (Upper Ground)
103	Level 3 (First Floor)
104	Roof Plan
401	Sections
402	Elevations
403	Site Section and Photomontage
501	Finishes Board

The HIS also refers to the Landscape drawings dated 24<sup>th</sup> November 2015 by NBRS as listed below:

LDA00	Cover sheet / Site Plan
LDA01	Level 1 (Lower Ground)
LDA02	Level 2 (Upper Ground)
LDA03	Planting Palette and Design Images
LDA04	Landscape Details

Comment is also made on the Arboricultural Impact Assessment by Sydney Arbour Trees and dated 5 November 2015.

### 4.2 The Proposal

Taronga Zoo is one of Australia's most popular attractions and together with the open range facilities of Taronga Western Plains Zoo attracts more than 1.7 million visitors annually and contributes an estimated \$249 million per annum to the NSW economy.

Taronga Zoo has evolved over time from a Zoo that simply provides the traditional visitor experience of viewing animals in exhibits, to a Zoo that focuses on wildlife conservation, animal welfare and providing a range of visitor learning experiences. A core function of Taronga Zoo is to educate and increase visitor understanding of conservation and to change human behaviour to support the conservation and preservation of species. Taronga has a world class reputation in education, research and immersion of people with wildlife.

The TCSA currently conducts a broad range of conservation science and learning programs on site. The Conservation Science programs involve three areas: investigations, application, and communication. The learning programs include formal school education programs, vocational education and training programs, and a range of informal student programs.

#### Project Rationale

The Taronga Institute of Science and Learning will build on Taronga's capacity to deliver world-class science, research and education outcomes by addressing unmet needs and demands that cannot be accommodated in the current facilities. The existing facilities do not readily adapt to current needs and are not designed to accommodate modern pedagogy and functional requirements. The infrastructure facilities are in poor physical condition and have inadequate space capacity, including for animal holding facilities.

The Taronga Institute of Science and Learning will provide a range of venues within a consolidated location to enable greater collaboration between science and learning programs and will facilitate:

- Formal and informal education programs for school children and adults. The learning programs will draw heavily on the Zoo's ability to create positive connections between wildlife and people by providing direct access to native wildlife which will enable students to learn more about the natural world we live in.
- Technical laboratories for the study of animal behaviour and animal welfare (such as health, nutrition, disease, reproduction, emergent environmental issues, etc.). This will help to better understand animal biology, inform conservation decision making and inform decisions about the management of the animals in Taronga's care.
- The facility will include a unique opportunity for school students to sleepover at the Zoo, with additional opportunity to experience the wildlife of the Zoo during the day and night with a behind-the-scene tour.

The new purpose built facility will allow for functional, best practice and safer day-to-day operations.

The *Zoological Parks Board Act 1973* (Zoological Act) is the Act that governs Taronga and Taronga Western Plains Zoos. A corporation named the "*Zoological Parks Board of New South Wales*" (the Board) is constituted under the *Zoological Parks Board Act*. The Board may also be called the Taronga Conservation Society Australia and the use of that name has the same effect for all purposes as the use of its corporate name.

Under Clause 5(2)(b) of the *Zoological Act* the Board shall, for the purposes of any Act, be deemed to be a statutory body representing the Crown. Taronga Conservation Society Australia has a formal mandate, as defined in Section 15 of the *Zoological Parks Board Act 1973*, to:

- a) carry out research and breeding programs for the preservation of endangered species;
- b) carry out research programs for the conservation and management of other species;
- c) conduct public education and awareness programs about species conservation and management; and
- d) display animals for educational, cultural and recreational purposes.

Given the natural world under threat through habitat loss, population growth, deforestation and climate change, the issues facing wildlife are critical and require immediate action. With 1.7 million visitors annually, consisting of local, interstate and international guests, Taronga's zoos are uniquely placed to inspire the public to help make a difference to the conservation of wildlife and wild places. Taronga Conservation Society Australia also conducts significant education and conservation science activities at its two Zoos. The Zoo is home to over 4,000 animals belonging to 350 species, including iconic conservation breeding programs for species such as the Corroboree Frog, Tasmanian Devil, Regent Honeyeater, Sumatran Tiger, Asian Elephant, and African Bongo.

### **Project Description**

The SSD application will seek approval for the development of a new research and education facility, to be known as the 'Taronga Institute of Science and Learning' and will include:

- Demolition of: the education centre building; the Section 170 registered Former Staff Amenity Block (78B); the capital works building and animal holding areas; and ancillary structures and the relocation of the archives and records (15M) currently housed in building 78B.
- Construction a three level building consisting of: open offices for life science, HR and education on the first floor level; classrooms and lecture rooms for teaching student on the ground level with holding dens for animals; laboratories and research facilities on the lower ground.
- Retention of and upgrade of the existing lecture theatre and the existing wildlife encounter experience area for students and VIPs.
- The existing courtyard will be removed and grassed, partly covered outdoor areas will be provided for passive recreation.
- The office space is designed to consolidate the existing administrative and HR functions into a centrally located area.
- Provision for overnight 'sleepover' for school children in the ground floor level classrooms, which will provide unique opportunity for school students to sleepover at the Zoo, with additional opportunity to experience the wildlife of the Zoo with a behind-the-scene tour and observe and learn about animal behaviour during the evening hours.
- Associated landscaping.
- Services to be relocated, upgraded and augmented, where required.

The proposed new buildings will be three storeys with a similar maximum height to the existing. The building is predominantly two levels and the appearance is typically of a two storey building with the lower level of the building cut into the site. To achieve this the lower level is excavated, similarly to the existing lower level of the theatre (which is retained and altered). The built form is designed to step down the site and is of a scale that is sympathetic to the surrounding site and existing building heights.

The building is designed to centre around a new atrium space and vertical core that links different functions of the building and serves as an orientation point. The main building entry is at lower ground level and with the integration of a landscape plaza area that links the proposed redevelopment with the Zoo proper. The access path from the Zoo proper is altered with a landscape stair and a ramp. This improves disabled access from the Zoo proper below the site.

The demolition of the Former Staff Amenities Building 78B is necessary for the lower level of the proposed building. This is to limit the overall height of the building to no greater than the existing and to separately house the science areas in cooler more stable areas and to provide separate service vehicle access. It also facilitates disabled access to the Zoo below. The current path / road rises from the lowest level of the existing theatre creating a steeper access path from below. Lowering this path so it grades down from the lowest building level means disabled access can be achieved.

The project includes retention of the remnant stone wall which will be in a back of house area with new small Aviaries adjacent. The Upper Ground floor plan shows retention of part of the wall.

The relocation of the movable archives is not part of the documented works but is being managed separately prior to the project. Advice about the relocation has been provided by the records manager.

### **Landscape Works**

Some trees in the centre of the site and adjacent the Alligator Enclosure are proposed to be removed. These are not heritage items and there are no heritage impacts from their removal. No works are proposed in the vicinity of the raised remnant natural area north of the site. The text of the Landscape Plan indicates that generally plantings are proposed to be local species.

In the area of 240L and the associated natural rock shelves tree removal is proposed. The Arboricultural Report assessed tree health with a view of public safety. The architectural drawings show that the excavation on the south of the site is within the footprint of the existing buildings (to be demolished) except at the east end. One tree, T14, is directly affected by the excavation and this is shown to be removed. This tree is a Swamp Mahogany (*Eucalyptus robusta*) which is not typical of the Angophora Costata association and is in very poor condition. It is not evident in 1962 photos and is likely to have been planted, along with other Swamp Mahogany trees, when the Koala House was built. The removal of this tree is possible without impacting on heritage values.

The landscape drawings show 9 other trees removed between 240L and the buildings proposed for demolition and one in area 123L immediately east of the Koala House. The Arboricultural report recommends removal of these trees on the basis of possible disturbance during demolition of adjacent buildings or of possible root disturbance by excavations or the trees being within the construction footprint. The Arboricultural report notes that some trees may be able to be retained if their root systems are not compromised by the proposed development. It also notes that replacement plantings should be made up of plant species associated with Sydney Red Gum (*Angophora costata*). Care should be taken not to damage the adjacent significant vegetation associations in the vicinity during tree removal.

Trees 15 and 16 on the landscape plan are immediately east of 123L very close to the existing bitumen path and which is to be changed in level - requiring their removal. They are semi-mature specimens of Snow-In-Summer (*Melaleuca linarifolia*), likely planted in association with the construction of the adjacent later path. They are contributory items to 123L, not individually significant and can be removed and replaced with appropriate species without negative heritage impacts. Care should be taken not to damage the rock shelf in the vicinity during tree removal.

One tree T5 is proposed to be removed from area 240L as it is in poor condition. Care should be taken not to damage the adjacent significant vegetation associations or undisturbed natural rock shelves in the vicinity during tree removal.



New planting and mounding is shown in the preliminary landscape plan along the south of the site adjacent the new roadway. Landscape works including the extent of excavation are yet to be developed in detail for the lowered entry path to the east of the Koala House.

#### **4.3 Impacts of Proposal on Taronga Zoo as a Whole**

The proposal is consistent with the ongoing use of the place as a Zoo and with the purposes of the Zoo as defined under the Zoological Act. In particular clauses

- b) to carry out research and
- c) to conduct public education.

It reflects recent concerns with the protection of animals and their habitats and research into and education about wildlife conservation. It contributes to keeping the Zoo viable and relevant into the future thus being able to maintain its continued relevance and its heritage and other assets.

*The proposal does not have negative impacts on the overall heritage significance of the Zoo.*

#### **4.4 Impacts of Proposal on Heritage Items (as listed on the S170 Register)**

There are negative and positive impacts on individual heritage items as detailed here. The documents forming the application show the proposal generally but some aspects are not shown in sufficient detail to assess heritage impacts. This level of information is normally part of detailed design that proceeds after project approval. The detailed design needs to continue to have heritage input to manage heritage impacts. Some detail, such as the extent of roots or the extent of the rock shelf under the lower entry path will not be able to be established until physical works commence and detail may need adjustment at that time.

##### **Heritage items within the site**

The remnant wall is to be retained. There is potential in the detailed future design to adjust enclosure locations and orientation in relation to wall. The cement mortar joins should be removed and the wall repointed with lime based mortar as has been done in other conserved sections of wall. The retention of the remnant and its conservation is a positive heritage impact. Existing sandstone garden edging which is stone previously part of the wall will continue to be used similarly.

The removal and relocation of the records and archives (15M) housed in building 78B is being supervised by the records manager, currently, Pam Burgoyne, who is working with State Records to determine the ownership responsibility of the various documents and to assess which are records required to be provided to them. These documents are required to be stored in appropriate accommodation that meets the requirements under the State Records Act. The current building does not meet these requirements. Climate controlled records storage is necessary. A range of options is being considered including the possibility of an off-site location. Through this process they will be housed temporarily in a location that appropriately supports the preservation of these historical items. Whatever the final arrangement the records will be accessible to researchers from the Zoo. Note that other parts of the movable heritage collection are and will remain stored elsewhere on site.

The major negative heritage impact is the demolition of the former staff amenities building (78B). It has an assessed overall level of significance assessed as “some” (as opposed to “high” or “exceptional” or “low”). It is noted that the building has *“some aesthetic significance as representative of the use of rendered detailing to create a more ‘natural’ appearance”*. The register’s recommended conservation strategy is *“adaptation for continuous usage is acceptable”* and the conservation policy in the CMS is *“Conserve in accordance with heritage advice”*. This policy allows discretion on the part of the heritage advisor in assessing if and what level of conservation is necessary.

The building is proposed to be demolished to enable access to a main lower level entry and to create a low level delivery area with classrooms on the upper level. These cannot be built here without demolishing the building though the proposed building footprint only partly overlaps the existing building. The access road to the lower level is proposed in the area of 78B and the adjacent non-listed structures. This road must come from the back of house area, must be within the Zoo boundary and must achieve appropriate grades. There is no alternate location that would provide the required access. There is also limited scope to move the proposed building clear of the former Staff Amenity Building without impinging on other heritage items of greater significance (Koala House and remnant natural areas) or infrastructure (such as the main back of house road access). The proposal entry point from below has already been relocated and redesigned to be clear of the Koala House and the remnant natural areas.

In addition, from the north, the building (78B) is visually intrusive and was never designed to be viewed from the north (as it would be if retained), rather to be a recessive, back of house facility.

*The proposal has a potential positive impact on a heritage item, a remnant of the stone boundary wall (07L), which will be retained and conserved. Detailed information is needed on the extent and methods of conservation.*

*The proposal has a positive impact on a heritage item, the movable heritage item records and archives (15M), which will be rehoused in appropriate climate controlled conditions.*

*The proposal has a negative impact on a heritage item, the former Staff Amenities Building (78B), which is demolished.*

### **Heritage items in the vicinity**

The proposal has been redesigned to avoid direct impact on the Koala House (77B). In that exhibit the Koalas are viewed against a backdrop of the rockface, and trees and the grey façade of the building 78B. Its removal will mean that views open up however the new building is set further back and from the exhibit will be apparently lower and barely visible. Retention of the rockface and trees (either retained or planted) will retain the setting. The path to the east of the Koala House is to be altered but this is not part of the designed setting of the exhibit – originally the natural landscape continued across the area.

The significant aspects of the Alligator exhibit (120B) – the former quarry and reservoir – are not affected by the proposal. The reservoir wall has already been lowered at the exhibit viewing area and at the west end for the theatre entry and no further change is proposed. The plantings below the reservoir wall are modern and not heritage significant – the wall originally was covered with a rockery and lower slopes were grassed – and removal or changes to the plantings and the addition of the access ramp with not impact on heritage significance.

The portion of the original / early path network (99L) in the vicinity of the site is below the Koala exhibit and no works are proposed to it. It will remain part of the main access to the western portion of the Zoo. Works in the vicinity are to the access path to the Institute and the new disabled access ramp however these works are to the north of the path and do not affect it. There is no heritage impact.

The remnant indigenous vegetation above the site (105L) is adjacent but above the works. No work is proposed during the project rather continuing management as an area of regenerating bushland as part of Zoo maintenance. Being uphill, fenced and isolated the site is not vulnerable to construction impacts but contractors need to be aware the area is to be protected. There are no heritage impacts.

The remnant vegetation below the site (240L) partly coincides with the Australian native landscape area (123L) also below the site and surrounding the Koala exhibit and also coincides with an area of Aboriginal Archaeological Zone 3, natural area and rock surfaces unmodified by European development. This area is outside the site and no work is proposed other than limited unsafe tree removal. The sites are generally vulnerable to potential construction impacts being downslope of demolition, excavation and construction works.

The removal of trees is discussed in detail in the description of the landscape works in section 4.2. The extent of removal proposed is limited to trees potentially affected by root disturbance and overhanging excavation or demolition works. They are generally clear of the heritage significant landscape and archaeological areas noting that the extent of these areas is not clear being shown diagrammatically only in the heritage documents.

The removal of one tree, T14, in the listed area is clearly required. It is a Swamp Mahogany (*Eucalyptus robusta*) which is not typical of the Angophora Costata association and is in very poor condition. It is on the edge of the significant area, close to building 78B and should be able to be removed with no heritage impact. Other trees such as the two *Melaleuca linarifolia* close to the access path that is being lowered are of little significance, contributing to 123L but not 240L and removal would have little impact subject to the protection of the adjacent rock shelf.

There is potential negative impact from the removal of some of the other trees both through their removal from the vegetation association (though some are not typical species rather other Australian species planted), the disturbance of understorey species and the potential to disturb the ground and natural rock features below in an area with possible Aboriginal archaeological remains. The trees between the informal bitumen path and the buildings, particularly at the east end are outside the

significant vegetation association as mapped, are likely to have been planted and likely to be in ground disturbed by the construction of building 78B. There are some natural and manmade rock features in this area to its the west end. The areas south of the informal path and within area 240L as mapped are more intact both botanically (especially at the west end) and with regards to natural rock features.

The design intention is to retain the natural area undisturbed. The demolition of the uphill structures should be carried out from above and managed to prevent impacts on the natural area. Some trees noted for removal may be retained subject to construction methodology and the extent of their root zones. The LMP has detailed recommendations and the vegetation areas should be managed according to these and protected during construction (and any demolition). This includes the intact original rock shelf and overhang running east west to the north of the Koala House. The planting of trees and mounding proposed should be designed in detail to avoid shading out significant understorey species and changing natural ground conditions and drainage patterns in 240L.

In Aboriginal Archaeological Zone 3 (coincides in part with 240L) tree removal should not disturb the ground or rock features either in the actual removal or machinery access. If disturbance is unavoidable there should be an archaeological site surface survey prior.

It is recommended that the Zoo continues to manage the remnant natural vegetation area 240L. Updated a detailed assessments may be needed, similar to that in the LMP to establish, for example, the survival and location of the previously identified population of over ninety individual plants of *Crowea exalata*. Also to identify invaders overshadowing the association that need to be removed to allow strong sunlight to reach the ground, to encourage regeneration of the *Angophora* association vegetation.

The landscaping and tree removal design should be developed in detail to minimise heritage impacts and to protect and regenerate the remnant *Angophora Costata* Association 240L as guided by the Landscape Management Plan.

#### **4.5 Compliance with Conservation Policies**

##### **Heritage items on the Site**

The project complies with the policies for 07L, the remnant section of wall in the site by conserving it.

For 15M the policy is complied with generally but the policy is broader and is concerned with long term management of the collection. There has been continuing long term cataloguing of movable items and archival materials stored at the office and extensive cataloguing has been undertaken by the records manager. This project has prompted developing appropriate management policies and will result in improved storage conditions for the collection. There is no specific Archives Management Plan but measures have been developed by the Zoo's records manager in consultation with State Records.

For 78B the policies envisaged retention and adaptation. The proposal does not comply with this policy. The policies allow conservation in accordance with heritage advice. This is less strict than for items of higher levels of significance and leaves discretion with the heritage advisor. In this case heritage advice is that on balance the value of the new works in furthering the aims of Taronga Zoo outweighs the requirement for the retention of this item. Options were explored to relocate the proposal to avoid the demolition. This was not possible because of the need to establish a lower ground level that facilitated both servicing the proposed facility and disabled access from and to the Zoo proper below.

*The proposal complies with conservation policies except for the demolition of the Former Staff Amenities building but heritage advice is that on balance the value of the new works in furthering the aims of Taronga Zoo outweighs the requirement for the retention of this item.*

##### **Natural Landforms** See section 3.4 and 4.4 above

The Conservation Policy for the Landscape notes that the

...inherent natural values of the site, in particular (sandstone) landforms, water bodies, drainage systems and vegetation should be retained.

No items are directly affected by the work except for the removal of one tree in area 240L but there is some risk from damage by works in the vicinity. For item 240L, the remnant vegetation below the site, and the natural rock features there is also a risk that they could be affected by changed water and nutrient regimes - caused by adjacent excavation, drainage from new structures and the like. This is a



matter for detailed design and construction management to ensure there is no detrimental impact. Underground services are not being run in areas of significant natural features but will be laid in the disturbed areas of the site. There is a risk of construction damage to natural features, for example during demolition of adjacent structures, that needs to be managed.

*The proposal has minimal direct impact on identified significant landscape items that are adjacent the site but potential negative construction impacts need to be managed.*

**Aboriginal Archaeology** See section 3.4 and 4.4 above

Polices for management of Zone 3 sites are in the AMP and are discussed above. If the area is undisturbed and potential construction impacts are managed there is no negative impact.

If the area is to be disturbed the Archaeological Management Plan requires that a “preliminary research permit” should be obtained. An appropriately skilled archaeologist would need to be engaged to assess the site and undertake the work in consultation with the Metropolitan Local Aboriginal Land Council. Test trenches may be required. If relics are found the proposal should be modified to avoid them and if their removal is necessary or damage to rock features possible then an Aboriginal Heritage Impact Permit (AHIP) would be required under the NPWS Act with the associated research, advertising, consultation and reporting.

**Views** See section 3.4

*The proposal has no negative impact on the identified views.*

**Historical Archaeology** See section 3.4

*No historical archaeological potential is identified in the area. The proposal has no negative impact on the historical archaeological resource.*

## **4.6 Heritage Impacts Summary**

### **Evaluation of Overall Heritage Impacts**

The proposal overall has no heritage impact on the overall state heritage significance of Taronga Zoo.

### **Evaluation of Positive Heritage Impacts**

The positive aspects of the proposal are the creation of an enhanced education and research facility that furthers the aims of the Zoo in wildlife conservation and education and contributes to ensuring the future of the Zoo. There is a positive heritage impact in the conservation of the remnant section of boundary wall and the rehousing of the records in climate controlled storage conditions.

### **Evaluation of Negative Heritage Impacts**

The removal of the former Staff Amenities Building (78B) is a negative heritage impact. It is considered that archival recording of the building before and during demolition would provide an adequate record of the building. Note that the later female staff amenities building to the west is not part of the listing. There are possible negative heritage impacts on remnant natural areas (240L) below the site, from construction works in the vicinity. Mitigative measures are required.

## 5.0 Conclusion

### 5.1 Preamble

As detailed in the Conservation Strategy, the zoo is a cultural landscape, the conservation of which should extend to the total resource, including the site's landscape, built elements, views and vistas, records, memories and associations, along with uses and activities.

### 5.2 Conclusion

As documented, the primary significance of Taronga Zoo lies in its unique and evocative cultural landscape; the place's ability to show the evolution of zoological approaches over the last century; its continuity of use and its recognition as a zoo of world-standing; and for the iconic sense of place and esteem in which it is held by visitors and Sydney residents.

Overall the proposal has little negative heritage impact. The site has been a back of house area with staff facilities, offices and staff access. It contributes little to the overall Taronga Zoo significant physical cultural landscape – other than the remnant natural areas. It is not open to regular Zoo visitors. The significant boundary wall is one key element but sections have already been lost at this location.

The proposal is important for its function of education and research, which is in line with the objectives of the Zoo and wildlife conservation. This proposal is one of a number of recent changes to the zoo that have resulted to the change in focus towards conservation of species, research and education.

There is positive heritage impact in the better provision of better climate controlled storage conditions for the records and archives (15M). There is also a positive impact in the conservation of the remnant stone wall (07L) and the continuing preservation of the remnant bushland adjacent to the site (240L) subject to management of possible construction impacts and appropriate detailed design.

There is some negative impact in the demolition of the former Staff Amenities building. This is a later building of limited heritage significance (some) and was never integral to the public face of the Zoo and the display of animals. The Zoo advises it is obsolete and no longer useful. Attempts were made to design the proposal to retain building 78B however the required functionality was not possible (see earlier) and there would have been more negative heritage impact on more significant heritage items in the vicinity – the Koala House and the remnant natural areas. The heritage advisor considers that overall conservation of the building is not warranted and proposes mitigative measures.

There is potential for negative impacts on other items during construction and on the potential Aboriginal archaeological resource should it be disturbed. Mitigative measures are suggested.

**Generally, in this proposal, the Zoo's site-wide values are preserved ensuring the distinctive historic character of the place is retained. An individual heritage item within the proposed development site is demolished. The following recommendations suggest mitigative measures.**

### **5.3 Recommended Mitigative Measures**

#### **5.3.1 Aboriginal Archaeology**

If the remnant natural area 240L and Aboriginal Archaeological Zone 3 is to be disturbed engage an appropriately skilled archaeologist to assess the site and to undertake work, including a site surface survey, in consultation with the Metropolitan Local Aboriginal Land Council. Obtain a “preliminary research permit” if required. Test trenches may be required. If relics are found modify the design of the proposal to avoid them. If removal of relics is necessary or damage to rock features possible then seek an Aboriginal Heritage Impact Permit (AHIP) under the NPWS Act with the associated research, advertising, consultation and reporting.

***If disturbance is required in the undisturbed natural area (Aboriginal Archaeological Zone 3) engage an appropriately skilled archaeologist to undertake surveys, and if required research and permits. Revise the design to minimise impacts.***

#### **5.3.2 Historical Archaeology**

In the unlikely event that historical archaeological relics are encountered during construction, works are to cease and the NSW Heritage Office be notified, pursuant to Section 146 of the Heritage Act 1977 (NSW). For Aboriginal finds, the Office of Environment is to be notified as detailed earlier.

***If unexpected historical archaeological relics are found cease work and notify the NSW Heritage Office as required under Section 146 of the Heritage Act 1977 (NSW).***

#### **5.3.3 Remnant Natural Area 240L**

Removal of trees should not disturb the remnant natural area in the vicinity of the site. Care should be taken, for example, to locate and ensure the survival of the previously identified population of over ninety individual plants of *Crowea exalata*. In the long term management should identify invaders overshadowing the association and that need to be removed to allow strong sunlight to reach the ground to encourage regeneration of the *Angophora* association vegetation. The landscaping and tree removal design should be developed in detail to minimise heritage impacts and to protect and regenerate the remnant *Angophora Costata* Association 240L as guided by the Landscape Management Plan.

***Avoid disturbance to remnant natural area (240L).***

***Ensure tree removal and landscape design is consistent with the protection and regeneration of the *Angophora Costata* Association.***

***TCSA should continue to manage the area for regeneration of the remnant *Angophora Costata* Association including protection of surviving populations and removal of invaders.***

#### **5.3.4 Bush Regeneration Work**

The remnant bushland is intended to continue to be regenerated with appropriate endemic species that enhance the area. Species selection and planting design should be guided by this approach. There is potential for the downhill areas to be negatively impacted by changed run off or nutrient levels

***The project is to preserve the significant bushland areas in the vicinity including by protection and by detailed design to limit overshadowing, changed drainage conditions, etc.***

#### **5.3.5 Landscape Heritage Items**

The existing landscape heritage items in the precinct and within its vicinity should be indicated on drawings and clearly marked during construction and all workers inducted as to their significance prior to starting works on the site. All works to significant trees and vegetation communities should be undertaken in accordance with the Taronga Zoo Tree Protection Guidelines.

***Identify and protect landscape heritage items during construction and in documentation.***



### **5.3.6 Detailed Design Development**

The level of detail of the documents as required for approval does not show in detail the treatment of some heritage features. Detailed design is needed to clarify the extent of excavation and tree removal required in the vicinity of the existing significant vegetation and the rock features above koalas and below the proposal. The interface between the proposal and these items needs to be carefully resolved to avoid damage and to enhance the potential for bush regeneration.

***Ensure there is no disturbance in the remnant natural area 240L and Aboriginal Archaeological Zone 3.***

***Develop the detailed design (including of services) to minimise impacts on heritage items within and in the vicinity of the site and facilitate bush regeneration.***

### **5.3.7 Conservation Work**

The piece of remnant stone boundary wall is to be retained, expressed and conserved as part of the redevelopment project. Detailed documents should show the remnant wall in relation to the off holding aviaries. Conservation works and methods should be part of the detailed documentation including lime base mortar repointing. The sandstone previously demolished from this wall and now incorporated in garden beds should be salvaged and reused.

***Conserve the remnant stone wall including removing any cement pointing and replacement with compatible lime-based mortar pointing. Show retention of the wall and conservation works and the reuse of sandstone garden edging in the detailed documentation.***

### **5.3.8 Conservation Advice**

Appropriate conservation advice should be available during the detailed design phase and throughout the works program. This should include availability for response to unforeseen circumstances that may arise during construction. Currently regular heritage advice is being provided to Taronga Zoo by staff specialist Jean Rice, Senior Project Manager, Heritage. Depending on the detailed extent of works expert advice may also be needed on Aboriginal archaeology and cultural landscape conservation and bush regeneration.

***Retain appropriately skilled conservation advice throughout the design and construction.***

### **5.3.9 Contractor Induction**

Suitable clauses should be included in all site contractor and subcontractor contracts to ensure that site personnel are aware of their obligations and requirements in relation to the *Heritage Act 1977* (NSW) and the NPWS Act, both of which are managed by the Office of Environment and Heritage (OEH). Specifically, personnel should be made aware of the need to protect the remnant indigenous vegetation and relevant personnel should be made aware of the procedure to be followed for notification and stopping works should items of heritage significance, including evidence of Aboriginal occupation, be found during site works.

***Include clauses in the specification about contractor responsibilities for heritage and conduct contractor inductions for heritage issues along with WHS inductions.***

### **5.3.10 Protection of Heritage Items during Works**

Adequate signage and fencing or similar should be erected in the vicinity of the heritage items within (07L) or in the vicinity of the development site that are to be retained alerting contractors and subcontractors to their existence and the need to protect them from damage.

***Include conditions in specification about protection of heritage items and identify heritage items to be protected on drawings. Monitor compliance with protection requirements.***

### **5.3.11 Archival Recording**

The history of the site is generally documented and additional research has been undertaken in respect to this project (see earlier in this report). A general photographic archival record should be made of the proposed site and items in the vicinity including individual heritage items, their respective settings and views to and from the subject development area. A detailed archival record should be made of the Former Staff Amenities Building, which is proposed to be demolished. Prior to demolition an architectural measured drawing should be prepared of the building. Additional photographic recording should be made during the works, paying attention to any concealed items and construction details revealed during demolition.

***Undertake photographic archival recording of the site generally prior to commencement and during construction of items unexpectedly revealed during works or made accessible during the works. Prepare a detailed archival record of the Former Staff Amenities Building including photographs and architectural measured drawings. To be in accord with Heritage Branch standards for recording.***

### **5.3.12 Interpretation**

An obligation arising from the historic significance of Taronga Zoo is that its cultural heritage values should be interpreted to the public. Previous studies have recommended that a strategy for interpreting the site as a whole should be developed. This is beyond the scope of this proposal. The building to be demolished is not of such significance or interest to warrant specific interpretation on site. However archival recording is recommended (see above) and this, with the historical research undertaken for this Statement of Heritage Impact should be retained as source material for future researchers.

***Retain the archival record of item 78B and the history in this Statement of Heritage Impact and make them available for research. This may be as physical records or electronic documents.***

Jean Rice Architect  
December 2015