Figure 5.2 View from Harbour.

Figure 5.3 View to the city from the Bird Show amphitheatre (View 9).

Figure 5.4 View from above the upper seal enclosure, looking to the southeast. This is one of the best views available that shows the sweep of the broad gully running up through the zoo (View 1).

Figure 5.5 Looking south from above the seal enclosure, towards the western portion of the main gully, evident in the background as the land falls steeply down towards the harbour (View 2).

Figure 5.6 View looking east across the seal cove at the base of the zoo site. The arc in the public road at the right of the image and the curved nature of these lower seal enclosures suggests the sweeping form of the gully that they lie within (View 8).

Figure 5.7 View to the southeast from the seal Theatre Terrace, looking over the mature trees which line the main gully extending up the zoo from the Harbour.

Figure 5.8 View looking west from the concert stage. Views such as this are not only important for identifying elements outside the zoo's perimeter, but also for locating key public facilities and zoo buildings from separate zones of the large site (View 6).

Figure 5.9 View to the west from the platform outside Sarina's Brasserie, across the zoo towards the city (View 5).

Figure 5.10 View looking south from Giraffe enclosures to the southern foreshore of the Harbour (View 13).

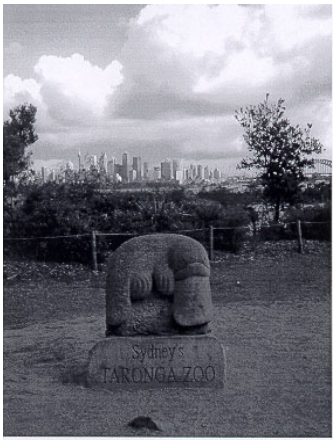

Figure 5.11 View from northwest picnic area (View 10).

Figure 5.12 View to the southeast from above the seal enclosure. Vantage points within the grounds allow internal view corridors between enclosures and features (View 2).

Figure 5.13 Visual corridor from Moore Park Aviary to Aquarium and beyond to the Harbour (View 11).

Figure 5.14 Looking east along Taronga Road to the elephant enclosure. The curved alignment of the road suggests the underlying gully landform extending through the middle of the zoo. This gully formation allows for internal glimpse views of zoo features.

Figure 5.15 View looking northwest from below the concert stage towards the lower zoo seal enclosures. The substantial gully leading up the site makes buildings on either side of the gully appear as features in distance views.

Figure 5.16 The tall Norfolk Island Pines in the centre background of this photograph are dominant features when looking west across the zoo's main gully, which lies to the west of the elephant enclosure (View 4).

Figure 5.17 View looking west from the floral clock, over the upper seal enclosures. The gully formation, the most dominant underlying topographical feature of the zoo site has dictated the alignments of some of the larger enclosures and the positioning and alignment of much of the road network through the centre of the site (View 3).

Figure 5.18 View from Orang-utan Exhibit down double staircase to Hallstrom Square (View 14).

Figure 5.19 Waterbird Exhibit at top entrance of site in vicinity of former watercourse through the natural site.

6.0 Archaeological Analysis of the Taronga Zoo Site

6.1 Archaeological Features

An analysis of local prehistory, as well as the history of land use since 1788, helps to suggest the context and nature of the archaeological remains that may occur on the Taronga Zoo site. (Further assessment of the Aboriginal values of the site is recommended as part of the implementation of this report.)

6.1.1 Pre and Post-Contact Aboriginal Occupation

The Mosman locality possesses a rich archaeological record of Aboriginal occupation. Souter cites that twenty-three rock shelters, forty-three middens and seventy-seven art sites have been recorded in the locality.[1] In addition, an excavation of a rock shelter at nearby Balmoral by the Australian Museum in 1992 provided radiocarbon dates of 3,780 years, plus or minus 140 years.[2] Middens and rock shelters are generally found concentrated along the coastline and examples are known close to, but outside, the boundaries of the Zoo sites; in Little Sirius Cove and Athol Bay. A surviving art site has been recorded within the Zoo grounds. It is a hand stencil on the wall of a shallow cave near the Bird Show area. The area in the vicinity of this site is marked with a contemporary rock wall carving and hand stencil (see Figures 6.1 and 6.2).[3]

Historical accounts suggest that the people living in this area at the time of first contact were the Boregegal band, who fished the waters in canoes, exploited shellfish and hunted small mammals. It is thought that the band was decimated by the smallpox outbreak of 1789 and that traditional occupation patterns were severely disrupted. However, Aboriginal occupation is likely to have continued in this area into the 1820s, being progressively disrupted by the growing colony of Sydney in the early nineteenth century.[4] By 1815 Governor Macquarie had established a short-lived Aboriginal settlement on nearby Georges Head. The settlers were known as being from the 'Broken Bay tribe' and included Bungaree, who was named their 'Chief' by Macquarie.

6.1.2 Early Colonial Exploitation and Land Grants

In the first half of the nineteenth century there is little recorded European activity in the subject area. However, there was likely to have been sporadic visits by European woodsmen, fishermen and hunters. The *Sirius* was careened in nearby Mosman Bay in 1789 and men are recorded as having become lost in the surrounding bush when walking to Sydney or hunting in the area. Contact between Europeans and Aboriginals during this time included some violent clashes and shootings.[5]

Activity in the locality surrounding the study area increased throughout the nineteenth century, no doubt gradually displacing any continued use of the land by Aboriginal people. The 1820s saw a successful orchard established at Chowder Bay, while some fishermen had taken up residence at Taylors Beach. Souter mentions an attempt at viticulture in either Little or Greater Sirius Cove by

John Parker, but no land grant was made to him. Nevertheless, the area was still remote enough in the 1820s for the convict pirate Michael Coogan to ambush a vessel near Bradleys Head in 1827.[6]

In 1830 the Colonial Secretary authorised the establishment of whaling facilities in Great Sirius Cove (Mosman Bay) and in 1831 shipwrights Robert Millard and Richard Linley were authorised to take possession of four acres of land in Sandy Bay (later Athol Bay) and more land on Little Sirius Point. Souter claims that this entire foreshore was taken up by the end of the 1830s, but that few houses had been developed in the area.[7] Just beyond the perimeter of the current Zoo site, Mary Anne Ferrier built the stone house known as 'Athol' in 1837. By the 1850s the Willoughby Parish map shows that the study area had been granted in four parcels to Charles Jenkins and J Holt, but no development appears to have occurred.

6.1.3 An Escape from the City

From the 1850s 'Athol' was let to tenants. A report in the *Sydney Morning Herald* shows that at this time the area was becoming known for its natural attractions.[8] The locality soon developed as a leisure destination, with steamers bringing day-trippers to the Athol Wharf. The mansion 'Athol' was transformed into a hotel and pleasure garden in 1863, featuring cock fighting, boxing and dancing. From the 1880s the locality attracted a different sort of visitor seeking fresh air, sea bathing and a respite from urban life. In 1890 the famous Curlew artists' camp, the best known of a number of bohemian camps in the area, was established at Little Sirius Cove, immediately adjacent to the Zoo site. The camp remained until 1912 when the site above it was determined as the venue for the new Zoo.

6.1.4 Military Uses

During 1840 to 1841, a stockade for convicts was built at Bradleys Head and work commenced on a battery. It was armed in 1846 against a perceived threat of American aggression. This battery was obsolete by 1861, when Souter states that Bradleys Head was notified as a military reserve.[9] It was not until the 1870s that a road to Bradleys Head was formed and several large guns were rolled down it to a new emplacement on the crown of the headland. By the 1890s all land grants in the study area were extinguished and the land reserved for military purposes. At Federation all military lands were handed over to the Commonwealth, but in 1906 New South Wales requested that the Commonwealth hand back lands no longer required for this purpose. In 1908 Bradleys Head was gazetted as Ashton Park.

6.1.5 Animal Quarantine Stations

In 1879 two sites were reserved for quarantining imported stock and the Chief Inspector of Stock called for tenders to construct buildings and fencing.[10] It is presently unclear when these sites became operational, but in 1891 two stations, one near Athol and one at the corner of Whiting Beach and Bradleys Head Road, were in existence. These sites were not incorporated into the Zoo until

1916 (the Athol Station) and 1950 (the site of the former Sheep and Dog Quarantine Station was excised from Ashton Park to create the Zoo's carpark).[11] The Quarantine Stations developed a freight tramline from the Athol Wharf, and this was also used in the construction of the Zoo.

6.1.6 Zoo Development

The developmental history of the Zoo is outlined in Sections 3.0 and 4.0 of this report. The site has undergone continuous change since construction began in 1912; however, the original shape of the Zoo is still strongly reflected in the current layout (see Figure 1.2). It is likely that some archaeological remains of earlier Zoo features exist on the site. The implications of this are discussed below.

6.2 Factors Affecting the Survival of Archaeological Features

Taronga Zoo's site is characterised by intersecting sandstone ridges and ledges which slope towards the harbour and were originally bisected by an eroded gully. The development of the Zoo has involved the creation of terraces on the sloping site, in order to create level building platforms, using both cutting and filling operations. However, remnants of the natural topography survive in many areas.

The topography, erosion and subsequent earthworks have major implications for the nature and location of any archaeological resources that may survive on the site. These implications mean that:

- areas that have been cut into bedrock will have no archaeological remains;
- areas that have been filled may retain archaeological remains; and
- sloping areas subject to erosion may result in archaeological material being redeposited at the foot of slopes or the base of gullies.

This situation makes the survival of archaeological remains difficult to predict. The density of development on the present site suggests that it is unlikely that substantial archaeological deposits survive. However, areas of filling and terracing may have buried remains, and the fill itself may contain items of archaeological or heritage significance. (Areas of fill often serve as dumping sites for all kinds of unwanted items.)

Taronga Zoo is a designated quarantine area and since the cessation of incineration in the 1970s, animals have been buried. Animal burial remains are therefore not 'relics' as defined by the *NSW Heritage Act* and are therefore not covered by the archaeological provisions of the Act. The location of animal burials is recorded, with the skeletal remains, in some cases, intended for recovery for scientific purposes. Such sites have been assessed as having no cultural significance and should be managed separately to other potential archaeological evidence on site.

6.3 Potential Archaeological Features

The land use history outlined above raises several important factors in determining the potential archaeological features of the study site:

- the Mosman locality is rich in Aboriginal archaeological remains;
- little development occurred on the subject site in the nineteenth century;
- the animal quarantine stations developed in the late nineteenth century are the first known developments on the site, apart from the construction of Bradleys Head and Whiting Beach Roads; and
- archaeological remains of earlier Zoo layouts are likely to exist.

This analysis suggests that the archaeological features of the Taronga Zoo site consist of, but may not be limited to, the following three categories:

6.3.1 Category 1: Aboriginal Archaeological Evidence

- Evidence of Aboriginal occupation (both pre and post-Contact) and land management, including the possibility of art sites and both in situ and re-deposited cultural material.
- Evidence of the original topography, such as watercourses, and vegetation of the site.

One Aboriginal art site has been recorded within the boundary of the Zoo and middens have been recorded on the coastline surrounding the Zoo. While the scope and scale of twentieth century development on the site makes it unlikely that such archaeological remains survive on the site, they may occur in pockets of fill or deposition, particularly along the less developed southern perimeter of the site.

6.3.2 Category 2: Evidence of Nineteenth Century Land Use

- Ephemeral archaeological evidence of nineteenth-century visitation of the site by Europeans involved in timber getting, quarrying, camping, hunting, military activities, etc.
- Evidence associated with the construction of Bradleys Head and Whiting Beach Roads from the 1870s.
- Evidence of structures associated with the late nineteenth century animal quarantine stations, including the tramline re-used for the early construction of the Zoo.

Category 2 evidence is most likely to occur in the northern car park and the southeastern corner of the site.

Figure 6.1 Contemporary hand stencil in vicinity of original artwork.

Figure 6.2 Contemporary rock wall carving to mark the Aboriginal site in the vicinity.

6.3.3 Category 3: Evidence of the Development of the Zoo

- Evidence of the successive development of the Zoo, including landscaping features such as gardens and paths and earlier enclosures and facilities.

Category 3 evidence might survive in any sector of the Zoo as the perimeter has largely remained stable since the early development of Taronga.

6.4 Endnotes

[1] Gavin Souter, 1994, *Mosman A History*, Melbourne University Press, Melbourne, pp 2, 3.
[2] Val Attenbrow, Balmoral Beach Shell Midden. Final Report to Mosman Municipal Council on Fieldwork Undertaken in 1992.
[3] Zoological Parks Board of New South Wales Heritage and Conservation Register, Prepared by Heritage Group NSW Department of Public Works and Services April 1998, items 40 A and 66 A.
[4] Gavin Souter, 1994, op cit, pp 11, 16.
[5] Gavin Souter, ibid, pp 16
[6] Gavin Souter, ibid, pp 36, 37.
[7] Gavin Souter, ibid, p 50.
[8] Gavin Souter, ibid, p 51.
[9] Gavin Souter, ibid.
[10] Gavin Souter, ibid, p 347.
[11] Zoological Parks Board of New South Wales Heritage and Conservation Register, prepared by Heritage Group NSW Department of Public Works and Services April 1998, pp T–11.

7.0 Analysis of Built Elements at Taronga Zoo

7.1 Introduction

The sense of place at Taronga Zoo is evidenced in the site's unique layout and composition of gardens, mature trees, circulation system, pathways, staircases, seating, lawns, views, buildings and animal enclosures. Section 2 of this report provides an overview of the many layers that comprise the cultural landscape of the Zoo and contribute to the sense of place, which defines the Taronga Zoo experience.

The wide variety of built elements at Taronga contributes greatly towards the rich cultural landscape of the Zoo. This section considers the buildings, structures and landscape elements that are of varying function, type, scale and architectural or aesthetic style, which reflect not only the periods within which they were built but also remain as a testament to the Zoo's changing philosophies as well.

This section of the Conservation Strategy addresses the key aesthetic themes and concepts, as set out below.

Functional Types The functional requirements of running the Zoo have led to the construction of a variety of built forms resulting in the large collection of buildings and structures that are characteristic of the Zoo today.

Architectural Styles Many architectural styles have been used at Taronga; however, the three that have had the most impact at the Zoo are the 'Edwardian Baroque' style, the 'Sydney School' and, most recently, a 'Contemporary Modern' style.

Exhibit Design Changing Zoo philosophies are reflected in the wide variety of animal enclosures and bird aviaries that remain at the Zoo today and in their location and relationship to each other and the site as a whole.

Thematic Precincts The use of thematic precincts to 'immerse' the visitor into the life of the Zoo has led to some areas within the Zoo featuring a particular overall aesthetic.

Stylistic Features There are many stylistic features throughout Taronga such as those manufactured of ferro-cement to create 'mock rock' as well as the grotto, log cabin and rustic charm effect.

Other Elements Numerous commemorative plaques, statues and markers feature throughout the Zoo, adding to the public realm.

7.2 Functional Types

The numerous building types at Taronga reflect the many functional requirements associated with the everyday running of the Zoo.

The resulting variety of buildings and structures, which are of different size, massing and style, has resulted in a large collection of buildings that impact on the landscape in varying ways and to varying degrees.

Broadly speaking, the functional types are based on the following themes:

Visitor Facilities There is a wide variety of facilities designed to cater for the visitor, including the Upper and Lower Entrances (Figure 7.1), cafes such as the 'Beastro' (Figure 7.2), kiosks, toilets, the visitor shop, the Education Building and the Taronga Zoo Function Centre (Figure 7.3).

Transportation All of the elements of the Cable Car, including the support pylons and the pick-up and set-down points (Figure 7.4), as well as the early Tram/Bus Waiting Shelter (Figure 7.5).

Animal Exhibits The wide variety of animal enclosures such as the Mountain Goat Enclosure (Figure 7.6) and bird aviaries and their associated animal carer and maintenance facilities.

Exhibit Structures Buildings and structures that are part of an animal exhibit, including the Indian Elephant Temple, the Upper Entrance to the Aquarium (Figure 7.7) and the Giraffe House.

Animal Welfare Includes those buildings that cater for the welfare of the animals such as the Veterinary and Quarantine Building.

Research Research centres associated with the Zoo are located in several places throughout the Zoo. These centres provide places where animals can be studied at close proximity.

Administration There are several administrative buildings located throughout the Zoo such as Hallstrom House (Figure 7.8), the Graphics Asset Management and IT buildings.

Staff Amenity Several buildings cater for the need of the staff, including what was originally Turner House (Figure 7.9) and the Old Staff Amenity building.

Services Includes service facilities such as water storage, depots, garages and the Waste Water Treatment Plant (Figure 7.10).

Figure 7.1 The Upper Entrance Building, one of the more prominent visitor facilities.

Figure 7.2 The Beastro Café, one of the many visitor facilities at the Zoo.

Figure 7.3 The Taronga Zoo Function Centre

Figure 7.4 The Taronga Zoo Cable Car transports people from the water's edge to the upper level of the Zoo.

Figure 7.5 The Tram/Bus Waiting Shelter has been associated with Zoo transport for a long time.

Figure 7.6 The Tahr Mountain Enclosure.

Figure 7.7 The Upper Entrance to the Aquarium, an example of an exhibit structure.

Figure 7.8 Hallstrom House, where much of the administration of the Zoo is carried out.

Figure 7.9 Turner House.

Figure 7.10 The Waste Water Treatment Plant that services the Zoo.

7.3 Architectural Styles

The built forms of Taronga Zoo feature many architectural styles ranging from the 'Californian Bungalow' style of the Tram Waiting Shed to the contemporary modern style of the Function Centre. However, 'Edwardian Baroque', which was used for the public buildings constructed during the initial development period, and the 'Sydney School', which greatly influenced the design and construction of buildings during the 1970s, have had the largest impact on the architectural character of the Zoo.

7.3.1 Edwardian Baroque

During the initial stages of development at the Zoo, the prevailing Zoo philosophy aimed to amuse and entertain in the hope that people would make return visits, essential for the Zoo's financial viability.

Also described as 'Federation Free Style'[1], Edwardian Baroque was an ideal aesthetic to use as it provided the early Zoo designers with exotic opportunities to break away from strict traditional architectural rules to create buildings that induced a feeling of excitement and anticipation in the visitor.

Generally, the characteristics of the style include an asymmetry with informal massing and fenestration, often using a number of windows of different shapes and sizes. It usually featured an eclectic combination of elements and details that might include 'original' decorative motifs, influenced by the work of the Arts and Crafts designers, and classical motifs that were usually impure, incomplete or out of context.[2] It also frequently made use of two principal materials with contrasting colours and textures — brick and stone or brick and stucco, usually of sombre, earthy colours.[3]

Perhaps the best examples of the Edwardian Baroque style at the Zoo are the Upper Entrance Building and the Indian Elephant Temple.

Due to its scale and positioning, the Upper Entrance is a landmark building providing a grand entrance to the Zoo through its monumental massing and beaux-arts planning. The two-storey building is made of brick, some of which is painted and some of which has been rendered. It also features a central, copper-sheathed dome and two single-storey wings that have terracotta, shingle-tiled roofs. The florid decoration is in applied cement render and includes plaster panels and mouldings of flora and fauna (Figures 7.11, 7.12 and 7.13).

In contrast to many of the other structures built at the time, the Indian Elephant Temple was not designed to imitate the natural habitat but made specific reference to the animal's country of origin. The symmetrical building was constructed to imitate an Indian temple and features a large central dome, florid ornamentation, domed corner turrets and overhanging tiled eaves supported on decorative brackets and painted using Indian styles and colours (Figures 7.14, 7.15 and 7.16).

Other buildings that display Edwardian Baroque characteristics are the Lower Entrance to the Zoo (Figures 7.17 and 7.18) and the Upper Entrance facade to the Aquarium (Figures 7.19 and 7.20).

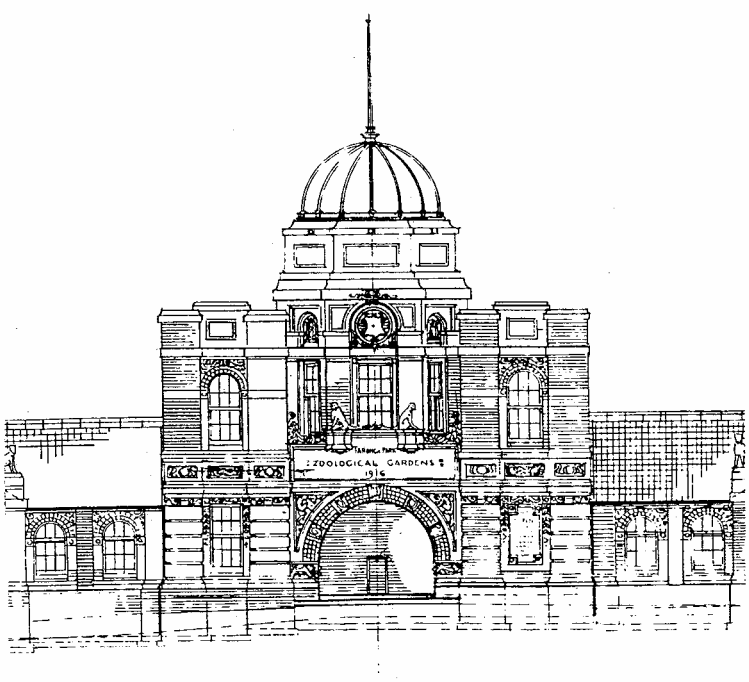

Figure 7.11 North elevation of the Upper Entrance Building.

Figure 7.12 Upper Entrance Building detail.

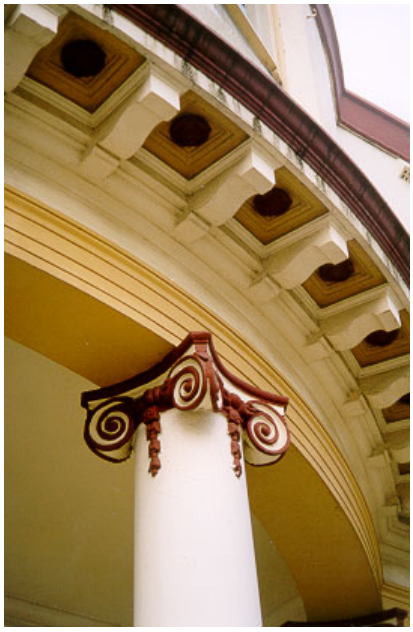

Figure 7.13 Upper Entrance Building detail of rear facade.

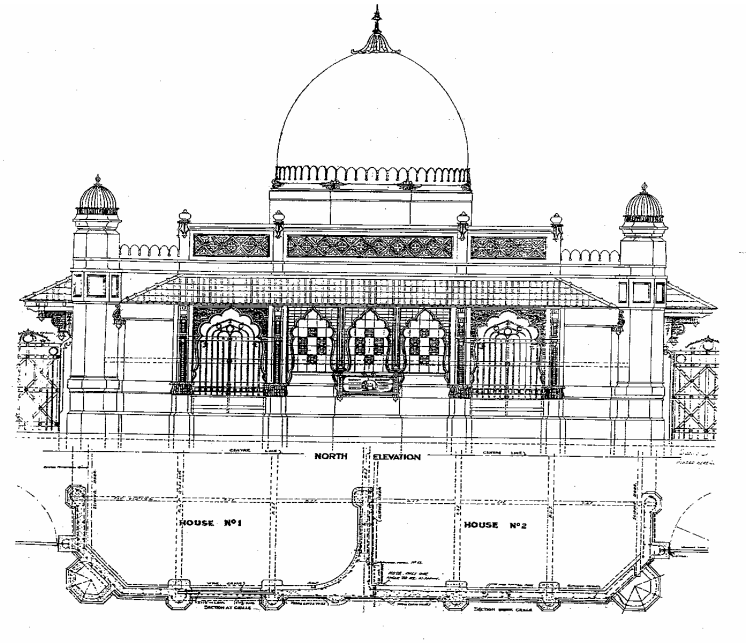

Figure 7.14 Elevation and part plan of the Indian Elephant Temple.

Figure 7.15 Detail of the Indian Elephant Temple.

Figure 7.16 Indian Elephant House and Yard.

Figure 7.17 Lower Entrance Building front facade.

Figure 7.18 Elevation detail of The Lower Entrance to the Zoo.

Figure 7.19 Entrance to Aquarium

Figure 7.20 Elevation detail of the Upper Entrance to the Aquarium.

7.3.2 The Sydney School

The recommendations arising from the 1966 Hediger Report marked the beginning of a new approach to the location, design and construction of enclosures, buildings and structures at Taronga Zoo.

This new approach was clearly embodied in the 1971 Taronga Zoo Masterplan where it was envisaged that the natural topography and existing vegetation should be retained and enhanced to preserve continuity with the adjacent harbour foreshore. All buildings and structures were to be designed to blend with the natural landscape in such a way that the natural form remained dominant. High and bulky structures were to be avoided and exterior surfaces were to be neutral in tone.[4]

The Masterplan coincided with a peak of interest in a new approach to architectural design that had begun in the 1950s, known as the 'Sydney School'. Also known as part of 'Late Twentieth Century Sydney Regional'[5], or as 'Port Jackson Romantic'[6], the Sydney School design principles paralleled those of the Zoo Masterplan which shows evidence of being heavily influenced by it.

Sydney School architects viewed architecture as an art in a natural environment and their theories and philosophies grew out of a love and respect for the Australian landscape and bush. It was part of a general move, throughout the arts, towards a new vision of nature, one that placed emphasis on the Australian landscape. It included writers such as Patrick White and Judith Wright and painters such as Lloyd Rees, Sidney Nolan and Fred Williams.

In general, the Sydney School approach to architecture attempted to blend the built elements within the existing landscape. This was done with the use of materials and forms that responded directly to the natural terrain and to the native flora. Usually the building site was left untouched and any introduced landscaping elements made use of supplementary informal arrangements of Australian flora.

Buildings generally featured asymmetrical massing that reflected both their function and the landform, with a roof that followed the slope of the land. This was ideal for steeply sloping sites and made it possible to leave the natural bushland largely undisturbed. The natural textural and tactile qualities of materials were usually expressed with timbers such as rafters, posts and beams left unexposed with a sawn finish, walls of either clinker brick or painted brick and generally natural or neutral colours. The overall effect was of a relaxed and informal appearance, although it was usually carefully contrived.

Although the Sydney School was best known for its houses, it was in the development of a regional architecture and its use in the Sydney region in particular that its greatest contribution was made.

At Taronga Zoo, the exhibits, buildings and structures influenced by the principles of the Sydney School include the Australian Landscaped exhibit that incorporated the Platypus House (later adapted to include echidnas); the Nocturnal House; the Koala Enclosure; the walk-through Rainforest

Aviary; and the Veterinary and Quarantine Building. The government architect for these jobs was EH Farmer with the project architect being DM Coleman.

The partial site redesign of Taronga Zoo to accommodate the 'Australian Mammals Section' was undertaken by the landscape architect Allan Correy. During his time with the Government Architect's Branch in Sydney and his subsequent years with the State Planning Authority, Correy was influential in establishing an ecological approach to landscape design. He aimed to provide enclosures for native animals in as natural an environment as possible, allowing for unobstructed viewing by the visitor.

The overall design was to have an Australian character with the landscape and architecture complementary with each other. The exotic trees within the area were removed with the remnant Australian species which largely dictated the path design and location of the enclosures. As part of the design, the Nocturnal House (Figures 7. 25 and 7.26) was 'sunk' into the earth utilising a former monkey mountain enclosure.

The Platypus House was designed so that the visitor was able to view the platypus underwater and to provide the platypus with accommodation to simulate its natural habitat. Within the building is a six-metre long viewing tank containing a series of grass-lined wooden chutes and boxes that simulate the platypus' tunnels and living quarters on a riverbank. As with other buildings of this period, it is constructed of off-form reinforced concrete and timber infill. The timber roof is clad with hand-split and resawn shingles replaced with white cypress pine shingles in 1992 (Figures 7.21 and 7.22).

The structure of the Koala House was designed with the idea that the visitor could either look up into the tree at the koalas or be able to see them at eye level. The timber structure was used as it was considered to be the most sympathetic to the biological requirements of the exhibit. The adjacent mass planting of trees was designed to help the building blend in to the landscape. It was constructed of hardwood timber framing and infill, brick support walls, hand-split and resawn roof shingle and bituminous paving (Figures 7.23 and 7.24).

The Veterinary and Quarantine Building is located in the Works and Services area of the Zoo and includes three types of animal pens, exercise yards, a post-mortem room, a surgery, laboratory and research and student facilities. It is constructed of load-bearing brickwork walls using bricks of varying colour as useless timber framing in the sloping roofs. This building epitomises two things: the use of the Sydney School principles in its design; and the general push within the Zoo towards placing more emphasis on research and conservation (Figures 7.27 and 7.28). Alterations and additions were carried out on this building in 1998.

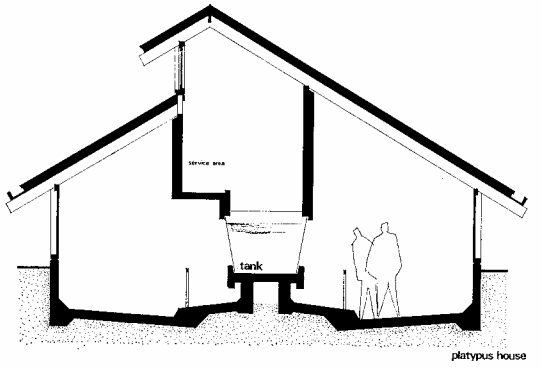

Figure 7.21 Section through the Platypus House.

Figure 7.22 The Platypus House.

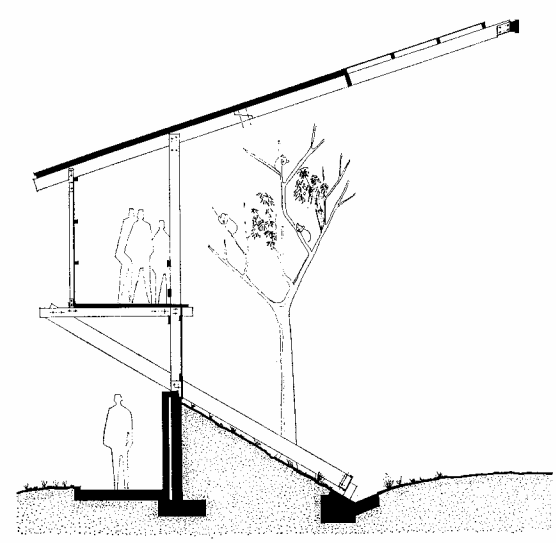

Figure 7.23 Section through the Koala House.

Figure 7.24 Internal view of the Koala House.

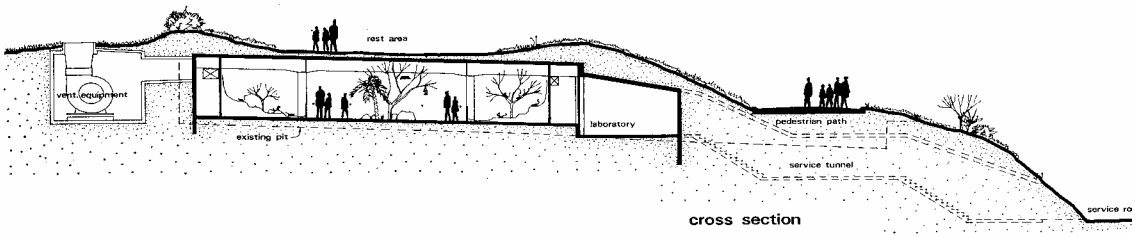

Figure 7.25 Section through the Australian Night Life Exhibit (Nocturnal House).

Figure 7.26 The Entrance to the Nocturnal House.

Figure 7.27 The Quarantine Building.

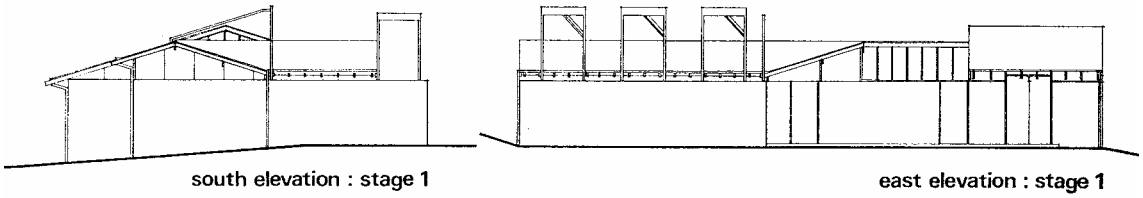

Figure 7.28 Quarantine and Veterinary Elevations.

7.4 From Recreation to Education — Animal Enclosures and Bird Aviaries

There are a wide variety of animal enclosures and bird aviaries at Taronga that are a legacy of changing zoo philosophies. Since the opening of the Zoo, the focus of animal collections has gone from a menagerie, where the animals were displayed primarily for the amusement of visitors, to a focus on the animals' physical well-being, to the more recent educational approach.

The layout and design of earlier zoos in Australia was originally based on the concept of the caged animals in a recreational park, much like a menagerie. The Monkey Pit Enclosure (Figure 7.29), the Nicobar Pigeon Aviary (Figure 7.30) and the New Guinea Bird Aviaries, are relatively elaborate examples that attempt to present the birds and animals and their cages as an aesthetic whole. These exhibits have features that are meant to complement the animals and therefore reinforce the visual appreciation of the exhibit. For example, the Spider Monkey Pit has a faux thatched ceiling and is supported on ferro-cement faux tree trunks.

Although the Zoo retains examples of the menagerie style, many of the other original enclosures were greatly influenced by Hagenbeck's designs for the Stellingen Zoo in Germany where the animals were displayed in as natural a setting as possible. At Taronga, the use of the natural sandstone rock faces and ledges has made for a unique response that remains one of the strongest physical characteristics of the Zoo (Figure 7.31).

The rear of the Tahr Mountain Enclosure utilises existing sandstone rock faces as an essential feature of the exhibit, adding additional features such as fencing only where necessary. In other cases, the natural terrain has been augmented with ferro-cement 'mock rock' that attempts to simulate the existing sandstone. The Kodiak Bear Pits, the Sun Bear Enclosure (Figure 7.32) and the Lion and Tiger Enclosures have used a combination of pits and moats and pits and screens that make use of the natural topography of the Zoo. The same technique was utilised to construct the Upper Seal Pond (Figure 7.33).

During the Hallstrom period of administration (1940–1967), the emphasis on exhibit design was on the physical well-being of the animals and the practicalities of Zoo management. This involved redesigning many of the exhibits so that they were easier to clean and provided the animals with a greater deal of protection from the elements, principally the cold southerly winter wind.

Although this resulted in the improved health of many of the animals, it also meant stark and unnatural animal environments and tended to keep the public further away from the animals. Since the late 1960s, the Zoo has largely altered these exhibits with some of the remaining examples being the Cats of Asia exhibit (Figure 7.34), the Wombat Enclosures (Figure 7.35) and the Australian Bird Aviaries (Figure 7.36).

From the late 1960s onwards, the emphasis on exhibit design changed to reflect the new focus on the Zoo as an educational institution. The aim was to display the animals in a manner where the visitor was able to get much closer to the animal without disturbing them or risking injury. This would

then make it easier to appreciate their size and characteristics as well as to be able to view their behaviour as an individual and as part of a group.

This concept relied heavily on viewing principles that led to the redesign of many of the enclosures and the construction of new ones. It paid particular attention to the design of fences, pits, screens, horizontal barriers, moats, viewing bays, viewing islands and the 'walk-through' principle.

The contemporary, modern enclosure designs have incorporated transparent screens to allow the public to observe the animals at eye-level, thereby achieving a certain level of intimacy. The Tiger Enclosure at Taronga uses one-way glass to ensure that the public cannot attract their attention and therefore irritate them (Figure 7.37). The Snow Leopard Mountain utilises tension wires to achieve the same purposes (Figure 7.38).

Viewing bays allow the public to come into close proximity of the animals within the exhibit by projecting into the enclosure itself. Having the animals' environment on three sides provides a sense that you are actually in the enclosure with the animals. There are several examples at Taronga where this principle has been employed, most noticeably at the Giraffe Exhibit and the Sun Bear Enclosure. The Koala House has also adapted these principles to create an elevated walkway that allows the public to view the koalas both at ground level and at eye-level (Figure 7.39).

The walk-through Rainforest Aviary (Figure 7.40) was designed to provide a large, free-flight aviary for Australian birds. It was designed to retain and enclose the rock benches and native vegetation sympathetic to the birds' native habitat. The public enters the structure through revolving doors and walks through the aviary, allowing the opportunity to experience first-hand the birds' environment.

The Rainforest Aviary exemplified the shift in thinking as to how best to display and visually experience the animals. Specifically, it represents a move away from seeing the animals as an item to look at in a cage to bringing the viewer into closer proximity with them which develops a better environment, at first hand. A Free Flight Bird Show was opened in 1999, which developed the concept of the display of birds even further allowing the public to again experience the animals in a more natural setting, by providing the opportunity to see the birds in free flight.

Figure 7.29 The remaining circular Spider Monkey Pit.

Figure 7.30 The Nicobar Pigeon Aviary.

Figure 7.31 The Lower Seal Pond.

Figure 7.32 The Sun Bear Enclosure.

Figure 7.33 The Upper Seal Pond.

Figure 7.34 The rear wall of the Cats of Asia Exhibit.

Figure 7.35 The Wombat Enclosures.

Figure 7.36 The Australian Birds Aviary.

Figure 7.37 The White Tiger Enclosure.

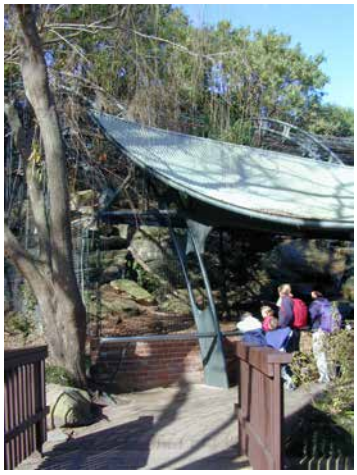

Figure 7.38 The Snow Leopard Enclosure.

Figure 7.39 The Koala House.

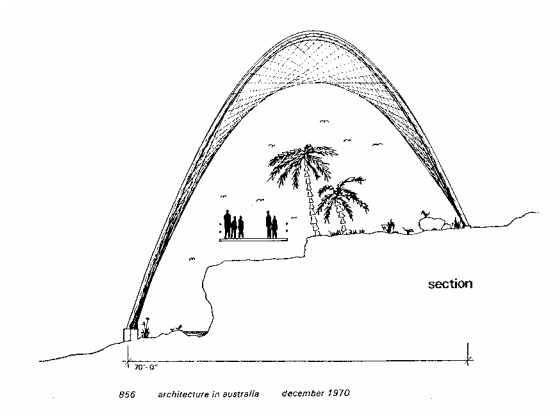

Figure 7.40 The walk-through Rainforest Aviary

7.5 Exotic Immersion — Thematic Precincts

In order to immerse the visitor in a total experience, incorporating the opportunity for interpretation and education, the Zoo designers have attempted to shape the physical environment within some precincts, giving each area of the Zoo a distinctive character evoking imagery of the animals' place of origin.

In some areas of the Zoo, particular aesthetic themes have dictated the design of the physical environment, such as the African Waterhole and the Australian Mammals Section.

The African Waterhole contains animals such as zebras, giraffes, camels and bongos. Entry is through a timber-framed circular structure that is evocative of the traditional abodes of native African tribespeople (Figure 7.41). The path leading to the entrance, and the paths within the area, are lined with treated pine logs that not only give the visitor the sense of being in an African village, but also provide a backdrop for the animals. This also works to disguise any elements that may detract from the desired aesthetic effect.

The animal enclosures within the precinct continue the African theme with the use of other evocative elements such as the tall, thatched, giraffe shelters in the Giraffe Enclosure (Figure 7.42) and the bamboo 'picket fence' along its northern boundary (Figure 7.43). Attempts have also been made to include public facilities such as kiosks and toilets as part of the thematic precinct, as is the case with the Safari Lodge Kiosk that is located at the end of the African Waterhole precinct.

The Australian section features native animals such as kangaroos, wallabies, wombats, dingoes and koalas. Of particular interest is the Australian Walkabout section where the design of the enclosures works with native bushland to give the visitor a sense that they are walking within the animals' natural environment (Figure 7.44). The Australian character of this area of the Zoo will be reinforced by the opening of the Backyard to Bush precinct as a mixed species exhibit of native animals, reptiles and birds.

Located throughout the site are several smaller precincts where the thematic aesthetic is contained in a building or path, such as the Bear Exhibit. In other instances, single elements have been used not only to contrast with the surrounding environment, but to refer directly to exotic places such as the Indian Elephant Temple in the Elephant Enclosure.

Figure 7.41 Entrance to the African Waterhole.

Figure 7.42 Giraffe Shelters.

Figure 7.43 The Giraffe Enclosure 'picket fence'.

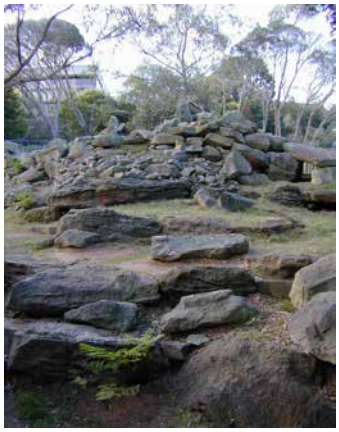

Figure 7.44 The Kangaroo and Emu Enclosure in the Australian Mammals Section of the Zoo.

7.6 Stylistic Features

Throughout the Zoo there are a variety of features that have been created in order to evoke certain imagery. In particular, ferro-cement has been used extensively to construct 'mock rock' or to simulate grottoes and log cabins. In other instances, small stones have been used to apply a rustic charm to many of the landscape features.

Such stylistic features were designed to ensure that the visitors' experience was out of the ordinary. Many of these features continue to exist today and help to provide both a physical and visual link to the many different areas within the Zoo.

The designers' original goal at Taronga was to display the many different animals in as natural a state as possible, with the emphasis being on the naturalness of the enclosures and exhibits. This was achieved by making use of the natural topography of the site and, in particular, the exposed sandstone rock faces as backdrops to the enclosures. In order to contain the animals, steel-framed side walls were constructed and finished with a ferro-cement layer that was shaped and coloured to simulate the surrounding sandstone.

The Kodiak Bear exhibit, modified in 2000, is an example where 'mock rock' has continued to be used to simulate the natural sandstone. The Upper Seal Pond also utilises mock rock to create additional features within the enclosures, including rock ledges and ice floats (Figure 7.46).

Tahr Mountain was constructed as part of the Mountain Goat Enclosure and is influenced by a similar structure located at Hagenbeck's Tierpark at Stellingen, Germany. It has a steel superstructure that is clad with ferro-cement shaped to simulate rock. Built into the structure are a number of imitation caves.

Apart from mock rock, the plastic qualities of ferro-cement have allowed for the creation of many other stylistic features.

The Aquarium at Taronga Zoo was completed in 1929. It was built in the form of a grotto or cavern with stalactites of reinforced concrete (Figure 7.47). A similar effect has been applied to an early deer shelter (Figure 7.48), to other animal shelters such as the Pygmy Hippo Shelter and to an early shelter which currently houses food and drink machines (Figure 7.49).

The second giraffe house, built around 1940, has been clad with a ferro-cement finish that attempts to imitate a log cabin (Figure 7.50). The same finish has been applied to the former Koala House, now a refreshment kiosk (Figure 7.51).

Many of the built landscape elements, such as the stone seats and the Rustic Bridge, have been given a 'rustic' finish.

The Rustic Bridge, which crosses a natural gully and is located to the east of the Aquarium, was built in 1915 to a Public Works Department design. It was constructed of cement-rendered brick arches with a reinforced concrete floor. Its rustic quality has been achieved by embedding stones in the walls and parapet capping and by applying ferro-cement mock rock to the buttresses (Figure 7.52). Major structural refurbishment work was undertaken to the bridge in 2000, including a new reinforced concrete super structure.

The same rustic qualities have been applied to many of the numerous stone seats located throughout the Zoo. Perhaps the most notable being the semi-circular seating at the north end of the Rustic Bridge and the eleven stone seats facing onto Hallstrom Square (Figure 7.53).

7.7 Other Elements

Other elements that contribute to the built landscape include exhibit displays, commemorative plaques, signs and wall carvings.

Many of the exhibit displays have been created as part of the overall aesthetic theme for that exhibit. One example is the Kodiak Bear Exhibit, completed in 2000, that features a large stone embedded into the pavement directly in front of the enclosure itself. The stone, which has a relief depiction of a bear, moulded into one side acts not only as a 'fun' marker for the exhibit but also as an interpretive device (Figure 7.54). Another similar example is that created for the Amazonia Exhibit, opened in 1998 (Figure 7.55). In this case, several crocodiles are depicted in relief on the wall that lines the entry to the exhibit.

Plaques that commemorate people or events associated with the Zoo have been placed at various locations throughout the Zoo. One of the more prominent is that celebrating the contribution of Hallstrom (Figure 7.56).

Also evident in numerous places are elements such as the carved platypus (Figure 7.57) that utilises the logo that has been associated with the Zoo over a long period of time.

A number of built movable heritage items also exist at Taronga. Most of these items have been removed from their original location; however, they are still able to interpret the historic context of the Zoo and remain part of the historic fabric of the Zoo. An example of such fabric is the moonstone element (see Figure 7.58) that was originally part of the former Monkey Pits and used as a decorative feature within the exhibit.

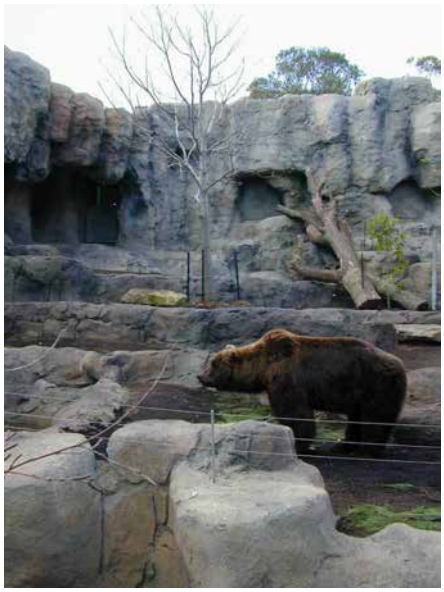

Figure 7.45 The Bear Exhibit, featuring the use of 'mock rock' to create ledges and alcoves.

Figure 7.46 The Upper Seal Pond, featuring 'mock rock' to create seal platforms.

Figure 7.47 The Aquarium Building and its coating of ferro-cement to create a 'grotto' effect.

Figure 7.48 The grotto effect applied to the supports of the Deer Shelter.

Figure 7.49 The former shelter exhibiting the use of ferro-cement to create a 'grotto' effect.

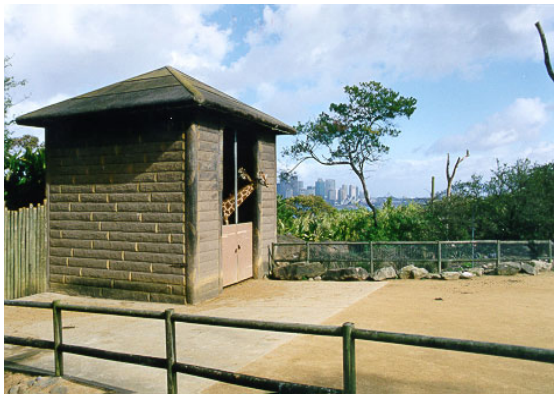

Figure 7.50 The 1940 'Log Cabin' Giraffe House.

Figure 7.51 Kiosk featuring the Log Cabin aesthetic.

Figure 7.52 The use of small stones to give a rustic charm to the Rustic Bridge.

Figure 7.53 The rustic charm of stone seating in Hallstrom Park.

Figure 7.54 Kodiak Bear Exhibit interpretation stone.

Figure 7.55 Amazonia Exhibit, opened 1998, wall display.

Figure 7.56 Memorial Plaque commemorating Hallstrom.

Figure 7.57 Carved platypus, replicating a long-term symbol of the Zoo.

Figure 7.58 Original moonstone element that was part of the Monkey Pit Exhibit.

7.8 Endnotes

[1] Apperly R, Irving, R and Reynolds, R 1989, *A Pictorial Guide to Identifying Australian Architecture*, Angus and Robertson, Sydney, p 136.
[2] ibid, p 139.
[3] ibid, p 139.
[4] *Architecture in Australia*, December 1970, p 853.
[5] Apperly R, Irving, R and Reynolds, R, op cit, p 145.
[6] Taylor J 1990, *Australian Architecture Since 1960*, RAIA National Education Division, Canberra, p 34.

8.0 Comparative Analysis

8.1 Introduction

Almost every large city in Europe, America and Australia maintains a zoo that is popular as both a local and tourist attraction. Zoos throughout the world vary in the type of animals kept and in the size of the place. This section, along with Historical Analysis found in Section 3.0, endeavours to broadly place Taronga in an international and Australian zoo context, however a contextual analysis of world zoos was outside the scope of study for this report and further research is warranted. Some of the information in this section can be found on the Taronga Zoo Web site and the Discovery Channel internet site.

8.2 Evolution of Zoological Approaches

Zoos, as institutions that keep animals for public display and scientific research throughout the world, have undergone an evolution of philosophical approach; from a 'menagerie' through to the 'zoological park', to the 'conservation centre' of today, which is reflected in the physical layout and presentation of the animals.

Early zoos were planned within a parkland in a menagerie style in which animals were exhibited in cages, as curiosities from faraway places, for the entertainment of visitors. The built fabric from this period reflected the whimsical amusement role of the place – structures were decorative and borrowed elements from the animals' country of origin.

As the principles of conservation and zoology developed in the latter part of the nineteenth century, awareness of the biological requirements of animals within zoos increased. These changes were pioneered by Carl Hagenbeck, who opened a zoo incorporating his philosophical approach in Stellingen Hamburg, in 1907. This zoo became the first example of the 'bar-less' zoo, in which concrete mountains and landscape devices, such as moats and vegetation, were created. The use of ferro-cement to create 'natural' landscapes in which to present the animals is a hallmark of this period.

The philosophical importance placed on the aesthetics of the zoo and presentation of the animals evolved during the middle of the twentieth century. During this time, a greater emphasis was placed on the functional role of the enclosures and the welfare of the animals in their care. A hygienic enclosure was considered of greater worth than an enclosure that was designed as an extension of the animals' natural environment. The structures within this period were designed as functional envelopes, with simple lines and plain surfaces.

Zoological philosophy continued to evolve and, most recently, zoos have aimed to reinforce natural geographical habitats by presenting the animals within identifiable thematic precincts.

8.3 Zoo Typologies

As zoos have been developed as part of the fabric of major cities throughout the world, the majority are presented as an urban zoological park. As part of the fulfilment of the conservation program and scientific research roles of these zoos, many have developed an associated open-range zoo as complementary to the functions of the urban zoo.

8.4 World Zoos

In 1793, the menagerie of animals at Versailles was sent to Jardin des Plantes and the idea of a zoological garden was established. For the first time, animals were first being regarded as more than curiosities for human enjoyment, but valued as a collection of scientific wonder. It was also during this period that a strong interest grew in the natural world and the Zoological Society of London was established.

The first zoological garden, as a collection of animals for their scientific value, in the modern world, was opened in 1828 at London and opened to the public in 1847, when the word 'Zoo' first appeared in print. The London Zoo became an example for zoological gardens which were established across the United Kingdom, Europe and the United States during the 1800s, including zoos at Dublin, 1831; Manchester and Amsterdam, 1836; Antwerp, 1846; and Berlin, 1844.

Today London Zoo is a thirty-six acre conservation centre which houses more than 650 species. London Zoo is associated with Whipsnade Wild Animal Park, a 600-acre wildlife conservation centre and one of the largest in Europe. This animal park is home to 2,500 animals and is renowned for its large, open, animal habitats.

The Stellingen Zoo was planned in 1890 by Carl Hagenbeck and opened in 1907, implementing his principles for the presentation of animals. Hagenbeck desired that animals be given the maximum amount of freedom, exhibiting them without bars to obstruct the views of the onlooker or to serve as a reminder of the animals' captivity. Exhibits were planned using moats as the only separation between the animal and the visitor, providing an increased sense of involvement for the public.

In the United States, the Zoological Society of Philadelphia was established in 1859 and in 1874 the oldest zoo in America was opened in this city. The Bronx Zoo first opened its gates to the public in November 1899 after the establishment of the New York Zoological Society (NYZS — renamed Wildlife Conservation Society, or WCS). The purposes of the Society were to create a zoological park, advance the study of zoology, protect wildlife and educate the public. WCS's first veterinary department was established at the Bronx Zoo in 1901. In 1929, the Bronx Zoo established the world's first formal zoo education program.

With the 1941 opening of the 'African Plains', the Bronx Zoo was one of the first US zoos to move away from cages and exhibit animals in naturalistic habitats. More recently the design approach for exhibits at the Bronx Zoo has influenced new works at Taronga, such as the Snow Leopard Mountain exhibit.

The philosophical approach to zoos and the presentation of animals is rapidly evolving and an emphasis is being placed globally on the role of zoos as places for the conservation, education and scientific study of the natural world. It is not known what impact this evolution is having on the zoos established during the 1800s and early 1900s and further research which places these zoos, including Taronga Zoo in an international context, while beyond the scope of this report, is warranted.

8.5 Australian Context

There are seven zoos of international standard in Australia. They are located in Melbourne, Werribee, Sydney, Dubbo, Adelaide, Montaro and Perth.

Melbourne Zoo is the oldest, still operating, purpose-built zoo in Australia. It opened in 1861, and is believed to be the eleventh-oldest zoo in the world. Adelaide Zoo, the second-oldest Australian zoo, opened in 1883. Perth Zoo, located beside the Swan River, opened in1898. These zoos were established at a time when there was a great interest in natural history and zoos reflected the desire to show animals as objects of curiosity for visitors.

8.5.1 Taronga Zoo

Taronga is unique in Australia as it was established in 1913 as a state-of-the-art modern zoo, incorporating and improving upon the most modern zoological principles of the day. AS le Souef, Director, and Dr RH Todd, Vice-President of the Royal Zoological Society, visited various zoos both in Australia and internationally, to study modern concepts of planning and construction for the new zoo. The design for Taronga was greatly influenced by the Stellingen Zoo and the philosophies of Carl Hagenbeck.

Like other zoos located in city centres, Taronga evidences the history of the evolution of zoological philosophy and is an urban zoo that presents animals in a variety of displays ranging from menagerie type exhibits to visitor immersion precincts.

Today, Taronga is recognised as Australia's premier urban Zoo, renowned for its world-famous harbourside vistas that set it apart from other Australian examples.

8.5.2 Melbourne Zoo

Melbourne Zoo grounds were laid out on formal lines to create a garden atmosphere (see Figure 8.1). Similar to Taronga, the entrance to Melbourne Zoo is enhanced by a unique landmark building, incorporating animals as part of the decorative design of the structure (see Figure 8.2). Also, like

Taronga, entertainment in the form of elephant rides were provided as part of the zoo experience until 1961 at Melbourne. A fun fair atmosphere continued to exist through the provision of rides, a restaurant, picnic grounds and even a small circus that were provided to enhance the recreational experience of visitors.

Solid brick enclosures with cast-iron bars began to appear in the 1890s, an example built in this style was for the orang-utan in 1928. This structure is now left as an interpretative device representative of an historic enclosure design and of the evolution of zoo culture (see Figure 8.3). Melbourne has many examples of the cage enclosure design, utilising bars as the barrier between the animal and the observer (see Figure 8.4), reflecting the period in which the zoo was established.

Melbourne Zoo also utilises 'mock rock' to simulate natural habitats and moat designs as a separation device as seen in the gorilla and elephant displays (see Figure 8.5).

Melbourne Zoo's modernisation began in the 1960s under the chairmanship of Alfred Dunbavin Butcher, and the layers of the evolution of zoo design are evident. The giraffe exhibit has been updated to incorporate a naturalistic habitat, presenting the giraffes with animals of the same geographical precinct and creating invisible barriers between the visitor and the animal (see Figure 8.6).

Melbourne Zoo is also associated with an open-range zoo at Werribee and Healesville Wildlife Sanctuary.

8.5.3 Open-Range Zoos

The open-range zoo typology provides the opportunity to present a zoo's animal collection in a different environment, as there are less site restrictions in terms of space and impact on neighbours and greater possibilities to lose or hide perimeter containment, creating opportunities for precinct immersion and thematic environment design that are different to those available at an urban zoo.

The Western Plains Zoo, associated with Taronga Zoo; Werribee Open-Range Zoo, associated with Melbourne Zoo; and Adelaide's sister zoo, at Montaro, are Australia's three examples of open-range zoos. These zoos have been developed in response to the evolving emphasis that zoos have placed on their contribution to local and worldwide biodiversity conservation programs.

The establishment of Western Plains Zoo by the Zoological Parks Board in 1977 was the first of its kind in Australia as part of Taronga's shift in focus under the directorship of Strahan towards playing a more scientific and conservationist role in a local and international context. The Western Plains Zoo at Dubbo is by nature complementary to the urban typology that exists at Taronga, providing the ZPB with a greater range of opportunities for breeding programs, study of natural behaviour and the provisions of infrastructure for services such as animal convalescent and quarantine facilities. In this way Western Plains Zoo is an extension of Taronga Zoo's zoological philosophy and is integral to Taronga's existence as a Zoo of international renown.

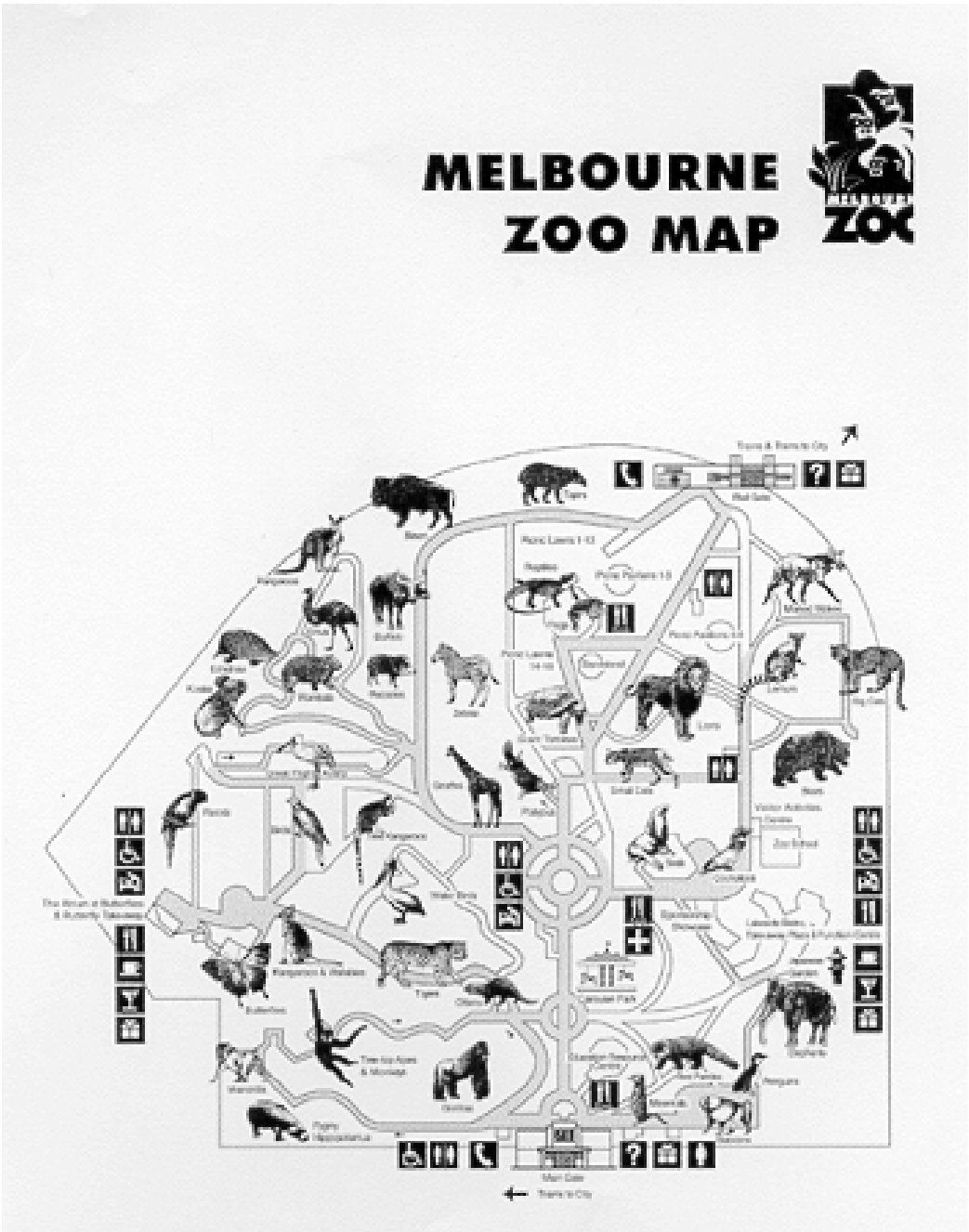

Figure 8.1 Melbourne Zoo site layout.

Figure 8.2 Melbourne Zoo, view from inside the entrance down the established formal garden layout.

Figure 8.3 Melbourne Zoo, entrance building.

Figure 8.4 Melbourne Zoo, historic animal enclosure exhibit.

Figure 8.5 Melbourne Zoo, monkey cage exhibit.

Figure 8.6 Melbourne Zoo, elephant enclosure utilising mock rock to simulate a more natural landscape.

Figure 8.7 Melbourne Zoo, the giraffe exhibit showing the most recent philosophical approach of presenting the animals in a naturalistic habitat.

9.0 Analysis of Evidence

9.1 Preamble

This section of the Conservation Strategy provides an analysis of the Zoo that forms the basis for an understanding of the cultural significance of the place. It contains background discussions, each of which considers aspects of the values of the place, including:

- Historic Values;
- Aesthetic Values;
- Landscape Values;
- Scientific Values; and
- Social Values.

The discussions are used as a resource base for the application of cultural significance assessment criteria presented in Section 10.0.

9.2 Historic Values

Taronga Zoo's significance goes far beyond it being a collection of exotic and native wildlife on display in a beautiful harbour setting. The historic values of Taronga derive from the following factors:

Zoological Philosophy Context

Taronga remains as a link in Sydney to the Age of the Enlightenment; a period in European history spanning the late eighteenth and early nineteenth centuries, where knowledge was to be derived, as far as possible, from first-hand observation and then utilised for the public good.[1]

Taronga is part of the continuum, in a world context, of the evolution of zoos that had begun with the Jardin des Plantes, Paris, which opened in 1793. The Jardin des Plantes represented the arrival of the idea of establishing animal collections for their scientific values. Previous to this, animals had mainly been kept for the pleasure of royalty or the aristocracy. During the nineteenth century, this zoo and the period's strong interest in natural history and animals, became the inspiration for zoological societies in Europe and Australia, including the Zoological Society of Sydney in 1852.[2]

Early Sydney Zoos

The first animal exhibits for public display in Sydney were at the Botanic Gardens, which cared for the Sydney Acclimatisation Society's animal collection. Other early zoos in Sydney included a small exhibit of animals in Hyde Park, associated with the museum, a private zoo at Botany and the Society's zoo at Moore Park, of which only remnants of the former structures still exist. These

earliest zoos represented a menagerie typology, presenting the animals as curios for the public's entertainment.

The Sydney Acclimatisation Society was established, in 1861, in order to introduce, acclimatise and domesticate animals. The NSW Zoological Society, formed in 1879 was responsible for establishing the Moore Park Zoo and later, Taronga Zoo. The NSW Zoological Society was concerned with the study of living things and the scientific values of animal collections.

The association of Taronga Zoo with Sydney's earliest animal exhibits and zoological societies provides evidence of the evolution in zoo philosophy evidenced from these zoos.

Association with Carl Hagenbeck/Stellingen Zoo, Germany

Taronga was opened in 1916 as a zoological park, making it the first 'real' zoo in Sydney, and Australia. The Director, AS le Souef, strongly established the Zoo's philosophy around the preservation and comfort of the fauna. Le Souef's vision for the new zoo was for a place without bars, where both animals and visitors would benefit. This principle guided the decision-making regarding the location of the new zoo, its layout and enclosure design and was based on the most modern zoological philosophy of the time. In particular, that of the Stellingen Zoo in Germany, established by Carl Hagenbeck in 1890.

Association with AS le Souef

The evolution of zoological approaches at Taronga from its inception has been shaped as much by its directors as by any external force. Le Souef's designs for the new zoo were considered to be at the forefront of zoo design in the world at the time and his basic layout and the legacy of his vision remains to the present day.

Early Fabric and Continuation of Original Use

The enclosures of greatest historical significance include the original seal, spider monkey, elephant, sun bear, giraffe and parrot/cockatoo enclosures, as well as the early aviaries and the tahr 'mountain' for the goats. While a number of other enclosures are also quite old, many of their internal formats have been changed to suit the different needs of different occupants, and have less continuity of use and association, and less original fabric.

Changes to the Zoo's policies began in the 1930s, and saw many of the original enclosures fitted with bars or converted into pit-style exhibits with the public looking down into them from above. One of the reasons given for the change was a lack of space. Indeed, comparisons of zoo plans from 1920 to 1934 dramatically indicate the boom in displays over this period.

Association with Sir Edward Hallstrom

The evolution of the Zoo during Sir Edward Hallstrom's appointment as a Trustee to the Zoo from 1941 to 1967 continued this move away from le Souef's bar-less zoo. In particular, Hallstrom directed that enclosures be clean, functional and easily maintained. Thus, he favoured the use of concrete, transforming many of the exhibits into enclosed dens.

Association with Ronald Strahan

The late 1960s and early 1970s represented an important phase in the further evolution of Taronga. The new director, Ronald Strahan, appointed in 1967, was the first professional zoologist as Director at Taronga. His time as Director was a period when Taronga began to return to the ideas of le Souef, both in design and function. Many enclosures were redesigned, removing the bars and concrete that had accumulated over the previous 30 years, as well as steering the Zoo towards a more scientific focus. This approach represented an objective to ensure Taronga continued to evolve in line with other world zoos, ensuring international recognition.

Association with Dr John Kelly

A major capital works program was undertaken during the late 1980s and 1990s under the Directorship of Dr John Kelly. Dr Kelly's vision included the development of conservation, research and education at Taronga as well as major physical improvements within the framework of the 1989 Masterplan (refer to Appendix E).

Development of an Australian Nationalism

Strahan's development of a substantial Australian native animal content at Taronga reflected a broader social movement within Australia. This period of 'new nationalism' saw a re-evaluation of what Australia was and what it meant to be Australian.

Development of the Contemporary Modern Approach

New developments in design approach at Taronga to exhibit planning, design and layout have most recently been influenced by those ideas from American zoos, in particular the Bronx Zoo, which has developed innovative separation techniques. Developments in the *Occupational Health and Safety Act* and the establishment of the *Exhibited Animals Protection Act* have also strongly influenced the development of exhibits at Taronga, especially the design of animal and keeper facilities. The new capital works at Taronga during the 1990s saw Peter Leslie appointed as Manager, Planning and Design in 1994 to oversee the development. This appointment was the first time the Zoo had employed an exhibit design specialist and represented a commitment to a modern zoo design approach at Taronga.

9.3 Aesthetic Values

Assessing aesthetic values involves considering whether the items or place have distinctive aesthetic attributes that are held in esteem by the community, or demonstrate creative or technical excellence, innovation or achievement.

9.3.1 Landscape and Views

Taronga's animals, staff and visitors enjoy some of the best views in Sydney. Indeed, images of giraffes and harbour views have long been synonymous with a visit to Taronga.

The aesthetic qualities of the landscape of Taronga Zoo derive from the following factors:

The Overall Site Design and Pathway Layout

The site still retains elements of the original design intent that AS le Souef proposed in 1913, including the original circulation and pathway layout, which exploited the natural features and location of the site on the harbour. The pathways were designed with a central circulation spine leading from the top of the site to the bottom, with radiating pathways extending along the sandstone ridge lines. The topography of the land was then utilised to design enclosures which faced onto these paths as well as providing opportunities for views down into the enclosures from pathways at higher levels.

Visual Prominence on Sydney Harbour

Taronga Zoo occupies a highly visible portion of the central foreshore area of Sydney Harbour; that is, people from the CBD, as well as those on boats and ferries, are able to see it every day and have come to appreciate it as an integral part of the northern harbour foreshore.

The Zoo's location is complemented by the adjacent Sydney Harbour National Park which creates a 'natural' foreshore and provides a contrast to the developed southern foreshore of Sydney Harbour. Together with the natural landscape, the tall, exotic trees and architectural icons exist as landmarks within the site, creating a unique harbour profile.

Views Within and From the Site

Taronga's sense of place is strongly defined by the unique views that the topography and layout of the site exploit. Differing visual corridors exist throughout the site, from intimate views within the site, framed by built or landscape elements, to expansive views out of the site that establish a close relationship between the visitor and Sydney Harbour and the CBD.

Natural Qualities

The effort to provide as natural as possible habitats for the animals at the Zoo has led to the fostering of natural elements such as trees, sandstone rock faces and water (even if limited). These efforts, combined with the earlier attempts to create a zoological park or gardens, have greatly assisted in keeping the site's natural appearance.

Topography

The site's narrow terraces, ramps and stairs facilitate – indeed oblige – movement through the site, but in a way that constantly offers stimulating, kaleidoscopic changes of scene. These involve both close-up, inward-focused views, followed by huge, breath-catching panoramas beyond the site. This is as much a valued part of the Zoo experience as study of the animals and their habits.

Terraces and Walls

The Zoo features terraces and walls of differing widths and heights. These offer a wide variety of scales for animal enclosures; from the small meercats to the giraffes.

Manufactured Landforms

These provide examples of the creative use of faux sandstone to produce imaginative sculptured landscape forms, such as small hills, platforms, boulders, caves, dark and light passages, and moats. There is both a mix of science and fantasy here.

Historic Landscape Elements

The grand staircases, balustrades, rustic seats and bridge evoke the styles and pace of a historic gracious era. So too does the Floral Clock. They remind us that the Zoo has a long history and are a reflection of the changing tastes and design philosophies of zoos.

Enclosures and Aviaries

These demonstrate changing attitudes towards the way animals are kept and put on display for people to enjoy and learn about. From tight wire or barred cages, the aviaries or enclosures have evolved into naturalistic open spaces, with sandstone (false or real) providing a confining and protective backdrop; a terrace or platform on which to move, leap or exercise; caves in which to shelter; and protective front walls (plus moats) to separate animals from humans. In other words, the indigenous qualities of the topography have contributed greatly to the ability to simulate natural habitats, while in turn that philosophy has assisted in maintaining the inherent natural qualities of the site. One has assisted the other.

Viewing Platforms

The natural terracing of the site has the great advantage that humans can observe animals from above, as if the latter were on a stage. This variety of perception from 'whole picture' to 'close-up' is also a stimulating and valued part of visitors' experience of the Zoo.

9.3.2 Architectural Values

Original Built Fabric

The existing fabric at Taronga that dates from its establishment, demonstrates the original design concepts, tastes and materials of the 1910s to 1920s that were influenced by the Stellingen Zoo in Germany, the most modern in the world at the time.

Architectural Elements

The public, administrative, animal and scientific roles of the Zoo require a significant number of built elements in order to function. The sense of place that characterises Taronga's public areas, therefore, is firmly established by the architecture throughout the Zoo. Features such as the upper and lower entrance buildings and the Indian Elephant Temple, which have utilised more whimsical architectural styles, are both landmarks in the landscape and in people's memory. Similarly, views to the city are also framed by built elements, such as the Giraffe Houses and the Upper Seal Pond.

Edwardian Baroque

In order to create an exotic atmosphere for the place, the earlier architecture of Taronga was designed in an Edwardian Baroque style. This allowed the architect the freedom to use highly decorative elements, often incorporating animal motifs, providing an originality and unique character to the site.

Functional Design

The enclosure designs, dating from the middle of the twentieth century, represent the desire to place the animals' needs above other issues. These enclosures now stand in stark contrast to both the original built elements and later designs in their use of materials, planning and presentation within the landscape.

Sydney School

The design approach at Taronga during the 1970s reflected an objective to present a more 'natural' setting in which to view the animals. Enclosures such as the Platypus House and the Rainforest Aviary represent the evolution of design and philosophical principles behind the presentation of the animals.

Mosman Architectural Character

There is a strong continuity between the residential character of Mosman and Taronga Zoo. As both the suburb and the Zoo were developed within a similar time frame, the use of stone, Federation detailing, street planting and built forms complement each other. In particular, the tram waiting shed is an example of the typical residential character of the suburb.

Contemporary Modern Style

Most recently, exhibits have been planned to provide the animals and keepers with the most modern design, providing state of the art animal dens, wet weather exercise yards and keeper safety features. At the same time opportunities to educate the visitors have been utilised in order to provide a richer experience. This philosophical approach is shown in the planning for mixed species exhibits, such as the Backyard to Bush and the Free Flight Bird Amphitheatre, where visitors witness birds in their most natural state.

Evolution of Enclosure Design

The aviaries and animal enclosures at Taronga evidence the development in the philosophical approaches to the management of zoos in an international context. A small number of exhibits represent the philosophy of presenting animals in a cage, menagerie style. However, Taronga was established on the principles of Carl Hagenbeck's zoo in Germany and fabric, including moats and mock rock landforms, remains on site that evidences the original objective of presenting the enclosures as 'natural' contexts with minimal barriers between the visitor and the animals.

The focus on providing a healthy, functional environment for the animals during the 1940s and 1950s left a legacy of concrete structures of simple, unembellished forms, such as the jungle cats enclosures and some aviaries . While serving the purpose of a hygienic environment for the animals, this did not address the issues of aesthetic pleasures, the ability to observe more natural behaviours in the animals or provide an ideal educational role.

From the late 1960s this approach was no longer considered ideal. The built elements from this period reflect the objective of presenting the animals in a 'natural' environment with the architecture playing a lesser role in the landscape. The exhibits designed in the Sydney School evidence this approach and include the Koala House, Platypus House and the Rainforest Aviary.

The most recent design at Taronga that has been undertaken since the 1980s has again evolved in order to provide the best outcome for animals, keepers and the visitors. Older exhibits have been adapted and upgraded and new works designed to provide better accommodation, new and innovative separation techniques and to allow visitors unique viewing and educational opportunities.

9.3.3 Natural Landscape Values

In terms of natural heritage values, the site comprises a distinctive sub-unit, typical of the smooth-barked apple (*Angophora costata*), which once covered extensive sections of Sydney's north shore. The remnant forest at Taronga is typical of that still evident on the adjoining foreshore slopes of Bradleys Head and Sirius Cove. The dominant species within the areas of the Sydney Harbour National Park adjoining the Zoo generally support an open forest of Sydney peppermint (*Eucalyptus piperita*), red blood wood (*Corymbia gummifera*), bangalay (*Eucalyptus botryoides*) and smooth-barked apple, as well as a closed forest, which is found in the area's more moist gullies. The remnant forest at Taronga is widely representative of its type and is not a rare or outstanding example. Moreover, the fact that it has been heavily modified over the last century has meant that some natural heritage elements have been degraded or have lost their integrity, at least within the walls of the Zoo itself.

It is mostly within the peripheral areas of the Zoo and the site's gully where the natural landscape elements are still found. These lie mostly outside the core site boundaries, near the foreshores of the bays and coves. Their natural values, especially their plant communities, cliffs and rock benches, and land–water edges, are consistent with those present in the adjacent Sydney Harbour National Park, and have a moderate degree of natural heritage significance. These areas are, however, outside the scope of this study and reference should be made to the Harbour Foreshore Management Plan, prepared by the Botanic Estate of Taronga Zoo for the ZPB, August 2000.

Natural Features

The gully/drainage swale running more or less north–south down the central section of the Zoo has significance as an important component of the site ecosystem which helped determine the micro-climates within the site and fostered a small extent of 'rainforest' vegetation. However, the course of the gully/swale has been substantially altered by earthworks since 1913 and its former role, legibility and significance have been much reduced. It does retain a modest degree of aesthetic significance in that its concave or amphitheatre-like form creates pleasant interior views and visual corridors within the site, helping to make it a more intimate, vegetated and human-scale of space and to reduce the sense of exposure experienced on the ridge and spurs.

Indigenous Vegetation

Most of the native vegetation within the core area of the Zoo has only a low degree of significance because the mature trees of the original woodland had already been cut by 1913 and further clearing was done when the Zoo was laid out. Some of the native vegetation is regrowth from the early period, while much of it was planted since the early 1960s, when preference was given to native plants over ornamentals. However, despite the loss of integrity, the remnant areas of indigenous

forest that survive at Taronga are important, particularly in their local context with the adjoining Sydney Harbour National Park.

Exotic Vegetation

The large, mature hoop pines, figs, ornamental garden beds and the Floral Clock demonstrate the early intention to establish a zoological park and reflect planting preferences of the early twentieth century. Other introduced vegetation includes native trees and shrubs, which have been planted to create a thematic context for some animals within their enclosures, to strengthen the visual links with the adjoining Sydney Harbour National Park and to encourage fauna to the site, in particular, a wide variety of birds.

Other vegetation has been introduced for its functional role. A wide variety of vegetation is used across the site to provide shelter for animals and visitors; to visually screen the service areas of enclosures and other necessary facilities throughout the site; to provide aesthetically pleasing picnic and resting areas for visitors; and to provide some limited food source for the animals.

9.4 Scientific Values

9.4.1 Components of Scientific Values

Assessing scientific values, often referred to as 'scientific significance' or 'research potential', requires an understanding of the ability of an item or place to yield valuable information. Scientific significance is embodied in the fabric of a place or item and its associated records. It is often a combination of documents and physical evidence that provides the key to unravelling a complex story.

Many places and items have scientific significance which derives from their archaeological research potential. Archaeology is concerned particularly with research, documentation and analysis of fabric. Archaeology extends beyond traditional concepts of subsurface features to include ruins, standing structures, engineering relics, plants and landform. However, other aspects of scientific significance may derive from records, artefacts, collections or people.

Scientific significance may also occur where places have strong educational potential, that is, the ability to yield information through interpretation.

Broadly speaking, scientific significance is typically established by considering whether the site or element:

- has the potential to yield new or further substantial scientific, historic, cultural, technical and/or archaeological information;
- is an important benchmark or reference site or type; or
- provides evidence of past technologies or cultures or human behaviour patterns that otherwise is unavailable.

9.4.2 Archaeological Value

Archaeological research combines the study of the fabric of a place, both above and below ground, with documentary sources and diverse forms of scientific analysis. Archaeological remains within the Zoo site have the potential to contribute to our understanding of the history and changing environment of this place. Aboriginal archaeological remains may contribute to a broad range of research questions relating to the prehistory and early contact period history of the people of the Sydney region. These remains may also possess a broad range of significant meanings for contemporary Aboriginal communities.

Archaeological remains relating to nineteenth century European uses of this landscape would be evidence of activities, which rarely feature in documentary sources, including road building and forms of environmental exploitation such as tree felling and quarrying. Evidence of the animal quarantine stations is also little documented and may shed light on the techniques and scientific knowledge employed in this field in the nineteenth century.

The development of Taronga Zoo is well documented in plans, photographs and other archival materials, however, archaeological remains may provide evidence relevant to the conservation of original structures and layouts and to the interpretation of the place.

As Taronga Zoo is a place possessing a broad range of heritage values, archaeological remains provide contributory evidence of its history and development. This evidence can be interpreted to provide an appreciation of the historical layering of this environment and would considerably enhance the visitor experience. Archaeological layers reflect not just the history of the Zoo, but also something about the history of Sydney and the Aboriginal people who lived here for thousands of years.

Taronga Zoo is likely to contain three categories of archaeological evidence:

- Category 1 — Aboriginal Archaeological Evidence. This category is likely to be of high archaeological significance. It is also likely to possess social significance and the ability to significantly contribute to the overall significance of Taronga Zoo as a place.

- Category 2 — Evidence of Nineteenth-Century Landuse. This category is likely to be of some archaeological significance and also to contribute to the overall significance of Taronga Zoo as a place.
- Category 3 — Evidence of the Development of the Zoo. This category is likely to be of some archaeological significance and also to contribute to the overall significance of Taronga Zoo as a place.

9.4.3 Zoological Value

Taronga Zoo exists in an international context of zoos that continue to evolve in order to serve the community as highly effective conservation and learning centres and well managed biological parks. Taronga takes its responsibility in this context seriously and is well recognised both locally and globally for its scientific, education and conservation expertise and for its programs, including specific projects such as:

- maintaining one of the largest zoo breeding groups of chimpanzees in the world;
- co-ordinating the Australasian stud book for the highly endangered Sumatran tiger (Taronga has focused on breeding this particular tiger species for the past sixteen years);
- the World Zoo Conservation Program for Western Lowland gorillas (of which the gorillas at Taronga are a part); and
- successfully breeding a number of endangered species, including the red panda, the green and golden bell frogs and the regent honeyeaters.

9.4.4 Archival Records, Collections and Movable Heritage Items

The physical resources of Taronga are substantially enhanced by the existence of an extensive body of archival material. The Taronga Zoo archives is a curatorial collection of many movable cultural heritage items. They include original architectural documentation, salvaged fragments from former Zoo exhibits and enclosures, zoological relics, original photographs and maps. While not all are provenanced, the majority are either individually significant or have an important contextual relationship with the Zoo. The collection covers a broad scope extending historically from the Moore Park Zoo period to the establishment of Taronga to the present.

The importance of this collection is three-fold:

- firstly, the individual pieces themselves and, where available, the records that are associated with them provide evidence of the historic development of zoos in New South Wales;
- secondly, those items which are directly provenanced to the site, though movable, are integral elements of the fabric of the place, with all of the same research attributes as built fabric or archaeological deposits; and

- thirdly, the Zoo Collection has been, is being and will continue to be used as an important educational resource, providing a major contribution to the messages conveyed through visual images available at the site.

While the ability of the collection to yield information would be greatly enhanced if all of the material were catalogued, the research potential of the assemblage remains substantially intact.

9.5 Social Values

Assessing social value (or social significance) involves identifying and consulting with communities and groups of people to understand their social, spiritual or cultural association with a place and to appreciate its significance to them. It also involves understanding whether significance resides in the fabric of the place or in other aspects, such as its use or accessibility.

Recognising social value acknowledges that places may be important to people who have direct experience and knowledge of a place, and that this significance transcends utilitarian values. Social value is seen as a value held by today's community. While historical research may be able to demonstrate considerable longevity and continuity of association, this is not essential to demonstrate social value.

Based on our experience of this and other similar sites and on readily available material, it is evident that Taronga Zoo has strong associations for different communities:

- the site is regarded by the local community as an important part of their local history and adds to their sense of community identity;
- the wider Sydney community regard the place as an important icon in the memory of generations who have visited the site as a school student or with family and friends;
- the site is regarded by tourists as an important urban zoo, with unrivalled views of Sydney Harbour and the city skyline, and as an integral part of their experience of Sydney;
- the staff and animal keepers and Zoo Friends have a very special connection with the place and hold the Zoo in high regard; and
- Taronga is recognised internationally by the zoological community for the important role the Zoo plays in the conservation of the natural world, and for its educational programs.

Local Community

Taronga's Wildlife Clinic takes on orphaned native animals, a service valued by the local community. Taronga Zoo marine mammal and veterinary staff are also frequently called out by National Parks and Wildlife Service rangers to assist with the rescue of sick and stranded marine mammals along the New South Wales coast.

Sydney Community and Visitors

Taronga Zoo has always been a major attraction for Sydneysiders and visitors to the city and is held in high regard by Sydneysiders as a signature place on the northern harbour's foreshore. Taronga embodies an important collective meaning with strong attachments to the place held by the local, greater Sydney and visiting communities.

Taronga Zoo is a place that many local people do not visit frequently, but rather, continue to go back to, to reinforce the sense of connection they have with the place. Therefore, the sense of place that has been established is a result of the community's collective memory of visits as a school student, with the family or as a host to an out-of-town visitor.

The popularity of the seal show, which has been running for over twenty years, and the more recently established bird show evidence the visitors' enjoyment of the Zoo experience.

Taronga Zoo Friends

Over 400 active 'Zoo Friends' volunteers provide over 55,000 hours of service annually. Volunteers are on duty 365 days a year. They operate the information centres, conduct guided tours and walks, take part in 'animal watch' programs, input and assess animal behaviour data, answer telephone enquiries, file Zoo archive material and assist in animal management, such as taking the dingoes on early morning walks.

9.6 Endnotes

[1] Gascoigne, J 1994, *Joseph Banks and the English Enlightenment: Useful Knowledge and Polite Culture*, Cambridge University Press, Melbourne, p 33.

[2] Strahan, R 1991, *Beauty and the Beasts: A History of Taronga Zoo, Western Plains Zoo and Their Antecedents*, Zoological Parks Board of NSW, Sydney, p 2.

10.0 Cultural Significance of Taronga Zoo

10.1 Introduction

This section provides a Statement of Cultural Heritage Significance for Taronga Zoo. The assessment of heritage significance is based on the evidence and analysis carried out in the preceding sections of this report.

The terms 'cultural significance' and 'heritage value' embrace the concept that a place or item has an intrinsic value which cannot be expressed in financial terms. Cultural significance may be embodied in the fabric of a place (including its setting and relationship to other items), the records associated with the place, its current or former use, associations and the meanings that the place may have for people to whom it is important. Cultural significance is a term used to describe the heritage value or importance of an item. This value is defined in the Australia ICOMOS *Burra Charter* as 'aesthetic', 'historic', 'scientific' or 'social' value for the 'past, present or future generations'.

10.2 Basis of Assessment

10.2.1 Previous Assessments

NSW Heritage Act Section 170 Zoological Parks Board of NSW Heritage and Conservation Register

The preparation of a Heritage and Conservation Register by all NSW State Government Authorities is required by Section 170 of the *NSW Heritage Act*. The Section 170 Conservation and Heritage Register for the Zoological Parks Board of NSW was prepared in 1998 and identifies and assesses the significance of the individual items throughout the Zoo as well as the place as a whole.

The Statement of Significance for Taronga Zoo states that:

> *Taronga Zoo site is a significant cultural landscape with mostly natural elements on its perimeter. Its range of structures, landscaping, displays, etc. demonstrate the past and present zoological practices, both for the exhibits and the manner in which they are displayed. The layout and early fabric reflect the philosophies of the time and demonstrate the designers' innovative approach in capitalising on the natural terrain to create natural-seeming habitats and enclosures.*
>
> *The site provides scenic visual catchments of the harbour and city.*
>
> *It is a major social facility and entertainment/recreational venue for Sydney.*
>
> *It is one of Australia's leading Zoo facilities in education, research and breeding of endangered species.*

Mosman Heritage Review 1996

The Mosman Heritage Review was prepared for the Mosman Municipal Council by Godden Mackay in December 1996. The Statement of Significance identified in the inventory sheet for Taronga Zoo in this document, states that:

> *Taronga Zoo is a major social facility and entertainment and recreational venue for Sydney, with international prominence. Recognised as the leading zoo facility.*
>
> *It contains some remarkable and unusual structures, many of them deliberately exotic or grand in their presentation.*
>
> *It demonstrates present and past zoological practices, both for the exhibits and the manner in which they are displayed.*
>
> *It remains a prominent landscape feature in Sydney Harbour.*

National Trust of Australia (NSW)

The National Trust listed the site on the register in 1982 and is currently reviewing the significance assessment of Taronga Zoo. The Statement of Significance recorded in the existing listing card for the site is identified as:

> *Taronga Park Zoo is a unique complex of highly individual structures. The three main buildings (Main Entrance, Indian Elephant House and Lower Exit) are an economical adaptation of a grand style and show an interesting mixture of classical, Italianate and Orientalizing features. The various other Baroque, Oriental and rustic structures are an important record of fashions in landscape architecture and concepts behind animal keeping at the time of construction. The extensive use of concrete and cement in cages and rustic structures is particularly noteworthy and presents an educational contrast with the greater use of timber and natural vegetation in the more open plan enclosures.*

10.2.2 Statutory Framework for Assessing Significance

The NSW Department of Urban Affairs and Planning and the NSW Heritage Office have developed a detailed set of criteria for assessing items of the State's environmental heritage. There are six criteria. It must also retain the integrity of its key attributes of significance. The criteria are as follows:

1. An item is important in the course, or pattern, of NSW's cultural or natural history.
2. An item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history.
3. An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW.

4. An item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons.
5. An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history.
6. An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history.
7. An item is important in demonstrating the principal characteristics of a class of NSW's:
   – cultural or natural places; or
   – cultural or natural environments.

10.3 Application of Significance Criteria

The following assessment identifies the significance of the Taronga Zoo subject site.

Criterion 1: An item is important in the course, or pattern, of NSW's cultural or natural history.

- The establishment of Taronga Zoo is a major event in the history of zoos in New South Wales and Australia as the first purpose-built, Zoological Park in the country. The planning of Taronga incorporated the most modern zoological thinking in the world at that time, and represents an important part of the historical pattern/process of zoo development in an international context.
- Taronga also represents the development of zoos in a world context at the turn of the twentieth century in an international context. In particular, the early planning of Taronga reflects the zoological philosophy of Carl Hagenbeck's zoo in Germany which was at the forefront of modern thought regarding the objectives of enclosure design, zoo layout and animal presentation, at the time.
- The Zoo's site provides evidence of and plays an important part in the history of private/public ownership of harbour foreshore.
- The built elements of Taronga demonstrate the long history of different approaches to the keeping and presentation of animals.
- The focus on Australian natural history, the development of the 'Australianess' of the site and the shift towards the scientific and educational role of the Zoo from the late 1960s evidences the rising environmentalism within the Zoo's philosophy and the community in general.
- The Zoo has some association with the Railway, Tramway and Miners' strike of 1917 when the site was closed to the public and used as a strikers' camp between 8 August and 26 October, 1917.

Criterion 2: An item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history.

- Taronga Zoo is associated with the long history of zoological and acclimatisation societies established in the nineteenth century in New South Wales. In particular Taronga is associated with the Zoological Gardens Trust, which was the body that established the Zoo.
- Taronga Zoo is associated with AS le Souef, who was part of an important family with strong links to Australia's zoological history. Le Souef was Secretary of the Zoological Gardens Trust and researched the modern zoo philosophy at the time of establishing Taronga and, based on international best practice, planned the layout and animal enclosure designs for the place.
- The original and early fabric of the Zoo, including the circulation layout, terracing, stairs, stone seating, buildings and animal enclosures evidence le Souef's vision for establishing Taronga as a modern Zoo of international renown.
- Taronga Zoo is associated with Hon Frederick Flowers MLC, who was the Chairman of the Trust when Taronga was established and provided input into the design of some animal enclosures, including the Aquarium.
- The Zoo is associated with Colonel Alfred Spain, Vice-President of the Trust at the time of Taronga's establishment and early development and was instrumental in the design and construction of the earliest Zoo fabric.
- Taronga has strong associations with Sir Edward Hallstrom, Trustee, benefactor and contributor to the place, who dominated the Zoo's development for 26 years from 1941.
- The Zoo is associated with Ronald Strahan, the first zoologist appointed as Director of the Zoo in 1967. Strahan was instrumental in the shift in focus and direction that the Zoo made from the late 1960s.
- The Zoo is associated with Dr John Kelly AM, Director and Chief Executive of Taronga and Western Plains Zoos from 1987 until 1997. During this period many capital works, wildlife conservation and educational projects were initiated under his vision to ensure Taronga's place as a world-renowned Zoo in the twenty-first century.
- The built elements of the Zoo designed in the 'Sydney School' style are associated with the Department of Public Works and Services. In particular, these enclosures evidence the architectural work of Don Coleman, design architect for the Platypus House, Rainforest Aviary and Koala House.

Criterion 3: An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW.

- The built character of the public buildings, administrative offices, animal enclosures and aviaries, veterinary services and back-of-house areas is an important part of the cultural landscape of the site. A number of architectural styles are evidenced at Taronga from the exotic Edwardian Baroque, to the 'Sydney School' designs and more recently, the contemporary modern design approach.
- The Upper and Lower Entrance Buildings and the Indian Elephant Temple are excellent examples of the Edwardian Baroque style. These buildings are landmarks in their landscape and with their use of unique, decorative detailing play an important role in establishing an architectural character for the site.
- The different approaches to the layout, design and presentation of animals within the enclosures evidence the evolution of zoological philosophies at Taronga. Examples include the use of moats as a separation device and mock rock to create a 'natural' environment and current use of tension wires and safety glass.
- The Zoo's location on the north face of Sydney Harbour and the steep topography creates many expansive and intimate views throughout the site. The natural terracing of the site provides memorable views back to the city skyline for which Taronga is famous. The Zoo also has important internal visual corridors that are both aesthetically pleasing and orientate the visitor within the site.
- The original use of faux stone, or mock rock at Taronga, was an early adoption of Hagenbeck's principles in Australia and was representative of a tradition of presentation of animal enclosures throughout the world.
- The early plantings, including the hoop pines and figs, are now mature landmarks in the landscape and along with the Floral Clock and other early garden beds, they are an important aesthetic layer of the cultural landscape.

Criterion 4: An item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons.

- Taronga is a significant landmark on Sydney Harbour both in a physical sense and as part of the Sydney community's collective sense of place.
- As an integral part of the social fabric of Sydney, the Zoo is highly valued as a place to which generations of visitors have come as a school student and with family and friends, to visit the zoological exhibits, enjoy the views, relax and socialise.

- Taronga is also important to the workers and the volunteer Zoo Friends, who have a special association with the Zoo.
- Memorials throughout the site, to workers who have died working with the animals, to past directors, such as Sir Edward Hallstrom and others, evidence strong connections of individuals with the Zoo.
- Taronga is important to the local and international zoological community.
- The Zoo contains a known Aboriginal site with in situ physical evidence. This site is likely to have value to the Aboriginal community.

Criterion 5: An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history.

- Taronga Zoo contains an extensive archive collection of associated fabric, records and oral traditions of great educational potential for both the general and zoological communities.
- The Zoo contains a known Aboriginal site with in situ physical evidence which may also have some scientific research potential.
- The Zoo may contain evidence of occupation by the military and of early land management practices by the colony.
- The site may also contain archaeological evidence of the development of the Zoo.

Criterion 6: An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history.

- Taronga Zoo is one of seven internationally recognised zoos in Australia and is the country's premier urban Zoo.
- Taronga is the only urban zoo in New South Wales.
- Taronga recognised the need to establish an open-range zoo and opened Western Plains Zoo (WPZ) at Dubbo in 1977. Therefore, Taronga was the first urban Zoo in Australia to complement its animal collection and provide an essential facility to enable the ZPB to continue to achieve its zoological objectives.
- Taronga Zoo is an iconic place for the people of New South Wales and Sydney in particular, that is an integral part of the city's sense of identity.
- The Zoo's early planning capitalised on the steep topography of its site, creating a unique 'naturalness' and layout for an urban Zoo.
- The Zoo's animal collection contains many rare and endangered species and plays an important role in their breeding.

Criterion 7: An item is important in demonstrating the principal characteristics of a class of NSW's:
– cultural or natural places; or
– cultural or natural environments.

- Along with Taronga's open-range Zoo, the Western Plains Zoo, at Dubbo, it is one of two internationally recognised zoos in New South Wales and one of Australia's seven internationally recognised zoos.
- Taronga is a substantially modified, designed cultural landscape. The built fabric and landscaping at Taronga evidences the evolution of a full range of zoological approaches, from its early fabric linked to Albert le Souef's original plan, to the most recent desire to immerse the visitor in a thematic precinct.

10.4 Summary Statement of Significance for Taronga Zoo

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 complementary faux rock formations; the circulation layout and associated staircases 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.

10.5 Graded Zones/Elements of Significance

10.5.1 Grading Criteria and Levels

The preceding sections of this document set out the identified heritage value of the Taronga Zoo site as a whole. In addition to the overall values identified, there are specific values attached to individual elements. These elements within the Zoo are divided into the following groups:

- Original Pathway Layout and Significant Built Landscape Elements;
- Buildings and Enclosures;
- Landscape Elements;
- Significant Views Within and From the Site;
- Movable Heritage Items; and
- Known Aboriginal Sites.

The individual significance of the diverse array of elements that comprise the site has been assessed using a four-tiered hierarchy. This ranking system is provided as a guide to understanding the complexity of the total place and, ultimately to assist in management decision making.

The following assessment of the significance of individual elements is based on the available known evidence and the ranking of their individual significance is based on the following aspects of each element:

- the age of the fabric;
- ability to demonstrate philosophical phases of the Zoo's development;
- ability to demonstrate design excellence;
- integrity of item;
- whether the item is still used for its original purpose; and
- the relative contribution the item/place makes to the overall significance of the Taronga Zoo site.

The individual element assessment has regard to the same criteria as the overall site assessment, that is, for the item's historic, associative, aesthetic, social and scientific values.

The relative rankings of individual items may be revised following further research undertaken as part of the implementation of this report, or on a reassessment of the comparative contribution of an individual item as a representative sample as the Zoo develops over time and fabric may become rarer.

The relative ranking is based on the following hierarchy:

Exceptional Elements of the site that meet one or more of the assessment criteria at an outstanding level. These elements are integral to the cultural significance of Taronga Zoo.

High Elements of the site which meet one or more of the assessment criteria at a considerable level. These items may have a similar historic value to those items of exceptional significance, however, because of the loss of structural integrity or inability to be used for its original purpose they have been assessed at an overall lower ranking. These elements make a major contribution to the cultural significance of Taronga Zoo.

Some Elements of the site which meet one or more of the assessment criteria. These elements are part of the cultural significance of Taronga Zoo. This level represents the threshold for entry onto the Section 170 Heritage and Conservation Register.

Low Elements of the Zoo site which do not meet any of the assessment criteria at a significant level.

Intrusive These elements include items and places that are intrusive — that is, they detract from the overall significance of the place.

The rankings provide an assessment of the contribution of an individual item to the overall cultural landscape of Taronga. They are not intended to substitute for a more detailed place or item-specific evaluation of significance which should be undertaken as part of the process for major decisions.

This Conservation Strategy has included all the items already identified as having heritage significance on the existing ZPB Section 170 Heritage and Conservation Register as well as additional items assessed as having some or high significance that should be added to the Register. The additional items have been identified using a continuation of the existing number referencing system used in the Section 170 Register and are marked with a '*' in the location reference column of the table.

10.5.2 Original Pathway Layout and Significant Built Landscape Elements

The following table assesses the relative significance of the original pathway layout and significant built landscape elements at Taronga Zoo. The location of these elements is shown in Figure 10.1.

Location Reference	Item Name	Construction Date	Remarks	Significance Ranking
13B	Floral Clock enclosure and gardens, including early plantings along road from Floral Clock to Elephant House	1928	Landscape feature recalling Taronga's establishment as a zoological park. Important element in cultural landscape of the Zoo highly regarded by visitors. Significant views from precinct to city skyline. Of technical value for clock mechanism and construction.	Exceptional
* 99L	Original pathway layout, including original balustrades	1913–1914	Integral part of original site layout that essentially remains intact. Association with AS le Souef who designed the circulation.	Exceptional
	Walls			
04L	Ashlar block wall — north corner of dingo enclosure	Early	Early site fabric. Sandstone materials use and detailing complementary to the cultural landscape.	High
06L	Curved sandstone retaining wall at Upper Entrance forecourt	Early	Early site fabric. Sandstone materials use and detailing complementary to the cultural landscape.	High
07B	East sandstone perimeter wall	1913–14	Original site fabric defining the site boundary. Sandstone materials use and detailing complementary to the cultural landscape.	High
011L	Walls — Upper Seal Pond	1915	Original site fabric. Upper balustrade wall has been modified. Ferro cement materials use and detailing complementary to the cultural landscape. Evidences utilisation of natural topography in original zoo layout.	Exceptional

Location Reference	Item Name	Construction Date	Remarks	Significance Ranking
14L	Dry rubble sandstone retaining wall opposite Floral Clock viewing platform	Early	Early site fabric. Sandstone materials use and less common detailing complementary to the cultural landscape.	High
20L	Panelled concrete wall opposite elephant enclosure	1915–16	Original site fabric. Materials use and detailing complementary to the cultural landscape.	High
30B	Rustic Bridge	1915	Original site fabric – structural and repair work in 2000. Still used as the pedestrian pathway across the gully. Materials use and detailing contribute to the cultural landscape.	Exceptional
31L	Retaining wall at Sarina's Lawn	Early?	No longer exists.	N/A
35L	Decorative cement plasterwork on retaining wall at Sarina's Lawn	1930s	Sculpted cement rendered materials use and detailing complementary to the cultural landscape.	Some
38L	Australian Bird aviaries retaining walls	Early	Part of early zoo aviaries. Use of buttressed stone retaining walls. No longer used for original purpose.	Some
47B	South sandstone perimeter wall	1913—14	Original site fabric defining the site boundary incorporating natural rock faces. Sandstone materials use and detailing complementary to the cultural landscape.	High
51L	Sandstone retaining wall at tortoise enclosure	1913–14?	Early site fabric. Materials use and detailing complementary to the cultural landscape.	High
63L	Ashlar block retaining wall opposite bird show	1913–16	Early site fabric. Materials use and detailing contributes to the cultural landscape.	High

Location Reference	Item Name	Construction Date	Remarks	Significance Ranking
72B	West sandstone perimeter wall	1913–14	Original site fabric defining the site boundary. Sandstone materials use and detailing complementary to the cultural landscape.	High
73L	Low retaining wall at Centennial Picnic Ground	c1916–26	Remnant of early site fabric. Materials use and detailing complementary to the cultural landscape.	Some
74L	Buttressed retaining wall at rear of bongo enclosure at African Waterhole	1913–15	Original site fabric. Materials use and detailing contribute to the cultural landscape.	Some
75L	Northeast corner of Barbary sheep enclosure at African Waterhole	Early	Original site fabric incorporating natural rock benches. Materials use and detailing complementary to the cultural landscape.	Some
81B	North sandstone perimeter wall	1913–14	Original site fabric defining the site boundary. Sandstone materials use and detailing complementary to the cultural landscape.	High
	Stairs			
17L	Paths and stairways, including balustrades, in the area adjacent to the monkey pits	1913–14	Original site fabric, now part of new exhibit. Extent of remnant fabric unknown.	Some
22L	Stairway from monkey pits to Elephant Temple	c1925	Original site fabric, now part of new exhibit. Extent of remnant fabric unknown.	Some
25L	Central stairway leading down to the Aquarium	1914–16	Part of original site layout. Picturesque visual corridor. Representative of heavy stucco-finish detailing. Contributes to the cultural landscape.	High

Location Reference	Item Name	Construction Date	Remarks	Significance Ranking
28L	Broad central stairway east of Aquarium	1914–16	Part of original site layout. Picturesque visual corridor. Representative of heavy stucco-finish detailing. Contributes to the cultural landscape.	High
56L	Stairway west end of Upper Seal Pond	1914–16	Part of original site layout. Representative of heavy stucco-finish detailing. Contributes to the cultural landscape.	High
59L	Double stairway between orang-utan exhibit and Hallstrom Square	c1914–24	Part of original site layout. Picturesque visual corridor. Original trellis demolished. Representative of heavy stucco-finish detailing. Contributes to the aesthetic qualities of Hallstrom Square precinct.	Exceptional
89L	Stairway between orang-utan exhibit and Turner House	c1915–20	Part of original site layout. Representative of heavy stucco-finish detailing. Contributes to the cultural landscape.	High
	Street Furniture			
	Cast iron light standards	NA		NA
26L	Semi-circular seating at north end of Rustic Bridge	1916	Part of original site layout. Representative of sandstone and concrete seating throughout the site. Reflects a pleasure-grounds design style.	High

Location Reference	Item Name	Construction Date	Remarks	Significance Ranking
34L	Three stone and concrete bench seats at junction to Macquarie Island	1914–16	Part of original site layout. Representative of sandstone and concrete seating throughout the site. Reflects a pleasure-grounds design style.	High
44L	Four rustic stone and timber seats along pathway between Aquarium and otters exhibit	1916–20	Part of original site layout. Representative of sandstone and concrete seating throughout the site. Reflects a pleasure-grounds design style.	High
48L	Two stone seats located near the otter exhibit	1915–20	Part of original site layout. Representative of sandstone and concrete seating throughout the site. Reflects a pleasure-grounds design style.	High
55L	Three curved stone seats between Upper Seal Pond and Turner House	1915–20	Part of original site layout. Representative of sandstone and concrete seating throughout the site. Reflects a pleasure-grounds design style.	High
58L	Eleven stone bench seats between Hallstrom Square and giraffe enclosure	1916–20	Part of original site layout. Representative of sandstone and concrete seating throughout the site. Reflects a pleasure-grounds design style. Aesthetically contributes to the Hallstrom Square precinct.	Exceptional
76L	Five stone seats at African Waterhole	1915–20	Part of original site layout. Representative of sandstone and concrete seating throughout the site. Reflects a pleasure-grounds design style.	High

Location Reference	Item Name	Construction Date	Remarks	Significance Ranking
	Other Features			
* 104L	Bird Free Flight Amphitheatre	c1998	Demonstrates a shift in the presentation of birds and the development of education of visitors as an integral part of the Zoo experience. Evidences utilisation of landform to create important open space.	Some
* 107L	Waterbird Lake	1950s	Some aesthetic significance as a water feature.	Some

Original Pathway Layout, Significant Built Landscape Elements and Aboriginal Cultural Heritage Sites

- Retaining Wall, Boundary Wall, Enclosure Wall
- Stairs, Rustic Bridge, Stone Seats, Ampitheatre
- Paths, Waterbird Lake and Floral Clock Enclosure
- Aboriginal

04L Ashlar Block Stone Wall
06L Curved Sandstone Retaining Wall
07B Eastern Perimeter Stone Wall
11L Rockbenches & Walls - Upper Seal Pond
13B Floral Clock Enclosure and Gardens
14L Dry Sandstone Rubble Walls
17L Paths and Staircases near Monkey Pits
20L Panelled Concrete Wall Opposite Elephant Enclosure
22L Stairway From Monkey Pit to Elephant Temple
25L Central Staircase - Down to Aquarium
26L Semi-Circular Seating at North of Rustic Bridge
28L Broad Central Staircase East of Aquarium
30B Rustic Bridge
31L Sandstone Retaining Wall at Sarina's Lawn
34L 3 Stone and concrete Bench Seats
35L Decorative Cement Plasterwork on Retaining Wall
37B Parron Enclosures Rockwork and Round Aviaries
42L Natural Rock Benches and Enclosures at Seal Cove
44L 4 Stone and Timber Seats
47B Southern Perimeter Stone Wall
48L 2 Stone Seats near Otters Exhibit
51L Sandstone Retaining Wall at Aldabra Tortoise Enclosure
55L 3 Curved Stone Seats
56L Staircase at West End of Upper Seal Pond
58L 11 Stone Bench Seats
59L Double Staircase
63L Ashlar Block Retaining Wall Opposite Bird Show
66A Aboriginal Heritage - Hand Stencil
67L Stone Carvings by M. Leslie
72B Western Perimeter Stone Wall
73L Eastern Low Retaining Wall at Centennial Picnic Ground
74L Buttressed Retaining Wall at Rear of Bongo Enclosure
75L N-E Enclosure of Barbary Sheep Exhibit
76L 5 Sandstone Seats at African Waterhole
81B Northern Perimeter Stone Wall
89L Staircase East of Hallstrom Square
104L Bird Free Flight Ampitheatre
99L Original Path Layout, including original Balustrades
107L Waterbird Lake

Figure 10.1 Original pathway layout, significant built landscape elements and known Aboriginal sites at Taronga Zoo.

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10.5.3 Buildings and Enclosures

The following table assesses the relative significance of the buildings and enclosures at Taronga Zoo. The location of these elements is shown in Figure 10.2.

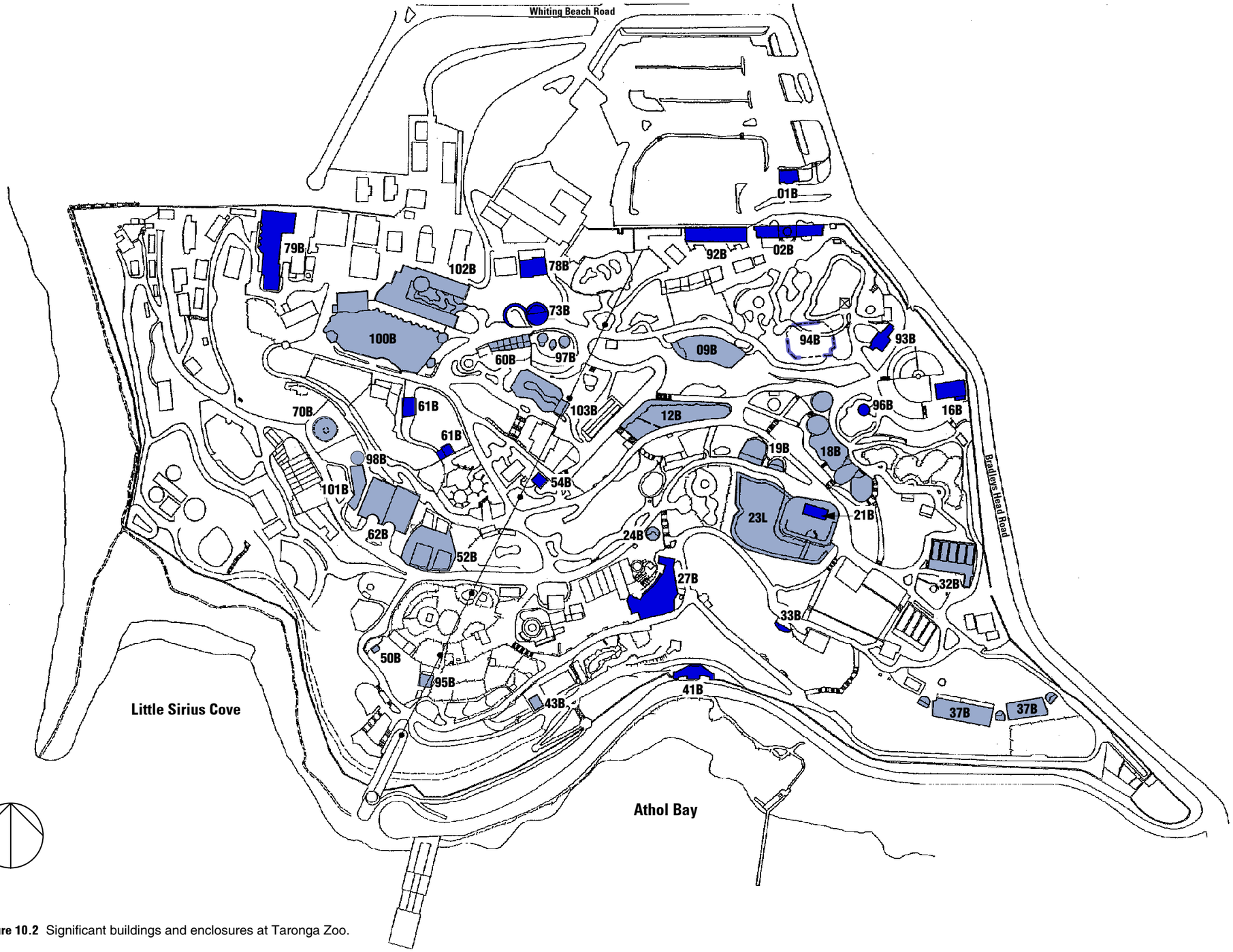
Location Reference	Item Name	Construction Date	Remarks	Significance Ranking
	Buildings			
01B	Tram Shelter	1915–16	Original Zoo fabric still used for original purpose. Example of Federation architectural style that contributes to the architectural character of Mosman.	Exceptional
02B	Upper Entrance Building	1916	Original Zoo fabric still used for original purpose. Outstanding example of Edwardian Baroque architectural style. Landmark qualities.	Exceptional
16B	Hallstrom House	1945	Association with Sir Edward Hallstrom, former Director of the Zoo. Some aesthetic significance, compromised by new function centre.	Some
27B	Aquarium (former Tropical Section)	1926	Early Zoo fabric, remnant of former aquarium section. Outstanding example of Edwardian Baroque architectural style. No longer used for original purpose. Loss of structural integrity.	High
33B	Triangular Shelter	Early	Original Zoo fabric, now used for kiosk purpose. Use of ferro-cement detailing is complementary to cultural landscape.	Some
41B	Lower Entrance Building	1915	Original Zoo fabric still used for original purpose. Loss of second storey built as part of original aquarium complex. Landmark qualities from Sydney Harbour.	Exceptional
54B	Turner House	Late 1940s–early 1950s	Formerly used as zookeeper's residence. Some aesthetic significance contributing to Hallstrom Square precinct.	Some
78B	Staff Amenity Block	Unknown (late 1930s–early 1940s)	Some aesthetic significance as representative of the use of rendered detailing to create a more 'natural' appearance. Now used for offices and storage.	Some

Location Reference	Item Name	Construction Date	Remarks	Significance Ranking
79B	Veterinary and Quarantine Centre	1970 and 1978	Evidences the shift in focus to more scientific objectives at Taronga during the 1970s. Outstanding example of the Sydney School architectural style. Continues original use for which it was designed.	High
* 96B	Kiosk (near Taronga Function Centre)	Early 1920s	Part of the early fabric of the site. Original use as visitor kiosk purpose retained. Some aesthetic significance for picturesque contribution to landscape.	High
	Enclosures			
09B	Rainforest Aviary	1970	Evidences the shift in focus at Taronga during the 1970s towards an immersion style of exhibit. Outstanding example of the Sydney School architectural style. Continues original use for which it was designed.	High
12B	Upper Seal Pond	1915	Original Zoo enclosure still used for original purpose. Evidences utilisation of landform to present viewing platforms and 'natural' environment. Outstanding views across enclosure to city.	Exceptional
18B	Monkey pit enclosures	1913–14	Original Zoo enclosure. Only one circular Monkey Pit (now partially enclosed) remains of original enclosures. Loss of staircases and balustrades that were an integral part of enclosure design. Original moonstone relic from exhibit in storage.	High
19B	New Guinea bird aviaries	1915	Original Zoo enclosure no longer able to be used for original purpose. Utilisation of ferro-cement complementary to cultural landscape.	High
21B	Indian Elephant Temple	1915	Original Zoo enclosure still used for original purpose. Outstanding example of Edwardian Baroque architectural style. Landmark qualities.	Exceptional

Location Reference	Item Name	Construction Date	Remarks	Significance Ranking
23L	Elephant Enclosure and yard	1915	Part of original Zoo enclosure layout still used for original purpose. Loss of original elephant pool. Outstanding views across enclosure to city.	High
24B	Nicobar Pigeon Aviary	1914	Original Moore Park Zoo aviary relocated to Taronga. No longer used for original purpose.	High
32B	Jungle Cats Enclosures	Late 1960s	May have originally been built as quarantine enclosure for carnivores. Representative of the functional style of enclosure advocated by Sir Edward Hallstrom. Adapted in 1993 for use as Jungle Cat Enclosures.	Some
37B	Parrot Enclosures, rockwork and round aviaries	1945	Representative of aviary fabric found at the Zoo. No longer used for original purpose. Use of ferro-cement detailing is complementary to cultural landscape.	Some
43B	Bear Museum	1916	Original Zoo fabric. Now used as historic relic of how animals were once kept.	High
50B	Deer Shelter	Early	Early Zoo enclosure. Use of mock rock to 'naturalise' enclosure. No longer used as animal enclosure.	High
52B	Upper Bear Pits	1915–16	Originally used as lion enclosure. Part of original Zoo fabric. Utilising moat as separation device. Enclosure recently upgraded for Kodiak Bears incorporating new 'mock rock' detailing.	High
60B	Finch Aviaries	Early	Early Zoo aviary still used for original purpose.	High
61B	Giraffe Houses	1923 and 1940	Early Zoo enclosures still used for original purpose. Famous for postcard views across enclosure to city. Use of mock rock and log cabin styles for enclosures.	Exceptional

Location Reference	Item Name	Construction Date	Remarks	Significance Ranking
62B	Cats of Asia Exhibits	1923–39	Early Zoo enclosure modified during the 1930s and again in the 1990s. Designed as lion and tiger enclosures, still used as cats exhibit. Capitalised on natural landforms and use of mock rock to 'naturalise' enclosure. Recent refurbishment has incorporated a modified curved glass window as separation device.	High
70B	Tahr Mountain	1920	Early Zoo enclosure still used for original purpose. Outstanding utilisation of mock rock to create 'natural' environment.	Exceptional
73B	Koala House	1972	Evidences the shift in focus at Taronga during the 1970s towards an emphasis on the Australian animal collection. Outstanding example of the Sydney School architectural style. Continues original use for which it was designed.	Exceptional
* 92B	Reptile House	1960s	Representative of the functional style of enclosure advocated by Sir Edward Hallstrom. No longer used as animal enclosure since construction of new Serpentaria exhibit.	Some
* 93B	Platypus House	1970s	Evidences the shift in focus at Taronga during the 1970s towards an emphasis on the Australian animal collection. Outstanding example of the Sydney School architectural style. Roof and structure rebuilt in early 1990s and some modifications made for display of echidnas. Continues original use for which it was designed.	High
* 94B	Nocturnal House	1970s	Evidences the shift in focus at Taronga during the 1970s towards an emphasis on the Australian animal collection. Innovative adaptation of original Monkey Mountain exhibit.	Some
* 95B	Baby Elephant enclosure	1920s?	Early Zoo enclosure. Use of mock rock to 'naturalise' enclosure. No longer used as animal enclosure.	Some

Location Reference	Item Name	Construction Date	Remarks	Significance Ranking
* 97B	Australian Bushbirds Exhibit	Early	Early Zoo aviaries still used for original purpose.	High
* 98B	Pygmy Hippo enclosure	1920s?	Early Zoo enclosure, now modified. Use of mock rock to 'naturalise' enclosure.	Some
* 100B	Chimpanzee Park	1980	Evidences a shift in presentation of exhibits to show animals in a more 'natural' environment.	Some
* 101B	Snow Leopard Mountain Exhibit	1990	Represents influence of American zoo design approach, especially the Bronx Zoo. First use of tension wires in Australia as separation technique.	High
* 102B	Serpentaria Reptile Exhibit		Evidences modern contemporary exhibit design approach.	Some
* 103B	Orang-utan Rainforest		Evidences a shift in presentation of exhibits to show animals in a more 'natural' environment.	Some



Significant Buildings and Enclosures

Buildings / Structures

Enclosures

01B Taronga Bus Shelter
02B Upper Entrance Building
09B Rainforest Aviary
12B Upper Seal Pond
16B Administrative Offices
18B Monkey Pits Enclosures
19B New Guinea Bird Aviaries
21B Elephant Temple
23L Elephant Enclosure and Yard
24B Nicobar Pigeon (Moore Park) Aviary
27B Aquarium
32B Jungle Cats Enclosures
33B Triangular Shelter
37B Parrot Enclosures Rockwork & Round Aviaries
41B Lower Entrance Building
43B Bear Museum
50B Deer Shelter
52B Upper Bear Pits
54B Turner House
60B Finch Aviaries
61B Giraffe House
62B Cats of Asia
70B Tahr Mountain
73B Koala House
78B Old Staff Amenity Block
79B Veterinary and Quarantine Centre
92B Former Reptile House
93B Platypus House
94B Nocturnal House
95B Elephant Enclosure
96B Kiosk
97B Australian Bushbirds Exhibit
98B Pygmie Hippopotamus Enclosure
100B Chimpanzee Park
101B Snow Leopard Mountain
102B Serpentria Reptile Exhibition
103B Orang-utan Rainforest

Figure 10.2 Significant buildings and enclosures at Taronga Zoo.

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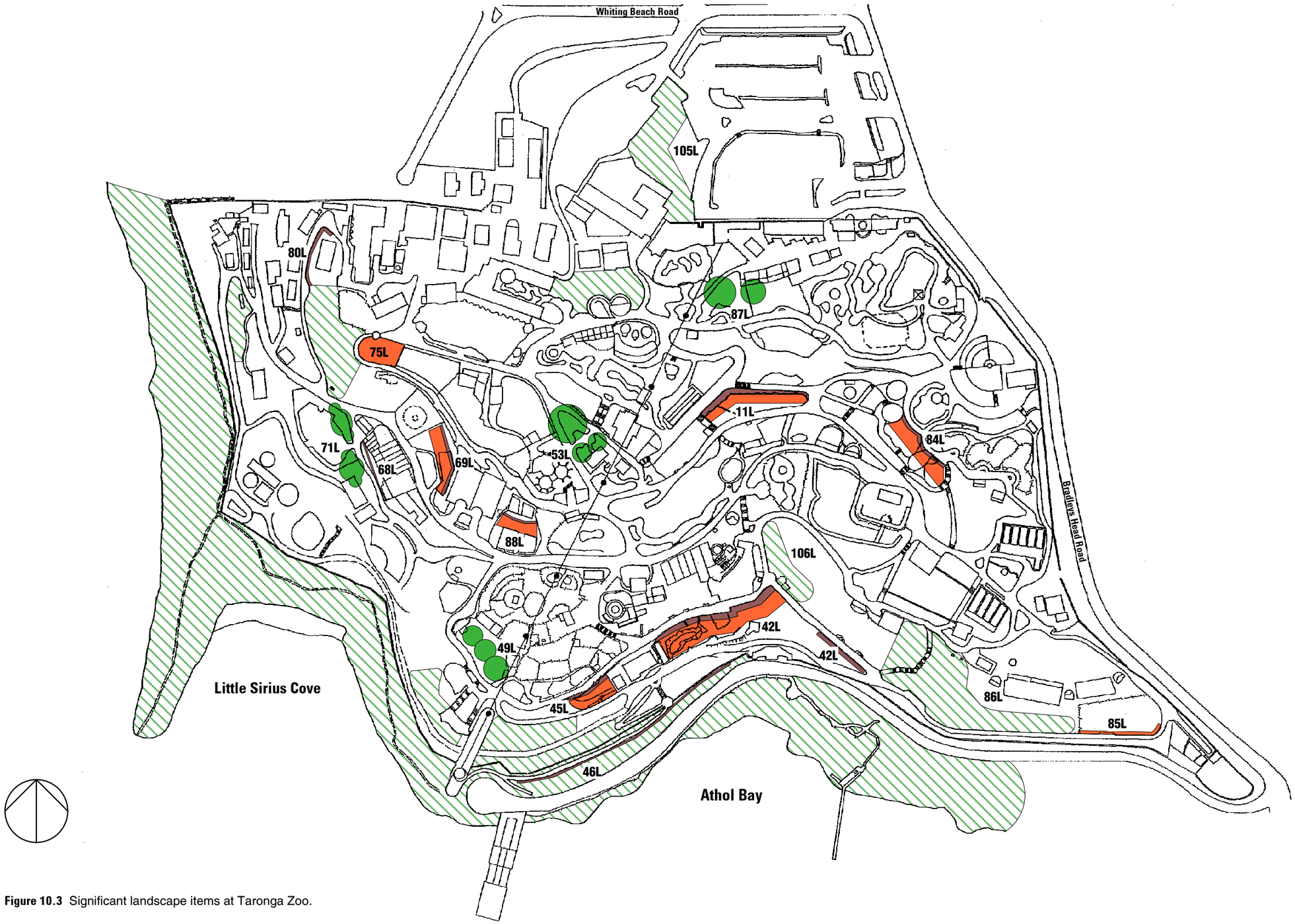
10.5.4 Significant Landscape Items

The following table assesses the relative significance of the landscape elements at Taronga Zoo. (Reference should be made to the Horticultural Database prepared and maintained by the Botanic Estate Department of Taronga Zoo for botany names). The location of the landscape elements is shown in Figure 10.3.

Location Reference	Item Name	Construction Date	Remarks	Significance Ranking
11L	Natural rock benches — Upper Seal Pond	Predates site establishment	Remnant natural topography of site.	Exceptional
42L	Natural rock benches and boulders in Sun Bear Enclosures	Predates site establishment	Remnant natural topography of site. Evidences utilisation of natural topography in original Zoo layout and animal enclosure design.	Exceptional
45L	Natural rock benches and enclosures at Seal Cove and Macquarie Island	Predates site establishment	Remnant natural topography of site.	Exceptional
46L	Cliff and rock benches facing Athol Bay	Predates site establishment	Remnant natural topography of site. Rock cuttings evidence the construction of the first access road between Athol Bay and the suburb of Mosman. Contributes to aesthetic values of the site and overall 'naturalness'.	Exceptional
49L	Three mature fig trees behind Discovery Farm	Early	Early plantings reflecting Taronga's establishment as a Zoological Park. Landmark qualities, and aesthetically contribute to cultural landscape of the Zoo.	Exceptional
53L	Group of mature trees at Hallstrom Square	Early	Early plantings reflecting Taronga's establishment as a Zoological Park. Landmark qualities, particularly from the harbour and from within the site itself. Aesthetically contribute to cultural landscape of the Zoo.	Exceptional

Location Reference	Item Name	Construction Date	Remarks	Significance Ranking
68L	Rock faces at western roadway between bird show and Centennial picnic grounds	Predates site establishment	Remnant natural topography of site. Evidences utilisation of natural topography in original Zoo layout.	Exceptional
69L	Natural rock benches at snow leopard exhibit	Predates site establishment	Remnant natural topography of site.	Exceptional
71L	Old paperbarks at Centennial picnic grounds	Early	Early plantings reflecting Taronga's establishment as a zoological park. Aesthetically contribute to cultural landscape of the Zoo.	Exceptional
75L	N-E enclosure of Barbary sheep exhibit at African Waterhole	Predates site establishment	Remnant natural topography of site. Evidences utilisation of natural topography in original Zoo layout and animal enclosure design.	Exceptional
80L	Natural landform rock benches leading to Insect House	Predates site establishment	Remnant natural topography of site. Evidences utilisation of natural topography in original Zoo layout and animal enclosure design.	Exceptional
84L	Rock benches at monkey pits	Predates site establishment	Remnant natural topography of site. Evidences utilisation of natural topography in original Zoo layout and animal enclosure design.	Exceptional
85L	Rock benches at southeast woodland	Predates site establishment	Remnant natural topography of site.	Exceptional
86L 105L 106L	Remnant native woodland	Predates site establishment	Remnant natural bushland of site.	Exceptional
87L	Mature fig trees near dingo enclosure	Early	Early plantings reflecting Taronga's establishment as a zoological park. Aesthetically contribute to cultural landscape of the Zoo.	Exceptional
88L	Rockwork in Kodiak Bear Pits	Predates site establishment	Remnant natural topography of site. Enclosure and rockwork modified in 2000.	High



Significant Landscape Elements

- Sandstone Rock Walls
- Sandstone Rock Benches
- Remnant Woodland
- Significant Trees

11L Rockbenches & Walls - Upper Seal Pond
42L Natural RockBenches & Enclosures at Seal Cove & Macquarie island
45L Natural Rockbenches & Boulders in Sun Bear Enclosures
46L Cliff & Rock Benches Facing Athol Bay
49L 3 Old Fig Trees Behind Discovery Farm
53L Group of Mature Trees at Hallstrom Square
68L Rockfaces at Western Roadway Between Bird Show & Centre Picnic Ground
69L Rock Benches at Snow Leopard Exhibit
71L Old Paperbarks at Centennial Picnic Ground
75L N-E Enclosure of Barbary Sheep Exhibit at African Waterhole
80L Natural Landform Rock Benches Going up to Insect House
84L Rock Benches - Monkey Pits
85L Sandstone Rock Benches
86L S-E Woodland
87L Mature Fig Trees
88L Rockwork in Bear Pits
105L Remnant Brush Forest at Top Carpark
106L Remnant Woodland

Figure 10.3 Significant landscape items at Taronga Zoo.

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10.5.5 Significant Views Within and From Taronga Zoo

The following table assesses the relative significance of the views within and from at Taronga Zoo. The location of the views is shown in Figure 10.4.

Location Reference	Item Name	Remarks	Significance Ranking
*01V	Southeast view from above the upper seal enclosure to Rushcutters Bay.	Important link with Sydney Harbour and its southern foreshore.	High
*02V	Looking south from upper seal enclosure to Garden Island and CBD.	Important link with Sydney Harbour and the CBD.	High
*03V	Looking west from Floral Clock, across upper seal enclosure to Opera House and CBD.	Important link with Sydney Harbour and the CBD.	High
*04V	Looking west across gully to hoop pines at Hallstrom Square.	Important visual corridor within the Zoo providing orientation for visitors.	High
*05V	Southwest view across Zoo to CBD.	Important link with Sydney Harbour and the CBD.	High
*06V	Looking west to CBD and Harbour Bridge.	Important link with Sydney Harbour and the CBD.	High
*07V	Southwest view across Seal Cove.	Important link with Sydney Harbour.	High
*08V	East view across Seal Cove to Athol Bay.	Important link with Sydney Harbour.	High
*09V	Expansive view from Free Flight Bird amphitheatre across Sydney Harbour to CBD.	Important link with Sydney Harbour and the CBD.	High
*10V	West view to CBD and Harbour Bridge from picnic area.	Important link with Sydney CBD.	High
*11V	Visual corridor down early staircase to Aquarium facade and beyond to the southern harbour foreshore.	Important visual corridor within the Zoo and view providing link with Sydney Harbour.	High

Location Reference	Item Name	Remarks	Significance Ranking
*12V	West view across giraffe houses to Opera House.	Important link with Sydney Harbour and the CBD.	High
*13V	South view across giraffe houses to Garden Island and Sydney CBD.	Important link with Sydney Harbour and the CBD.	High
*14V	View from orang-utan exhibit to mature landscape landmarks at Hallstrom Square.	Important visual corridor within the Zoo.	High
*15V	West view across Tahr Mountain to Sydney CBD.	Important link with Sydney CBD.	High

Significant Views

Significant Views

01V South-east View from the upper seal enclosure to Rushcutters Bay

02V Looking south from upper seal enclosure to Garden Island and CBD

03V Looking west from floral clock to Opera House and CBD

04V Looking west across gully to Hoop Pines as Hallstrom Square

05V South-west view across Zoo to CBD

06V Looking west to CBD and Harbour Bridge

07V South-west view across Seal Cove

08V East view across Seal Cove to Athol Bay

09V Expansive view from Free Flight Ampitheatre

10V West view to CBD and Harbour Bridge frim picnic area

11V Visual corridor to Aquarium portico and beyond to southern Harbour foreshore

12V West view across Giraffe Houses to Opera House

13V South view across Giraffe Houses to Garden Island and CBD

14V View from Oranguatan exhibit to Hallstrom Square

15V West view across Tahr Mountain to CBD

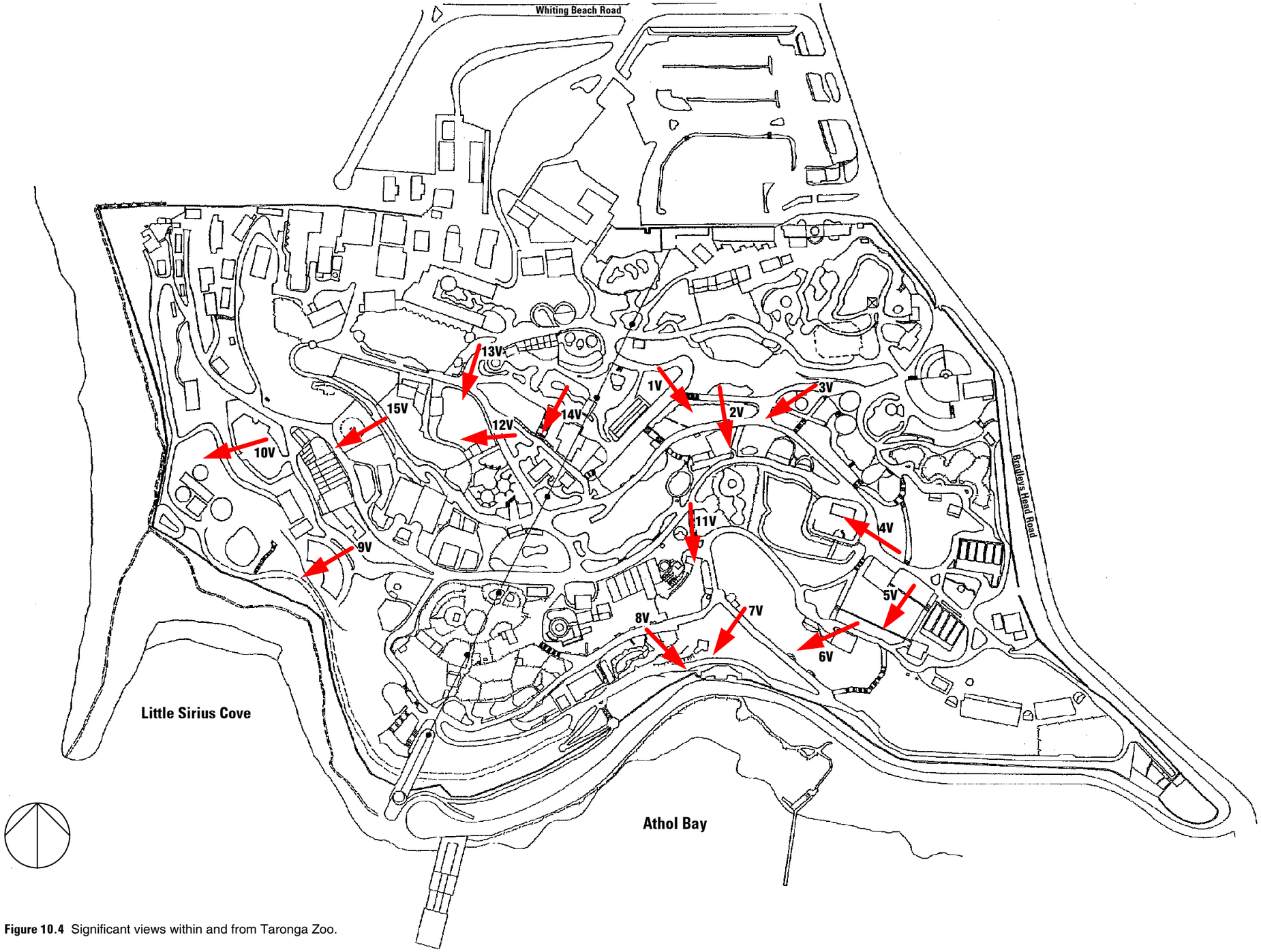

Figure 10.4 Significant views within and from Taronga Zoo.

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10.5.6 Other Significant Items

The following table assesses the relative significance of other significant items at Taronga Zoo. (The general vicinity of the known Aboriginal sites is shown in Figure 10.1.)

Location Reference	Item Name	Construction Date	Remarks	Significance Ranking
	Movable Heritage Items			
15M	Zoological Parks Board collection Archives and Records	C1913–	Invaluable documentary resource of the Zoo's historical evolution.	Exceptional
36B	Tree House	1936	(now demolished)	NA
83M	Automatic Weighing Scales	Early	Early fabric associated with the Zoo. Contributes to the cultural significance of the site.	High
*108M	Moonstone Relic from Monkey Pit Enclosures	1913–14	Original surviving fabric from former Monkey Pit enclosure.	Exceptional
*109M	Opening Day Marble Plaque	1916	Original surviving relic representing the opening day of Taronga Zoo.	Exceptional
*110M	Marble Bath in Discovery Farm	Unknown	Early surviving relic.	High
*111M	Red kangaroo Qantas Plaque	Unknown	Surviving relic of former use of part of the Zoo.	High
*112M	Sandstone Bird Bath, near Insect House	Unknown	Early surviving relic.	High
*113M	Old Orang-utan cage doors/bars	Unknown	Surviving relic of former Zoo exhibit.	High
*114M	Cast Iron Post, near Platypus Tank	Unknown	Surviving relic.	High
	Known Aboriginal Sites			
66A	Aboriginal Hand Stencil	Predates the site's establishment as a Zoo.	The visible hand stencil is a contemporary interpretation of the unmarked, original stencil in the vicinity. Evidences the original occupation of the site by the Aboriginal community.	Original hand stencil — Exceptional

Location Reference	Item Name	Construction Date	Remarks	Significance Ranking
67L	Aboriginal stone carvings by M Leslie	c1965 and 1981	A contemporary interpretation of the Aboriginal significance of the original hand stencil in the vicinity. Evidences the original occupation of the site by the Aboriginal community.	Some

10.6 Intrusive Items

There are a relatively small number of elements throughout the site which detract from the assessed values of the place. Such items generally utilise incongruous materials that are not consistent with the traditional palette of materials used throughout the site; have little, if any, association or ability to demonstrate a philosophical design approach of the Zoo's development; are out of scale with the established character of the place; and encroach on or detract from existing visual corridors within the site and views to the site.

Specific items that have been identified as intrusive within Taronga Zoo include:

- the Taronga Zoo Function Centre;
- the Cable Car lower terminal, pylons and easement;
- the Maritime Building at the Seal Bay exhibit;
- modern kiosks and portable buildings; and
- some recently introduced pathways, signage and street furniture across the site.

11.0 Constraints and Issues

11.1 Preamble

This section of the report sets out the key constraints and issues that affect Taronga Zoo. The conservation planning process established by the guidelines of the *Burra Charter* of Australia ICOMOS requires that relevant constraints and opportunities be identified as part of the process for developing conservation policies for places of significance. They are as follows:

- obligations arising from the heritage significance of the place and its component elements;
- physical constraints of the place arising from the condition of the fabric of the elements;
- external factors, including relevant statutory and non-statutory controls; and
- site management issues, including those arising from the animal collection, keeper requirements and visitor experience.

It is recognised that a number of the issues set out below stand in contrast. The following sections are not conclusions or recommendations, but rather observations relevant to the circumstances of the place and matters that require consideration and resolution. None of these constraints, issues and opportunities in themselves form conservation policy. Appropriate conservation policy is a result of the careful comparative assessment of these various values.

11.2 Obligations Arising From Heritage Significance

11.2.1 Obligations Arising From Assessed Significance of the Site as a Whole

The heritage significance of Taronga Zoo gives rise to a range of obligations and requirements. The key obligation relates to the need to retain the significance of the place for present and future generations. Other obligations that arise from the values expressed in the statement of significance include the following:

- Taronga Zoo is a place of national significance and therefore should be managed in accordance with accepted conservation principles.
- Taronga Zoo should be retained as a zoo at its current site.
- The physical evidence of the history of the place, and in particular the fabric evidencing the changes in the philosophical approach of the Zoo, should be retained and conserved.
- Action should be taken (or not taken) so as to ensure the continuing ability of the place to demonstrate its history, operations and philosophy.

- The landscape and setting of the place, including the site design, pathway layout, landscape elements, significant views and overall visual quality, should be retained, maintained and enhanced.
- Taronga, as an integral part of the social fabric of Sydney, should continue its role as a place of recreation, entertainment and education for visitors.
- Archaeological resources, both above and below ground, and collections should be protected and conserved.
- Records and other information, such as oral traditions, should be recognised as important elements of the place and appropriately maintained and managed.
- The ZPB should consult with the public, key stakeholders and the local community about proposed changes at Taronga Zoo and opportunities should be provided to allow interested stakeholders to be involved in the care and conservation of the place.
- The history and significance of the place should be interpreted to visitors.

11.2.2 Constraints Arising From Assessed Significance of Individual Items

The principal issues arising from the assessed significance of individual items are as follows:

- Individual items identified as integral to the cultural landscape of Taronga Zoo should be managed in accordance with accepted conservation principles.
- The assessed significance of individual items should be conserved.
- Individual items should be managed in accordance with their assessed level of significance.
- The historic use of significant buildings and enclosures should be retained or reinstated wherever possible.
- The assessed level of significance should dictate the degree to which change in use and fabric is acceptable.
- All conservation research and works on the built fabric should utilise 'best practice' principles and conservation techniques according to those principles of the *Burra Charter* of Australia ICOMOS. That is, works may, according to circumstance, commonly include a combination of the processes of retention or reintroduction of a use, retention of associations and meanings, maintenance, preservation, restoration, reconstruction, adaptation and interpretation (see Appendix A).

11.2.3 Constraints Arising From Assessed Significance of the Landscape Elements

The principal landscape issues arising from the above assessment of significance of the landscape items and places can be identified as:

- the need to preserve the legibility of the original, underlying landform of the site;
- the desirability of conserving and, where possible, restoring the original form of the gully and its associated 'rainforest' vegetation;
- the need to maintain the early patterning of terraces, pathways, stairways and seating;
- the need to conserve and actively manage the identified views within and from the site;
- the need to conserve what remains of the original, remnant vegetation on the site and to foster regeneration in appropriate areas;
- the desirability of retaining the original ornamental plantings, and particularly the rainforest species in the core area of the Zoo; and
- the need to retain and conserve the Floral Clock in its original position.

11.2.4 Constraints Arising from Assessed Curtilage of Taronga Zoo

The issue of the curtilage was addressed in the earlier, Section 170 Report, prepared by Mayne-Wilson & Associates in 1998. It concluded that the old stone and wire boundary walls effectively defined the core area of the Zoo, and that these provided an adequate curtilage on its western, southern and eastern sides. The presence of Bradleys Head Road reinforced the logic of this on the eastern and southern sides. On the northern side, while the heritage curtilage would be regarded as being defined by the 1913–1914 stone boundary walls, it was recognised that for functional reasons, primarily to do with parking, service and educational facility requirements, the curtilage could reasonably extend to the southern edge of Whiting Beach Road.

This curtilage proposal, however, does not correspond with the cadastral or land title boundaries of the Zoo. These extend to the foreshores of the harbour; at Little Sirius Cove, Whiting Beach and Athol Bay. The ZPB (Zoological Parks Board) has developed a detailed Plan of Management for these foreshores.

Although the visual catchments themselves cannot be included within a curtilage for the Zoo, lying well beyond its boundaries and being essentially borrowed elements, they nevertheless should be included as part of the heritage significance of the Zoo as they form a critical element in its overall setting. Indeed, they should be as vigorously protected and managed as any piece of heritage fabric within the Zoo because they are elements which the public value and want to keep.

11.2.5 Constraints Arising From Potential Archaeological Resources at Taronga Zoo

The nature of archaeological resources identified requires a responsible management process to be developed and the results of archaeological investigation to be interpreted to the public.

However, the location and nature of archaeological resources on this site is difficult to predict. Where development of a precinct is proposed, management would be streamlined through the use of physical testing (to see if and where resources occur). The results of physical testing could be combined with the findings of this study to simplify management procedures.

11.3 Aboriginal Values

There are two recognised sites within the subject study site of the Zoo which have contemporary significance for Aboriginal people. This significance gives rise to a range of issues and principles. These are embodied in two key guideline documents:

- *Draft Guidelines for the Protection Management and Use of Aboriginal and Torres Strait Islander Cultural Heritage Places (DOCA);* and
- *Previous Possessions, New Obligations (Australian Museum Policies).*

These guidelines emphasise the right of Aboriginal and Torres Strait Islander people to self-determination and involvement, in respect to cultural heritage matters.

There are a range of other related issues and constraints concerning the Aboriginal heritage values of the Taronga Zoo site. These include:

- the need to undertake an assessment of the site's Aboriginal values;
- the condition of Aboriginal sites;
- risk to Aboriginal values from visitation and/or excavation;
- Aboriginal artefactual material held in collections, if any;
- the availability of Aboriginal historical information related to the site; and
- interpretation of Aboriginal values.

11.4 Obligations Arising From the Revised *Burra Charter* of Australia ICOMOS

The revised Australia ICOMOS *Charter for the Conservation of Places of Cultural Significance* (the *Burra Charter*) provides guidelines for the care of places of cultural significance. This Conservation Strategy has been prepared in accordance with the relevant *Burra Charter* principles.

The *Charter* provides specific guidelines for physical and procedural actions that should occur in relation to significant places. Some of the principles which are relevant to the consideration of appropriate conservation policies for the Taronga Zoo Site include the following:

- Conservation is an integral part of good management of places of cultural significance (Article 2).
- Decision-making should be based on a cautious approach, that is, of changing as much as necessary but as little as possible (Article 3).
- Conservation should make use of all the knowledge, skills and disciplines which can contribute to the study and care of the place (Article 4).
- Where the use of place is of cultural significance it should be retained (Article 7).
- The visual setting of the place should be maintained and no new construction or other action which detracts from its heritage value should occur (Article 8).
- Significant fabric should be maintained in situ, unless moving it is the sole means of achieving its survival (Article 9).
- The contribution which related objects make to the cultural significance of the place should be retained (Article 11).
- Conservation, interpretation and management of a place should provide for the participation of people for whom the place has special associations and meanings (Article 12).
- Change may be necessary to retain cultural significance but is undesirable where it reduces cultural significance. The contribution of all periods must be respected (Article 15).
- Continuing, modifying or reinstating a significant use may be appropriate and preferred forms of conservation (Article 23).
- Significant associations between people and a place should be retained and opportunities for the interpretation of these associations implemented (Article 24).
- The cultural significance of a place should be explained by interpretation and should enhance understanding and enjoyment of the place (Article 25).
- The impact of proposed changes on the cultural significance of a place should be analysed with reference to the statement of significance and policy for managing the place (Article 27).
- Competent direction and supervision should be maintained at all stages, and any changes should be implemented by people with appropriate knowledge and skills (Article 30).
- A log should be kept of new evidence and additional decisions recorded as future documentary evidence (Article 31).

- All records associated with the conservation and history of the place should placed in a permanent archive and made publicly available where this is culturally appropriate (Article 32).

11.5 Statutory Controls

In addition to the *Zoological Parks Board Act, 1973,* Taronga Zoo is subject to a range of Commonwealth, State and Local Legislation and policy controls. The following section is not intended to provide a comprehensive analysis of all relevant legislation, but rather an overview summary, which can provide an overall context for understanding conservation issues.

11.5.1 Australian Heritage Commission

The *Australian Heritage Commission Act* provides for the creation of the Register of the National Estate. This Register is the national list of all those parts of Australia's natural, historic and cultural heritage that should be conserved. It alerts planners, decision-makers, researchers and the community at large to the heritage value of these places.

The Register lists items which, in the opinion of the Australian Heritage Commission, fall within the following definition:

> *Components of the natural environment or the cultural environment of Australia that have aesthetic, scientific or social significance, or other special value for future generations, as well as for the present community.*

Listing in the Register of the National Estate imposes no legal restrictions, except on Federal authorities which must consult the Commission prior to carrying out any work which will impact on the heritage value of a place in the Register. Commonwealth agencies, however, may not take any action that adversely affects a place or building on the Register (or the Interim Register), unless the relevant Minister is satisfied that there is no 'feasible or prudent alternative', and that all reasonable measures will be taken to minimise environmental damage. Section 30 of the Act requires Commonwealth agencies to inform the Australian Heritage Commission of all proposed Commonwealth actions that are likely to have a significant effect on any listed place so that the Commission has the opportunity to comment.

Taronga Zoo is not listed on the Register of the National Estate (RNE).

However, the Zoo clearly has sufficient heritage value to warrant its listing on the RNE.

11.5.2 State Environmental Planning Policy No. 56 — Sydney Harbour Foreshores and Tributaries (SEPP56)

Taronga Zoological Gardens is designated as State Significant Development in Schedule 1 of the State Environmental Planning Policy No. 56 — Sydney Harbour Foreshores and Tributaries (SEPP 56). The state Minister of Urban Affairs and Planning is the consent authority for such developments. There is a requirement under Clause 11 of the SEPP that a masterplan be prepared and that development be consistent with that plan. Clause 19 of the SEPP sets out the items the masterplan should 'illustrate and explain', where appropriate. These include:

(i) heritage conservation, implementing the guidelines set out in any applicable conservation policy, and protection of archaeological relics.

The masterplan requirement may be waived by the Minister for reasons such as the nature of the development, the adequacy of other planning controls that apply to the proposed development or for other such reasons as the Minister considers sufficient. The masterplan requirement may also be waived if the development relates to only part of the strategic foreshore site. The views of the local Council must also be sought by the consent authority.

The implications of inclusion under this instrument are that DUAP would assess any development proposal against an approved masterplan (unless exemption is sought), and that comments from the Heritage Office as well as Mosman Council would be sought.

11.5.3 Sydney Regional Environmental Plan No. 23 — Sydney and Middle Harbours (SREP 23)

Taronga Zoo is not listed as a heritage item in the Sydney Regional Environmental Plan No. 23 — Sydney and Middle Harbours (SREP 23). However, it is situated within the area to which the Plan applies. Matters for consideration are contained in Clause 18 of the SREP, of which the following are relevant to consideration of heritage issues:

a) the appearance of the development from the waterways and the foreshores;

j) the effect of the development on any conservation area or on any building, work, relic, tree or place that is a heritage item of significance to the locality and the effect on its site and its vicinity.

Although the Zoo is not individually listed under SREP 23, consideration would have to be given to the appearance of the development from the waterways and foreshores and to the effect of the development on both the Zoo itself and individual local heritage items on the site or in the vicinity. Part 4 of the SREP, containing specific heritage provisions, does not apply as the Zoo is not listed as a heritage item in this REP.

11.5.4 New South Wales Heritage Act, 1977

State Heritage Register

The State Heritage Register (SHR) is a list of places and items of particular importance to the people of NSW, made under the *NSW Heritage Act, 1977*. Heritage Council approval is required for works proposed to an item on the State Heritage Register.

Taronga Zoo is not presently listed on the State Heritage Register. However, as the site is identified in this report and the Mosman Heritage Study as having State significance and it clearly meets the relevant criteria it is therefore recommended in this report that the site be nominated for listing on the SHR. If the Zoo is listed on this Register, certain statutory requirements and processes would apply.

If a site is listed on the State Heritage Register, the owner must not do a range of activities without the approval of the Heritage Council. These activities are identified in Section 57(1) of the Heritage Act. The activities most relevant in the case of Taronga include any alteration, demolition, relocation or destruction of any part of the place. Inclusion on the State Heritage Register brings with it an obligation for Heritage Council approval for certain works. There are standard exemptions from the requirement for approval for maintenance, repair, painting, excavation (non-archaeologically significant areas), restoration and specific conservation works.

Owners of places on the SHR can apply to the Heritage Council for place-specific exemptions to cover regular maintenance or site-specific works and needs that are not covered by the standard exemptions gazetted under the Act's regulations. In addition, works proposed in a CMP that has been submitted to and endorsed by the Heritage Council, can be deemed by the Minister to be additional site-specific exemptions, thus freeing the owner to undertake works without the need for further Heritage Council approvals.

Archaeological Relics

The *NSW Heritage Act* currently affords automatic statutory protection to 'relics' which form part of archaeological deposits. The Act defines a 'relic' as:

> *any deposit, object or material evidence which relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and which is 50 or more years old.*

Sections 139–145 of the Act prevent the excavation of a relic, except in accordance with a gazetted exemption or an excavation permit issued by the Heritage Council of New South Wales.

Section 170 Heritage and Conservation Register

A Heritage and Conservation Register was prepared in 1998 by the Department of Public Works for the Zoological Parks Board of NSW, as required by Section 170 of the *NSW Heritage Act*.

Further, Section 170 of the *1999 Heritage Act Amendments* requires the Zoological Parks Board of NSW to maintain minimum standards of maintenance and repair to all places listed on their Section 170 Register.

Notice must be given to the Heritage Council before any item is removed from the Section 170 Register, transfer of ownership of listed items occurs or demolition of any item on the Register occurs.

In the course of this study, additional items worthy of inclusion on the Section 170 Register have been identified and assessed. These items generally evidence early fabric or demonstrate a key change in the development of the Zoo.

11.5.5 Mosman Municipal Council Local Environmental Plan 1998

Only a small number of individual items within Taronga Zoo are identified as Items of Environmental Heritage on Schedule 2 of the Mosman LEP, namely the:

- Top Entrance Building;
- Lower Entrance Building;
- Indian Elephant Temple;
- Moore Park Aviary;
- Floral Clock; and
- Australian Sections 1 and 2.

The Mosman Heritage Review, 1996, however, identifies the site as a whole as an item of State heritage significance (see Appendix B).

Under Clause 37 of the LEP, Council must consider the likely effect of the proposed development on the heritage significance of a heritage item. However, while individual elements of the site are listed in the heritage schedule of the Mosman LEP, the consent authority for development is the Department of Urban Affairs and Planning (DUAP) as the State planning instruments prevail over the Local Environmental Plan. Mosman Council would be invited to comment on any development application for the Zoo received by DUAP.

11.5.6 National Trust of Australia (NSW)

The National Trust of Australia (NSW) is a community based conservation organisation. The Trust has assembled a register of heritage items and conservation areas through the assessment work of its expert committees. Although it holds no legal status, the National Trust Register is considered to be an authoritative guide to heritage significance and acts as a lobby group for heritage conservation.

Taronga Zoo site as a whole is identified on the National Trust's register as well as the following individual elements:

- Main Entrance building;
- Indian Elephant House;
- Lower Exit building;
- Aquarium;
- Floral Clock;
- Aviaries; and
- Rustic and other elements, including the tree house (now demolished), rustic seating, baroque landscaping near the Elephant House, cast-iron light standards (no longer on site), Giraffe House, Tahr Mountain Enclosure and the African Lion Enclosure.

The National Trust is currently reassessing the existing listing card for the Zoo. A copy of the current listing card for the site and the individual elements is included as Appendix C.

11.5.7 Royal Australian Institute of Architects (RAIA)

The Royal Australian Institute of Architects (RAIA) maintains a non-statutory register of Buildings of Twentieth Century Significance. The Upper Entrance Building, Lower Entrance Building and the Indian Temple are identified in this register. The listing information is included in Appendix D.

11.5.8 National Parks and Wildlife Act, 1970

All Aboriginal cultural material receives statutory protection under the *National Parks and Wildlife Act*. If Aboriginal cultural material is found, the National Parks and Wildlife Service must be informed under Section 91 of that Act. The heritage provisions contained in the Mosman Local Environmental Plan reflect this requirement.

11.5.9 Exhibited Animals Protection Act, 1986

The *Exhibited Animals Protection Act, 1986*, (EAP Act) is administered by the NSW Department of Agriculture. The EAP Act outlines provisions for minimum standards of conditions for exhibited animals, including requirements for the population density of animals, minimum space provisions, safety measures for both the animals and keepers and other requirements for the well-being and health of the animals in the Zoo's care. The EAPA is periodically revised to bring the Act into line with changing public perception.

11.5.10 Constraints Arising from the Building Code of Australia

The configuration, space utilisation, provision of services, access and visitor circulation within the Zoo and individual buildings and enclosures should comply with the relevant sections of the Building Code of Australia. The code provides requirements and standards for issues such as:

- design, construction and structural provisions;
- fire resistance and fire safety;
- occupant access and egress;
- services and equipment; and
- health and amenity.

11.5.11 Other Legislation and Policies

Conservation and management of Taronga should also have regard for a range of other legislation and statutory controls covering issues such as:

- public and visitor safety requirements;
- maintenance of archival collections;
- employee working conditions, in particular the requirements for occupational health and safety for the animal keepers;
- public health; and
- environmental issues, including issues arising from animal waste, exhibit washdown and the Zoo's designation as a quarantine area requiring tight site security and controls over the site's boundary walls.

11.6 Zoological Parks Board

The Zoological Parks Board of New South Wales is a statutory authority responsible for the operation of Taronga Zoo and Western Plains Zoo and is recognised by the World Conservation Organisation as a leader in the world zoological community. The Board's powers, obligations and authorities are outlined in the *Zoological Parks Board Act 1973*, and *Amendment Act 1992*, and come within the administration of the Minister for the Environment.

The Board's primary objectives are to facilitate visitor and community education, biological research and wildlife conservation.

The Board has an absolute commitment to the preservation and conservation of wildlife and demonstrates this commitment through ongoing captive breeding and research programs. The Board is the only zoo-based agency within the Australasian region that has a dedicated Conservation Research centre specifically aimed at developing research and conservation programs.

The Board also aims to maximise the visitor experience by providing a unique and exciting educational tour of each zoo with animals exhibited in an environment similar to their natural habitat. Education initiatives undertaken by the Board primarily focus on public education in relation to the conservation of biodiversity leading to improved community awareness and activity.

Management acknowledges that to maintain its pre-eminent status, a commitment to excellence across all facets of its operation is required, as well as a continuing program of renewal and improvement to ensure the Zoo remains relevant to the community it serves and responsive to the needs of the animal species it seeks to conserve.

Over the last two years, the ZPB has embarked on a major program of asset renewal and improvement. To assist the Board in the achievement of its vision and mission, it has prepared a strategic plan to guide the 'regeneration' of the organisation and its assets. The plan seeks to define the Board's passion for wildlife and the environment as well as recognising the importance of zoos to the community. The vision expressed in the Strategic Plan to 2002 and beyond is stated as being:

> *To inspire Australians and our visitors to explore, discover, delight in and protect our natural world. ZPB 1999.*

The Strategic Plan outlines the Board's mission as follows:

- *We will demonstrate a meaningful and urgent commitment to wildlife, our natural environment and the pursuit of excellence in our conservation, recreation and scientific endeavours.*
- *Through effective communication and example, we will promote positive and measurable conservation outcomes.*
- *We will inspire active and enjoyable learning experiences and be a catalyst in creating understanding and wonderment of our natural world.*

- *By encouragement and demonstration, our zoos will lead individuals and communities in the wise sustainable use of natural resources for the benefit of future generations.*

The Strategic Plan proposes that the ZPB achieve this by 'example, effective communication and being market responsive without compromising the integrity' of its mission. The ZPB has commissioned this Conservation Strategy in accordance with these objectives and its vision to make Taronga one of the world's leading zoos.

The Strategic Plan also provides an objective and action plan that guides all aspects of the ZPB's decision-making and planning. Such objectives include:

- a vision for the animals in their care:

  Ensuring the animals in our care are valuable education and conservation resources, which provide enjoyable and exciting experiences that promote learning and inspire empathy for the welfare and conservation of wildlife.

  Strategy for presenting animal collection includes providing exhibits which integrate habitat immersion with interpretation of the relationship between plants and animals; ensuring that exhibit designs serve conservation and education outcomes.

- a vision for the landscape on the site:

  Developing our landscapes and botanic displays to enhance animal habitats and visitor experience, interpret ecological relationships among plants and animals and contribute to the conservation of plants and the heritage value of our gardens.

  Action Plan — To develop a Vegetation Management Plan; develop botanic interpretive plan, incorporating people, plants and animals; implement horticultural presentation standards checklist and audit and develop programs for the care and maintenance of trees.

- a vision for the physical assets at the Zoo:

  Sensitively develop, manage and maintain our exhibits, facilities, associated infrastructure and properties to the highest standards for the enhancement of visitor experience and the well being of our people and animals.

- the provision of a work environment which accepts and promotes staff and visitor safety as an utmost priority, that is:

  to provide a stimulating and rewarding environment that encourages initiative, ownership and a results-oriented climate where our people are fulfilled and encouraged to invest their skills and talents in the future of our Zoos.

- a vision for the visitor experience of the place:

  to ensure design concepts enhance visitors' enjoyment through the creation of a natural ambience and sense of immersion; to provide assets that enhance animal welfare, visitor and staff wellbeing.

  Action Plan items include reinforcement of the sense of community ownership of our Zoos through increasing participation in the number of community programs and developing an appropriate interpretation plan.

- and fostering of a sense of community pride and ownership in the place:

  To achieve an increased sense of community pride and ownership of the Zoos and to strengthen relationships with local government through regular discussion.

11.7 Site Management Issues

The challenge for the ZPB is to achieve a balance between cultural heritage conservation objectives (as identified here), and the requirements for the well-being of the animals, their keepers and visitor expectations to support the economic well-being of the Zoo.

Upgrading of Taronga is consistent with its historical values as a place that was considered as a state of the art zoological garden at the time of its construction. The Zoo was referred to as a breakthrough design at a time when most zoos were presented in the menagerie format.

The emphasis on the presentation of Taronga has evolved to emphasise the educational and conservation role of the Zoo. Accordingly, the aesthetic and physical environment of the place is now more important than ever in conveying to the community a fit and proper image of zoology.

The key heritage conservation issues and challenges identified in the preparation of this report are discussed below.

11.7.1 Integrated Approach to Heritage Conservation

The challenge for the ZPB is to more fully integrate heritage conservation into the 'Zoo culture' and all of its activities. This approach starts with absorbing a cultural landscape attitude to planning the Zoo, based on the sum of its multi-layered parts rather than as a list of 'big-ticket' heritage items. The second challenge is to incorporate more fully conservation planning into all 'normal' management activities. This approach includes: staff training and work procedures; a linkage between assets management and heritage databases; an increased utilisation of heritage expertise (at appropriate times); and identifying a range of conservation planning processes targeted towards appropriate levels and assessment that are linked to the development and construction processes. This integrated approach should also include building a greater degree of consultation and communication/reporting with the government and the broad community in relation to heritage conservation.

11.7.2 Animals

The educational function of Taronga strongly influences the composition of the animal stocks held, the method of display, labelling and general 'mood' of the design of the place. Enclosures and buildings for animals must be animal-centred. The World Zoo Organisation (WZO), of which the ZPB is a member, has set goals and criteria, including sensitive exhibit design and an overall ambience that immerses visitors within natural habitats, rich in biological diversity, and the provision of a sense and assurance that all animals are well cared for. Further, experiences gained from practical involvement and ongoing research influence amendments and subtle changes to the physical environment of the place.

Animal welfare aspects are a critical constraint in the alteration or demolition of significant animal enclosures that must be addressed. These issues however, should be considered in the context of the educational value and visitor experience of the Zoo. In some cases, meeting the provision of minimal standards of care may mean that some historic enclosures can not be re-used for the purpose designed, however other opportunities may exist for adaptive re-use.

As Taronga Zoo is a designated quarantine area, dead animals need to be managed within the site boundary. Formerly, an incinerator was utilised; however, current management is to bury the animals with the intention of using the bones for scientific purposes.

11.7.3 Botanic Estate

The botanic estate of Taronga is not composed of individual and unrelated elements but is the sum composition of the gardens, forests, lawns, mature exotic trees, circulation routes and retaining walls. The relationship between the landscape and the built environment is also important as these are often integrated in order to establish a character for a precinct. While not always physically integrated, the two environments are visually connected throughout the Zoo. These relationships should be acknowledged in any work carried out.

Landscaping within an exhibit area is also utilised and planned to provide sufficient complexity to stimulate the exploratory and territorial behaviour of the animals and should include refuge areas for animals with a low position in a dominance hierarchy. The existing Tahr Mountain at Taronga is a successful example of this approach.

The planning in the Masterplan recommends a thematic precinct approach to the presentation of the animal collection at Taronga. This may result in the need for removal of vegetation, change to landscape character of some parts of the site and possibly block existing views and visual corridors throughout the site.

At present, the Zoo presents a 'natural' appearance, despite a significant amount of hardworks. This 'naturalness' should be rigorously maintained and functional requirements for services, cleaning, security, public safety, ready visibility etc that may otherwise incrementally lead to the loss of this

character should be carefully planned. Not only would the loss of this character be to the detriment of the natural qualities so long sought to be protected, but also to the site's visual qualities when seen from afar. The impact of any requirement to reduce the landscape cover in order to provide more sunlight for the animals or to increase the hardworks to accommodate increased visitation requirements on the overall visual quality of the site should be assessed before undertaking any works.

The shift in attitude away from the concept of a zoological *garden* towards a more scientific approach to animal keeping and breeding in natural, rather than ornamental, settings, together with the emphasis since the late-1960s on the revegetation of the site with native plants, has created a somewhat hybrid vegetation situation. The challenge is to retain significant landscape elements of these different philosophical approaches.

Native shrub plantings should be maintained in order that identified key views out to the harbour or along visual corridors within the site are conserved.

Greater visibility and expression of water could be made at Taronga Zoo. There are the Waterbird Ponds, in the northeast sector, and the Seal Enclosures, but elsewhere the presence of water is not visible. An opportunity exists to restore (even if artificially) the flow of the creek that runs diagonally down across the site and link it clearly to its outlet at Athol Bay. This would give point to the rustic bridge, as well as provide opportunities along the way for the restoration of most gully vegetation. Small rills or waterfalls could be created, creating a pleasant background sound for visitors. The upper Seal Enclosure should be retained as it provides a large pond of water and activity.

11.7.4 Physical Assets

The physical assets of Taronga are a significant component of the overall environment of the place. Taronga contains a wide variety of architecture and the physical assets of the place fulfil a range of functions and essential services.

Earlier examples of Zoo architecture play a significant role in communicating to the visitor the history of zoology; however, they are sometimes in conflict with the philosophies of contemporary zoo design. The location, nature and construction of the physical assets at Taronga present a number of management constraints. In summary these are:

- The harbour setting of the Zoo, with a south-facing aspect, creates a relatively harsh physical environment which has caused severe corrosion of some fabric in the past.
- Many of the site's ferro-cement 'mock rock' formations were built on unprotected steel frames. These structures are in varying degrees of structural condition.
- Many structures reflect the transient nature of animal exhibiting.
- The conservation of some fabric requires specialist trades techniques.

- While it is most desirable that any original use of an item continues to be utilised for the purpose it was designed for, it is recognised that the size and configuration of some elements prevent their ongoing use as animal enclosures or aviaries, thus creating redundant resources.
- Although certain items may no longer be able to be put to their original use, there still exists options other than the destruction of these items, including the potential to retain a select collection of outmoded exhibits for interpretation of past zoological practices.
- The fragile construction of some items does not allow for the opportunity to relocate them elsewhere within the site.
- Items, such as the stone seating, should be sensitively upgraded so that they may be used again for their original purpose.

11.7.5 Archive Collection

A substantial quantity of records and associated relics of Taronga Zoo exist. Not all of the archive collection has been catalogued and archived.

11.7.6 Visitors

The WZO (World Zoo Organisation) has set goals and criteria for visitors' experience of zoos. These include provisions for the creation of multi-sensory experiences, allowing visitors to see, hear, smell and touch. This gives the impression that the animals live wild and unrestrained and inspires visitors to become active in conserving and restoring the wild to its rich and critical biological diversity.

There is also the opportunity for a meaningful interpretation of the cultural significance of the place and individual items to further enrich the visitors' experience and appreciation of the place.

11.8 Masterplan Zoo 2000

In January 1999, The Portico Group, a zoological exhibit planning and design firm from Seattle, Washington, was engaged to begin the process of updating the masterplans for Taronga Zoo and the Western Plains Zoo for the ZPB. The brief included: 'making necessary recommendations, based on the knowledge of sustainable 'world-class' facilities that would help coordinate collections and approach and enable both zoos to fully live up to their potential'.

A Masterplan document was approved in December 1999 by the ZPB and submitted to DUAP in January 2000 as a visionary document. The Masterplan provides a precinct/immersion-based approach to the presentation of Taronga Zoo. The implementation of the visions within the Masterplan, without strategic heritage input, will result in the inevitable loss of significant fabric and inter-relationships between elements throughout the site, the redundancy of built items and (possibly) vegetation, or the need for relocation of significant items. Actions such as these would have

ramifications for the significance of the site as a whole as well as having potential impacts on specific features of the site.

As it stands, the Masterplan raises a number of issues and potential conflicts with the significance of the site as identified in the Section 170 Register and this report. Broadly speaking, issues arising from the Masterplan document include a focus on a limited range of 'big-ticket' heritage items and a lack of procedural definition in relation to heritage management during the implementation stages of this visionary document. However, it is not within the scope of this study to identify the potential impacts that may arise from the implementation of the Masterplan.

It is understood that redevelopment of the Zoo will be undertaken on a precinct by precinct basis with reference to the Masterplan vision for the site as a whole. As a prerequisite to this precinct planning stage, the Masterplan should be reviewed, potential impacts with the Conservation Strategy identified and updated to minimise potential conflicts between the Conservation Strategy and the Masterplan.

Following conditional endorsement of the Masterplan, the ZPB will nominate Taronga Zoo to the State Heritage Register. Once listed, and subject to the agreement of the Ministers involved, it is intended that a Heritage Agreement, provided for in Part 3B (Sections 39–46) of the *NSW Heritage Act*, will be put in place, ensuring the implementation of the Conservation Strategy, while facilitating implementation of the current Masterplan and associated Works Program.

During the implementation stages of the Masterplan, strategic heritage input should be provided at the planning stage of each precinct in order to ensure the recognised cultural values of the site are conserved.

A Heritage Impact Statement and Conservation Management Plans for items of exceptional significance should be prepared as part of the final precinct planning documentation for submission to the relevant authorities. These documents will provide a formal evaluation of the potential impacts, arising from the proposal, on the heritage value of individual items and the overall significance of the site against the ZPB's zoological requirements.

12.0 Conservation Policy

12.1 Discussion of Conservation Policy

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 and in an international context; its continuity of use as a Zoo of world standing; its historic links with earlier zoos in Australia and Carl Hagenbeck's zoo in Germany; and the iconic sense of place it has for the people of New South Wales and Sydney in particular.

The main issue for Taronga Zoo is the inherent tension between the requirements of the place as a major progressive urban Zoo and its cultural significance. The Conservation Strategy should recognise the contribution of all elements to the whole and include the identification of appropriate processes and priorities for the development, care, maintenance and uses of the place. This will ensure that any upgrading of Taronga Zoo is undertaken within a framework of appropriate conservation principles so that its cultural significance is retained and enhanced.

12.2 Conservation Principles

Having regard to the constraints and issues set out in the previous section, the following principles are identified as the fundamental philosophical basis for the Taronga Zoo site Conservation Policy:

- **Conservation must be a management objective at Taronga Zoo**

In order to achieve the retention of identified cultural significance, conservation, as a management objective, must be recognised.

- **Conservation of Taronga Zoo must extend to the total resource**

The site includes landscape, built elements, views and vistas, cultural deposits, artefacts, records, memories and associations, along with uses and activities. Conservation of the place must extend to all of these elements and attributes if cultural significance is to be retained in the long term.

- **Decision making must be based upon proper understanding of cultural significance**

All management decisions, which have potential to affect the heritage values of the place, should be founded on a clear understanding of those values. The heritage impact of decisions should be stated and evaluated as part of the decision making process.

- **Significance is embodied in associations and meanings**

Taronga Zoo has strong associations for the local community, visitors, staff and the Australian and International zoological community. These less tangible meanings associated with the iconic value of the place should be respected when making decisions about the place.

- **A cautious approach is required where actions may have adverse heritage impacts**

The objective for Taronga Zoo to be a world-class urban Zoo may require removal of elements of Some significance and alterations of others so as to meet essential operational requirements. Notwithstanding this, where management actions or decisions may result in a loss of cultural significance, these actions should be reversible or, at the very least, adopt a cautious approach involving the minimum amount of change possible and retention of the maximum amount of fabric.

- **Conservation should be undertaken in accordance with well accepted guidelines.**

The principles and guidelines of the *Burra Charter* of Australia ICOMOS (revised 1999) should be adopted (refer to Appendix A). The *Burra Charter* remains relevant and its application, in conjunction with other relevant guideline documents, including the *Australian Natural Heritage Charter* (1996) and the *Draft Guidelines for the Protection, Management and Use of Aboriginal Torres Strait Islander Cultural Heritage Places*, should be implemented.

- **The social and environmental condition of Taronga Zoo should be monitored**

Monitoring of the physical condition of the site, including all Section 170 Register items, over time, will provide both a measure of the effectiveness of conservation actions and essential data for future decision making. In conjunction with considerations of the physical, cultural and natural environment, the appropriateness and effectiveness of visitor management actions should be monitored — the aim being to achieve better conservation and improved visitor experience, concurrently.

- **The Taronga Zoo story should be told**

Visitation and interpretation are integral elements of conservation. Provision of a positive, informative and interactive experience for visitors to the site and those who wish to learn about it, remote from the place itself, must continue to be a fundamental aim.

- **There should be clear responsibilities and processes for decision making**

The Zoological Parks Board of New South Wales (ZPB) has formal responsibility for Taronga's conservation and management. In reaching decisions regarding the site, the ZPB should draw upon the wide range of formal and informal methods of consultation available to it. The ZPB should continue to liaise with the Heritage Office and Department of Urban Affairs and Planning regarding their statutory obligations arising from the *NSW Heritage Act*.

- **Records and collections should be managed**

The Zoo should maintain a full record of primary documentary evidence and artefacts associated with the place and conservation works undertaken, including restoration and adaptive re-use.

12.3 General Conservation Policy

The Taronga Zoo Statement of Significance provides the basis for natural and cultural resource management at the site.

Taronga Zoo should continue to be used as a Zoo in its present location.

Retention of identified significance and conservation of the place is a management objective of the Zoological Parks Board (ZPB).

The Taronga Zoo site will be managed and conserved in accordance with the following principles and guidelines:

- the Australia ICOMOS Charter for the Conservation of Places of Cultural Significance (the *Burra Charter* and associated guidelines);
- the *Australian Natural Heritage Charter* and associated guidelines; and
- the *Draft Guidelines for the Protection, Management and Use of Aboriginal and Torres Strait Islander Cultural Heritage Places*.

The whole of Taronga Zoo is even more important and significant than any individual item. Conservation of Taronga Zoo will adopt a total resource approach and will extend to all areas and elements such as landscape, built structures, views and vistas, cultural deposits, artefacts, records, memories and associations, along with uses and activities.

Conservation of the Zoo will make use of the full array of available expertise and knowledge and will adopt a scientific approach to materials conservation.

Caution will be applied in making decisions that may result in damage to the natural or cultural environment over time. The precautionary principle will be adopted, where appropriate, in relation to management actions with potential to result in a loss of significance.

A full record of all fabric on site and all works undertaken should be maintained as part of the documentary evidence of Taronga.

The effectiveness of conservation management of Taronga Zoo will be monitored.

Interpretation of the history and significance of the place is fundamental to its conservation.

Ultimate responsibility for decision making in relation to Taronga Zoo is vested in the ZPB.

12.4 Specific Policy Statements

12.4.1 Boundaries, Setting, Visual Catchments

Significant views to and from the site and visual corridors within Taronga Zoo should be maintained. No new structures or landscape elements should be erected which would impact on the setting of the place and views to and from the site.

Former vistas may be reconstructed (where there is adequate evidence of them), by removal of visually intrusive elements (including vegetation), provided that such action does not have other adverse impacts on the significance of the site.

12.4.2 Landscape

A Landscape Management Plan for the site should be prepared.

The aim of future development/works to the site should be to conserve and protect those elements of the landscape at Taronga which give it its distinctive character, demonstrate the evolution of the site and the changing approaches towards the keeping, displaying and breeding of animals.

The early circulation layout, pathways, terraces, stairways and enclosures that demonstrate the original bar-less, moated ideal that were developed by Albert le Souef should be conserved and maintained.

The inherent natural values of the site, including its particular (sandstone) landforms, waterbodies, drainage systems and vegetation should be maintained.

The early ornamental plantings, including the tall, stately canopies of hoop pines and figs and the slightly later paperbarks, arising from the original development of the place as a zoological *garden* should be retained. Significant vegetation that dies or becomes senescent will be replaced with the same (or similar) species in the same (or similar) location, unless there are compelling operational management reasons for not doing so. (Reference should be made to the Horticultural Database and base plans for specific botanic names and locations of individual plant items. This document was prepared and is maintained by the Botanic Estate Department at Taronga Zoo.)

Care is needed to ensure that native shrub plantings do not eventually close off some of the key views out to the harbour and along the visual corridors within the site.

The overgrown character of some areas of the site should be identified in the Landscape Management Plan and policies developed to enable a program of maintenance pruning to be implemented.

New plantings may be introduced provided they:

- are selected from species currently (or formerly) present on site;
- contribute to the overall interpretation of the site; and/or
- fulfil an important operational function and, in doing so, do not detract from the significance of the place.

Significant infrastructure, such as roads and paths, should be maintained in their existing location. Former structural elements may be reconstructed if adequate evidence exists. Materials used in maintenance or reconstruction of built landscape elements will be traditional materials, already used on site.

The waterbird ponds at the top entrance, the upper Seal Enclosure and the lower Seal/Sea Lion Enclosure should be retained and, where appropriate, restored or enhanced. Consideration should also be given to the restoration or enhancement of the original watercourse by possibly restoring (even if artificially) its flow down the site and linking it back to its original outlet at Athol Bay. This would assist with visitor orientation throughout the site, would give point to the presence of the rustic bridge, and provide opportunities along the way for the restoration of moist gully vegetation. Small rills or waterfalls could be created, establishing a pleasant background sound for visitors and enhancing the overall sensory enjoyment of the place.

12.4.3 Approach to Conservation of Built Fabric Generally

All items dating from the original development of Taronga retaining a high level of structural and fabric integrity, still being used for their original purpose and identified as integral to the unique cultural landscape character of the Zoo have been assessed of Exceptional Significance and should be retained and conserved.

Items dating from the early period of the Zoo's establishment which have suffered a loss of integrity or are no longer able to be used for their original purpose, items evidencing the evolution of changes in zoo philosophy or items possessing aesthetic qualities that are important to the cultural landscape of the place have been assessed of High Significance and should be preserved, restored or reconstructed to an earlier known form based on documentary and physical evidence.

Items that are able to demonstrate the evolution of the changes in philosophy at Taronga or are of some importance to the cultural landscape of the site, have been assessed as having Some Significance and should be retained and maintained.

All works to significant items should be in accordance with the principles of the *Burra Charter* (refer to Appendix A).

Prior to planning of specific precincts, an analysis of the subject area should be undertaken to identify original fabric to be retained, and intrusive elements that may be removed.

12.4.4 Specific Polices for Individual Items

The following table provides specific policies for the items identified as having Exceptional, High or Some Significance.

Location Reference	Item Name	Significance Ranking	Conservation Policy
	Landscape Elements		
99L	Original pathway layout, including original balustrades	Exceptional	Conserve in accordance with Conservation Management Plan and heritage advice
13B	Floral Clock enclosure and gardens, including early plantings along road from Floral Clock to Elephant House	Exceptional	Conserve in accordance with Landscape Management Plan
	Walls		
04L	Ashlar block wall — north corner of dingo enclosure	High	Maintain fabric
06L	Curved sandstone retaining wall at Upper Entrance forecourt	High	Maintain fabric
07B	East sandstone perimeter wall	High	Maintain fabric. Works to be undertaken in accordance with heritage advice
011L	Walls — Upper Seal Pond	Exceptional	Maintain fabric
14L	Dry rubble sandstone retaining wall opposite Floral Clock viewing platform	High	Maintain fabric

Location Reference	Item Name	Significance Ranking	Conservation Policy
20L	Panelled concrete wall opposite elephant enclosure	High	Maintain fabric
30B	Rustic Bridge	Exceptional	Maintain fabric. Works to be undertaken in accordance with heritage advice
35L	Decorative cement plasterwork on retaining wall at Sarina's Lawn	Some	Maintain fabric
38L	Australian bird aviaries	Some	Conserve in accordance with heritage advice
47B	South Sandstone perimeter wall	High	Maintain fabric. Works to be undertaken in accordance with heritage advice
51L	Sandstone retaining wall at tortoise enclosure	High	Maintain fabric
63L	Ashlar block retaining wall opposite bird show	High	Maintain fabric
72B	West sandstone perimeter wall	High	Maintain fabric. Works to be undertaken in accordance with heritage advice
73L	Low retaining wall at Centennial Picnic Ground	Some	Maintain fabric
74L	Buttressed retaining wall at rear of bongo enclosure at African Waterhole	High	Maintain fabric
75L	Northeast corner of Barbary sheep enclosure at African Waterhole	Some	Maintain fabric
81B	North sandstone perimeter wall	High	Maintain fabric. Works to be undertaken in accordance with heritage advice

Location Reference	Item Name	Significance Ranking	Conservation Policy
	Stairs		
17L	Paths and stairways, including balustrades, in the area adjacent to the monkey pits	Some	Maintain surviving fabric
22L	Stairway from monkey pits to Elephant Temple	Some	Maintain surviving fabric
25L	Central stairway leading down to the Aquarium	High	Maintain fabric. Works to be undertaken in accordance with heritage advice
28L	Broad central stairway east of Aquarium	High	Maintain fabric. Works to be undertaken in accordance with heritage advice
56L	Stairway, west end of Upper Seal Pond	High	Maintain fabric. Works to be undertaken in accordance with heritage advice
59L	Double stairway between orang-utan exhibit and Hallstrom Square	Exceptional	Maintain fabric. Works to be undertaken in accordance with heritage advice
89L	Stairway between orang-utan exhibit and Turner House	High	Maintain fabric. Works to be undertaken in accordance with heritage advice
	Street Furniture		
26L	Semicircular seating at north end of Rustic Bridge	High	Maintain fabric and restore for re-use. Works to be undertaken in accordance with heritage advice
34L	Three stone and concrete bench seats at junction to Macquarie Island	High	Maintain fabric and restore for re-use

Location Reference	Item Name	Significance Ranking	Conservation Policy
44L	Four rustic stone and timber seats along pathway between Aquarium and otter exhibit	High	Maintain fabric and restore for re-use
48L	Two stone seats located near the otter exhibit	High	Maintain fabric and restore for re-use
55L	Three curved stone seats between Upper Seal Pond and Turner House	High	Maintain fabric and restore for re-use
58L	Eleven stone bench seats between Hallstrom Square and giraffe enclosure	Exceptional	Conserve in accordance with Landscape Management Plan
76L	Five stone seats at African Waterhole	High	Maintain fabric and restore for re-use
*99L	Original pathway layout, including original balustrades	Exceptional	Conserve in accordance with Landscape Management Plan
*104L	Free Fight Bird Amphitheatre	Some	Conserve in accordance with Landscape Management Plan
*107L	Waterbird Lake	Some	Conserve in accordance with Landscape Management Plan
	Buildings		
01B	Tram shelter	Exceptional	Conserve in accordance with CMP
02B	Upper Entrance Building	Exceptional	Conserve in accordance with CMP
16B	Hallstrom House	Some	Conserve in accordance with heritage advice
27B	Aquarium (former Tropical Section)	High	Retain and restore front facade and foyer area. Remainder of building may be demolished following archival recording of fabric

Location Reference	Item Name	Significance Ranking	Conservation Policy
33B	Triangular Shelter	Some	Conserve in accordance with heritage advice
41B	Lower Entrance Building	Exceptional	Conserve in accordance with CMP Reconstruction of the second storey as part of an adaptive re-use of the building may be acceptable
54B	Turner House	Some	Conserve in accordance with heritage advice
78B	Staff Amenity Block	Some	Conserve in accordance with heritage advice
79B	Veterinary and Quarantine Centre	High	Conserve in accordance with heritage advice
*96B	Kiosk (near Taronga Function Centre)	High	Conserve in accordance with heritage advice
	Enclosures		
09B	Rainforest Aviary	High	Conserve in accordance with heritage advice
12B	Upper Seal Pond	Exceptional	Conserve in accordance with CMP
18B	Monkey pit enclosures	High	Conserve in accordance with heritage advice Re-use original moonstone feature as interpretive device
19B	New Guinea Bird Aviaries	High	Conserve in accordance with heritage advice
21B	Indian Elephant Temple	Exceptional	Conserve in accordance with CMP
23L	Elephant Enclosure and yard	Exceptional	Conserve in accordance with CMP
24B	Nicobar Pigeon Aviary	High	Conserve in accordance with heritage advice
32B	Jungle Cats enclosures	Some	May be further adapted in accordance with heritage advice
37B	Parrot enclosures, rockwork and round aviaries	Some	Conserve in accordance with heritage advice
43B	Bear Museum	High	Continue to use as interpretive device. Conserve in accordance with heritage advice

Location Reference	Item Name	Significance Ranking	Conservation Policy
50B	Deer Shelter	High	Conserve in accordance with heritage advice
52B	Upper Bear Pits	High	May be further adapted in accordance with heritage advice
60B	Finch aviaries	High	Conserve in accordance with heritage advice
61B	Giraffe Houses	Exceptional	Conserve in accordance with CMP
62B	Cats of Asia exhibits	High	May be further adapted in accordance with heritage advice
70B	Tahr Mountain	Exceptional	Conserve in accordance with CMP
73B	Koala House	Exceptional	Conserve in accordance with heritage advice
*92B	Reptile House	Some	Conserve in accordance with heritage advice
*93B	Platypus House	High	Conserve in accordance with heritage advice
*94B	Nocturnal House	Some	Conserve in accordance with heritage advice
*95B	Baby Elephant Enclosure	Some	Conserve in accordance with heritage advice
*97B	Australian Bushbirds Exhibit	High	Conserve in accordance with heritage advice
*98B	Pygmy Hippo Enclosure	Some	Conserve in accordance with heritage advice
*100B	Chimpanzee Park	Some	Conserve in accordance with heritage advice
*101B	Snow Leopard Mountain	High	Conserve in accordance with heritage advice
*102B	Serpentaria Reptile Exhibit	Some	Conserve in accordance with heritage advice
*103B	Orang-utan Rainforest	Some	Conserve in accordance with heritage advice
	Landscape Items		
11L	Natural rock benches — Upper Seal Pond	Exceptional	Conserve in accordance with Landscape Management Plan

Location Reference	Item Name	Significance Ranking	Conservation Policy
45L	Natural rock benches and enclosures at Seal Cove and Macquarie Island.	Exceptional	Conserve in accordance with Landscape Management Plan
46L	Cliff and rock benches facing Athol Bay	Exceptional	Conserve in accordance with Landscape Management Plan and Harbour Foreshore Management Plan
49L	Three mature fig trees behind Discovery Farm	Exceptional	Conserve in accordance with Landscape Management Plan
53L	Group of mature trees at Hallstrom Square	Exceptional	Conserve in accordance with Landscape Management Plan
68L	Rock faces at western roadway between bird show and Centennial Picnic Grounds	Exceptional	Conserve in accordance with Landscape Management Plan
69L	Natural rock benches at snow leopard exhibit	Exceptional	Conserve in accordance with Landscape Management Plan
71L	Old paperbarks at Centennial Picnic Grounds	Exceptional	Conserve in accordance with Landscape Management Plan
75L	NE enclosure of Barbary sheep exhibit at African Waterhole	Exceptional	Conserve in accordance with Landscape Management Plan
80L	Natural landform rock benches leading to Insect House	Exceptional	Conserve in accordance with Landscape Management Plan
84L	Rock benches at monkey pits	Exceptional	Conserve in accordance with Landscape Management Plan

Location Reference	Item Name	Significance Ranking	Conservation Policy
85L	Rock benches at southeast woodland	Exceptional	Conserve in accordance with Landscape Management Plan
86L	Remnant native landscape in southeast corner of site	Exceptional	Conserve in accordance with Landscape Management Plan
87L	Mature fig trees near dingo enclosure	Exceptional	Conserve in accordance with Landscape Management Plan
88L	Rockwork in bear pits	Exceptional	Conserve in accordance with Landscape Management Plan
*105L	Remnant native landscape at north carpark	Exceptional	Conserve in accordance with Landscape Management Plan
*106L	Remnant native landscape to the east of the Aquarium	Exceptional	Conserve in accordance with Landscape Management Plan
	Views Within and From Site		
*01V	Southeast view from above the upper seal enclosure to Rushcutters Bay	High	New development should not detract from or obscure existing view Maintain view in accordance with Landscape Management Plan
*02V	Looking south from upper Seal Enclosure to Garden Island and CBD	High	New development should not detract from or obscure existing view Maintain view in accordance with Landscape Management Plan
*03V	Looking west from Floral Clock, across upper Seal Enclosure to Opera House and CBD.	High	New development should not detract from or obscure existing view Maintain view in accordance with Landscape Management Plan

Location Reference	Item Name	Significance Ranking	Conservation Policy
*04V	Looking west across gully to hoop pines at Hallstrom Square	High	New development should not detract from or obscure existing view Maintain view in accordance with Landscape Management Plan
*05V	Southwest view across Zoo to CBD	High	New development should not detract from or obscure existing view Maintain view in accordance with Landscape Management Plan
*06V	Looking west to CBD and Harbour Bridge	High	New development should not detract from or obscure existing view Maintain view in accordance with Landscape Management Plan
*07V	Southwest view across Seal Cove	High	New development should not detract from or obscure existing view Maintain view in accordance with Landscape Management Plan
*08V	East view across Seal Cove to Athol Bay	High	New development should not detract from or obscure existing view Maintain view in accordance with Landscape Management Plan
*09V	Expansive view from Free Flight Bird Amphitheatre across Sydney Harbour to CBD	High	New development should not detract from or obscure existing view Maintain view in accordance with Landscape Management Plan
*10V	West view to CBD and Harbour Bridge from picnic area	High	New development should not detract from or obscure existing view Maintain view in accordance with Landscape Management Plan

Location Reference	Item Name	Significance Ranking	Conservation Policy
*11V	Visual corridor down early staircase to Aquarium facade and beyond to the southern harbour foreshore	High	New development should not detract from or obscure existing view Maintain view in accordance with Landscape Management Plan
*12V	West view across giraffe houses to Opera House	High	New development should not detract from or obscure existing view Maintain view in accordance with Landscape Management Plan
*13V	South view across giraffe houses to Garden Island and Sydney CBD	High	New development should not detract from or obscure existing view Maintain view in accordance with Landscape Management Plan
*14V	View from orang-utan exhibit to mature landscape landmarks at Hallstrom Square	High	New development should not detract from or obscure existing view Maintain view in accordance with Landscape Management Plan
*15V	West view across Tahr Mountain to Sydney CBD	High	New development should not detract from or obscure existing view Maintain view in accordance with Landscape Management Plan
	Movable Heritage		
83M	ZPB collection archives and records	Exceptional	Conserve in accordance with Archives Management Plan
15M	Weighing Scales	High	Conserve and maintain
*108M	Moonstone Relic from former Monkey Pit enclosure	Exceptional	Conserve and maintain Reinstate as interpretative feature in new Backyard to Bush exhibit

Location Reference	Item Name	Significance Ranking	Conservation Policy
*109M	Opening Day Marble Plaque	Exceptional	Conserve and maintain Reinstate in public area of Zoo
*110M	Marble Bath in Discovery Farm	High	Conserve and maintain Place in dedicated movable heritage storage if relocated until long term use/location known
*111M	Red kangaroo Qantas Plaque	High	Conserve and maintain Place in dedicated movable heritage storage until long term use/location known
*112M	Sandstone Bird Bath, near Insect House	High	Conserve and maintain Place in dedicated movable heritage storage if relocated until long term use/location known
*113M	Old orang-utan cage doors/bars	High	Conserve and maintain Place in dedicated movable heritage storage until long term use/location known
*114M	Cast-Iron post, near platypus tank	High	Conserve and maintain Place in dedicated movable heritage storage until long term use/location known
	Known Aboriginal Sites		
66A	Hand stencil	Exceptional	Conserve in consultation with Aboriginal community and NPWS
67L	Stone carvings by M Leslie	Some	Conserve in consultation with Aboriginal community and NPWS

12.4.5 Maintenance

Appropriate maintenance procedures should be developed, documented and implemented to ensure the ongoing long-term maintenance of the significant built elements of the site. These will include both long-term resourcing and access to relevant expertise.

12.4.6 Use

Taronga should continue to be used as an urban Zoo.

Items of Exceptional Significance that retain their original use should continue to be used for the same purpose.

Items of High and Some Significance should continue to be used for their original use, if still applicable, however they may be adaptively re-used for other operational purposes, provided that these uses are not in conflict with the significance of the site or result in major adverse impacts to the individual element.

12.4.7 Adaptive Re-Use

Proposals for change of use of parts of the site or individual elements should be on the basis of a thorough understanding of the impact of the proposed use on the significance of the item and the site as a whole.

All items of significance may be adapted for new use provided that:

- the adaptation work is reversible; and
- adaptation is required for conservation, operational or interpretative purposes.

Adaptation of fabric and use may also be permitted where essential to comply with relevant animal welfare requirements, fire safety, health, building or other statutory controls.

Where built structures are adapted for new uses, these uses will be compatible with the significance of the element and will not obscure important historical associations or the ability of the built element to demonstrate its historic use.

12.4.8 New Work

Proposals for new development should be considered on the basis of a thorough understanding of the impact on the significance of the place. As a place valued by a wide range of communities, the sense of place and familiarity inherent in the fabric of the Zoo for these communities, within an ever-changing environment, must be considered an important attribute to be retained and reinforced in future development concepts.

New buildings or enclosures are to be designed such that they will not mask or otherwise impair views or visual corridors either out to the harbour or to internal focal points, landmarks or scenically attractive sectors of the central, heritage core of the site.

The potential impact of any new design as a new focal point or landmark within the Zoo — and possibly the harbour — should be considered as part of any development. New work will need to blend harmoniously with the surrounding environment including the setting of nearby heritage items.

Future development beyond the boundaries of the site should be carefully considered in consultation with all relevant authorities so as to minimise the visual and environmental impact on the Taronga Zoo site.

12.4.9 Masterplan 2000

The implementation of the Masterplan 2000 document should have regard to the identified significance of Taronga as a whole and to the graded levels of significance of individual elements throughout the site.

The Masterplan recommends a thematic precinct approach as a means of providing an immersion-based experience for visitors to the Zoo. As the first step in the future planning and development of the Zoo, the Masterplan should be reviewed and potential conflicts with the Conservation Strategy identified. The review and update of the Masterplan should be updated in light of the policies and recommendations made as part of this Conservation Strategy.

The implementation of the Masterplan for each thematic precinct should include strategic heritage input into the planning stage. This advice should include the identification of heritage issues and opportunities and potential impacts.

Any precinct development proposal should include a formal identification and evaluation of the potential impacts arising from the proposed development on the heritage values of individual built and landscape items and on their contribution to the overall assessed significance of the site. This report should be prepared as part of the overall documentation submission to the relevant consent authorities.

The heritage management policies and recommendations made in this report should be adopted as part of the brief to the designers responsible for the redevelopment of each precinct. In particular, where decisions regarding the redevelopment of individual items of significance are being considered, the conservation principles outlined in Section 12.2 should be followed in order to conserve the identified heritage value of the individual item and of the overall significance of Taronga Zoo.

12.4.10 Conservation of Archaeological Resources

As the Zoo is a designated quarantine area, animals buried on site are recorded and their bones later recovered for scientific purposes. These specific artefact sites have not been assessed as a significant cultural resource and may be managed separately to other potential archaeological evidence on the site. The burial sites however, should be well documented and recorded for future reference. This management procedure should be incorporated into the Zoo work procedures document.

Development projects or other works, which have the potential to impact on archaeological resources, will be investigated and assessed. A variety of conservation actions will be appropriate for the different kinds of archaeological resources located on the site. All historical archaeological artefacts recovered from works or investigations at Taronga Zoo will be retained on site.

The following table expresses the appropriate conservation policy for the three categories of archaeological evidence identified.

- Conservation in situ is recommended where items posses a High degree of significance which is broader than just archaeological research potential. It is also generally recommended to enhance the perception of historic layering of the environment. This perception should also be encouraged by the Interpretation Plan.
- Archaeological recording and analysis should contribute directly to the Interpretation Plan as well as responding to other pertinent research issues.

Archaeological Resource Management Table

Category	Significance	Conservation	Interpretation
Category 1 — Aboriginal Archaeological Evidence	High Archaeological Social Contributory	Conserve in situ as far as possible Record and analyse comprehensively	Interpret appropriately Respond to site-wide interpretation plan
Category 2 — Evidence of Nineteenth Century Landuse	Moderate Archaeological/ Historical Contributory	Conserve in situ where appropriate Record and analyse	Respond to site-wide interpretation plan
Category 3 — Evidence of the Development of the Zoo	Moderate Archaeological/ Historical Contributory	Conserve in situ where appropriate Record and analyse	Respond to site-wide interpretation plan

12.4.11 Conservation of Aboriginal Heritage

The management of the Zoo site will include management of the Aboriginal values of the place.

Identification, assessment and physical intervention in the Aboriginal values of the site will be carried out or supervised by suitably qualified personnel.

The right of Aboriginal people to be involved in making decisions that affect their cultural heritage and their concerns in this respect will be acknowledged. Provision will be made for ongoing consultation with relevant Aboriginal groups in relation to the management of the Aboriginal values of the site.

Management and interpretation of Aboriginal values at the site will be based on a detailed understanding of the Aboriginal resource and values of the site and the site context.

12.4.12 Conservation of Archive Collections and Records

Collections and records are an important element of Taronga Zoo and will be managed in accordance with a Collections Management Plan.

All items in the Taronga Zoo Collections will be subject to selection, cataloguing and conservation processes to professional museum standards.

Appropriate security measures will be put in place to provide for protection of the collections.

Copies of all known relevant records will be kept at the Zoo site. These will include records of cultural heritage management decisions and actions, as well as other archival material.

Records will be professionally catalogued. Archival material will be curated to a high professional standard.

Record management will facilitate easy access by both site managers and researchers.

It is appropriate for archival material be exhibited to the public as part of any future Zoo museum or historical exhibition space.

12.4.13 Visitors

The interpretation of the history and cultural significance of the site, including the Australian and international historic context of Taronga Zoo, should be an objective of Taronga's visitor management.

Visitor management should also endeavour to provide high-quality visitor experience, consistent with the conservation requirements of the place, enabling visitors to gain an understanding of the meanings and significance of the place.

Ongoing visitor evaluation should occur, to assess the effectiveness of interpretation and conservation measures, visitor access and visitor facilities.

12.4.14 Interpretation

The selection of themes and messages to be interpreted on site should have regard to the cultural significance of the site.

Messages to be conveyed in interpretation should be prioritised and communicated to all involved in site management.

Interpretation should extend to historic activities, structures and landscapes and will, where possible, focus on real historic elements. Selected structures may be used to demonstrate past zoological practices, such as the existing Bear Museum. While a pleasant message may not always be

presented, the structures convey a powerful interpretation of the evolution of zoo philosophy at Taronga.

The approach to interpretation should extend beyond the physical site itself, providing an understanding of the place in its historic, scientific and social context.

12.4.15 Conservation Planning Procedures

Proposed works to items of Exceptional Significance are to be preceded by a specific Conservation Management Plan (CMP). This document should build upon the existing resources available, in particular this report and the Section 170 Register document, to enable a greater understanding of the fabric of the individual item and to ensure planning decisions are based on appropriate and specific policies.

Work to items of High or Some Significance should involve input/advice from a heritage specialist.

Any future planning for works, including catch-up maintenance, for items on the Section 170 Register should respect the significance of the item. When assessing future works, the NSW Heritage Office will require that appropriately skilled experts be engaged to provide ongoing heritage advice and input into the documentation and supervision of works. Any development, apart from regular maintenance (as part of the recommended Maintenance Strategy), should be preceded by a Heritage Impact Assessment prepared by a suitably qualified heritage specialist as part of the documentation required by the NSW Heritage Office (refer to Section 12.5.7).

Professional archaeological advice should be sought whenever subsurface excavation is proposed as part of the redevelopment of a precinct.

12.4.16 Human Resources for Conservation

The Taronga Zoo site requires access to a broad range of specialist conservation skills. These skill needs will be met through a combination of internal and external expertise, including:

- board members with an understanding of heritage conservation;
- skilled tradespeople;
- advisory committees;
- liaison with other public sector agencies, especially the Heritage Office;
- external consultants; and
- community contributions.

The contribution of all of these parties and the need for a high level of expertise and experience is recognised. Skills should be provided by:

- active retention through professional development and training of existing skilled staff;
- engagement of an in-house heritage officer or appointed consultant responsible for provision of ongoing heritage advice;
- selective use of expert consultants/tradespeople; and
- development of effective and co-operative working relationships between internal and external contributors.

12.5 Procedural Policy Statements

12.5.1 Heritage Input/Advice

In order to retain and enhance the cultural significance of the site, access should be made available for ongoing heritage advice and specialist input for any proposed works to items of High or Some Significance.

12.5.2 Conservation Management Plans

Proposed works to any item of Exceptional Significance should be preceded by a Conservation Management Plan (CMP). Each CMP should follow best-practice conservation guidelines and include:

- specific historical analysis of the item;
- documentation and analysis of fabric, building on existing documentary resources;
- assessment of significance and grading of built fabric;
- specific analysis of constraints, including management requirements and structural condition;
- policy statements; and
- specific implementation recommendations.

12.5.3 Further Management Plans

The following Management Plans should be prepared in accordance with the policies and recommendations of the Conservation Strategy for the site:

- Asset Condition Audit and Maintenance Strategy;
- Work Procedures Document;

- Landscape Management Plan;
- Collections and Records Management Plan; and
- Interpretation Plan.

Asset Condition Audit and Maintenance Strategy

An Asset Condition Audit should be undertaken to determine and record the condition of all items on the site, including built and landscape elements, and identify 'catch-up' repairs. The recommendations from the Asset Audit should be used as the basis for the preparation of a maintenance strategy for the place to establish a cyclic maintenance program. (Currently being prepared by the Asset Management Department at Taronga Zoo.)

Works Procedure Documents

These documents should be oriented to day-to-day management needs and cover relevant operational requirements for the Zoo. Participation in the preparation of these documents by those who actually do the work is essential.

It is important to determine and implement a clear strategy for setting works priorities. Firstly, because it will never be possible to action all desirable works proposals simultaneously; and secondly, because the budgetary reality is that the quantum of resources available will still be set through a fixed operational and capital budgeting process.

Landscape Management Plan

The Conservation Strategy provides fundamental policies and recommendations for the landscape elements and items of the Zoo which should be utilised as part of the review of the Masterplan and the overall strategic heritage input into the precinct planning.

Prior to the finalisation of precinct planning, the documentation in this report should be expanded and more detailed policies and recommendations developed for the landscape elements and items of the Zoo in a Landscape Management Plan. This Plan should build upon the existing work undertaken in this report, with particular attention to developing specific policies for all landscape elements and items of Exceptional and High Significance.

Collection and Records Management Plan

This policy document will set out the philosophical basis for the Taronga Zoo archive collection, the history of the collection and a series of policies covering:

- care and maintenance;
- precise definition of 'professional museum standards';

- specification of physical conservation requirements and procedures;
- access and security;
- identification of appropriate research projects which use the collections; and
- inclusion of a long-term implementation program.

Interpretation Plan

The Interpretation Plan should identify the major messages, themes and sub-themes of Taronga Zoo. Interpretative devices and media should be specified in detail, including program proposals.

12.5.4 Monitoring of Significant Items

A program of regular monitoring should be instigated. The monitoring program will focus on identification and measurement of indicators that provide useful data which is easily gathered and should cover issues such as physical wear and tear impacts, visitation numbers and possible threats to the retention of significance.

Processes will be established to allow the results from the monitoring program to be taken into account in management decisions that affect natural or cultural resources, or the visitor experience.

Monitoring will cover both environmental (natural and cultural) and social (visitor interpretation and experience) issues.

The monitoring program will be documented in an annual 'State of the Environment' report, which complies with relevant State reporting guidelines.

12.5.5 Section 57(2) Exemptions

A list of Section 57(2) exemptions under the *Heritage Act, 1977*, should be prepared incorporating exemptions for site management issues such as everyday work procedures, outstanding physical conservation works and cyclical maintenance.

12.5.6 Archaeological Investigations

As part of any future precinct planning, specific archaeological investigations should be preceded by:

- archival research and field recording;
- site-specific evaluation of research potential and other significance; and
- formulation of relevant and worthwhile research questions, consistent with the overall research framework.

Archaeological investigations should be carried out, with the following aims:

- to record information which is not available from historic records, maps, plans, photographs or other similar records;
- to test the accuracy or validity of existing historical documents; and/or
- to provide site-specific information which can assist in understanding the potential impact of proposed works.

Whenever archaeological investigation is undertaken, a report should be prepared and placed in the Zoo's archives.

12.5.7 Heritage Impact Statement

A Heritage Impact Statement (HIS) should be prepared for all new developments at Taronga 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.

Physical alteration of items of Exceptional, High or Some Significance should only occur following the preparation of an item-specific Heritage Impact Statement. Each Heritage Impact Statement should follow the methodology outlined in the Conservation Policy Guidelines of the *Burra Charter* and include:

- specific outline history;
- analysis of fabric;
- assessment of the item's individual significance and its relative contribution to the significance of the site as a whole;
- policy statement;
- guidelines for works;
- consideration of options for adaptive re-use if the item is no longer able to be used for its original purpose (if demolition is proposed, the HIS should show that all feasible and prudent options have been considered); and
- evaluation of the impact of the proposed activity.

12.5.8 Archival Recording

Prior to, during and immediately after any future conservation works or adaptive re-use of any item of significance, an archival photographic record should be made.

No demolition work or removal of a significant item should occur prior to completion of archival recording.

Archival recording should be lodged with the Taronga Zoo archives and comprise:

- black and white photos, colour slides, measured drawings and retention of any relevant fabric for items of Exceptional or High Significance; and
- black and white photos and colour slides for items of Some Significance.

12.6 Consequences of Conservation Policy

Adoption and implementation of this policy as the Conservation Strategy provisions for Taronga Zoo will:

- ensure the heritage significance of the Zoo is conserved and adapted in accordance with the *Burra Charter* of Australia ICOMOS;
- facilitate retention, conservation and adaptation of significant elements;
- enable removal/demolition of items of Some significance;
- provide appropriate procedures for new works on significant items;
- provide for investigation of archaeological resources;
- ensure adequate records are made of significant items which are removed; and
- provide for interpretation of the site.

13.0 Implementation

13.1 Preamble

This section provides recommendations on the way that policies presented in the preceding section may be implemented. Undertaking these actions will result in the retention of the site's identified attributes of cultural significance.

13.2 Adoption and Implementation by Zoological Parks Board of New South Wales

Preparation of this Conservation Strategy is an important stage in the conservation of the place. For the strategy to succeed, it is important that it is accepted by stakeholders, adopted by the Board and implemented by the staff and other interested parties.

Recommendation 1

- *Following review phase, the final Conservation Strategy document, incorporating all policies in Section 12.0 and the following recommendations, should be formally adopted by the Zoological Parks Board of NSW as the basis for future conservation planning and management of the site.*
- *All staff should receive formal briefing/training about the Conservation Strategy and its implications. (Training/briefing sessions may be of different levels of information and duration, reflecting the different roles of staff).*
- *A copy of the Conservation Strategy should be made permanently available for inspection on site by any interested party.*

13.3 Roles and Responsibilities

In order to ensure the progress of decisions and outcomes for the Zoo, it is important that the status of this report be clear and that the roles and responsibilities of those charged with its implementation are clearly defined.

Recommendation 2

- *Responsibility for implementation of the Conservation Strategy should rest with the ZPB.*
- *A full-time officer should be nominated by title/position as responsible for implementation of the Conservation Strategy.*
- *The officer responsible for implementation of the Conservation Strategy should identify those individuals, sections of the ZPB or external parties who will have responsibility for implementation of particular elements of the Conservation Strategy.*

13.4 Referral to Consent Authorities

In order to facilitate future development consent it is desirable that relevant agencies receive a copy of the Conservation Strategy. The relationship of this report with the Taronga Zoo Masterplan 2000 and the recommended conservation management documentation is shown in Figures 13.1 and 13.2.

Taronga Zoo, as a whole, should be recognised as having State significance and identified on the State Heritage Register (SHR) and on the Australian Heritage Commission's Register of the National Estate.

As part of the ongoing management of the significance of the site, liaison should continue with the NSW Heritage Office. The current approvals process for works or activities at Taronga Zoo is shown in Figure 13.3.

The NSW Heritage Office should be requested to endorse this Conservation Strategy as the basis for the future conservation and management of the Zoo. Standard exemptions for works under the *NSW Heritage Act,* Section 57(2), should be prepared following endorsement of this plan by the Heritage Office as part of streamlining of the statutory approval requirements for works to Section 170 Register items or to an item on the SHR. The proposed approvals process with an endorsed Conservation Strategy and exemptions under Section 57(2) is outlined in Figure 13.4.

Recommendation 3

- *Upon the Board's adoption, the Taronga Zoo Conservation Strategy should be forwarded for endorsement to:*
  - *the NSW Heritage Office; and*
  - *planningNSW.*
- *The Taronga Zoo site, as a cultural landscape should be recognised as an item of State significance on the State Heritage Register.*
- *The Taronga Zoo site should be nominated for listing on the Australian Heritage Commission's Register of the National Estate.*
- *Application should be made to the NSW Heritage Council, for standard exemptions for specific works, on the basis that Heritage Council referral is not required for any management or conservation action that is in accordance with exemptions to be developed after endorsement of this Conservation Strategy by the NSW Heritage Office.*

- *A copy of the Conservation Strategy should be provided to*
  - *The NSW Heritage Office; and*
  - *Mosman Municipal Council.*

While not consent authorities, a copy of the Conservation Strategy should also be forwarded to the National Trust of Australia (NSW) and the RAIA.

- *Updated information should be made available to the National Trust and the existing listing cards updated.*
- *The Koala House should be nominated to the RAIA for recognition on the Register of Buildings of Twentieth Century Significance.*

13.5 Masterplan 2000

It is recommended that the existing Masterplan 2000, prepared by Portico, be updated in accordance with the Conservation Strategy to guide future development of the site (see Figure 13.1).

Recommendation 4

- *The Masterplan 2000 should be updated to address both conservation requirements (built fabric, landscape, views, interpretation and archaeology) and appropriate new development (access, parking and new buildings) opportunities.*
- *A copy of this Conservation Strategy should be provided to all consultants involved with the planning for the redevelopment of Taronga Zoo.*

13.6 Conservation Skills/Heritage Expertise

The significance and complexities of issues of the fabric at Taronga requires a high level of expertise across a wide range of disciplines.

While the continuation of the multi-disciplinary asset management team at Taronga is essential, it is unrealistic to expect that this team will have access to all the necessary skills and knowledge. An effective model involves specialist on-site staff being assisted by external resources/advice. An appropriately qualified and experienced conservation practitioner should be available to provide advice on request and to make recommendations concerning the continuing conservation of the place and the individual elements. This person should be responsible for examining and recommending options for future development within the site.

Recommendation 5

- *An appropriately qualified and experienced conservation practitioner should be employed as part of the asset management team or formally appointed as the 'Taronga Zoo Heritage Advisor', available on an 'on-call basis' to provide advice and to take responsibility for recommending future prioritisation of conservation works.*
- *Expertise in conservation practice should be made available to the ZPB from both internal and external sources.*
- *A copy of this report should be provided to the appointed Heritage Advisor.*

13.7 Conservation of Built Fabric

13.7.1 Physical Condition Survey

An up-to-date physical condition audit which identifies current problems and essential catch-up works should become a basis for the development of the long-term forward works program.

It is recommended that a CAD and GIS system be established and that the findings of the condition audit are incorporated into the database. (This is currently being prepared by the Asset Management Department at Taronga Zoo.)

Recommendation 6

- *A current asset condition audit of all built elements which comprise Taronga Zoo should be prepared,*
- *The condition audit should also be used to identify those elements of the site requiring immediate physical conservation and stabilisation and recommend catch-up works to be undertaken.*
- *A CAD and GIS database should be established and the findings from the condition audit are incorporated into the system.*
- *Resources should be allocated to identify and undertake identified urgent stabilisation works.*

13.7.2 Maintenance Strategy

A Maintenance Strategy following the policies recommended in this report, should identify all major components of the cultural landscape, and provide a checklist for how these features should be maintained. The Strategy should be updated as work is carried out and as new information on the fabric is found.

Recommendation 7

- *A Maintenance Strategy should be undertaken of all the significant site elements.*
- *All maintenance and inspections should be recorded and added to the database to allow those carrying out works in the future to understand the background to the fabric of the place. Documentation of works also allows cost estimations and forecasting of works' programming to be prepared.*
- *Problems with the condition of the different elements within the Zoo should not be solved in isolation but considered with regard to the site as a whole.*
- *A fully co-ordinated cyclic maintenance program should be established and a person appointed with the responsibility to ensure that the work is implemented accordingly.*
- *An immediate response system for undertaking emergency corrective maintenance and detailing who is responsible for urgent repairs should be prepared.*

13.7.3 Fabric Conservation

Management and conservation of the built elements at Taronga presents some of the major ongoing physical conservation challenges to the site. Works to be undertaken on the built fabric of Taronga include:

- restoration/reconstruction, in accordance with the identified level of significance of the item;
- catch-up works as identified in the Asset Condition Audit;
- cyclic maintenance, as recommended in the Maintenance Strategy;
- BCA upgrading works, including provision of disabled access;
- replacement of fabric to match existing where these have been lost or severely damaged;
- adaptation of existing built elements associated with providing new uses and interpretative information;
- removal of intrusive elements; and
- retention of original fabric, as far as possible, including finishes and evidence of use on the fabric.

Recommendation 8

A long-term strategy should be adopted for the progressive restoration/refurbishment of the built fabric according to its significance ranking where appropriate.

The works are to include:

- *documentation of schedule of works by an appointed conservation practitioner;*
- *repair of structural fabric of buildings;*
- *restoration of non-structural components; and*
- *reconstruction of lost fabric.*

13.8 Landscape Management

A Landscape Management Plan and Works Procedures should be prepared as the basis for specific management recommendations. This document is to be a support document to the Conservation Strategy and its findings are critical to the implementation of the Masterplan Implementation.

The prime objectives that have been identified during the course of the Conservation Strategy are to maintain and reinforce the existing character established by the natural setting, and to ensure that the built and natural character complement each other.

Recommendation 9

- *Provide sufficient open space to allow for relief of congestion in the principal public areas.*
- *Establish a maintenance regime to reduce overgrowth through a planned thinning and pruning program.*
- *Provide sufficient shade and shelter in large open spaces for visitors to cope with high summer temperatures and winter rain.*
- *A pruning regime should be implemented to restore/improve key views within the site.*
- *Reduce the diversity and contrast in materials and styles for paths, fences, balustrades and furniture. Create an overall theme which can synthesise or encompass them, or rationalise them into separate, coherent precincts associated with the period style of architecture at hand and in accordance with their degree of heritage significance.*
- *Rationalise pedestrian pavements in terms of design and purpose to establish a distinctive hierarchy with clearly identifiable routes and purposes.*

- *Re-establish the presence and flow of water, and the sense of always crossing over or passing through water features 'to complement the lushly vegetated and overhead canopy' to instil a special sense of place to the central gully. Create the illusion of connected water features right through this old watercourse. Supplement plantings to complement the water & gully theme.*
- *Increase the amount of planting on the central ridge to help define better the public spaces.*
- *Old and dying plantings, which are important elements of the site, should be replaced with the same or similar species as a matter of priority.*

13.9 Archaeology

A site-wide Archaeological Management Plan, in accordance with NSW Heritage Office Guidelines, should be prepared as the basis for an application for a broad-ranging archaeological excavation permit for the Taronga Zoo site and exemptions under Section 57(2) of the *NSW Heritage Act*. Should it be proposed to develop a precinct within the site or undertake excavations before completion of this Management Plan, physical testing of key areas to better understand the topography, geology and stratigraphy, as well as further precinct specific research of historic maps and images is to be undertaken. This kind of information could also be combined with any Geographic Information System (GIS) that is established as an ongoing management tool for the Zoo.

The results from the Taronga Zoo Archaeological Management Plan or precinct-specific Archaeological Assessments will alert Project Management to the areas of the Zoo which are archaeologically sensitive and, if developed, will require further investigation and a permit under the *Heritage Act, 1977*, or the *NPWS Act, 1974*.

Recommendation 10

- *Liaison should be established with the NSW Heritage Office in relation to requirements for an archaeological research design prior to excavation of any precinct within the Zoo.*
- *A site-wide Archaeological Management Plan should be undertaken as the basis for an application to the NSW Heritage Office for a broad-ranging permit for archaeological works and exemptions under Section 57(2) of the NSW Heritage Act.*

13.10 Aboriginal Values

A detailed assessment of Aboriginal values and an analysis of Aboriginal heritage issues is to be undertaken in liaison with the local Aboriginal Land Council and the NSW National Parks and Wildlife Service (NPWS).

Recommendation 11

- *Comprehensive assessment of the Aboriginal resources of Taronga Zoo should be undertaken to provide direction for determining the future strategies for managing the Aboriginal values of the site. In the interim, the condition of known sites should be monitored in consultation with NPWS and the local Aboriginal Land Council.*

13.11 Archives Collection and Records

The archives are an integral element of the cultural significance of Taronga Zoo and an irreplaceable resource.

In addition to housing published works and copies of some primary source material, the archives should also contain documentation regarding conservation works and management activities at the site over the history of the Zoo.

Data relating to individual elements of the site is not easy to retrieve in a cohesive form. The Section 170 Heritage and Conservation Register includes an inventory that, along with a CAD and GIS program for the site, has the potential to become the basis of an asset management database.

Recommendation 12

- *The existing Taronga Zoo archives should be continue to be maintained.*
- *A full time archivist/records manager should continue to manage records in the archives.*
- *Opportunities should be pursued for the long-term, thorough cataloguing of the artefact and documentary records collection. (This could be achieved through staff input, external researchers, volunteers or a combination of these.) Research projects based on the collection should also be encouraged.*
- *The archives should obtain copies of all known relevant primary documentation relating to the site (in either electronic or hard copy format, as appropriate).*

- *A Taronga Zoo site CAD and GIS program should be established as a basis for a Taronga Zoo Asset Management Database that incorporates the ZPB's Section 170 Heritage and Conservation Register.*
- *All known sources of information (images, references, documents) relating to each asset should be recorded (ie added to the database), providing easy access to this information for conservation and management purposes.*
- *The Asset Management Database should be used to record all works, alterations and repairs undertaken, thereby providing a thorough record of physical changes to each item. (As resources permit, it would be desirable to investigate and record previous works and add these to the database also.)*

13.12 Conservation Planning

Conservation planning is required for specific elements within the Zoo as part of the asset resource management.

As part of the day-to-day management of the Zoo, Work Procedures Documents should be prepared. Ongoing heritage input should be available to ensure that the policies in this Strategy are implemented.

Further Management Plans should be prepared to guide specific features throughout the site. All works to items of significance should be guided by ongoing heritage advice. Prior to any works to be undertaken on an item of Exceptional Significance, a Conservation Management Plan should be prepared to guide the decision making and to ensure the significance is retained or enhanced (see Figures 13.2 and 13.4).

Recommendation 13

- *Specific Management Plans should be prepared for the following disciplines:*
  - *Maintenance*
  - *Landscape*
  - *Collection Policy and Procedures; and*
  - *Interpretation.*
- *Works Procedures for the day-to-day management of the site should be prepared in facilitated workshop sessions which are attended by all of the relevant staff.*
- *Conservation Management Plans should be prepared for individual items of Exceptional Significance prior to any proposed works.*

13.13 Approvals Process

The submission of proposed works and development documentation to any item on the Section 170 Heritage and Conservation Register to the relevant authorities is to be accompanied by a Heritage Impact Statement. This statement is to outline the impact of the proposal on the identified significance of the site and individual items. The current approvals process is shown in Figure 13.3.

The endorsement of the Conservation Strategy and preparation of exemptions under Section 57(2) of the *NSW Heritage Act* will streamline the approval requirements for works to Section 170 Register items or to an item on the SHR. A proposed approvals process is shown in Figure 13.4.

Recommendation 14

- *A Heritage Impact Statement should be prepared as part of any development proposal for submission to planningNSW and the NSW Heritage Office.*
- *Where a proposal affects a heritage item listed on the Mosman LEP Schedule 2 Heritage Items, planningNSW should refer the proposal to Mosman Council for comment.*
- *The Heritage Impact Statement should outline any impact on an individual element, as well as an assessment of the proposal's impact on the original circulation layout, visual corridors, views, other items in the vicinity and the overall significance of the site.*

13.14 Archival Recording

As an integral part of standard good conservation practice, archival recording should be undertaken of the site before and during alterations, in order to record details of the structures that cannot be evaluated or understood except during the upgrading works.

Recommendation 15

- *During any physical change, appropriate archival recording should be compiled for all significant items. This recording should include:*

– *Cataloguing and storage of original fabric samples for future reference;*

– *measured drawings; and*

– *black and white and colour photographs.*

13.15 Interpretation

An Interpretation Plan should be undertaken in order to interpret the rich history of the place as a cultural landscape.

Recommendation 16

- *An Interpretation Plan, identifying key historical themes, messages and techniques, should form part of any Masterplan developed for the site.*
- *Responsibility for interpretation should be extended to all Taronga Zoo personnel. Specifically, staff and Zoo friends should be briefed periodically on the 'key messages' which the interpretation program is endeavouring to convey and should be encouraged to interact with visitors and convey these messages at every opportunity.*
- *Interpretation of the cultural significance of the site should be included in each conservation/development project.*

13.16 Monitoring

Monitoring of the condition of the natural and cultural resources of the site (as well as the visitor experience) is considered an essential management tool.

Recommendation 17

- *A program of regular monitoring of the physical environment, in particular, the Section 170 register items, should be established at Taronga Zoo.*
- *The social, visitor experience should be monitored.*
- *Any conclusions from the monitoring programs should be used in management decisions.*
- *An annual Taronga Zoo 'State of the Environment Report' should be prepared, in accordance with current State Government reporting guidelines.*

13.17 Heritage Act Section 57 (2) Exemptions

Section 57 (2) of the *NSW Heritage Act* provides for the Minister to exempt certain agreed works from the need for the Zoo to make Section 60 applications for Heritage Council approval.

Based on the recommended Works Procedure documents, application should be made for exemptions to streamline works at the Zoo (see Figure 13.4). Besides normal 'maintenance' exemptions, more site-specific exemptions may be prepared, including conservation works and other works unlikely to impact on the significance of the site.

Recommendation 18

- *Following the endorsement of this Conservation Strategy by the NSW Heritage Council, discussions should be undertaken regarding the preparation of exemptions for specific works at the Zoo including the day-to-day operations, maintenance and proposed conservation works.*
- *Following approval of the exemptions by the NSW Heritage Council, a copy should be forwarded to planningNSW for reference when assessing Development Applications.*

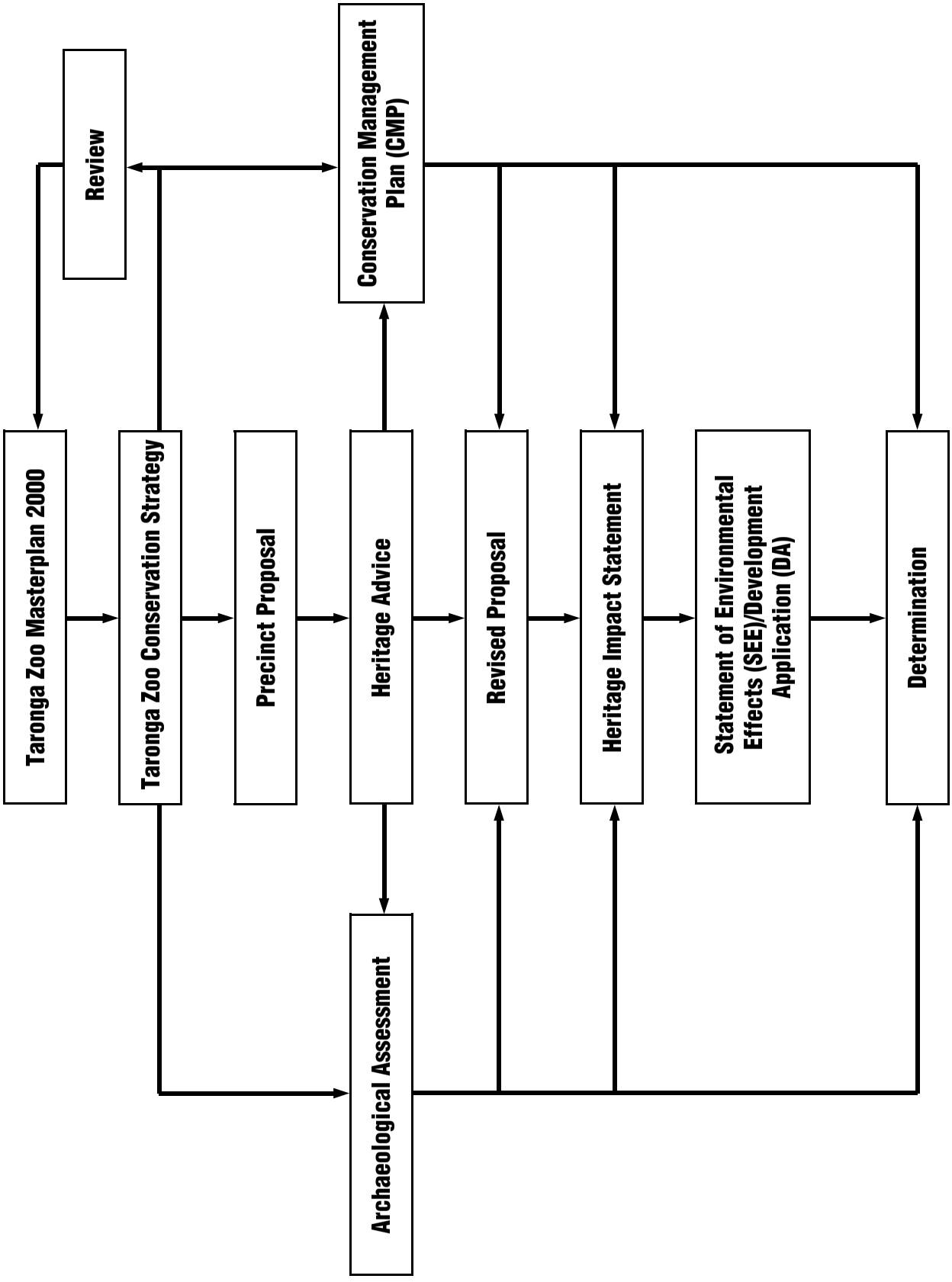


Figure 13.1 Conservation Strategy Relationship with Masterplan 2000

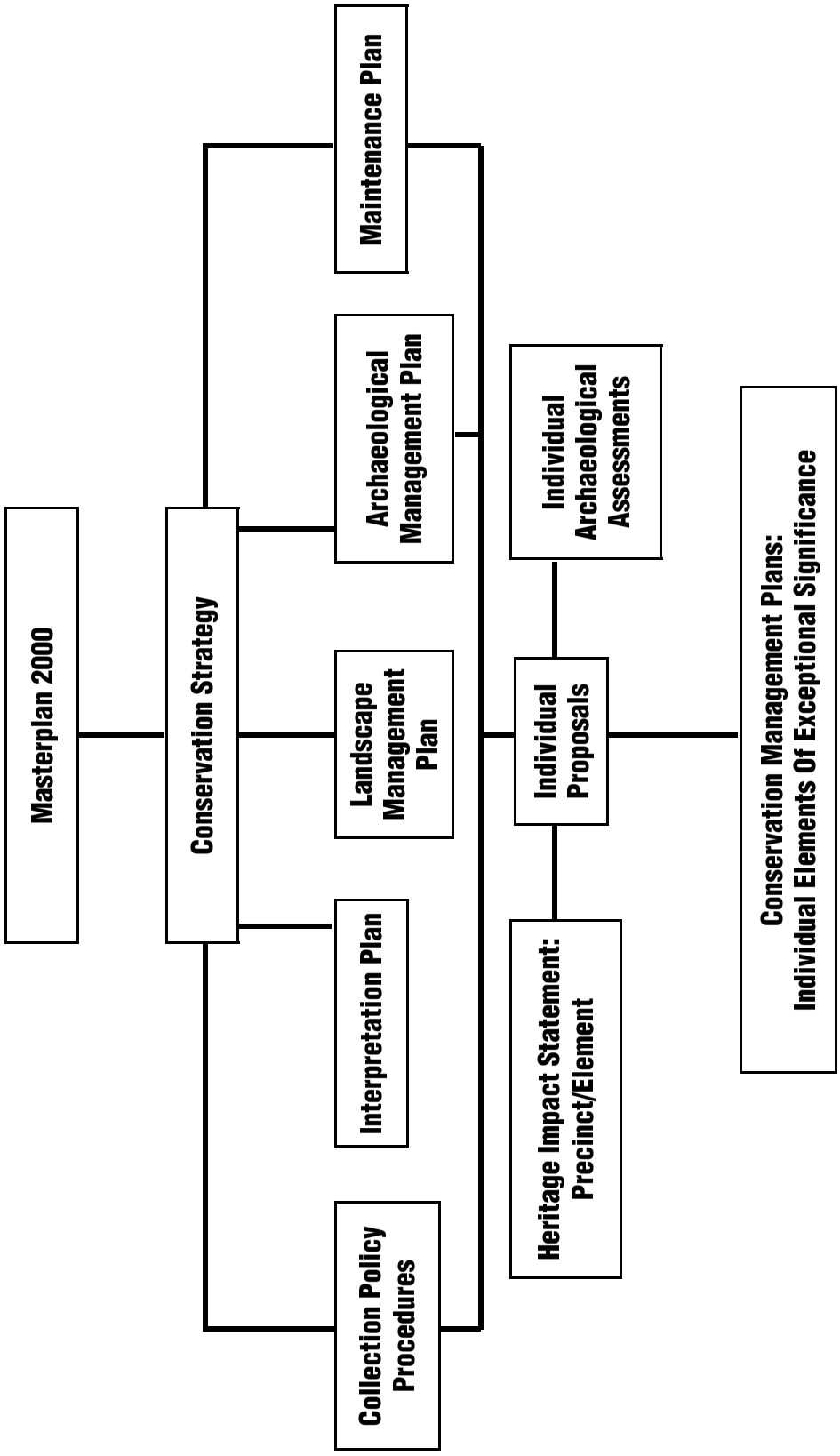


Figure 13.2 Conservation Planning

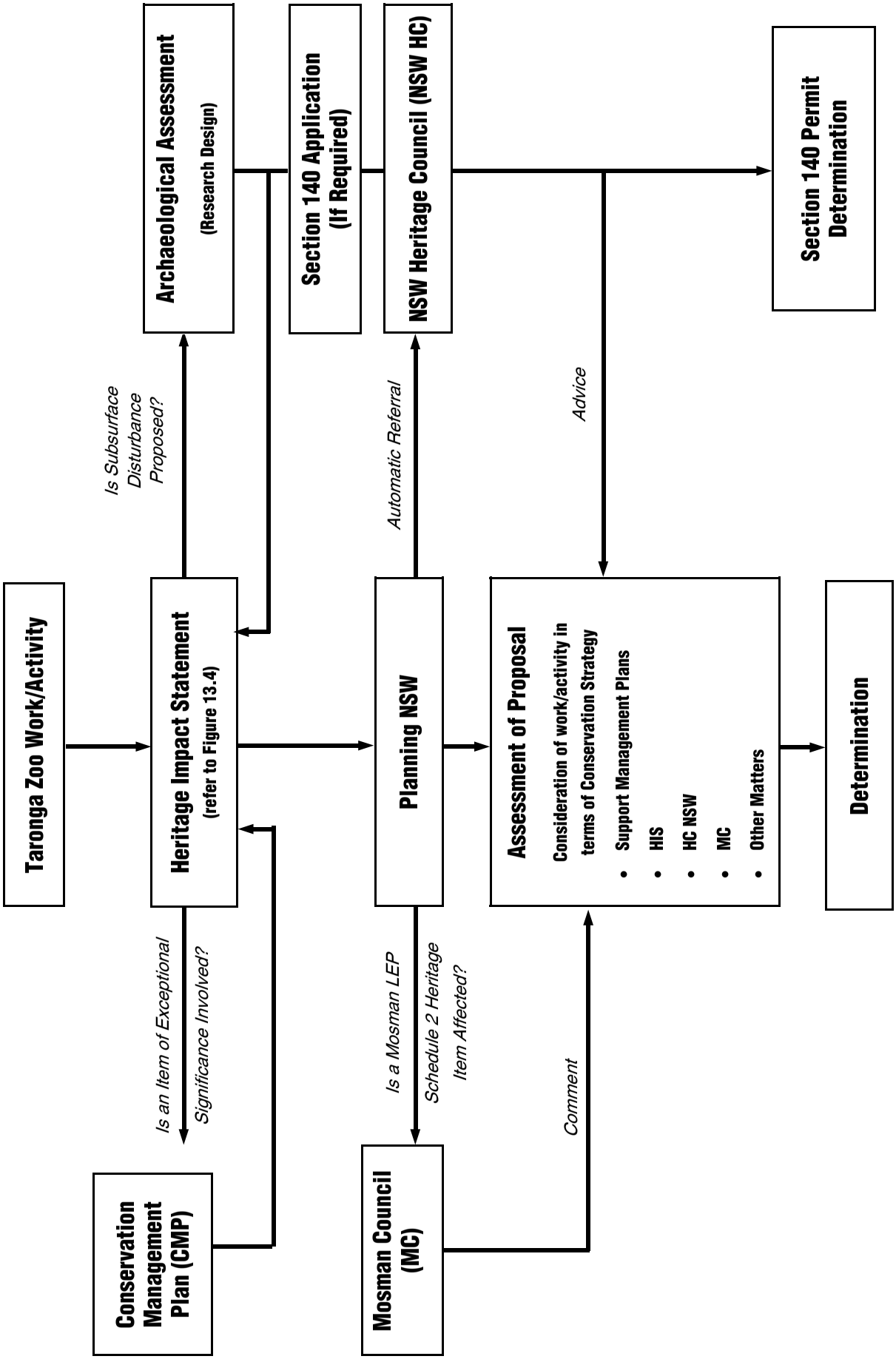


Figure 13.3 Current Approvals Process

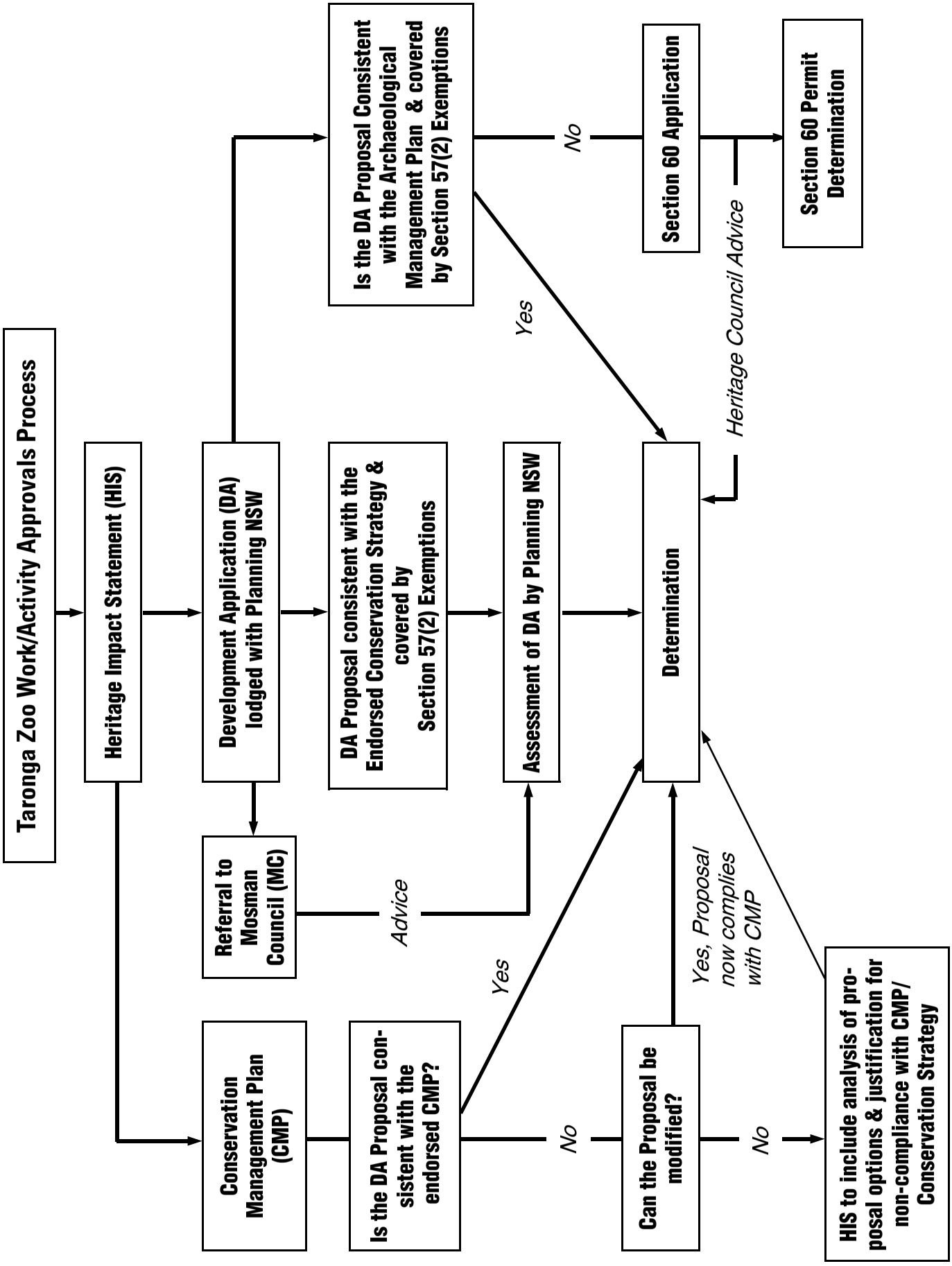


Figure 13.4 Proposed Approvals Process

14.0 Appendices

Appendix A

Burra Charter of Australia ICOMOS (Revised 1999)

Appendix B

Mosman Heritage Review, prepared by Godden Mackay Logan, 1996, Inventory Sheet for Taronga Zoo

Appendix C

National Trust of Australia (NSW) Listing Card for Taronga Zoo

Appendix D

Royal Australian Institute of Architects (RAIA) Register of Significant Twentieth Century Buildings, Inventory Sheet for Taronga Zoo, Upper and Lower Entrance Buildings and Indian Elephant House

Appendix E

Excerpt on Dr John Kelly from *This is Your Life, True Stories of Great Australians*, 1998, edited by David Mitchell, published by Prentice Hall Australia Pty Ltd, pp 115–117

Appendix A

Burra Charter of Australia ICOMOS (Revised 1999)

The Burra Charter

(The Australia ICOMOS Charter for Places of Cultural Significance)

Preamble

Considering the International Charter for the Conservation and Restoration of Monuments and Sites (Venice 1964), and the Resolutions of the 5th General Assembly of the International Council on Monuments and Sites (ICOMOS) (Moscow 1978), the Burra Charter was adopted by Australia ICOMOS (the Australian National Committee of ICOMOS) on 19 August 1979 at Burra, South Australia. Revisions were adopted on 23 February 1981, 23 April 1988 and 26 November 1999.

The Burra Charter provides guidance for the conservation and management of places of cultural significance (cultural heritage places), and is based on the knowledge and experience of Australia ICOMOS members.

Conservation is an integral part of the management of places of cultural significance and is an ongoing responsibility.

Who is the Charter for?

The Charter sets a standard of practice for those who provide advice, make decisions about, or undertake works to places of cultural significance, including owners, managers and custodians.

Using the Charter

The Charter should be read as a whole. Many articles are interdependent. Articles in the Conservation Principles section are often further developed in the Conservation Processes and Conservation Practice sections. Headings have been included for ease of reading but do not form part of the Charter.

The Charter is self-contained, but aspects of its use and application are further explained in the following Australia ICOMOS documents:

- Guidelines to the Burra Charter: Cultural Significance;
- Guidelines to the Burra Charter: Conservation Policy;
- Guidelines to the Burra Charter: Procedures for Undertaking Studies and Reports;
- Code on the Ethics of Coexistence in Conserving Significant Places.

What places does the Charter apply to?

The Charter can be applied to all types of places of cultural significance including natural, indigenous and historic places with cultural values.

The standards of other organisations may also be relevant. These include the Australian Natural Heritage Charter and the Draft Guidelines for the Protection, Management and Use of Aboriginal and Torres Strait Islander Cultural Heritage Places.

Why conserve?

Places of cultural significance enrich people's lives, often providing a deep and inspirational sense of connection to community and landscape, to the past and to lived experiences. They are historical records, that are important as tangible expressions of Australian identity and experience. Places of cultural significance reflect the diversity of our communities, telling us about who we are and the past that has formed us and the Australian landscape. They are irreplaceable and precious.

These places of cultural significance must be conserved for present and future generations.

The Burra Charter advocates a cautious approach to change: do as much as necessary to care for the place and to make it useable, but otherwise change it as little as possible so that its cultural significance is retained.

Articles

Article 1. Definitions

For the purposes of this Charter:

1.1 *Place* means site, area, land, landscape, building or other work, group of buildings or other works, and may include components, contents, spaces and views.

Explanatory Notes

The concept of place should be broadly interpreted. The elements described in Article 1.1 may include memorials, trees, gardens, parks, places of historical events, urban areas, towns, industrial places, archaeological sites and spiritual and religious places.

1.2 *Cultural significance* means aesthetic, historic, scientific, social or spiritual value for past, present or future generations.

Cultural significance is embodied in the *place* itself, its *fabric*, *setting*, *use*, *associations*, *meanings*, records, *related places* and *related objects*.

Places may have a range of values for different individuals or groups.

The term cultural significance is synonymous with heritage significance and cultural heritage value.

Cultural significance may change as a result of the continuing history of the place.

Understanding of cultural significance may change as a result of new information.

1.3 *Fabric* means all the physical material of the *place* including components, fixtures, contents, and objects.

Fabric includes building interiors and sub-surface remains, as well as excavated material.

Fabric may define spaces and these may be important elements of the significance of the place.

1.4 *Conservation* means all the processes of looking after a *place* so as to retain its *cultural significance*.

1.5 *Maintenance* means the continuous protective care of the *fabric* and *setting* of a *place*, and is to be distinguished from repair. Repair involves *restoration* or *reconstruction*.

The distinctions referred to, for example in relation to roof gutters, are:

- maintenance — regular inspection and cleaning of gutters;
- repair involving restoration — returning of dislodged gutters;
- repair involving reconstruction — replacing decayed gutters.

1.6 *Preservation* means maintaining the *fabric* of a *place* in its existing state and retarding deterioration.

It is recognised that all places and their components change over time at varying rates.

1.7 *Restoration* means returning the existing *fabric* of a *place* to a known earlier state by removing accretions or by reassembling existing components without the introduction of new material.

1.8 *Reconstruction* means returning a *place* to a known earlier state and is distinguished from *restoration* by the introduction of new material into the *fabric*.

New material may include recycled material salvaged from other places. This should not be to the detriment of any place of cultural significance.

1.9 *Adaptation* means modifying a *place* to suit the existing *use* or a proposed use.

1.10 *Use* means the functions of a place, as well as the activities and practices that may occur at the place.

1.11 *Compatible use* means a *use* which respects the *cultural significance* of a *place*. Such a use involves no, or minimal, impact on cultural significance.

1.12 *Setting* means the area around a *place*, which may include the visual catchment.

1.13 *Related place* means a *place* that contributes to the *cultural significance* of another place.

1.14 *Related object* means an object that contributes to the *cultural significance* of a *place* but is not at the place.

1.15 *Associations* mean the special connections that exist between people and a *place*.

Associations may include social or spiritual values and cultural responsibilities for a place.

1.16 *Meanings* denote what a *place* signifies, indicates, evokes or expresses.

Meanings generally relate to intangible aspects such as symbolic qualities and memories.

1.17 *Interpretation* means all the ways of presenting the *cultural significance* of a *place*.

Interpretation may be a combination of the treatment of the fabric (e.g. maintenance, restoration, reconstruction); the use of and activities at the place; and the use of introduced explanatory material.

Conservation Principles

Article 2. Conservation and management

2.1 *Places* of *cultural significance* should be conserved.

2.2 The aim of *conservation* is to retain the *cultural significance* of a *place*.

2.3 *Conservation* is an integral part of good management of *places* of *cultural significance*.

2.4 *Places* of *cultural significance* should be safeguarded and not put at risk or left in a vulnerable state.

Article 3. Cautious approach

3.1 *Conservation* is based on a respect for the existing *fabric*, *use*, *associations* and *meanings*. It requires a cautious approach of changing as much as necessary but as little as possible.

The traces of additions, alterations and earlier treatments to the fabric of a place are evidence of its history and uses which may be part of its significance. Conservation action should assist and not impede their understanding.

3.2 Changes to a *place* should not distort the physical or other evidence it provides, nor be based on conjecture.

Article 4. Knowledge, skills and techniques

4.1 *Conservation* should make use of all the knowledge, skills and disciplines which can contribute to the study and care of the *place*.

4.2 Traditional techniques and materials are preferred for the *conservation* of significant *fabric*. In some circumstances modern techniques and materials which offer substantial conservation benefits may be appropriate.

The use of modern materials and techniques must be supported by firm scientific evidence or by a body of experience.

Article 5. Values

5.1 *Conservation* of a *place* should identify and take into consideration all aspects of cultural and natural significance without unwarranted emphasis on any one value at the expense of others.

Conservation of places with natural significance is explained in the Australian Natural Heritage Charter. This Charter defines natural significance to mean the importance of ecosystems, biological diversity and geodiversity for their existence value, or for present or future generations in terms of their scientific, social, aesthetic and life-support value.

5.2 Relative degrees of *cultural significance* may lead to different *conservation* actions at a place.

A cautious approach is needed, as understanding of cultural significance may change. This article should not be used to justify actions which do not retain cultural significance.

Article 6. Burra Charter Process

6.1 The *cultural significance* of a *place* and other issues affecting its future are best understood by a sequence of collecting and analysing information before making decisions. Understanding cultural significance comes first, then development of policy and finally management of the place in accordance with the policy.

The Burra Charter process, or sequence of investigations, decisions and actions, is illustrated in the accompanying flowchart.

6.2 The policy for managing a *place* must be based on an understanding of its *cultural significance*.

6.3 Policy development should also include consideration of other factors affecting the future of a *place* such as the owner's needs, resources, external constraints and its physical condition.

Article 7. Use

7.1 Where the *use* of a *place* is of *cultural significance* it should be retained.

7.2 A *place* should have a *compatible use*.

The policy should identify a use or combination of uses or constraints on uses that retain the cultural significance of the place. New use of a place should involve minimal change, to significant fabric and use; should respect associations and meanings; and where appropriate should provide for continuation of practices which contribute to the cultural significance of the place.

Article 8. Setting

Conservation requires the retention of an appropriate visual *setting* and other relationships that contribute to the *cultural significance* of the *place*.

Aspects of the visual setting may include use, siting, bulk, form, scale, character, colour, texture and materials.

New construction, demolition, intrusions or other changes which would adversely affect the setting or relationships are not appropriate.

Other relationships, such as historical connections, may contribute to interpretation, appreciation, enjoyment or experience of the place.

Article 9. Location

9.1 The physical location of a *place* is part of its *cultural significance.* A building, work or other component of a place should remain in its historical location. Relocation is generally unacceptable unless this is the sole practical means of ensuring its survival.

9.2 Some buildings, works or other components of *places* were designed to be readily removable or already have a history of relocation. Provided such buildings, works or other components do not have significant links with their present location, removal may be appropriate.

9.3 If any building, work or other component is moved, it should be moved to an appropriate location and given an appropriate *use*. Such action should not be to the detriment of any *place* of *cultural significance*.

Article 10. Contents

Contents, fixtures and objects which contribute to the *cultural significance* of a *place* should be retained at that place. Their removal is unacceptable unless it is: the sole means of ensuring their security and *preservation*; on a temporary basis for treatment or exhibition; for cultural reasons; for health and safety; or to protect the place. Such contents, fixtures and objects should be returned where circumstances permit and it is culturally appropriate.

Article 11. Related places and objects

The contribution which *related places* and *related objects* make to the *cultural significance* of the *place* should be retained.

Article 12. Participation

Conservation, *interpretation* and management of a *place* should provide for the participation of people for whom the place has special *associations* and *meanings*, or who have social, spiritual or other cultural responsibilities for the place.

Article 13. Co-existence of cultural values

Co-existence of cultural values should be recognised, respected and encouraged, especially in cases where they conflict.

For some places, conflicting cultural values may affect policy development and management decisions. In this article, the term cultural values refers to those beliefs which are important to a cultural group, including but not limited to political, religious, spiritual and moral beliefs. This is broader than values associated with cultural significance.

Conservation Processes

Article 14. Conservation processes

Conservation may, according to circumstance, include the processes of: retention or reintroduction of a *use*; retention of *associations* and *meanings*; *maintenance, preservation, restoration, reconstruction, adaptation* and *interpretation*; and will commonly include a combination of more than one of these.

There may be circumstances where no action is required to achieve conservation.

Article 15. Change

15.1 Change may be necessary to retain *cultural significance*, but is undesirable where it reduces cultural significance. The amount of change to a *place* should be guided by the *cultural significance* of the place and its appropriate *interpretation*.

When change is being considered, a range of options should be explored to seek the option which minimises the reduction of cultural significance.

15.2 Changes which reduce *cultural significance* should be reversible, and be reversed when circumstances permit.

Reversible changes should be considered temporary. Non-reversible change should only be used as a last resort and should not prevent future conservation action.

15.3 Demolition of significant *fabric* of a *place* is generally not acceptable. However, in some cases minor demolition may be appropriate as part of *conservation*. Removed significant fabric should be reinstated when circumstances permit.

15.4 The contributions of all aspects of *cultural significance* of a *place* should be respected. If a place includes *fabric, uses, associations* or *meanings* of different periods, or different aspects of cultural significance, emphasising or interpreting one period or aspect at the expense of another can only be justified when what is left out, removed or diminished is of slight cultural significance and that which is emphasised or interpreted is of much greater cultural significance.

Article 16. Maintenance

Maintenance is fundamental to *conservation* and should be undertaken where *fabric* is of *cultural significance* and its *maintenance* is necessary to retain that *cultural significance*.

Article 17. Preservation

Preservation is appropriate where the existing *fabric* or its condition constitutes evidence of *cultural significance*, or where insufficient evidence is available to allow other *conservation* processes to be carried out.

Preservation protects fabric without obscuring the evidence of its construction and use. The process should always be applied:

- where the evidence of the fabric is of such significance that it should not be altered;
- where insufficient investigation has been carried out to permit policy decisions to be taken in accord with Articles 26 to 28.

New work (e.g. stabilisation) may be carried out in association with preservation when its purpose is the physical protection of the fabric and when it is consistent with Article 22.

Article 18. Restoration and reconstruction

Restoration and *reconstruction* should reveal culturally significant aspects of the *place*.

Article 19. Restoration

Restoration is appropriate only if there is sufficient evidence of an earlier state of the *fabric*.

Article 20. Reconstruction

20.1 *Reconstruction* is appropriate only where a *place* is incomplete through damage or alteration, and only where there is sufficient evidence to reproduce an earlier state of the *fabric*. In rare cases, reconstruction may also be appropriate as part of a *use* or practice that retains the *cultural significance* of the place.

20.2 *Reconstruction* should be identifiable on close inspection or through additional *interpretation*.

Article 21. Adaptation

21.1 *Adaptation* is acceptable only where the adaptation has minimal impact on the *cultural significance* of the *place*.

Adaptation may involve the introduction of new services, or a new use, or changes to safeguard the place.

21.2 *Adaptation* should involve minimal change to significant fabric, achieved only after considering alternatives.

Article 22. New work

22.1 New work such as additions to the *place* may be acceptable where it does not distort or obscure the *cultural significance* of the place, or detract from its *interpretation* and appreciation.

New work may be sympathetic if its siting, bulk, form, scale, character, colour, texture and material are similar to the existing fabric, but imitation should be avoided.

22.2 New work should be readily identifiable as such.

Article 23. Conserving use

Continuing, modifying or reinstating a significant *use* may be appropriate and preferred forms of *conservation*.

These may require changes to significant *fabric* but they should be minimised. In some cases, continuing a significant use or practice may involve substantial new work.

Article 24. Retaining associations and meanings

24.1 Significant *associations* between people and a *place* should be respected, retained and not obscured. Opportunities for the *interpretation*, commemoration and celebration of these associations should be investigated and implemented.

For many places associations will be linked to use.

24.2 Significant *meanings*, including spiritual values, of a *place* should be respected. Opportunities for the continuation or revival of these meanings should be investigated and implemented.

Article 25. Interpretation

The *cultural significance* of many *places* is not readily apparent, and should be explained by *interpretation*. Interpretation should enhance understanding and enjoyment, and be culturally appropriate.

Conservation Practice

Article 26. Applying the Burra Charter process

26.1 Work on a *place* should be preceded by studies to understand the place which should include analysis of physical, documentary, oral and other evidence, drawing on appropriate knowledge, skills and disciplines.

The results of studies should be up to date, regularly reviewed and revised as necessary.

26.2 Written statements of *cultural significance* and policy for the *place* should be prepared, justified and accompanied by supporting evidence. The statements of significance and policy should be incorporated into a management plan for the place.

Statements of significance and policy should be kept up to date by regular review and revision as necessary. The management plan may deal with other matters related to the management of the place.

26.3 Groups and individuals with *associations* with a *place* as well as those involved in its management should be provided with opportunities to contribute to and participate in understanding the *cultural significance* of the place. Where appropriate they should also have opportunities to participate in its *conservation* and management.

Article 27. Managing change

27.1 The impact of proposed changes on the *cultural significance* of a *place* should be analysed with reference to the statement of significance and the policy for managing the place. It may be necessary to modify proposed changes following analysis to better retain cultural significance.

27.2 Existing *fabric*, *use*, *associations* and *meanings* should be adequately recorded before any changes are made to the *place*.

Article 28. Disturbance of fabric

28.1 Disturbance of significant *fabric* for study, or to obtain evidence, should be minimised. Study of a *place* by any disturbance of the fabric, including archaeological excavation, should only be undertaken to provide data essential for decisions on the *conservation* of the place, or to obtain important evidence about to be lost or made inaccessible.

28.2 Investigation of a *place* which requires disturbance of the *fabric*, apart from that necessary to make decisions, may be appropriate provided that it is consistent with the policy for the place. Such investigation should be based on important research questions which have potential to substantially add to knowledge, which cannot be answered in other ways and which minimises disturbance of significant fabric.

Article 29. Responsibility for decisions

The organisations and individuals responsible for management decisions should be named and specific responsibility taken for each such decision.

Article 30. Direction, supervision and implementation

Competent direction and supervision should be maintained at all stages, and any changes should be implemented by people with appropriate knowledge and skills.

Article 31. Documenting evidence and decisions

A log of new evidence and additional decisions should be kept.

Article 32. Records

32.1 The records associated with the *conservation* of a *place* should be placed in a permanent archive and made publicly available, subject to requirements of security and privacy, and where this is culturally appropriate.

32.2 Records about the history of a *place* should be protected and made publicly available, subject to requirements of security and privacy, and where this is culturally appropriate.

Article 33. Removed fabric

Significant *fabric* which has been removed from a *place* including contents, fixtures and objects, should be catalogued, and protected in accordance with its *cultural significance*.

Where possible and culturally appropriate, removed significant fabric including contents, fixtures and objects, should be kept at the place.

Article 34. Resources

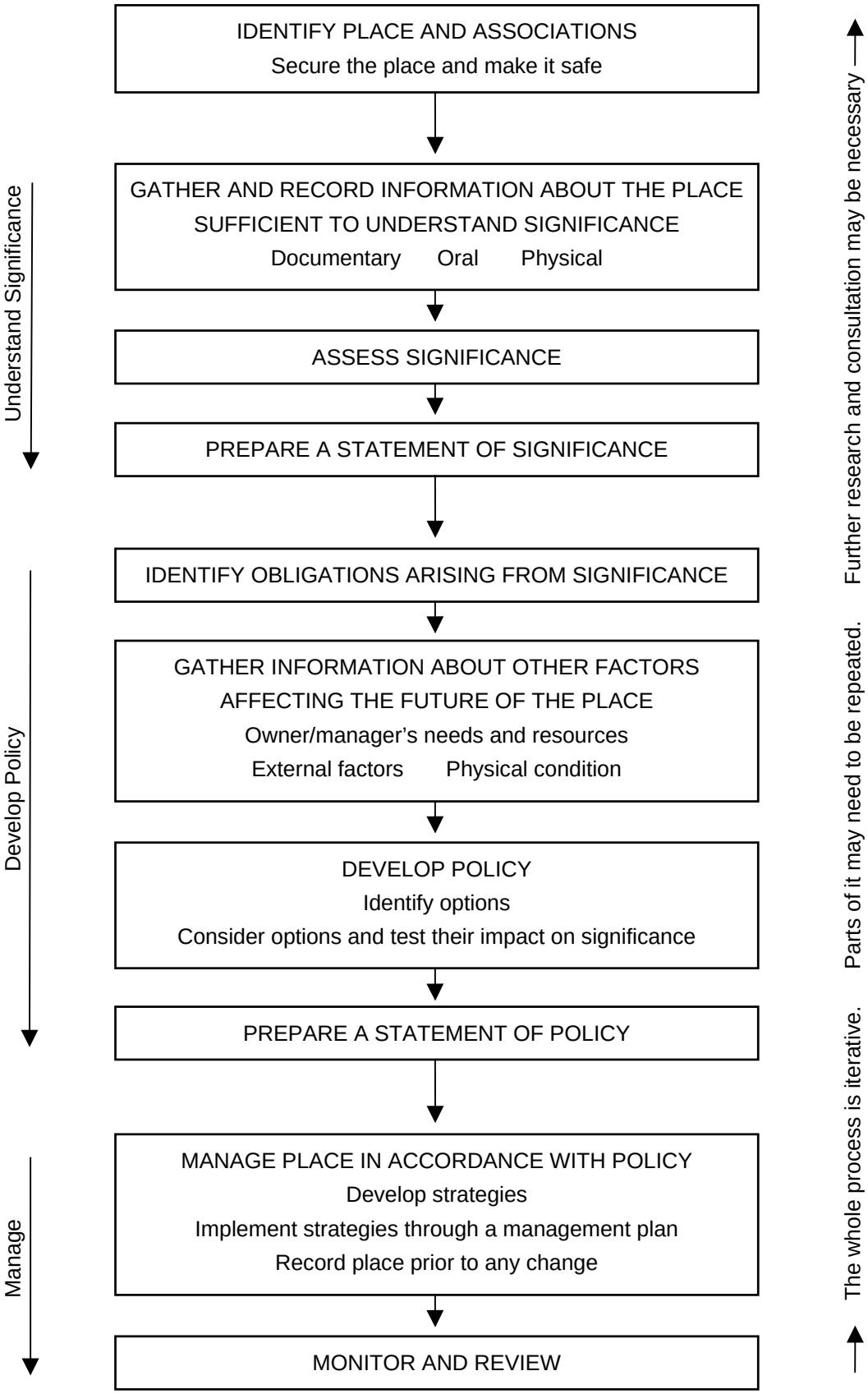
Adequate resources should be provided for *conservation*.

The best conservation often involves the least work and can be inexpensive.

Words in italics are defined in Article 1.

The Burra Charter Process

Sequence of investigations, decisions and actions



Appendix B

Mosman Heritage Review, prepared by Godden Mackay Logan, 1996, Inventory Sheet for Taronga Zoo

MOSMAN HERITAGE REVIEW 1996

STREET ADDRESS Bradleys Head Road

NAME OF ITEM Taronga Zoo **REFERENCE NO** 062

OTHER/FORMER NAMES Taronga Zoological Park

CATEGORY Taronga Zoo

BOUNDARY The Zoo Property Boundary

REAL PROPERTY DESCRIPTION

SITE CONDITION

- Intact: ☑
- Minor Alteration: ☐
- Major Alteration: ☐
- - Sympathetic: ☐
- - Unsympathetic: ☐
- Removed (site only): ☐

DESCRIPTION

A large Zoological park covering 42 acres of land, enclosed by stone, concrete and wire mesh fencing. It has upper and lower entrances and numerous interesting and significant structures as well as exhibits. Main items include the Entrance Buildings, the Elephant House, Aquarium, Floral Clock, Aviaries and rustic landscaping elements.

Roll No	95-147-307
Neg No	27
Surveyor	TB
Date of Survey	5/96

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