

Godden Mackay Logan Conservation Strategy

Taronga Zoo

Prepared for the Zoological Parks Board of NSW, Heritage Council Endorsed, July 2002

Contents	Page
Part A: Evidence and Analysis	
1.0 Introduction	1
1.1 Preamble.....	1
1.2 Background.....	1
1.3 Objectives of Study	2
1.4 Study Area	2
1.5 Heritage Status	3
1.6 Methodology	3
1.7 Study Team.....	4
1.8 Acknowledgements.....	4
1.9 Terminology	4
1.10 Limitations.....	5
1.11 Relationship to other Documents.....	5
2.0 Overview — Taronga Zoo as a Cultural Landscape.....	9
2.1 Introduction	9
2.2 Physical Attributes of the Cultural Landscape	9
2.3 Other Attributes that Contribute to the Sense of Place	12
3.0 Historical Analysis of Taronga Zoo	17
3.1 Introduction	17
3.2 The First Zoos.....	17
3.3 Zoos in New South Wales Prior to Taronga Zoo	18
3.4 The Sydney Acclimatisation Society and the NSW Zoological Society, 1861–1916	20
3.5 The Creation of Taronga Zoo.....	22
3.6 Taronga Zoo: 1916–1940	28
3.7 Taronga Zoo: 1941–1967	32
3.8 Taronga Zoo: 1967–1986	36
3.9 Taronga Zoo: 1987–Present	41
3.10 Endnotes.....	46
4.0 Summary of Key Phases of Taronga Zoo’s Development	47
4.1 Introduction	47
4.1.1 <i>Key Phases of Taronga Zoo’s Development</i>	47
5.0 Landscape Analysis	59
5.1 Landscape Setting and Topography	59
5.2 Soils and Vegetation	59
5.2.1 <i>Soils</i>	60
5.2.2 <i>Vegetation</i>	60
5.3 The Setting and Visual Qualities.....	60
5.4 Views and Visual Catchments/Corridors.....	61
5.5 Site Layout	61
5.6 Development of the Site.....	61
5.7 Landscape Features	62
6.0 Archaeological Analysis of the Taronga Zoo Site.....	69
6.1 Archaeological Features	69

6.1.1	<i>Pre and Post-Contact Aboriginal Occupation</i>	69
6.1.2	<i>Early Colonial Exploitation and Land Grants</i>	69
6.1.3	<i>An Escape from the City</i>	70
6.1.4	<i>Military Uses</i>	70
6.1.5	<i>Animal Quarantine Stations</i>	70
6.1.6	<i>Zoo Development</i>	71
6.2	Factors Affecting the Survival of Archaeological Features	71
6.3	Potential Archaeological Features	72
6.3.1	<i>Category 1: Aboriginal Archaeological Evidence</i>	72
6.3.2	<i>Category 2: Evidence of Nineteenth Century Land Use</i>	72
6.3.3	<i>Category 3: Evidence of the Development of the Zoo</i>	74
6.4	Endnotes	74
7.0	Analysis of Built Elements at Taronga Zoo	75
7.1	Introduction	75
7.2	Functional Types	76
7.3	Architectural Styles	79
7.3.1	<i>Edwardian Baroque</i>	79
7.3.2	<i>The Sydney School</i>	83
7.4	From Recreation to Education — Animal Enclosures and Bird Aviaries	87
7.5	Exotic Immersion — Thematic Precincts	91
7.6	Stylistic Features	93
7.7	Other Elements	94
7.8	Endnotes	98
Part B: Significance Assessment		
8.0	Comparative Analysis	99
8.1	Introduction	99
8.2	Evolution of Zoological Approaches	99
8.3	Zoo Typologies	100
8.4	World Zoos	100
8.5	Australian Context	101
8.5.1	<i>Taronga Zoo</i>	101
8.5.2	<i>Melbourne Zoo</i>	101
8.5.3	<i>Open-Range Zoos</i>	102
9.0	Analysis of Evidence	105
9.1	Preamble	105
9.2	Historic Values	105
9.3	Aesthetic Values	108
9.3.1	<i>Landscape and Views</i>	108
9.3.2	<i>Architectural Values</i>	110
9.3.3	<i>Natural Landscape Values</i>	112
9.4	Scientific Values	113
9.4.1	<i>Components of Scientific Values</i>	113
9.4.2	<i>Archaeological Value</i>	114
9.4.3	<i>Zoological Value</i>	115
9.4.4	<i>Archival Records, Collections and Movable Heritage Items</i>	115

9.5 Social Values	116
9.6 Endnotes	117
10.0 Cultural Significance of Taronga Zoo	119
10.1 Introduction	119
10.2 Basis of Assessment.....	119
10.2.1 Previous Assessments	119
10.2.2 Statutory Framework for Assessing Significance	120
10.3 Application of Significance Criteria	121
10.4 Summary Statement of Significance for Taronga Zoo	125
10.5 Graded Zones/Elements of Significance.....	126
10.5.1 Grading Criteria and Levels.....	126
10.5.2 Original Pathway Layout and Significant Built Landscape Elements	128
10.5.3 Buildings and Enclosures	135
10.5.4 Significant Landscape Items.....	141
10.5.5 Significant Views Within and From Taronga Zoo	144
10.5.6 Other Significant Items	147
10.6 Intrusive Items.....	148
Part C: Conservation Policy	
11.0 Constraints and Issues	149
11.1 Preamble.....	149
11.2 Obligations Arising From Heritage Significance.....	149
11.2.1 Obligations Arising From Assessed Significance of the Site as a Whole.....	149
11.2.2 Constraints Arising From Assessed Significance of Individual Items.....	150
11.2.3 Constraints Arising From Assessed Significance of the Landscape Elements	151
11.2.4 Constraints Arising from Assessed Curtilage of Taronga Zoo.....	151
11.2.5 Constraints Arising From Potential Archaeological Resources at Taronga Zoo.....	152
11.3 Aboriginal Values	152
11.4 Obligations Arising From the Revised <i>Burra Charter</i> of Australia ICOMOS	152
11.5 Statutory Controls	154
11.5.1 Australian Heritage Commission	154
11.5.2 State Environmental Planning Policy No. 56 — Sydney Harbour Foreshores and Tributaries (SEPP56).....	155
11.5.3 Sydney Regional Environmental Plan No. 23 — Sydney and Middle Harbours (SREP 23).....	155
11.5.4 New South Wales Heritage Act, 1977	156
11.5.5 Mosman Municipal Council Local Environmental Plan 1998.....	157
11.5.6 National Trust of Australia (NSW)	158
11.5.7 Royal Australian Institute of Architects (RAIA)	158
11.5.8 National Parks and Wildlife Act, 1970	158
11.5.9 Exhibited Animals Protection Act, 1986.....	159
11.5.10 Constraints Arising from the Building Code of Australia.....	159
11.5.11 Other Legislation and Policies.....	159
11.6 Zoological Parks Board.....	160
11.7 Site Management Issues	162
11.7.1 Integrated Approach to Heritage Conservation	162
11.7.2 Animals.....	163

11.7.3 <i>Botanic Estate</i>	163
11.7.4 <i>Physical Assets</i>	164
11.7.5 <i>Archive Collection</i>	165
11.7.6 <i>Visitors</i>	165
11.8 Masterplan Zoo 2000	165
12.0 Conservation Policy	167
12.1 Discussion of Conservation Policy	167
12.2 Conservation Principles	167
12.3 General Conservation Policy.....	169
12.4 Specific Policy Statements.....	170
12.4.1 <i>Boundaries, Setting, Visual Catchments</i>	170
12.4.2 <i>Landscape</i>	170
12.4.3 <i>Approach to Conservation of Built Fabric Generally</i>	171
12.4.4 <i>Specific Polices for Individual Items</i>	172
12.4.5 <i>Maintenance</i>	182
12.4.6 <i>Use</i>	182
12.4.7 <i>Adaptive Re-Use</i>	183
12.4.8 <i>New Work</i>	183
12.4.9 <i>Masterplan 2000</i>	184
12.4.10 <i>Conservation of Archaeological Resources</i>	184
12.4.11 <i>Conservation of Aboriginal Heritage</i>	185
12.4.12 <i>Conservation of Archive Collections and Records</i>	186
12.4.13 <i>Visitors</i>	186
12.4.14 <i>Interpretation</i>	186
12.4.15 <i>Conservation Planning Procedures</i>	187
12.4.16 <i>Human Resources for Conservation</i>	187
12.5 Procedural Policy Statements	188
12.5.1 <i>Heritage Input/Advice</i>	188
12.5.2 <i>Conservation Management Plans</i>	188
12.5.3 <i>Further Management Plans</i>	188
12.5.4 <i>Monitoring of Significant Items</i>	190
12.5.5 <i>Section 57(2) Exemptions</i>	190
12.5.6 <i>Archaeological Investigations</i>	190
12.5.7 <i>Heritage Impact Statement</i>	191
12.5.8 <i>Archival Recording</i>	191
12.6 Consequences of Conservation Policy	192
13.0 Implementation	193
13.1 Preamble.....	193
13.2 Adoption and Implementation by Zoological Parks Board of New South Wales.....	193
13.3 Roles and Responsibilities	193
13.4 Referral to Consent Authorities	194
13.5 Masterplan 2000	195
13.6 Conservation Skills/Heritage Expertise	195
13.7 Conservation of Built Fabric.....	196
13.7.1 <i>Physical Condition Survey</i>	196
13.7.2 <i>Maintenance Strategy</i>	196

13.7.3 Fabric Conservation	197
13.8 Landscape Management	198
13.9 Archaeology	199
13.10 Aboriginal Values	200
13.11 Archives Collection and Records	200
13.12 Conservation Planning	201
13.13 Approvals Process	202
13.14 Archival Recording	202
13.15 Interpretation	203
13.16 Monitoring	203
13.17 Heritage Act Section 57 (2) Exemptions	204
14.0 Appendices.....	209
Appendix A <i>Burra Charter</i> 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 <i>This is Your Life, True Stories of Great Australians</i> , 1998, edited by David Mitchell, published by Prentice Hall Australia Pty Ltd, pp 115–117	

Godden Mackay Logan

1.0 Introduction

1.1 Preamble

Taronga Zoo is one of six internationally-recognised zoos in Australia, including Taronga's sister zoo, Western Plains Zoo, at Dubbo. Taronga was officially opened in 1916. Prior to the establishment of Taronga Zoo, animals had been displayed for the public by a number of institutions. A number of animals had been displayed within the Sydney Botanic Gardens since the Governorship of Macquarie, in The Australian Museum in Hyde Park between 1848 and 1850, and in 1850 at a menagerie established at the Sir Joseph Banks Hotel in Botany.

In 1879 the New South Wales Zoological Society was formed and operated a zoo from Moore Park between 1881 and 1916. Site restrictions at this location led to the decision to choose the existing site on the northern shores of Sydney Harbour in 1910, and the animals were moved in 1916.

The heritage of Taronga Zoo comprises the site layout, paths, buildings, animal enclosures, natural and exotic vegetation, landscape elements, views into, out and across the site, archaeological resources, Aboriginal sites, movable heritage items and historic records. It is home to more than 2000 animals and over 370 species. Some species are amongst the world's rarest, while others are classified as endangered and many are vulnerable or threatened.

Taronga Zoo is an important part of the social life of Sydney. The trip to the Zoo is made by over 1.3 million local, interstate and overseas visitors a year who arrive by car, bus and ferry.

The existing fabric of Taronga, dating from 1916 to present, demonstrates the changing philosophical approaches to the keeping of animals, the role of the Zoo as a place of entertainment and education for visitors and the importance of research and conservation of the natural world.

1.2 Background

The physical context of Taronga Zoo has been examined in a number of previous documents. The first masterplan for the site was prepared in 1970, at the end of Sir Edward Hallstrom's Directorship, in response to Ronald Strahan's new vision for Taronga. Since that time, zoological philosophies and practices have continued to evolve and have been reflected in future management planning of the site.

The Public Works Department of New South Wales (PWD) prepared a Masterplan for Taronga in 1989 which formulated objectives and recommendations for the future planning and development of the Zoo.

In April 1998 a Heritage and Conservation Register for the entire Zoo was prepared by PWD. This document was prepared as part of the obligations of the Zoological Parks Board of New South Wales (ZPB), as a State Government Department, under Section 170 of the *NSW Heritage Act, 1977*, to

identify and appropriately manage their heritage resources as part of the continuing asset management of the site.

Most recently, in 2000, a Masterplan was prepared by Portico, a US-based zoological design and planning consultancy, to further establish a planning direction and vision for Taronga Zoo. This Masterplan has been endorsed by the NSW Heritage Council and accepted by planningNSW in accordance with Clause 11 of State Environmental Planning Policy No. 56 — Sydney Harbour Foreshores and Tributaries.

1.3 Objectives of Study

As part of the planning of the future vision for Taronga, the ZPB has commissioned Godden Mackay Logan to prepare a Conservation Strategy for the Taronga Zoo Site.

The purpose of the Conservation Strategy is set out in the following project aims.

1. To provide an integrated, multi-disciplinary framework for the future management of the heritage resources at Taronga Zoo through:
 - reviewing the cultural and natural heritage resources of the site identified in the existing Section 170 Register;
 - assessing the relative value or significance of those resources;
 - identifying opportunities and constraints that apply to their management;
 - developing policies for conservation, interpretation, management and use of the site; and
 - developing a framework within which recommendations for conservation works and further investigation and planning should be implemented as part of the management of the Taronga Zoo site.
2. Building an understanding of the conservation planning process among stakeholders.

1.4 Study Area

Taronga Zoo is located on Sydney Harbour's northern foreshore at the head of Athol Bay. The land is under the ownership of the Zoological Parks Board of NSW and is within the Municipality of Mosman.

The study area for the Conservation Strategy, as agreed with the NSW Heritage Office, is defined as that land which is within the perimeter wall of the Zoo and the carparking areas to the north of the site. The remaining areas outside the Taronga Zoo perimeter wall have not been included as part of this report.

The location, context and configuration of the Study Area are shown in Figures 1.1 and 1.2.

1.5 Heritage Status

The existing heritage status of Taronga Zoo is fully addressed in Section 11.0.

In summary, the entire site owned by the ZPB at Mosman, including the subject study site, along with 83 individual items (including buildings, animal enclosures, landscape items and movable heritage items) is included in the Heritage and Conservation Register for Taronga Zoo under Section 170 of the *NSW Heritage Act, 1977*.

The Zoological Parks Board of New South Wales has nominated Taronga Zoo for listing on the NSW State Heritage Register (SHR), provided that appropriate exemptions are available, under Section 57(2) of the Heritage Act, to allow the Zoo to continue its operations. This Conservation Strategy provides the background documentation used to prepare the SHR nomination. It is intended that site-specific Section 57(2) exemptions will be developed by and agreed with the NSW Heritage Office, prior to the SHR listing proceeding.

The Zoo is identified in the Mosman Heritage Study as a place of State significance. However, only a limited number of items are listed in Schedule 2 (Heritage Items) of the Mosman Local Environmental Plan.

The site is also classified by the National Trust of Australia (NSW) and is identified on the Register of Twentieth Century Items of Significance, which is maintained by the Royal Australian Institute of Architects (RAIA).

1.6 Methodology

This Conservation Strategy follows the relevant guidelines contained in James Kerr's *The Conservation Plan*, published by the National Trust of Australia and the guidelines of the *Australia ICOMOS Charter for the Conservation of Places of Cultural Significance* (the *Burra Charter*). Assessment of the cultural significance of the place and its individual elements has been made using the NSW Heritage Office significance assessment criteria.

In undertaking this study a number of previous reports for the Zoo were reviewed, including:

- the 1989 Masterplan prepared by PWD;
- the Section 170 Heritage and Conservation Register, prepared in April 1998 by the Heritage Group of the Department of Public Works and Services;
- the Harbour Foreshore Plan, August 2000, prepared by ZPB;
- the Strategic Plan to 2002 and beyond, prepared by the ZPB; and
- the 2000 Masterplan prepared by Portico.

The site was visited by all members of the project team over a number of days during the period June–September, 2000.

The Conservation Strategy is divided into three parts:

- Part A — Evidence and Analysis
- Part B — Significance Assessment
- Part C — Conservation Policy, incorporating Constraints and Issues, Policy and Implementation.

It is not the intention of the Conservation Strategy to provide a comprehensive history of the Zoo, nor to set out a thorough physical analysis of every individual element of the site. This information may be found by reference to other documents listed above or requires further study. Whilst this report identifies observable social associations with the place, it does not include a full social significance assessment.

1.7 Study Team

The Conservation Strategy has been prepared by a multi-disciplinary team including Geoff Ashley, Associate; Jannene Smith, Built Heritage Specialist; Sean Williams, Architectural Graduate; Mark Dunn, Historian; Warwick Mayne-Wilson, Landscape Specialist; and Tracy Ireland, Archaeologist. Geoff Ashley has also reviewed the report.

1.8 Acknowledgements

Acknowledgement is made of the invaluable assistance of many individual Taronga Zoo staff who have contributed to discussions, including:

- Mr Eddie Swat, Project Manager, Asset Management Services;
- Mr Alan Flinders, Manager, Strategic Asset Development;
- Mr Hunter Rankin, General Manager, Corporate Services, Finance and Legal;
- Mr Glenn Smith, General Manager Corporate Strategic Development and Human Resources; and
- Ms Margaret Miller, Archivist.

1.9 Terminology

The terminology used in this report is consistent with the *NSW Heritage Manual* and the definitions contained in the (Australian ICOMOS) *Burra Charter*.

The reference number identification for heritage items within the Zoo follows the existing terminology established in the Heritage and Conservation Register document. This reference system numerically identified features and then added an A, B, L or M to further identify the element as an Aboriginal, Built, Landscape or Movable item.

Other abbreviations used throughout this report include:

ZPB Zoological Parks Board of NSW;
PWD Department of Public Works;
CMP Conservation Management Plan; and
HIS Heritage Impact Statement.

1.10 Limitations

This study has been limited to that area of the Zoo that is within the perimeter wall and northern carpark grounds. Foreshore areas and other land under the ownership of the Zoological Parks Board have not been included as part of this study, as agreed with the NSW Heritage Office. (Reference should be made to the Harbour Foreshore Management Plan, August 2000, prepared by the Taronga Zoo Botanic Estate Department for the ZPB.)

This report includes some comparison of Taronga with other zoos, focusing on the national context, with international references, but given the rapidly changing management of zoos, it is not possible to provide a detailed comparison of world zoos. This is worthy of further work, but outside the scope of this study.

A discussion of the origins of the Edwardian Baroque architectural style and its link to the design of exhibition buildings of the Victorian Era was considered to be outside the scope of this report. However, further research on this subject may provide additional contextual background to the use of this architectural style at Taronga Zoo.

Section 13 of this report recommends that further studies be undertaken as part of the ongoing implementation of this report. These studies include a Landscape Management Plan (reference should also be made to the Horticultural Database maintained by the Taronga Zoo Botanic Estate Department), an assessment of the Aboriginal values of the site and a full social significance assessment of Taronga Zoo (it should be noted that this report includes some social value assessment and judgements based on available information and our experience).

In particular, as the redevelopment of precincts at Taronga Zoo is undertaken, it is vital that the documentation in this report is expanded upon, as necessary, to ensure that the heritage values of the site are retained and enhanced and that decisions regarding the future of significant elements are made in the knowledge of their importance within the Zoo.

1.11 Relationship to other Documents

This Conservation Strategy provides an agreed assessment of significance for the Taronga Zoo and a policy framework for conservation, interpretation, management and use of the site as part of the implementation of the endorsed Masterplan. The Conservation Strategy therefore has important operational relationships with other documents. These may be broadly summarised as follows:

Masterplan

Redevelopment of the Zoo is to be undertaken on a precinct by precinct basis with reference to the Masterplan's vision for the site as a whole. There are some aspects of the Masterplan which are not consistent with the Conservation Strategy. Where these occur, the Conservation Strategy will prevail. As the Masterplan is reviewed and updated it will be brought into alignment with the Conservation Strategy.

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

Conservation Management Plans

Conservation Management Plans are to be prepared for items of exceptional significance as part of the final precinct planning documentation. These will have regard to the policies and other provisions of the Conservation Strategy.

Heritage Impact Statements

Heritage Impact Statements will be prepared for submission to relevant authorities as part of each works package. These documents will also have regard to the Conservation Strategy, but will include formal evaluation of the potential impacts, arising from the proposal, on the heritage value of individual items and the overall significance of the site.

Landscape Management Plan, Archaeological Management Plan, Interpretation Plan

The Conservation Strategy requires preparation of a series of subsidiary documents which will give effect to particular aspects of heritage management at Taronga Zoo. These documents will provide greater detail but will reflect the Conservation Strategy. They will also guide and, where appropriate, modify or refine the Masterplan implementation process.

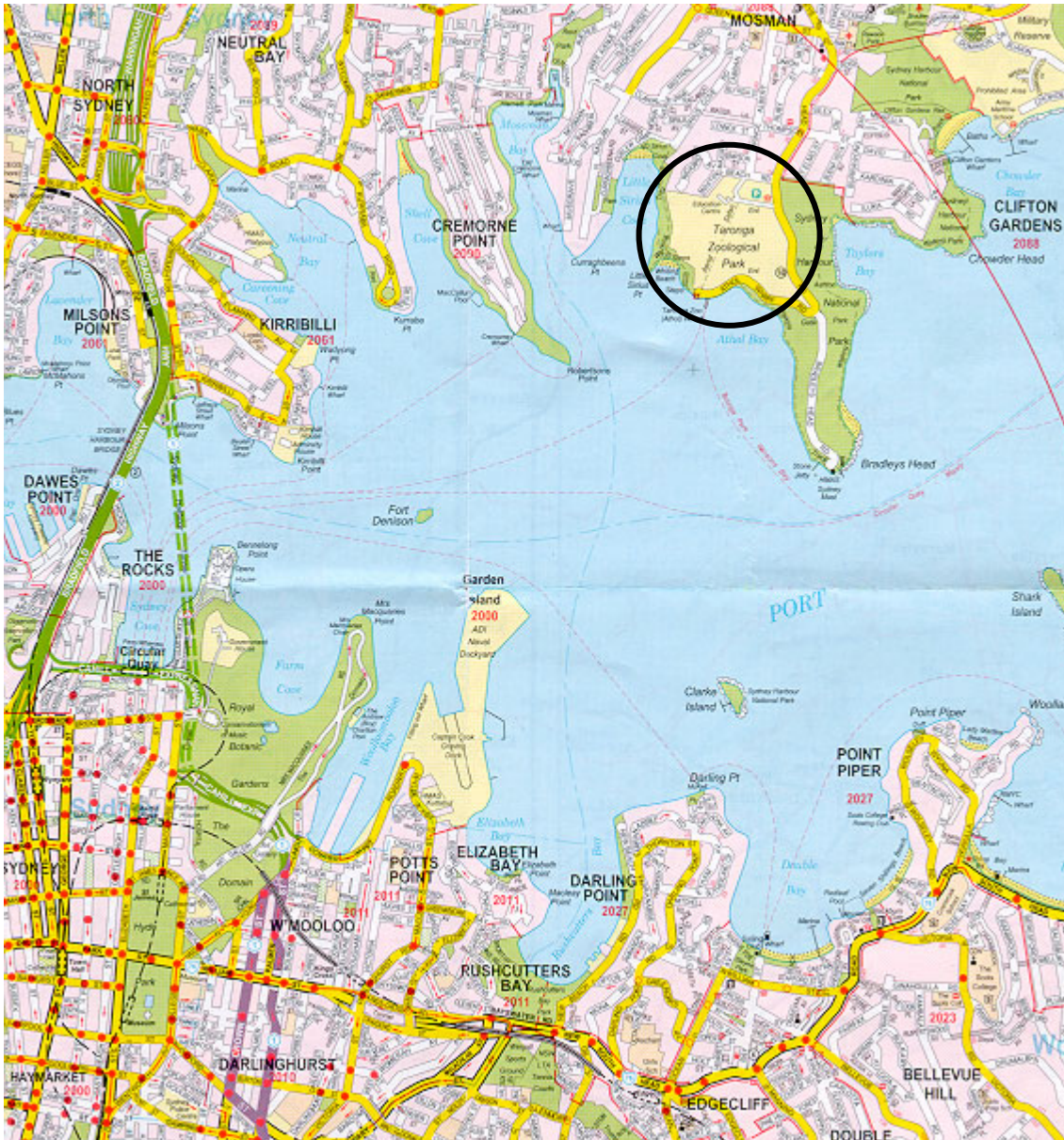


Figure 1.1 Location plan showing Taronga Zoo's relationship to Sydney Harbour and the suburb of Mosman.

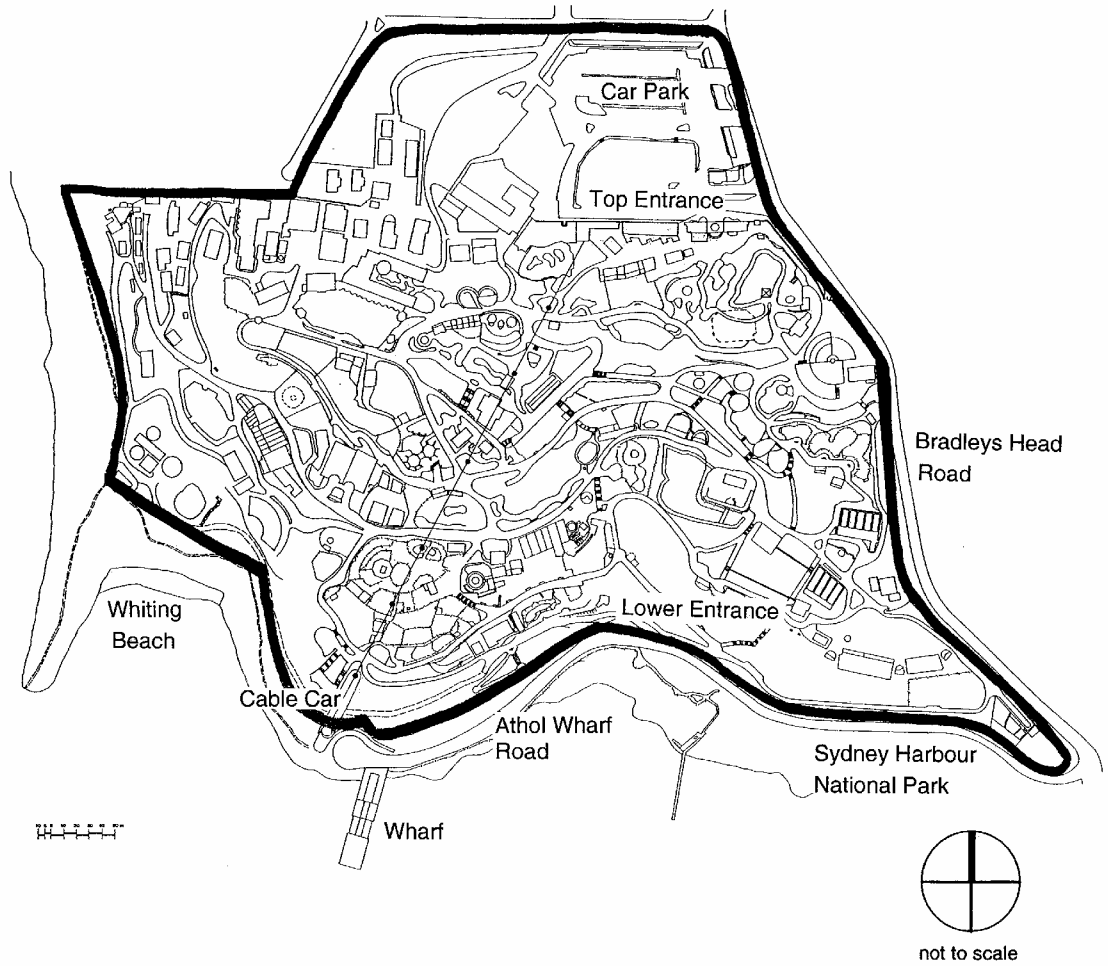


Figure 1.2 Taronga Zoo site plan showing extent of subject study area.

2.0 Overview — Taronga Zoo as a Cultural Landscape

2.1 Introduction

Taronga exists because of the animals in its care. Over 2000 specimens and 400 species/subspecies of animals live at Taronga Zoo. As a living Zoo, the Zoological Parks Board's vision, as expressed in the Strategic Plan to 2002 and Beyond, is: 'to inspire Australians and our visitors to explore, discover, delight in and protect our natural world'.

Taronga has always played an important role as a social resource for Sydney. Originally, the Zoo was established as a place for the entertainment of its visitors, however, the emphasis has shifted over the years to the education of visitors and conservation of the natural world as key objectives in the presentation of the Zoo. Today, over 1.3 million visitors a year, including nearly 90,000 school students, visit the site.

Besides the animals, which are integral to the Zoo's existence, the unique sense of place that exemplifies Taronga is also evident in the composition of the gardens, mature trees, pathways, stairs, seating, lawns, views, buildings and animal enclosures throughout the site. These elements serve as reminders of the establishment of the Zoo as a Zoological Park, have aesthetic values which contribute to the visual character of the site and act as markers of the site's historical background. This section provides an overview of these elements. A more detailed description of the documentary evidence is contained in Sections 3.0 and 4.0 and of the physical evidence in Sections 5.0, 6.0 and 7.0.

The current visitors souvenir map showing the existing animal exhibits and layout of the Zoo is shown in Figure 2.1.

2.2 Physical Attributes of the Cultural Landscape

Cultural landscapes are those places that have been significantly modified by human activity and are highly valued by the community for their associations with the place.

Taronga Zoo, as a cultural landscape, consists of the following elements:

The Natural Landforms, Landscape and Views to, from and within the Site

When viewed from the harbour, within the foreshore setting of Athol Bay and Little Sirius Cove, the landscape provides the impression of a 'natural' setting for the Zoo that links it to similar landscapes around the water's edge of the harbour (see Figure 2.2). The rock benches, landscape and native and mature introduced species of flora, within a steep site, characterise the visual quality of the Zoo (see Figure 2.3).

The slope of the land has to a large degree, determined the site layout, providing memorable views across the water to the southern shore of the harbour and the city skyline as well as selective and intimate views across the site, establishing a sense of place and giving Taronga its unique backdrop (see Figure 2.4).

A known site of Aboriginal value also exists within the boundary of Taronga and is an important reminder of the indigenous occupation of the lands surrounding Sydney Harbour and their use of its waterways prior to European settlement.

The Site Layout/Pathway Design

The pathway layout at Taronga was designed in 1913 by Le Souef, Secretary of the Zoological Gardens Trust, as a deliberate scheme designed to draw the visitor along to the next exhibit. The pathways were laid out in order to exploit the site's natural features and its location on Sydney Harbour, providing visitors with ever-changing vistas, dramatic contrasts and unique viewing opportunities.

Although greatly expanded, much of the original pathway scheme, with its associated balustrades, stairs and seating, still exists (refer to Figure 4.32).

Landscape Elements and Exotic Vegetation

The cultural plantings at Taronga include a wide variety of natural and exotic vegetation that encompasses tall ornamental specimens, shrubs and flower beds. Many features have become landmarks within the Zoo, including the tall hoop pines at Hallstrom Square and the Floral Clock. The vegetation at Taronga is chosen and designed to provide an aesthetic backdrop to passive public areas; for screening and protection of the animal enclosures; to provide shading of public open spaces; to create a thematic precinct in which the animals are displayed; and to provide essential food stock for the animal collection.

Buildings

The architectural design of the public, administrative and service buildings of Taronga demonstrates the wide variety of functional uses as well as philosophical approaches to Zoo design during the history of the place. When Taronga was established, the designs reflected the objective of presenting exotic structures that provided a sense of wonderment and charm to the visitor, and not specifically for the benefit of the animals.

The upper and lower entrance buildings are part of the original fabric of the site. By their scale, unique architecture and location, they serve as important landmarks in their context and have become icons of the built fabric of Taronga (see Figure 2.5).

Architectural design is also integral to a number of animal enclosures, such as the Elephant Temple; Aquarium; the Koala House; the Platypus House and the Rainforest Aviary (see Figure 2.6) and reflects changing stylistic approaches, in turn reflecting broader cultural patterns.

Other Built Elements

As well as buildings, the site is also characterised by other elements such as retaining walls, paths, terracing, roads, stairs, seats and the Floral Clock (see Figures 2.7, 2.8 and 2.9). The use of a consistent palette of materials, such as ferro-cement and stonework, for many of these items provides the Zoo with a high degree of design consistency.

The Animal Enclosures and Aviaries

The animal enclosures and aviaries at Taronga exemplify the different approaches to the care and display of animals over the site's history. The exhibit objectives when Taronga was established were that each enclosure should be open to viewing from two or more sides and that bars and fences should, as far as possible, not be utilised.

The use of moats to present animals without the need for bars was seen as the ideal. Although many of the original enclosures have been modified over time, remnants of this original design philosophy exist, such as the Bear Enclosure (see Figure 2.10), and is still utilised in the planning of new enclosures, such as the Gorilla Exhibit.

Another early feature of the enclosures was the use of mock rock to simulate a natural environment in which to present the animals. An example of this is the Tahr Mountain (see Figure 2.11).

More recently, the design of enclosures has integrated the structures into the landscape by creating a built form that sits within the natural terrain and utilises more natural materials, such as found at the Platypus House and the Koala House (see Figure 2.12).

Built elements that are themed in the style of the animals' country of origin have most recently been utilised as part of the overall interpretive message of the exhibit that presents geographical zones and allows visitors to immerse themselves in thematic precincts.

Items of Movable Heritage

Taronga Zoo has an extensive archive, which is an invaluable resource of the changing philosophical approach to zoological parks. The archive contains original visitors maps, demonstrating the growth of the Zoo as well as items such as the seat used as part of the elephant ride and other ephemeral objects relating to the site.

Throughout the site there are also items which date from the earliest days of the Zoo, such as commemorative plaques and weighing machines, which play a part in creating the overall character of Taronga.

2.3 Other Attributes that Contribute to the Sense of Place

Besides the elements that create the physical environment of Taronga, other attributes exist which are also significant for their contribution to the sense of place which defines the Zoo experience. Many of these aspects are difficult to articulate as their qualities are often intangible, however they include such elements as:

- the provision of a sense and reassurance amongst staff and visitors to the Zoo that the animals are well cared for;
- provision for visitors of a unique, multi-sensory contact experience with nature;
- the presence of free-roaming peacocks throughout the Zoo (see Figure 2.13);
- the contribution of Taronga to the scientific and biological conservation programs in a local, national and international context;
- helping to instil a responsibility for the world's biological diversity; and
- the memories of Taronga kept by all who visit it, making up part of the social fabric of Sydney.



Figure 2.1 Visitor's Souvenir Map of Taronga Zoo, 2000.



Figure 2.2 Taronga as viewed from the Harbour.



Figure 2.3 Mature fig trees south of Discovery Farm.



Figure 2.4 The expansive view of the Harbour and city skyline from the Bird Show Amphitheatre.



Figure 2.5 Upper Entrance building.



Figure 2.6 Elephant temple.



Figure 2.7 Typical staircase.



Figure 2.8 Stone seating near Rustic Bridge.



Figure 2.9 Floral clock and animal topiaries.



Figure 2.10 Sun Bear enclosure.

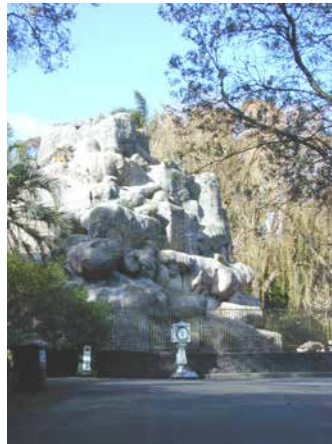


Figure 2.11 Tahr Mountain.



Figure 2.12 Koala House.



Figure 2.13 Free-roaming peacock in the landscape.



3.0 Historical Analysis of Taronga Zoo

3.1 Introduction

The following historical outline is based on primary and secondary research from the following sources:

- Taronga Zoo archive collection;
- Mitchell Library, including Small Pictures File; and
- Archives Office of NSW.

3.2 The First Zoos

The keeping of wild and exotic animals in captivity for public entertainment and exhibition was by no means a new idea when Taronga Zoo opened in 1916. The Romans had kept animals for the arena, while monarchs and aristocrats of other ancient empires had held wild animals for their own enjoyment or prestige. In England in c1100, King Henry I established a Royal Menagerie at Oxfordshire. Later moved to the Tower of London, the collection remained there until 1831 when King George IV presented it to the newly formed Zoological Society in London.

However, while these collections represent a long history of the keeping of animals in captivity, if we regard zoos as institutions that keep collections of animals for public display and scientific research, then their history is somewhat shorter. In 1752 the Holy Roman Emperor Maximilian II established a menagerie in Vienna for his family and the court, which was then opened to visitors in 1765 by Emperor Joseph I. This remains as the oldest existing public collection to date. In 1793 the Museum of Natural History in Paris established the Jardin des Plantes. This collection of wild animals was the first to be gathered primarily for scientific study and education, and was always open to the public.

The idea of a zoological study is credited to Sir Stamford Raffles, the founder of modern Singapore. Raffles had visited the Jardin des Plantes in 1817, and on his return to England in 1826 he proposed the establishment of a zoological society to study animals in the same way that plants were studied in a botanical garden. His ideas were realised in the opening of the world's first scientific zoo, London Zoo, in 1828. Raffles set out his ideas for a zoological society in a long prospectus in which he wrote that:

Should the Society flourish and succeed, it will not only be useful in common life, but could likewise ... offer a collection of animals such as never existed in ancient or modern times ... from every part of the globe to be applied either to some useful purpose, or as objects of scientific research, not of vulgar admiration.¹

Raffles' idea to move away from pure entertainment toward a more scientific approach heralded the beginning of zoology as a science. In 1829, the same year that a Royal Charter was granted to the Zoological Society, a statement of aims for the Society was produced which declared its aims as:

The advancement of Zoology and Animal Physiology and the introduction of new and curious subjects of the Animal Kingdom.²

While the society soon dropped the idea of domesticating animals, the scientific activities thrived with scientific meetings and symposia taking place from 1830. Then, in 1831, King George IV presented the Royal Menagerie to the Society, for its Zoological Garden in Regent's Park. The introduction of the Royal Collection overshadowed the scientific role of the Society in the eyes of the public and led many visitors to the Society only being aware of the exhibition of the animals and mistakenly assumed that this was the sole function of zoology. Indeed, the word zoo first appeared in print in 1847, as the public abbreviated 'the Menagerie of the Zoological Society of London in Regent's Park', the same year the menagerie was opened to the public.³

As well as the opening of the London Zoo, six more major zoos were founded in the first half of the nineteenth century. These were Dublin (1831), Manchester (1836), Amsterdam (1836), Stuttgart (1842), Antwerp (1843) and Berlin (1844).

3.3 Zoos in New South Wales Prior to Taronga Zoo

The first collection of exotic animals to be placed on display for the public in Sydney was at the Botanic gardens, from the time of Governor Macquarie. The animals, including birds, an anteater, Chinese deer and monkeys, were displayed close to the present herbarium, near Mrs Macquarie's Road.

Between 1848 and 1850 a small group of animals owned by the Australian Museum, including a tiger, were displayed in Hyde Park. The Australian Museum had been founded in 1828–29, but it was not until 1852 that a permanent home was found for it in College Street.

After 1850 the lessees of the Sir Joseph Banks Hotel at Botany, Messrs Beaumont and Waller, took over the Australian Museum's collection and advertised themselves as having the most delightful gardens in the country, with an exhibition including 'almost every Beast and Bird particular to the colony'. Their advertisement in the *Sydney Morning Herald* on 30 December 1850 boasted that the:

Magnificent importation by the Royal Saxon, consisting of a Royal Bengal Tiger, a Black bear of the Himalaya Mountains, and an extraordinary Ape, will be exhibited at the charge of sixpence for each person.⁴

The menageries at Botany and Hyde Park reflected the emergence of a new interest in science and a growing intelligentsia in Sydney itself. When Charles Darwin had visited Sydney in 1836, he had observed that the main preoccupation of the residents was to make money, and that there was little

evidence of an intellectual lifestyle. However, by the early 1850s this had begun to change fairly rapidly. The creation of the first elected Legislative Council in 1850, the end of transportation of convicts and the establishment of Sydney University in 1852 all served to promote a new feeling of independence and Victorian enlightenment in Sydney.

Working within this spirit, the Reverend George E Turner received permission from Governor General Fitzroy in June 1852 to call together local naturalists in Sydney to consider the foundation of a public zoological institution. Turner, an Anglican minister, was the then Honorary Secretary of the Australian Museum and a respected amateur botanist. He was interested in the development of a zoo for Sydney based on the London Zoo: a place of research, education and recreation. Turner saw the Zoo as complimentary to, but separate from, the museum, which at the time was struggling to complete its new home. Two other prominent men associated with the Museum, Dr George Bennett, who had been the first secretary of the museum, and the Reverend William Braithwaite, a keen geologist who had been the second secretary of the Australian Museum, supported Turner in his quest for a Sydney zoo.

As well as those from the museum, other prominent Sydney figures who supported the idea included: Charles Moore, director of the Botanic Gardens; Edmund Blackett, the Government Architect; Dr AT Holroyd, a member of the Legislative Council; and Henry Parkes, editor of the new newspaper the *Empire* (later to be hailed as the Father of Federation).⁵

On 28 June, the *Empire* ran a notice informing the Sydney public of a meeting to be held at the Royal Hotel in George Street. The meeting was to discuss the desirability of establishing a 'Zoological Institution' in or near the city of Sydney, for the encouragement of science and the recreation of the public.⁶ The meeting was attended by upwards of two hundred interested parties, who unanimously agreed that a zoo should be established and that the government should be approached for a loan towards capital and operating expenses. A site on a portion of Hyde Park was also discussed. A working committee of ten people was elected, who within three days had published a prospectus for the Zoological Society of Sydney. Part of the Society's stated purpose was to raise the amount of intellectual recreation available to the inhabitants of Sydney, and to lay a foundation of knowledge through moral and intellectual improvement.⁷

With what seemed like the support of the people behind them, the deputation approached the Governor General, Sir Charles Fitzroy (Governor General of the five Australian Colonies at the time), for a grant of ten hectares in the Domain. This was considered and rejected in August. A second application for five hectares at Woolloomooloo Bay, or elsewhere in the locality of Sydney was also rejected. With this, the idea of the Zoological Society of Sydney also faltered.

One of the original ambitions of the Society had been to combine the function of a zoo with an acclimatisation society for the introduction and domestication of exotic animals. While this idea had been dropped early in the Society's history, it was to reappear in the 1860s and paradoxically eventually lead to the formation of a zoological society.

3.4 The Sydney Acclimatisation Society and the NSW Zoological Society, 1861–1916

The Sydney Acclimatisation Society was formed on 4 November 1861, with Dr George Bennett as Secretary, AT Holyrod, Charles Moore, RJ Want and GK Holden, all members of the 1852 Committee. The Sydney society was stimulated by developments in Victoria where both a Zoological Society (1857) and an Acclimatisation Society (1861) had already been established. Indeed, the influence of their Victorian counterparts was obvious within the stated aims of the Sydney society, which were identical, word for word, to the Victorian charter. In part, this claimed that the object of the Acclimatisation Society was the introduction, acclimatisation and domestication of all innocuous animals, birds, fish, insects and plants, both exotic and native. However, the Society had no intention to collect zoological curiosities, nor to undertake the breeding or maintenance of its collection, a job it hoped to pass on to its members.

One of the groups that did look after the Acclimatisation Society's collection was the Botanic Gardens. The Botanic Gardens had displayed or kept animals within its boundary on and off since the governorship of Lachlan Macquarie. By 1856 it had a substantial aviary which had reputedly been built to house the collection of birds by Alfred Denison, brother of the then Governor. The first non-avian addition to the Botanic Gardens was an anteater and a Chinese deer in 1862.⁸ Two hectares of the gardens were set aside for the production of fodder but by 1871 this was not enough and the gardens were buying feed for its increasing menagerie. The keeping of the animals within the Botanic Gardens and the need to breed animals to keep customers supplied both combined to create the image of a developing zoo, as the Sydney public inevitably visited the gardens to see the animals. This was furthered when a monkey house was built in 1880 for the price of £100.⁹

By this time, however, the Acclimatisation Society was struggling to survive due to a lack of funds. Much of its money had come from a pound for pound grant by the NSW Government and member subscriptions. Annual matching grants had ceased in 1864, and by 1879 the Society was being directly challenged by a second society started by one of its founding members, Walter Bradley.

On 24 March 1879, Bradley called a meeting to consider the formation of a body to be called 'The New South Wales Acclimatisation Society' which would set about to collect and introduce all such birds and animals that could afford sport and amusement without doing injury to agriculturalists or gardeners. Animals that could provide game or birds that could enliven homes as songsters were to be favoured. When Bradley moved that his proposed New South Wales Acclimatisation Society be formed, Charles Moore pointed it out to him that this would overlap with the aims and purpose of the existing acclimatisation society. In reply, Bradley changed his proposal, instead calling for the establishment of the New South Wales Zoological Society, which was accepted.

In 1880, with Bradley as President and Holroyd as one of four vice presidents, the Society began negotiations for the lease of Billy Goat Swamp in Moore Park. Plans were submitted to Sydney Council for the erection of bird aviaries and a keeper's house, while a proposal to excavate the swamp area for the construction of a pond for fish and waterfowl was also put forward.

Between 1881 and 1914 the NSW Zoological Society operated its Zoo from Moore Park. Its original lease was extended to 12½ acres in 1894 and to 15 acres in 1906. In 1908 the prefix 'Royal' was added to the Society's title. By the mid-1880s the zoo boasted more than 60 mammal species, including Australian natives, polar bears, two Asian elephants, 100 bird species, a pond for fish and approximately 20 reptiles. The grounds were extensively landscaped and included cafes, pavilions and refreshment rooms.¹⁰

In 1907 the Society's Council decided that without the possibility of further expansion at Moore Park the site was unsuitable to continue operating as a zoo, and a new site would be required. In 1909 the State Government indicated that a request for relocation of the zoo would be considered favourably, prompting the society to begin the process of searching for a new site. In the Annual Report for 1909, locations suggested included Campbells Hill, Tempe, Upper Lane Cove, land at Long Bay, land at Maroubra, at Bondi, an estate at Harris Park, Parramatta, Scarborough Park, Rockdale, as well as land at Middle Harbour, Ashton Park, Bradleys Head and Wentworth Estate, Vacluse.¹¹

In the Annual Report of the following year, 1910, it was noted that while the State Government had yet to decide upon a suitable site for the new Zoo, the Society Council had decided to request the site at Ashton Park, to the west of Bradleys Park, from the Government. The report stated that in the opinion of 'several experts' the site was admirably suited for the purpose of a zoological garden and aquarium, and in addition was easy for the public to access at a small cost. Overlooked in the process of selection for the new Zoo was the exposed outlook of the Ashton Park site. The Metropolitan District Surveyor noted in his report for the Lands Department that the site had a rather steep slope, would lack sun in winter and was buffeted by cold southerly winds. In his opinion the zoological park would be better sited some distance away at Balmoral.¹²

The decision to relocate also caused internal problems for the Society, splitting the councillors. Councillor Mörner, who had initially pressed for a move from Moore Park, now questioned the ability of the Society to transform the Moore Park Zoological Garden into a leading zoological park which could be of any use to science. The letters pages of Sydney's newspapers kept the debate in the public eye, with increasing support for Mörner seeing first the secretary and then the president of the Society resign. A new Council was elected in 1910, including five zoologists, achieving Mörner's aim, albeit at the expense of his position.

Just as this most public debate had been settled, another began. Shortly before the 1910 election, a deputation from the Society council had approached the city council for an additional five acres (2ha) at Moore Park, a proposal which had been on the agenda prior to the counter petition being made for the harbourside location. In view of the recent wrangling, the government intervened, taking 17 hectares of Crown Land at Ashton Park and rededicating it as a zoological garden. This was announced in the Government Gazette on 24 April 1912. The site would be administered by a Trust appointed by the government, on advice from the Minister of Lands, who generously invited the Society to nominate five members of the initial seven member Trust. The establishment of the Trust

and the decision to move the Zoo to Ashton Park sealed the fate of the politically divided and still small Society. Its fate was decided in June 1912, when a Special General Meeting resolved that the Council hand over to the new Zoological Gardens Trust the sum of two thousand pounds, the animals and the buildings. Despite this, the Society did not fade away, but instead redirected its efforts into the publication of the first issue of 'The Australian Zoologist' in 1913, which remained the major medium for scientific publication in the field of zoology in Australia until the 1950s.

3.5 The Creation of Taronga Zoo

The site chosen for the site of the new Taronga Zoo was a portion of the Sydney Harbour foreshore; bounded on the east by native forests, on the west by cliffs of the eastern shore of Sirius Cove, and by the suburb of Mosman to the north (see Figure 3.1). The slope of the Zoo site was, on average, one in six, with little soil covering the rocky ground. The site was crisscrossed by five or six parallel ridges of exposed sandstone, with a natural watercourse running north-south down to the Harbour.

The topography of the site dictated the basic design of the Zoo from the start (see Figure 3.2). Due to the rugged nature of the slope, walking tracks were largely constructed along the level ground between the stony ledges with the animal exhibits built close to these. The path of the watercourse was the logical position for any freshwater ponds, while Bradleys Head Road, which ran along the eastern border, provided easy access for the public. A narrow jetty and freight tramline from the eastern shoreline to a Commonwealth Quarantine Station (inside the Zoo grounds) provided limited access for workmen and equipment.

The first meeting of the 'New Zoological Gardens Trust' was held on 31 May 1912. Within a few weeks of this, men had been employed on site to thin the undergrowth. On 14 October, an inaugural ceremony was held. New native and ornamental trees and shrubs were planted and the site was officially named Taronga Zoological Park. A contour study of the site was carried out in early 1913, and from this it was decided to utilise the upper third of the site for recreation, while the remaining two-thirds would be used for exhibits. The Secretary of the Trust, Albert Sherbourne le Souef (who had also been secretary and supervisor of the Moore Park Zoo from 1903) outlined his scheme for the new Zoo in March 1913.

Le Souef wanted a simple plan that was of benefit to the animals and the public with a clear circulation route traversing the site from east to west down the slope (see Figures 3.3 and 3.4). All the exhibits were to be designed so as to be able to be viewed from two or more sides, preventing crowd build-up around one part of an exhibit. The enclosures for the animals were also to be constructed in the most open plan possible, with no roof or bars, but with a surrounding concrete wall and moat or ditch separating the public from the animals (see Figure 3.5). The Zoo was to be ringed by one 'heavy cart' road from access for maintenance and construction, otherwise all the access was to be via footpath.

Le Souef had been inspired in his design by the Hagenbeck Zoo in Hamburg, Germany. In 1908 Le Souef and other Council members had been sent overseas to examine zoos and aquariums. Le Souef had been most impressed with the zoo of Carl Hagenbeck, a former fish merchant who had his start by displaying seals caught in his nets. He then moved into supplying seals and other wild animals to zoos and circuses, and from this he had been able to determine the height and distances that each species could leap. With this knowledge, Hagenbeck had then designed dry moats that could safely separate animals from visitors without obstructing the view.

Hagenbeck's Zoo also employed the use of sculptured artificial rock formations to provide an interesting topography to a flat site, and to house hidden night accommodation for the animals. Opened in 1907, Hagenbeck's Zoo was revolutionary for the time, and is still regarded as one of the best designed zoos in the world.¹³

Construction of the Zoo continued throughout 1913 and 1914. By September, the perimeter fence, temporary gates, and enough enclosures, aviaries, paths and ponds had been completed and the public was admitted at a small charge (see Figures 3.6 and 3.7). Included in the first enclosures were five circular monkey enclosures (ten were planned but never completed) one of which remains as the Spider Monkey exhibit.¹⁴ The massive design and construction job was taken over by the Public Works Department, from architect and Trust Vice-President Colonel Spain, who was soon to enlist in the AIF for overseas service. The Public Works designed the Upper and Lower Entrances, the Administrative Offices and Refreshment Rooms, the Elephant Temple, Bear and Carnivore Pits and some of the aviaries.

With the basic infrastructure in place, the job of transferring the animals from Moore Park to Taronga could begin. This transfer captured the imagination of the Sydney public, especially when it came to the turn of Jessie the Elephant. Jessie was one of the two elephants housed at Moore Park from 1883. The other, Jumbo, had died in 1896. While the smaller animals could be caged for the journey across the harbour, Jessie was too large for this method. The *Sydney Morning Herald* reported that Jessie would be walked through Sydney, accompanied by two circus elephants to keep her calm. She would then be led onto a vehicular ferry and transported to Taronga. As it happened, Jessie was one of the first major animals to arrive, alighting at Taronga at 6.15am on 24 September 1916. By the time of the official opening on Saturday, 7 October, 177 animals and 329 birds had been transferred from Moore Park, which was then closed down.¹⁵ The construction had been financed from the Public Works Fund (£265,000) and by a grant from Consolidated Revenue (£4,000).

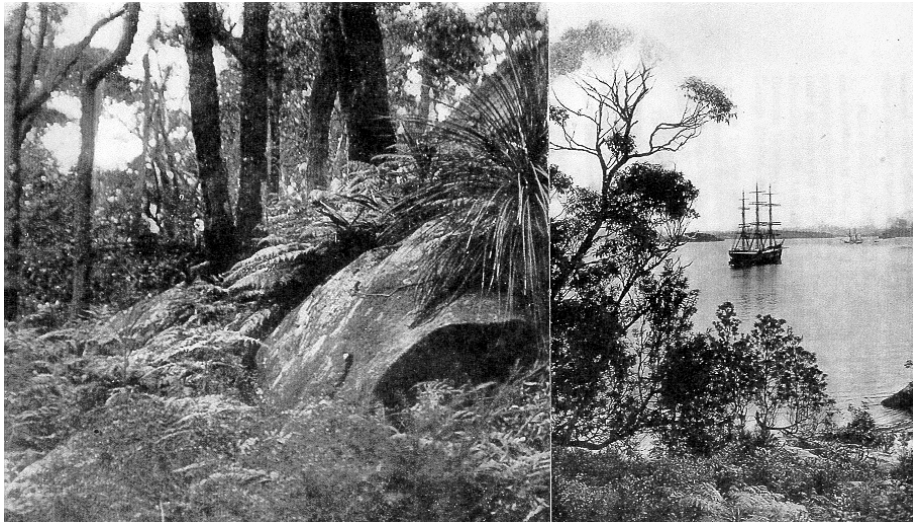


Figure 3.1 View of the Taronga Zoo site prior to the start of construction. When the site was selected it was still covered in virgin Sydney bushland. Note the sandstone outcrop in the foreground. The natural sandstone ridges dictated the eventual layout of the Zoo.

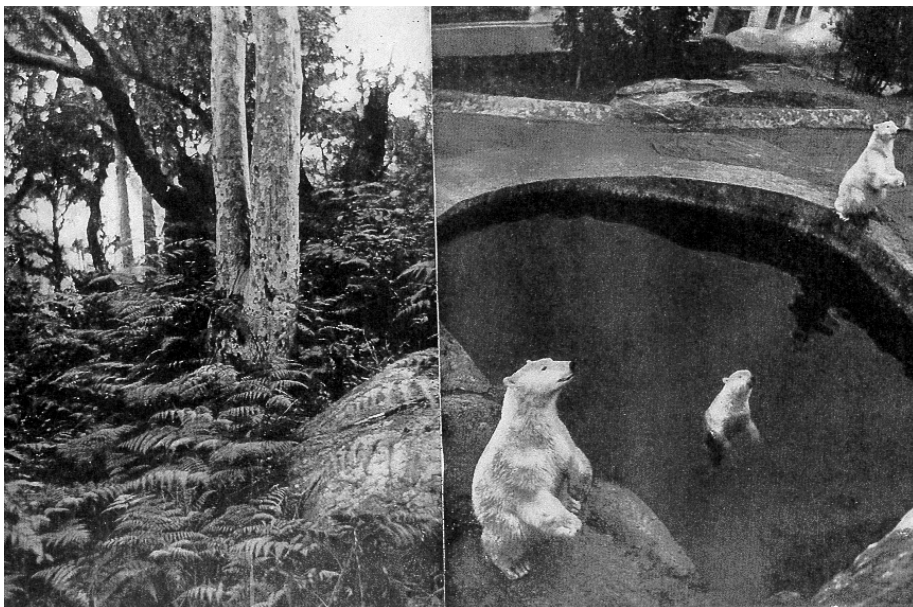


Figure 3.2 Two features of Taronga that are no more. On the left is the natural bushland that covered the site prior to the start of construction, while on the right is the polar bear enclosure that was built on this portion. Polar bears are no longer exhibited at Taronga. The construction of the Zoo resulted in a dramatic change in the appearance of the site (Australian Zoologist Vol 1, 1917).

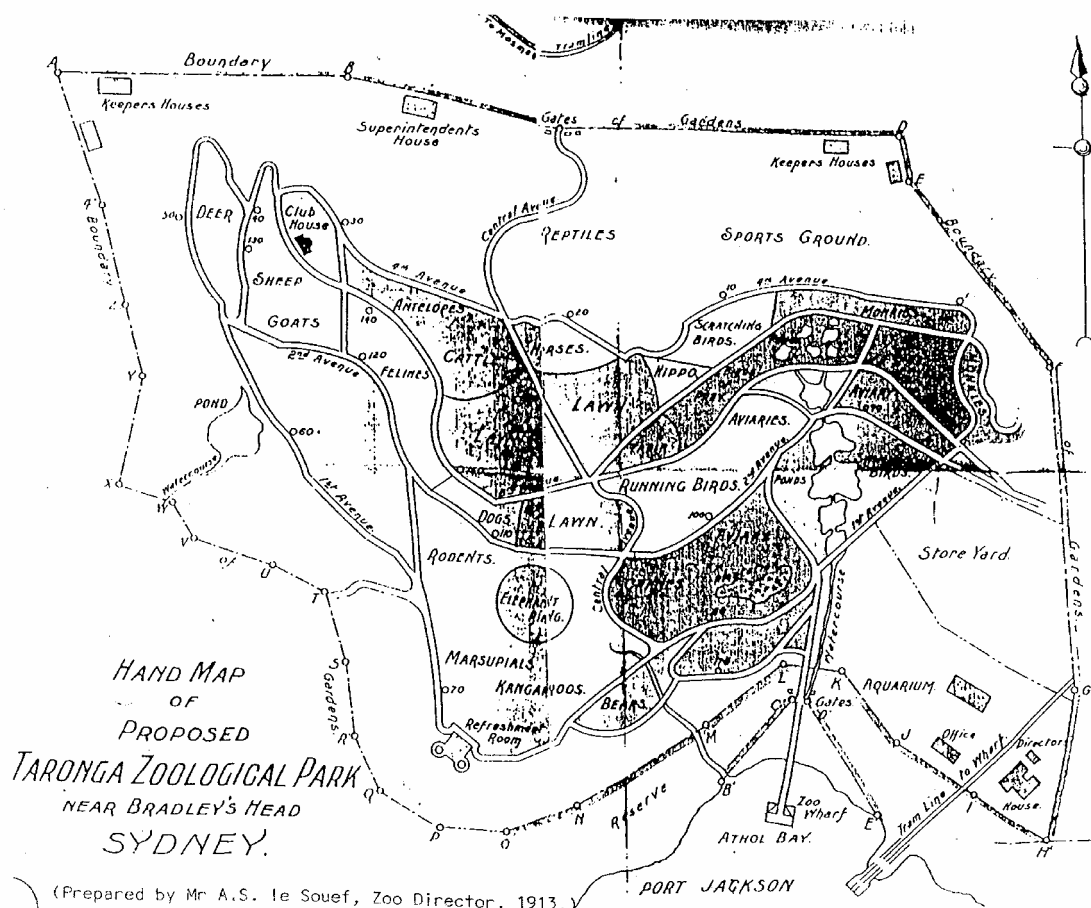


Figure 3.3 Hand Map of Proposed Taronga Zoological Park near Bradleys Head, Sydney, 1913. This plan shows the original concept design for the Zoo. Note the centre path leading top to bottom with radiating arms extending along the sandstone ridge lines. The enclosures were designed to face out onto these paths (Taronga Zoo Archive).

Figure 3.4
Taronga Zoo site
prior to major works
commencing. Before
any exhibit space
could be started, the
paths had to be laid
down. This
photograph, c1914,
clearly shows the
natural landscape
prior to the Zoo.



Figure 3.5
The construction of
one of the circular
monkey pits, c1915.
Note the natural
bushland in the
background (Taronga
Zoo Archives).





Figure 3.6 One of the original monkey pits (photo taken c1920). One monkey pit, modified by the addition of a wall to the south and a roof structure, remains today at Taronga.



Figure 3.7 View south from Taronga Zoo across the harbour. In the right of the photo notice the caged bird exhibit, examples of which remain on-site. The path layout was a deliberate scheme, designed to draw the visitor along to each exhibit.

3.6 Taronga Zoo: 1916–1940

The official opening of the Zoo was attended by 1,200 guests, with the then Premier of New South Wales, the Hon WJ Holman, presiding. While the new Zoo got off to a good start in the eyes of the public, it had been operating officially for only ten months when it was taken over by the State Government, under its emergency powers, in August 1917 to accommodate strike breakers during the Railway Tramway and Miners Strike. Although it is not entirely clear why the Zoo was chosen for accommodation during this period, it meant that the Zoo was closed to the public from 8 August to 26 October, 1917.

Upon reopening, construction work continued apace. Between 1917 and 1919 the 'backyard' area was organised and completed with workshops, an incinerator, food and storage sheds, and off-exhibit cages for sick and newly-arrived animals all constructed. Refreshment Rooms from Moore Park were re-erected close to the Elephant House. There has been speculation about the fate of the Moore Park buildings, and which, if any, were to be transferred to Taronga. Permission had been given to move any or all of the Moore Park structures, however Ronald Strahan, Director of Taronga from 1967 to 1974, believed that a large timber barn and some of the refreshment rooms were the only ones that could be positively identified.¹⁶

The new Refreshment Rooms were opened in 1917, capable of holding 300 people, later extended to accommodate 500. The complex included a bakery that provided fresh bread and scones to Zoo visitors until the late 1960s (see Figure 3.8). With the completion of the Refreshment Rooms, the basic elements of the Zoo were in place: a wide range of exhibits interconnected by walking paths through a landscaped terrain with over 20,000 trees and shrubs that had been planted over the previous five years.

While the period 1917–1919 was witness to the establishment of the Zoo infrastructure, a planned building and maintenance program continued after this date.

Throughout the 1920s and up to the beginning of World War II, Taronga continued with its building works. The work demonstrated both the concept of the bar-less zoo as well as the caged system of animal exhibition. In 1920 a deep rectangular baboon enclosure was excavated close to the upper entrance. The enclosure was a stark, smooth-sided hole, with a mound in the centre for the baboons to climb. It was replaced in the 1970s by the nocturnal house. The baboon enclosure was followed in 1921 by a chimpanzee cage, and a game bird aviary at the cost of £1850 (£500 of which was donated by Anthony Horden). A bandstand was added in 1922, later demolished to make way for the Platypus House.

Between 1923 and 1925 the Zoo added the first Giraffe House, a Polar Bear Enclosure, Hippopotamus Enclosure, two enclosures for big cats and a number of paddocks to house ostriches, camels and llamas. Not all the work was as innovative as the early moated enclosures, the hippopotamus in particular were housed in inadequate conditions. During this period the two metres

high stone, concrete and wire perimeter fence was also completed, designed as much to keep the animals in as to keep unwanted intruders out.

The main attraction to be added during the 1920s period was the Aquarium. Approved by the Trustees in 1925, the Aquarium was built in two stages, with the first stage near the lower entrance opened in July 1927 and the second stage opened in March 1929. The Government Architect was employed to build the Aquarium with input from the Chairman of the Trust, the Hon Fred Flowers, MLC. The building was designed to extend up the slope of the Zoo on a series of ten pillars. The front lay over the lower entrance, while the interior displayed free-standing aquarium tanks around the walls with a central shark pool. While it was an instant popular success with Zoo visitors, the building itself was not well designed for its purpose and began to experience troubles soon after completion. Within two years of the completion of the first stage, cracks began to appear in the roof, while an inspection after ten years showed such serious deterioration of the building that parts of the lower section were in danger of collapse, resulting in it being closed to visitors for repairs. The tanks had also been enclosed behind a mock wall made to resemble a grotto in an underwater cave. The design restricted access for keepers to the exhibits, making cleaning and maintenance difficult.

The second section of the Aquarium was designed for tropical fish, and experienced the same difficulties as the earlier section as well as some new ones. The first problem was one with the reticulation of warm water through the system. So inadequate was it that it prompted the then Vice-Chairman of the Marine Section of the Zoological Society to write to the Premier to complain and recommend that management of the facility be placed under fisheries experts in the Department of Agriculture. Although expensive repairs were carried out, the Aquarium continued to come under criticism. The first section was demolished in 1981, having become too unsafe to repair, while the upper section was closed to the public in 1991.¹⁷

While the Aquarium was under construction, one of Taronga Zoo's early landscape features was being completed. The Floral Clock, designed by James Ritchie and Son of Edinburgh, began keeping time on 19 December 1928. The hands, numerals and surrounds of the clock were planted with upwards of 75,000 flowers, according to an article on the Zoo from 1934.¹⁸

As the Zoo rapidly became established, tension began to appear between it and Mosman Council in the late 1920s. Taronga Zoo and Mosman Municipal Council came into dispute over the Zoo's payment of Council rates. The Zoo, for the years 1925–28, refused to pay the rates to the Council on the basis that it was a Public Reserve under the Local Government Act and was therefore exempt. However, with the Zoo's unimproved capital value being set at £50,000, and the rate assessment being £1,093 15s, the Council saw the issue somewhat differently. The matter came to a head in 1929 when the Council took the dispute before a full bench of the Supreme Court. In *Municipal Council of Mosman v Spain and Others*, the Council argued that as not all members of the community had the same visiting rights to the site (some members of the Royal Zoological Society could access the Zoo after hours and without payment) then the Zoo could not be classified as a

public reserve and so should pay Council rates. The Court was of a different mind, however, declaring that although some members of the Society could indeed access the Zoo after hours, this did not alter the fact that it was a Public Reserve under Section 132 of the Act, and was therefore exempt from rates.¹⁹

Coming into the 1930s, the Zoo experienced a number of changes, due to the economic depression and a different attitude to the keeping of animals. In the early part of the decade, a number of amusements were added to the Zoo, including a miniature train and merry-go-round operating close to the elephant walk, which created a mini-fairground atmosphere. (The elephants at the Zoo had been employed to carry visitors around on their back since the earliest days of the Zoo). Then, in 1933, Colonel Spain made the decision to have the original lion enclosure filled in and replaced with a mesh barrier. The decision was significant in that the original lion enclosure had been a centre-piece of the bar-less zoo ideal that Taronga had been designed upon. The reason for the change was that it would allow the public to move closer to the lion cubs and provide the lions with more time in the sunlight, without the shadows of the former den. In 1940 all but one of the bear enclosures were converted in the same fashion, making them into pits with visitors walkways across the top.

Over the next ten years, most of the moated displays were converted and works were undertaken on existing exhibits. The moats were modified as they took up a lot of room, a problem that was exacerbated as more and more animals were placed on exhibition. The moats could also prove to be dangerous to the animals, as was dramatically shown in 1949 when one of the Zoo's elephants fell into one and was killed. Other works included some modifications to the Seal Pool, including a new balustrade (see Figure 3.9), the replacement of the original moat of lion and tiger enclosures with a mesh barrier and the conversion of the bear exhibits from a moated display to a pit exhibit.

From the opening of the Zoo until the outbreak of World War II, £281,000 had been spent on capital works.



Figure 3.8 The 1917 Refreshment Rooms, demolished in 1986 after fire damage.



Figure 3.9 The Seal Pond, 1940.

3.7 Taronga Zoo: 1941–1967

In January 1941 Edward Hallstrom was appointed as a Trustee to the Zoo, beginning a twenty-six year dominance in the Zoo's affairs. Already well known as a benefactor and contributor to the Zoo, Hallstrom, a well-known and wealthy Sydney businessman (famous for his refrigerator factory located in Willoughby), had been a member of the Royal Zoological Society since 1933 and had donated two black rhinoceroses in 1938 and a pair of black glossy cockatoos in 1940.

Hallstrom's appointment as a trustee was unique in that an outgoing trustee, Mr AF Bassett Hull, resigned his position on the condition that Hallstrom was chosen to replace him. This was remarkable due to the fact that the choice of new Trustees was normally a job for the Minister to decide. Despite this unusual start, Hallstrom wasted no time in establishing himself within the Zoo. The death in July and August 1943 of a giraffe, two hippopotamuses and a rhinoceros prompted Hallstrom to write a report on conditions within the Zoo's enclosures. Hallstrom and some other Trustees who had been present at the autopsies suspected that the animals' deaths could be attributed to their eating too much sand or gravel with the food. If this was the case, it reflected badly on the Superintendent and Veterinarian RA Patten, who was under increasing pressure from war-time shortages. Hallstrom's report on the condition of twenty-seven kangaroo and ungulate enclosures listed ten as satisfactory, eleven as being in bad condition and five as being in very bad condition. Accepting this report, the Trust then accepted Hallstrom's offer to provide men and materials from his factory to repair the enclosures. This was the first example of many financial contributions made to the Zoo by Hallstrom while he was on staff.²⁰

While a trustee (1941–1967), Hallstrom contributed upwards of £150,000 in animal donations, enclosure construction and repairs, as well as the purchase of a farm for the Zoo in 1947. Examples of his contributions included:

- £2,000 towards building materials to reconstruct the eastern half of the Refreshment Rooms that had been destroyed by fire in 1943;
- £8,500 loan to erect a two-storey office block (named in his honour) in 1945;
- £2,250 for a southern boundary wall and a row of parrot aviaries in November 1945;
- £2,000 to cover the purchase and transport of two pairs of black rhinoceroses and African elephants in 1946;
- £5,000 donation for a collection of New Guinean birds and animals in 1947; and
- £130,000 on purchase and improvements of property at Mona Vale for use as farmland to provide fresh produce for the animals between 1947 and 1961.

In 1948 Hallstrom's position was strengthened with his election as President of the Taronga Zoological Trust, replacing the Hon D Clyne.

Hallstrom's first contribution to Zoo policy had been to recommend that all the enclosures be provided with concrete floors, a recommendation made in 1943 after the inquiry into the animal deaths mentioned above. His aim was achieved in 1956. Within the same year, Hallstrom initiated the construction of concrete walls to block cold southerly winds and reduce the impact on the animals. While the intention of the program was admirable, the result was to transform many of the more open enclosures into concrete pits, taking the Zoo further away from its original Hagenbeck-inspired design. Hallstrom contributed ideas for zoo design right through his term on the Zoo's trust. His approach to design was described as that of an engineer, being practical but not always sensitive.²¹ This was evident in his design for an Ape House, which consisted of five exhibit compartments with sleeping dens and transfer facilities in the rear. While chimpanzees and orangutans bred well in the enclosure, the concrete and mesh enclosure was generally regarded as a poor example and boring for the animals.

In 1952, in recognition for his work in and contributions to the Zoo, Edward Hallstrom was made a Knight Bachelor in the Queen's Birthday Honours List.

In September 1956, through an Act of Parliament, the Taronga Zoological Park Trust was made a Body Corporate, enabling it to function more smoothly within its role as the commercial enterprise that it had become. The Act also extended Hallstrom's term of office, changing the statutory age limit from seventy to seventy-three.

Changes to public access were implemented in 1959. As well as the ferry service to the Zoo, the site was also served by regular tram service. In 1957 the Trust was informed that from 1959 tram services would be replaced by buses, as part of the overall shutdown of Sydney's tram network. If buses were to meet the ferry, then a large turning circle would be required at the bottom of the road. As the road was officially owned by the Trust, there was some concern that they would be required to bear the cost of the large excavation that would be required for this job. However, in an agreement with the government, the Trust kept the road as part of their property while having it designated a main road and therefore transferring the responsibility of maintenance to the Department of Main Roads.

During the same year, Hallstrom's term in office was again extended, this time by appointing him as honorary Director. This meant that he could hold this position until his resignation, death or removal by a resolution of the Trustees.

Additions in the first half of the 1960s included a new Snake House (completed in 1962), an extended Gorilla House (completed in 1963), a Dolphin Pool (deepening of the Seal Pool) and new Tiger Enclosures and extension to the entrance carpark (see Figures 3.10 and 3.11). The Tiger Enclosures were the last major project that Hallstrom was involved in and epitomised his views on animal display. The enclosure included five long sloping cages, entirely made of concrete, with rectangular concrete shelves for the tigers to rest on with a public viewing area at one end and bars

and mesh separating them from the exhibit. The cages were stark and sterile, easily cleaned and with first class handling and rear facilities.

Of more consequence for the Trustees were two reports into the Zoo's administration and zoological aspects. The first report was commissioned in January 1966, under instruction of the Hon TL Lewis, Minister for Lands. Lewis appointed two inspectors from the Public Service Board, N Thomson and JT Quinn, to report on the administration and business aspects of the Zoo. Thomson and Quinn's recommendations included a two-year moratorium on all but the most necessary capital works in an attempt to reduce a £30,000 deficit, and a comment on the overstocking within the Zoo. The report also recommended a program of progressive redesign and upgrade to suit changing needs in Zoo and animal management.

In October 1966, the second report, this time on the zoological aspects, was started. For the second report, the Minister for Lands employed the Director of Zurich Zoo, Dr H Hediger, a member of the International Union of Directors of Zoological Gardens (IUDZG) and an authority on the psychology of captive animals. Hediger was considered to be a controversial figure within zoology due to his ideas on animal diet and enclosure design. Hediger's report was handed to the Trust on 28 October. The central issue to arise from his investigation was the inability of a major zoo to be run by only one person, that being Sir Edward Hallstrom. Other issues cited included the absence of a veterinarian or zoologist on the staff, the small number of post-mortem examinations carried out, meaning a lack of information for the Zoo to prevent unnecessary animal deaths, and the overuse of concrete floors in the enclosures. Hediger made a number of recommendations regarding the organisation, records, education, research, public relations, safety and design aspects of the Zoo. Needless to say, the report caused a major stir within the Trust, many of whom saw it as a direct attack on themselves, none more so than Sir Edward. Nevertheless, after eleven months debate many of the recommendations were accepted by the Trust.²²

Sir Edward Hallstrom retired early in 1967 and was given the title of Director Emeritus.



Figure 3.10
1962 aerial photograph of Taronga Zoo looking northeast. Note the work being carried out in the extension of the entrance carpark in the top left corner. Also of note is the large monkey pit in the top right corner and the obvious pathways that wind their way through the site, following the natural topography (Taronga Zoo Archives).

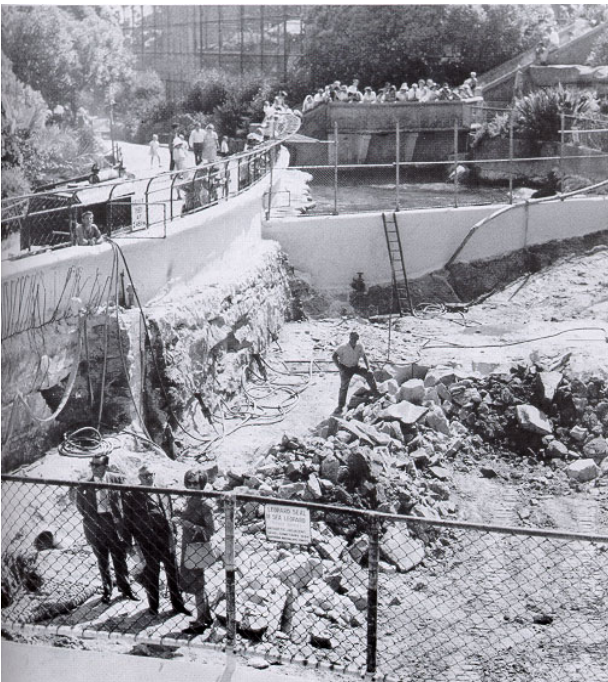


Figure 3.11
Modifications made to the Seal Pool for conversion to Dolphin Pool, c1964.

3.8 Taronga Zoo: 1967–1986

Following the tabling of the Thompson–Quinn report, the Hediger report and the retirement of Sir Edward Hallstrom, Taronga Zoo entered a period of restructuring. Recommendations arising from the two reports set the basis for a period of both physical and ideological change within the Zoo. Under a new leadership, the Zoo set out to redevelop many of its aging displays, and through the appointment of new professional staff, namely zoologists and veterinarians, establish itself as a Zoo of world-class standing. The new director, Ronald Strahan, was the first zoologist appointed as Director of the Zoo. Strahan considered that many of the Zoo's problems stemmed from the lack of zoological input and he was determined to create a true zoological park at Taronga. With a series of government grants throughout the late 1960s and into the 1970s, Strahan began to implement his plan. He employed a staff veterinarian, established a system of promotion within the Zoo to mirror keeper's experience levels and thereby create an incentive system for continual improvement, and created the foundations for an education program for primary and secondary students through the employment of an education officer.

In 1970 the first Masterplan for Taronga Zoo was handed down. The Masterplan had developed out of another of Strahan's initiatives, the Zoo's first planning committee, which had been established in 1968. In the writing of the Masterplan a detailed design for new exhibits and a proposed new road access system were also formulated. For the roads, the committee adopted a 'spine and ribs' approach, an idea that had been raised during a program with third year architecture students from the University of NSW. The idea was based on the separation of vehicular and pedestrian traffic, a problem that had plagued Taronga from the outset. Visitors to the Zoo would move between the upper and lower areas via a wide, generally north–south spine with three east–west ribs running from this. The exhibits would then be arranged to face these ribs, with service vehicles moving around the Zoo via a ring road with arterials to access the rear of the exhibits.

The committee also investigated the upgrading of the Zoo's sewerage and waste water disposal, water reticulation, drainage and electrical supply. All the services required a major overhaul before any serious work could begin on updating the exhibits.²³

The first exhibits to be revamped were those of the Australian collection. The nocturnal habits of many of Australia's native mammals had created a sad disinterest in the public toward them. In his vision of Taronga, Strahan aimed to display the unique diversity of Australian natives and in doing so to change the perception of the public. A number of new exciting exhibits were built during the late 1960s and early 1970s, including a new Kangaroo Enclosure, the Platypus House, Waterholes for native waterfowl, a Koala Exhibit, a Nocturnal House and Rainforest Aviary (see Figure 3.12). Combined, these exhibits gave a new face to Australian native animals and all proved popular with visitors. Exhibits such as the Nocturnal House and the Rainforest Aviary were recognised within the zoological profession as exciting new displays incorporating modern design within the research and

entertainment needs of a zoo. They also came at a time when a new sense of nationalism was growing in Australia, with renewed interest in Australia's history and environment generally.

Throughout this period, the expertise of Taronga grew and with it did the Zoo's national and international reputation in zoological and biological fields. The appointment in 1970 of two new curators enhanced this growing reputation. Mr UE Friese, Curator of the Aquarium, and Mr KA Muller, Curator of Birds, were both appointed to head the respective departments, and were expected to establish management, education and exhibition principles, give consideration to which species should be held, develop research projects and encourage scientific co-operation with museums and other institutions. A new approach to the collection was also implemented, with each new acquisition being based on its message to the public and its relevance to the rest of the collection. In 1972 a new Curator of Mammals was also added, firmly positioning the Zoo as a major voice in animal management.

While the Zoo was repositioning itself as an authority in animal management, it was facing the more practical problem of low attendance and falling revenue. The appointment of the new director, Dr WP Crowcroft in September 1975, coincided with the lowest attendance rate in a decade and an increase in total expenditure of 80 per cent. One factor of this, which complicated matters, was the increase in the proportion of children among paying visitors: up to 41 per cent in 1975. The result was a reduction in per capita takings at the gate and the realisation that the Zoo's education prowess was reducing the need for parents to take their children to the Zoo and therefore starving the Zoo of funds. The reaction from the Board was to suggest the reintroduction of animal performances, an idea that the Committee rejected.

The Zoo's financial position was bettered somewhat from 1976 when the Board persuaded the State Government to provide an operating subsidy of \$175,000. A change in government in the same year led to further contributions, with an average of \$120,000 per year from 1977–81, more than was required per year, and allowing an accumulation exceeding \$1 million by 1981.²⁴

From the mid-1970s until the mid-1980s, Taronga consolidated its position as a world-class zoo with developments in scientific, educational and display aspects. Between 1975 and 1978, two of the Zoo's major infrastructure projects were completed: the high-tension electricity reticulation and animal waste plant. These two projects stabilised two of the Zoo's main operating problems, reliable power supply and removal of animal waste from the public system. A new bird house was also completed during this period. Outside the public area, the complex included incubators, rooms for brooding and raising young birds, feed areas and quarantine and acclimatisation areas.

In 1978, in line with Taronga's growing scientific role, the second stage of the Veterinary Quarantine Centre was opened, comprising a hospital with operating theatre, pathology, laboratory, hospital cages, veterinary records centre, offices and reception area. The centre also included a public entrance where sick or injured native animals could be brought for treatment. Although it had been

ten years since a veterinarian had been appointed to the Zoo, Taronga was now equipped with world-class facilities.²⁵

New directions in exhibit design were also a feature of the mid-1970s to early-1980s at Taronga. Although a new aquarium building was planned but never eventuated, a number of other exhibits were completed that provided a new public face for the collection. In 1969 the Zoo had received a pair of numbats from Western Australia, endangered and difficult to keep in captivity. Taronga Zoo managed to keep the pair for seven years, the previous record for a zoo having been one month. In 1976 Taronga's first 'environmental' exhibit opened — the African Swamp exhibit. The exhibit was centred around an artificial pool, thickly planted with reeds, that provided a certain amount of cover for the animals (in this case antelopes). The exhibit attempted to provide a more natural experience for both animal and visitor, with the visitor having to display some patience to view the animals. This was followed by the redesign of the Chilean Flamingos area, with their old circular enclosure being redeveloped to include a moat in which other waterfowl could swim, and a muddy pool constructed in the centre of the exhibit to encourage nest-building and breeding.

1976 also saw the opening of Taronga's Education centre. Originally approved in 1974, government wrangling had delayed and reduced the original project. Nevertheless the opening of the centre in 1976 provided the Zoo with another world-class facility, including five teachers offering educational services from primary to university level. Loosely associated with this was the opening of the Friendship Farm, which held mainly domestic mammals and some birds, for hands-on displays. In May 1979, after a grant was received from the State Government, a Seal Theatre was opened. The theatre was both a concession to the idea of performing animals in the Zoo as entertainment, and an educational tool in that the seals performed natural behaviours, with the trainers using it to explain aspects of seal biology to the public.

Ronald Strahan had resigned as director in 1974 and Mr Brydon-Brown took over the position as acting director in September of that year. In 1975 Mr Peter Crowcroft was appointed Director of Taronga Zoo retiring in May 1979 to take up a position in Toronto, Canada. Mr Jack L Throp, Director of Honolulu Zoo, was appointed director in 1979. Throp's arrival coincided with two consecutive record years for attendances, and the opening of the new Chimpanzee Enclosure. The Zoo Friends' Association was established in 1982 to 1983.

The Chimpanzee Park, in planning since the early 1970s, opened to critical and public acclaim in 1980 (see Figure 3.13). As another example of the environmental style of exhibit, the Chimpanzee Park incorporated a long grassed area, moated in the front, with viewing windows at either end. The uneven terrain, stream and trees (live and dead) provided the animals with enough room to explore and exercise in. The large group of chimpanzees also allowed for a social hierarchy to develop, creating an equally compelling atmosphere for the visitor.

Following the Chimpanzee Exhibit, Throp oversaw a number of other significant changes to the Zoo's exhibits. The view of the Giraffe Enclosure was opened up with the removal of a high brick wall running along the southern boundary, and its replacement with a low wooden fence, providing a fine view of the harbour. Next, the individual bear pits in the lower Zoo were combined into one enclosure which, in turn, was landscaped to provide the impression of a North American landscape for three black bears. A second tank was added to the Platypus House as well as an indoor–outdoor section for the display of echidnas, which was completed in 1982. Work was also undertaken on the Elephant Enclosure, removing a Hallstrom-era barrier fence and doubling the total area available for the elephants to roam within.

Outside the Zoo, the top entrance and carpark area was also remodelled. Re-paving, defined bus parking areas, a new turning circle and a boom gate all added some order to the public entrance area. The planting of some 300 native trees and shrubs, providing a gentle transition from Ashton Park next door, helped to soften the appearance of the site.

The 1980s were dominated by a renewed interest in the aquatic aspects of the Zoo, being the Aquarium and a proposed Marinelife Protection Zone. Interest in the Aquarium had surfaced again in 1982 when the director, the curator of the Aquarium and an architect from the Department of Public Works went on a fact-finding mission to inspect twenty aquariums and marine parks around the world. In May 1984 it was estimated that a new aquarium would cost an estimated \$4,500,000, with a further \$1,000,000 required for landscaping and contingencies. The Board noted that approximately \$5,000,000 would be available from the sale of the Mona Vale farm, but did express some misgivings regarding the project and established a committee to investigate further.

However, as time progressed, a number of factors began to work against the proposal. The construction of the 'Taronga Centre', a large office and function centre on the site of the old Refreshment Rooms, placed a strain on funds, while the Zoo's involvement in a National Aquarium at Darling Harbour further delayed any action and resulted in a lessening of interest in the project. Meanwhile a seal exhibit, Seal Cove, had been constructed, and opened in October 1986. Throp's proposal for a Marinelife Protection Zone also contributed to the demise of the Aquarium. This project was designed to provide a safe zone within the harbour, adjacent to the Zoo's land, in which fairy penguins and fur seals would be encouraged to breed. The project received special funding from the Commonwealth Government as part of Australia's bicentennial celebrations, and work began. The design included nets within the harbour to enclose the area and fences on the land side to protect the colonies from dogs and foxes. The sea-side netting was suspended between two wooden piled structures, supported by a series of pontoons. The pontoons also supported a rigid fence which continued onto land.



Figure 3.12 A model of the new Koala House prepared by the NSW Public Works Department.



Figure 3.13 Chimpanzee Park, opened 1980.

However, before any animals could be introduced, problems began to appear. Firstly the pontoons began to sink under the weight of accumulated sea growth and barnacles. As ongoing cleaning was too expensive, it was proposed that the pontoons be replaced by rigid poles. These in turn were rejected for a combination of reasons, including the inhibiting cost of starting again, and the need to have the poles extend well out of the water to accommodate the change in tides. Furthermore, it was pointed out that if the animals did begin to breed, the enclosure would quickly become overcrowded, while the National Parks and Wildlife Service was against the mixing of semi-tame and any wild populations because of the risk of disease from the Zoo animals. As the enclosure would have been subjected to Zoo run-off, the risk of disease was real. With mounting opposition the project was finally abandoned in 1990.²⁶

During this process, Throp resigned as Director on the 31 December 1986 being replaced by JD Kelly in 1987. As well as his building program, Throp was remembered for his foresight in animal management. Throp had convinced zoo directors within Australasia, working within the Association of Zoo Directors of Australia and New Zealand, that in the interests of the species displayed, the various animal collections of the public zoos should be managed as one. This meant that the captive populations within the various zoos could be assessed in terms of their total representation and that strategies for breeding could be carefully formulated. Furthermore, the zoos would co-operate with the movement of species between zoos, which species are imported into the region and where they should be distributed, emphasising the important role played by zoos in the conservation of wildlife.

3.9 Taronga Zoo: 1987–Present

Dr John Kelly was appointed as Director and Chief Executive of Taronga Zoo and Western Plains Zoo on 12 October 1987. In the late 1980s and into the early 1990s, the Zoo continued to struggle with the sometimes conflicting aspects of zoology and economics. In November 1987 the opening of the Taronga Centre provided a major boost to the Zoo's finances. With its restaurant and function rooms, the Centre could attract patrons outside the usual operating hours of the Zoo. The second floor terrace of the Centre was enclosed during 1991–92, using money attained through a special loan of \$2,600,000, provided by the Premier to assist with capital works.²⁷ The Taronga Aerial Cabin Ride was also opened in 1987.

During 1988 Taronga Zoo displayed two giant pandas which was the most successful exhibit in the Zoo's history at that time (see Figure 3.14). The loan of the pandas was China's Bicentennial Gift to Australia in 1988, and was the highlight of the year for Taronga Zoo. During the three months that the animals were on loan 623,390 paying visitors came to Taronga.

As part of a major redevelopment program for Taronga Zoo, Dr John Kelly undertook an Overseas Study Tour in April–May 1989, during which he visited fifteen major overseas zoos, research and conservation institutes. The tour resulted in a report to the Zoological Park Board containing some 155 recommendations regarding opportunities for growth, ideas for marketing, presentation of animal exhibits and support facilities, education and management of endangered species. A Masterplan for Taronga Zoo was also prepared during 1989 by the NSW Public Works Department which set a broad conceptual framework for the development. The major goals of the Masterplan were to develop all exhibits and visitor facilities to an international standard commensurate with Taronga's role as one of Australia's outstanding tourist attractions; to ensure high standards in animal management and services facilities to enable fulfilment of the Zoo's important role in species conservation and research and community education; and to ensure the planned development of facilities reflected the Board's corporate mission and objectives.

On 13 November 1989 the Zoological Parks Board opened its Conservation and Research Centre at Taronga, the first such facility in any Australasian zoo and one of the few such centres associated with zoos around the world. This centre was established to conduct conservation-orientated research using the skill and expertise within the zoos, in collaboration with external organisations, such as universities and research institutions.

During 1990 to 1991, the refurbished and repopulated Rainforest Aviary, originally constructed in 1973, was reopened. The works included the upgrading of the mesh and the replacement of its elevated timber walkway with a ground level path. During the same period a number of new feline displays were finalised, with the introduction of the Snow Leopard Mountain exhibit designed by the Public Works Department. The Snow Leopard Mountain was officially opened on 18 May 1990. It was the Zoo's first all-weather, large animal exhibit, incorporating modern and innovative construction techniques, including the first use of tension wires at Taronga as a barrier method and represented the first phase in the redevelopment of the ageing carnivore complex. Other works undertaken at the Zoo centred around the upgrading of old facilities and included the meerkats, fishing cats (adapted from the previous Jaguar Exhibit), oriental small-clawed otters, lions and white tigers. Particular attention was paid to improving the older buildings to conform to the *Occupational Health and Safety Act and the Enclosed Animals Protection Act*, which had been introduced in 1986.

Exhibits of Golden Lion Tamarin, Reticulated Pythons and Komodo Dragons were also created during the early 1990s. Other displays dating from this period include the upgraded Platypus House, which required extensive refurbishment due to structural deficiencies, entrance modifications and a new shingle roof; and a new Koalas In Focus exhibit providing facilities for visitors to be photographed with koalas.

In line with the Zoo's increasing awareness of its role as a scientific institution, Kelly initiated a program whereby keepers were required to have a minimum level of biological education, achieved through a three-year Technical College Certificate, with many continuing to university. The result

was an increase in the professional knowledge of those in direct contact with the animals of the collection, and an interactive process of care for the animals involving the keepers, curators and veterinarians.

Two more major exhibits were designed and opened at Taronga in the mid to late-1990s, these being the new Orang-utan Rainforest Home (1991) and Gorilla Forest (1996). The completion of these two enclosures reinstated Taronga's ape population into well-designed exhibits, along the line of the earlier Chimpanzee Park. The idea for new enclosures for the three ape groups had been initially raised under the directorship of Ronald Strahan, who envisioned three adjoining moated exhibits. This concept was never realised, with the chimpanzee exhibit being the only one completed. The opening of the gorilla and orang-utan enclosures completed this concept, and provided good examples of the change in exhibit style, from the boxed cages to open free-ranging (within a limited space) environmental exhibits, more comfortable for the animal and the visitor. These projects were designed to incorporate the most up to date animal management facilities available with off-exhibit areas including night dens, wet-weather exercise yards, modern keeper facilities and food preparation and storage areas. To add further interest and variety for visitors, the Orang-utan Rainforest was designed as a multi-species exhibit with the introduction of other primates such as gibbons.

Due to the significant increase in the capital works program during this time, the senior position of Manager, Planning Design and Development was created to oversee the exhibit development process. The position was filled in late 1992 by Peter Leslie, an officer previously with the New South Wales Public Works Department.

The existing Sumatran Tiger exhibit was refurbished in 1992 incorporating updated animal management facilities and providing a new semicircular window of 39mm thick safety glass to allow visitors to view the animals from as close as half a metre (see Figure 3.15).

Stages 2 and 3 of the Cats of Asia project were completed in 1994, involving the redevelopment of the old lion and tiger pits built in the 1920s. Works to a number of old exhibition spaces around the African Swamp site were restored/adapted to create an extensive African Waterhole exhibit completed in 1994. This precinct highlighted giraffes, zebra and pygmy hippopotamus in their natural savannah habitat.

On Australia Day 1995, Director and Chief Executive Officer, Dr John Kelly was appointed as a Member in the General Division of the Order of Australia (AM) for 'Service to conservation and the environment particularly in the fields of wildlife preservation and zoo administration'. During this year the new reptile exhibit, Serpentaria was opened as one of the world's best facilities for research, education and conservation of reptiles and amphibians. Another world-first during 1995 was Taronga's new wastewater recycling project. Night Zoo commenced in September 1995 as well as the launch of a series of twilight concerts in February/March 1996, which has become a popular annual program of music.

Dr John Kelly passed away on 25 October 1997. During the ten years under his directorship, many facets of both Zoos and their functions underwent significant change. Apart from the major physical improvements at Taronga and Western Plains Zoos Dr Kelly is fondly remembered for his development of the ZPB's programs of conservation, research and education. Mr Guy Cooper took up the position of Director and Chief Executive Officer from 24 August 1998.

The Free Flight Bird Show Amphitheatre was completed in 1998 and showed the development in the zoological presentation of birds. Other works during this year included the Amazonia precinct, the upgrading of the top entrance plaza and the design and construction of the Conservation Theatre. The opening of the 300 seat Conservation Theatre in November 1999 realised Dr John Kelly's vision to provide a unique place in Sydney where conservation news and information could be shared by the community and conservationists in all fields of endeavour for wildlife. The ZPB website was also launched and the Heritage and Conservation Register for Taronga Zoo was undertaken in accordance with the requirements of Section 170 of the NSW Heritage Act.

In 1999 to 2000 the Zoo again began a comprehensive capital works Masterplanning process. A draft Masterplan was prepared by the international zoo design specialists, the Portico Group from Seattle, and Aldrich Pears Associates of Vancouver, which has made recommendations, based upon the knowledge of sustainable world-class facilities, to help co-ordinate collections and approach and to enable Taronga to live up to its potential.

Most recently, capital works have included the refurbishment of the Kodiak Bears exhibit, which opened in mid-2000, a new Condor aviary and the Creatures of the Wollemi precinct (due to be completed in the near future), displaying Australian mammals and incorporating the first display of a Wollemi pine in a zoo. The current planning of the Zoo into a geographical zone represents a major planning and development change in strategy which seeks to create opportunities for a mixed species display, to immerse the visitor in a themed precinct, provide greater interpretation possibilities and ensure longer term cost savings.



Figure 3.14 The two giant pandas on loan from China and exhibited at Taronga during 1988.



Figure 3.15 The Sumatran Tiger exhibit, modified during the early 1990s to incorporate a new viewing window and animal dens above.

3.10 Endnotes

- ¹ 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.
- ² *ibid*, p 3.
- ³ *ibid*, p 3.
- ⁴ Crowley, F 1980, *A Documentary History of Australia, Volume 2: Colonial Australia 1841–1874*, Nelson, Melbourne, p 179.
- ⁵ Strahan, *op cit*, p 5.
- ⁶ *The Empire*, Monday 28 June 1852.
- ⁷ Strahan, *op cit*, p 9.
- ⁸ Wilson, E 1992, *The Wishing Tree: A Guide to the Memorial Trees, Statues, Fountains, etc. in the Royal Botanic Gardens, Domain and Centennial Park, Sydney*, Kangaroo Press, Sydney, p 30.
- ⁹ *ibid*, p 30.
- ¹⁰ Raxworthy, R 1998, *Zoological Parks Board of NSW, Heritage and Conservation Register Stage 1: Taronga Zoo, Thematic History*, Heritage Group Department of Public Works and Services, T-6.
- ¹¹ Strahan, *op cit*, p 22.
- ¹² *ibid*, p 22.
- ¹³ *ibid*, p 20.
- ¹⁴ The Spider Monkey Exhibit was originally an uncovered circular structure that could be viewed from all sides. In c1940 the enclosure was provided with a southern wall and half canopy as protection from wind and rain.
- ¹⁵ Raxworthy, *op cit*, p T-14.
- ¹⁶ Strahan, *op cit*, p 30.
- ¹⁷ *ibid*, p 39.
- ¹⁸ Campbell, N, 'From Billy Goat Swamp to Taronga Park: The story of the Zoos of Australia', *Life: Stories and Articles by the Worlds Best Authors*, 15 February, 1934, p 109.
- ¹⁹ Souter, G 1994, *Mosman: A History*, Melbourne University Press, p 130.
- ²⁰ Strahan, *op cit*, p 48.
- ²¹ *ibid*, p 52.
- ²² *ibid*, p 65.
- ²³ *ibid*, p 81.
- ²⁴ *ibid*, p 94.
- ²⁵ *ibid*, p 96.
- ²⁶ *ibid*, p 110.
- ²⁷ *ibid*, p 121.

4.0 Summary of Key Phases of Taronga Zoo's Development

4.1 Introduction

The first public display of animals in Sydney dates from the 1820s during the governorship of Lachlan Macquarie, where initially aviaries and then other animal enclosures were built in the grounds of the Botanic Gardens. The Australian Museum displayed a tiger and a small number of other animals in Hyde Park from 1848 to 1859, when the collection was removed to the newly established and privately-owned menagerie at Botany, by the lessees of the Sir Joseph Banks Hotel.

Prior to the establishment of the NSW Zoological Society in 1879, the Sydney Acclimatisation Society was formed in 1861. The objectives of the Acclimatisation Society were to introduce, acclimatise and domesticate innocuous animals, birds, fish, insects and plants. The Society's collection was cared for by the Botanic Gardens.

The New South Wales Zoological Society was established in 1879 and, in 1880, began negotiations for the lease of Billy Goat Swamp in Moore Park. Between 1881 and 1914 the NSW Zoological Society operated from Moore Park, however, by 1907 the Society had decided that this site was no longer suitable and options for relocation were explored. By 1910 the Society had decided to request the site at Ashton Park, on Sydney Harbour.

4.1.1 Key Phases of Taronga Zoo's Development

Taronga Zoo has been subject to several key phases of historical development since its initial construction began in 1913. These key phases generally correspond to the tenures of various key Zoo directors, generally reflecting their philosophy of zoo management. The key periods are:

- initial construction — 1913 to 1916;
- consolidation — 1916 to 1940;
- the Hallstrom era — 1941 to 1967;
- restructure — 1968 to 1986; and
- planning for the new millennium — 1987 to present.

The following summary of the historic evolution at Taronga Zoo graphically presents the growth and development of the site through each key phase. A more detailed historical background is found in the previous Historical Analysis section.



4.2 Initial Construction Period, 1912–1916

This period spans between 1912, when work first began at the Taronga site following the design of the Secretary of the New Zoological Gardens Trust, AS le Souef, and October 1916, when the Zoo was officially opened to the public.

Le Souef was heavily inspired by the Hagenbeck Zoo in Germany, the most modern zoo of its time. In his design for Sydney’s new Zoo le Souef aimed for:

- a simple plan that was of benefit to the animals and the public;
- enclosures that could be viewed from two or more sides to avoid crowding;
- enclosures that had an open plan layout with no roofs or bars but with a surrounding concrete wall, moat or ditch that could safely separate the animals from the public without obstructing the visitors’ views; and
- sculptural artificial rock formations to provide an interesting topography and to hide the night accommodation and service structures associated with the exhibits.

During this initial period of design and construction at Taronga Zoo, Colonel Alfred Spain, Architect and Vice-President of the new Zoological Gardens Trust, undertook the co-ordination of the project.

By September 1914 the basic infrastructure was in place and the public were admitted at a small charge. The first built elements on the site included the Upper and Lower Entrance Buildings, administrative offices, refreshment rooms (for use by the visitors), the five circular Monkey Pits, the Seal Pool, the Elephant Temple, bear and carnivore pits and some aviaries.

Animals arrived from 24 September 1916. By the time of the official opening of the Zoo on 7 October, 177 animals and 329 birds had been transferred from Moore Park Zoo.



Figure 4.1 Refreshment rooms – July 1917.

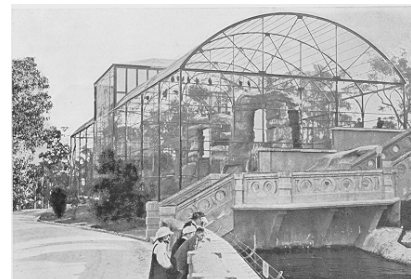


Figure 4.2 Bird of Prey Aviary – 1917.



Figure 4.3 View overlooking site and from top entrance building – 1916.

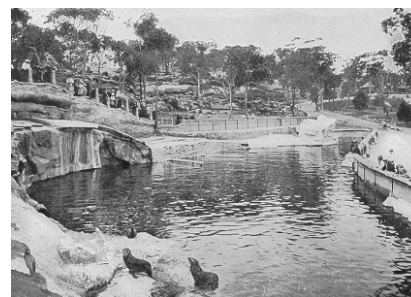


Figure 4.4 Seal pool – 1918.

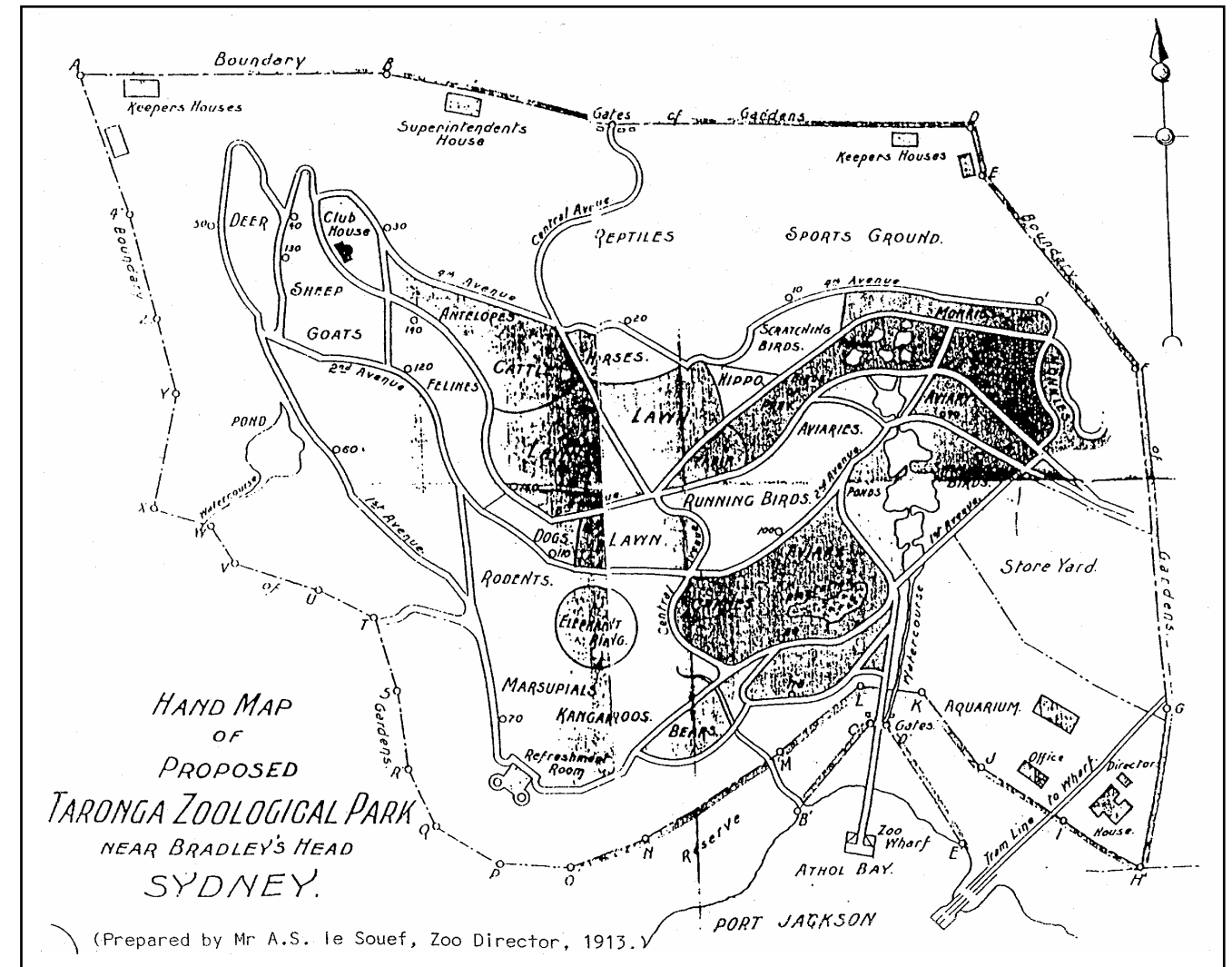


Figure 4.5 Proposal for Taronga Zoo layout prepared by AS le Souef, 1913.

Godden Mackay Logan



4.3 Consolidation, 1916–1940

This period spans between the official opening of the Zoo in October 1916 and the departure of Albert le Souef as Superintendent of the Zoo in 1939.

During this time, Taronga continued the concept of a bar-less zoo but also designed caged exhibits. However, the Depression of the 1930s resulted in numerous changes at Taronga. In the early part of the decade a number of amusements were added, including a miniature train and merry-go-round, that helped to create a mini-fairground atmosphere.

Following are some of the features of this phase:

- In 1917, the rest of the basic infrastructure was completed with the construction of the Refreshment Rooms. Between 1917 and 1919 the services areas and infrastructure of the Zoo were organised with workshops, an incinerator and storage sheds being completed.
- Between 1923 and 1925 the first Giraffe House, Polar Bear, Big Cats and Hippopotamus Enclosures were built and a two metre high stone, concrete and wire perimeter fence was completed.
- The Aquarium became a major attraction of Taronga upon completion of its lower section in 1927 and the upper section in 1929.
- Floral Clock installed in 1928, designed by James Ritchie and Son of Edinburgh.

By the end of this period, the philosophy of the Zoo had begun to change. This is evident with the filling in of the dry moat around the lion enclosure and the construction of a chain wire fence to allow people closer access to animals. By 1940, all but one of the bear enclosures was converted in the same way. This was significant in that it contradicted the bar-less philosophy upon which the Zoo was originally designed.



Figure 4.6 Lion enclosure, 1930.



Figure 4.7 Stone seating, 1925.



Figure 4.8 Lower Zoo Entrance building, 1930.



Figure 4.9 Bandstand.

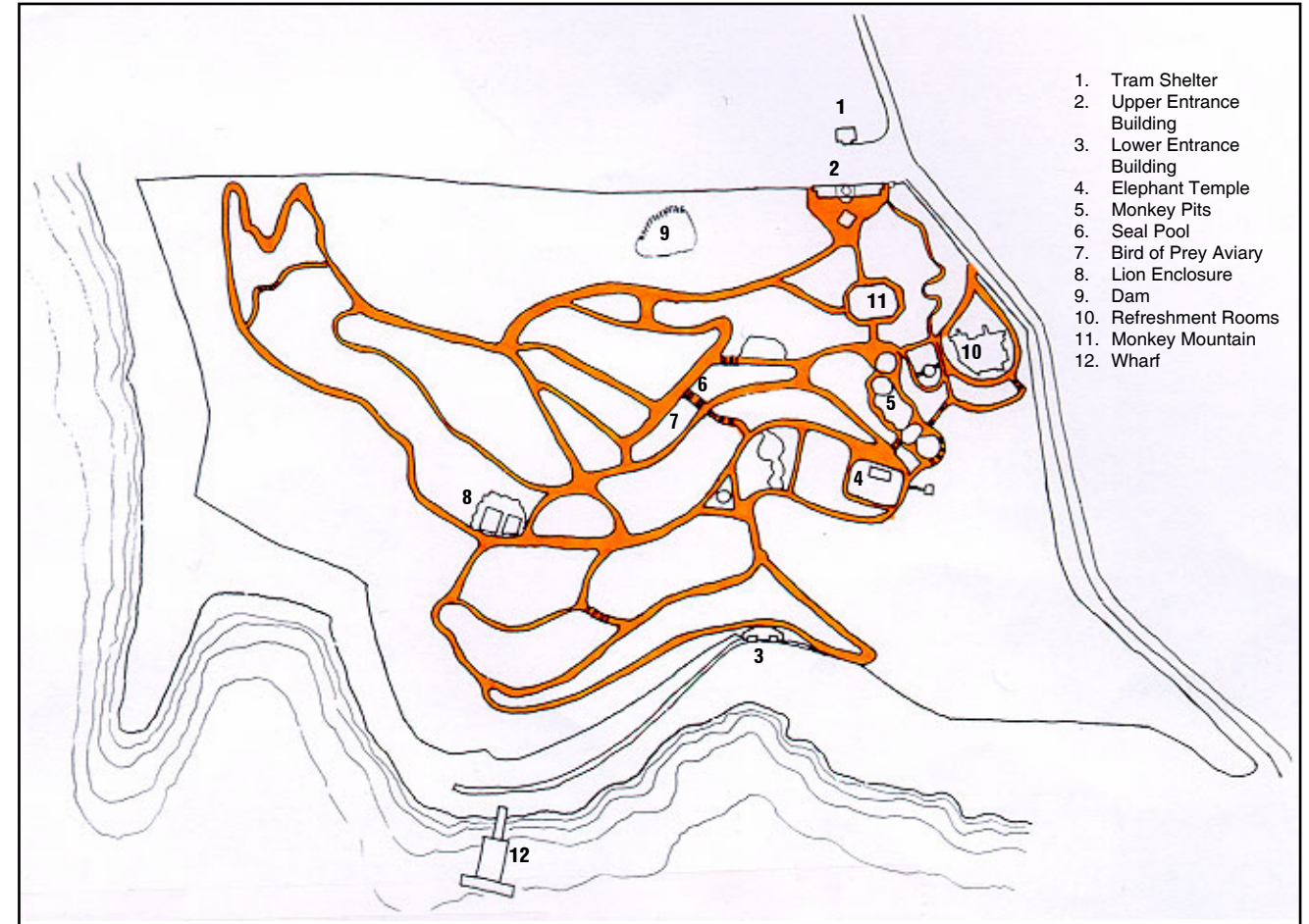


Figure 4.10 Taronga Zoo, 1916. (Note, the shaded areas indicate the original path layout.)

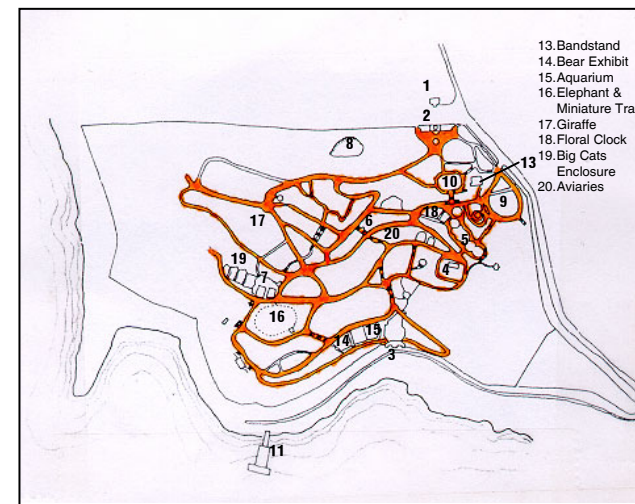


Figure 4.11 Taronga Zoo, 1927.

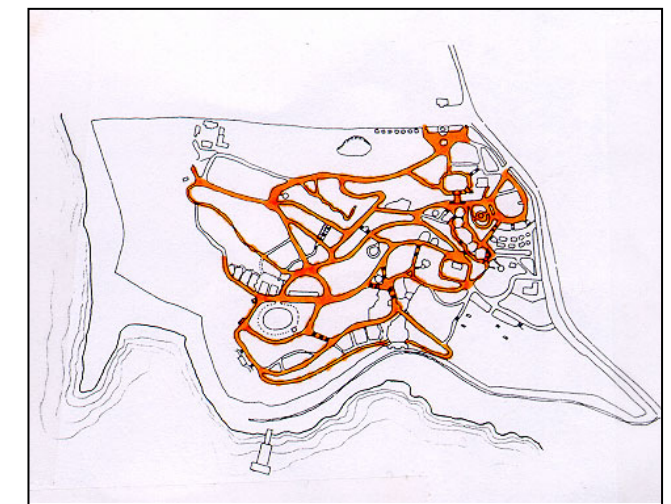


Figure 4.12 Taronga Zoo, 1935.



Figure 4.13 1930 Aerial Photograph of Taronga Zoo.

4.4 The Hallstrom Period, 1941–1967

Sir Edward Hallstrom, a benefactor and contributor to the Zoo, strongly influenced Taronga throughout his 26 years of association with the place, from 1941 to his retirement in 1967.

During 1943 Hallstrom prepared a condition report on the animal enclosures, concluding that many were unsatisfactory in terms of providing ideal conditions for the animals.

The first change was the provision of concrete floors and concrete walls in all of the enclosures, to protect the animals from the cold southerly winds. Once again, this was an approach that moved further away from the original design concept of the Zoo. In reviewing this period, Hallstrom's approach, while seen to be practical, was not always sensitive.

Changes to public access were implemented in 1959, as the existing tram service was replaced with buses.

The enclosures that Hallstrom created in the 1960s reflected his approach which regarded the animal's welfare as paramount. The exhibits were stark and sterile but easy to clean and manage.

A report prepared by consultants Thomas and Quinn, in January 1966, recommended that a program of progressive redesign and upgrade to suit changing needs in zoo and animal management be implemented, as well as recommendations for changes to the overall management policies of the Zoo.

In October 1966, Hediger was appointed to carry out another assessment of the Zoo. His recommendations covered the organisation, records, education, research, public relations, safety and design aspects of the Zoo.

The recommendations of both these reports concluded that for the zoological integrity of Taronga to be internationally respected, the scientific and educational role of the Zoo needed to evolve.



Figure 4.14 View over Seal Pond, 1942.



Figure 4.15 Koala Exhibit, c1950s.

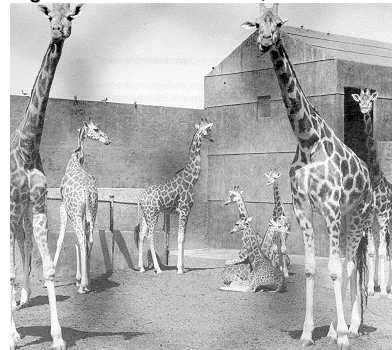


Figure 4.16 Giraffe House, 1958.



Figure 4.17 Miniature train ride and elephant ride station, 1962. These rides continued to operate until the 1970s.

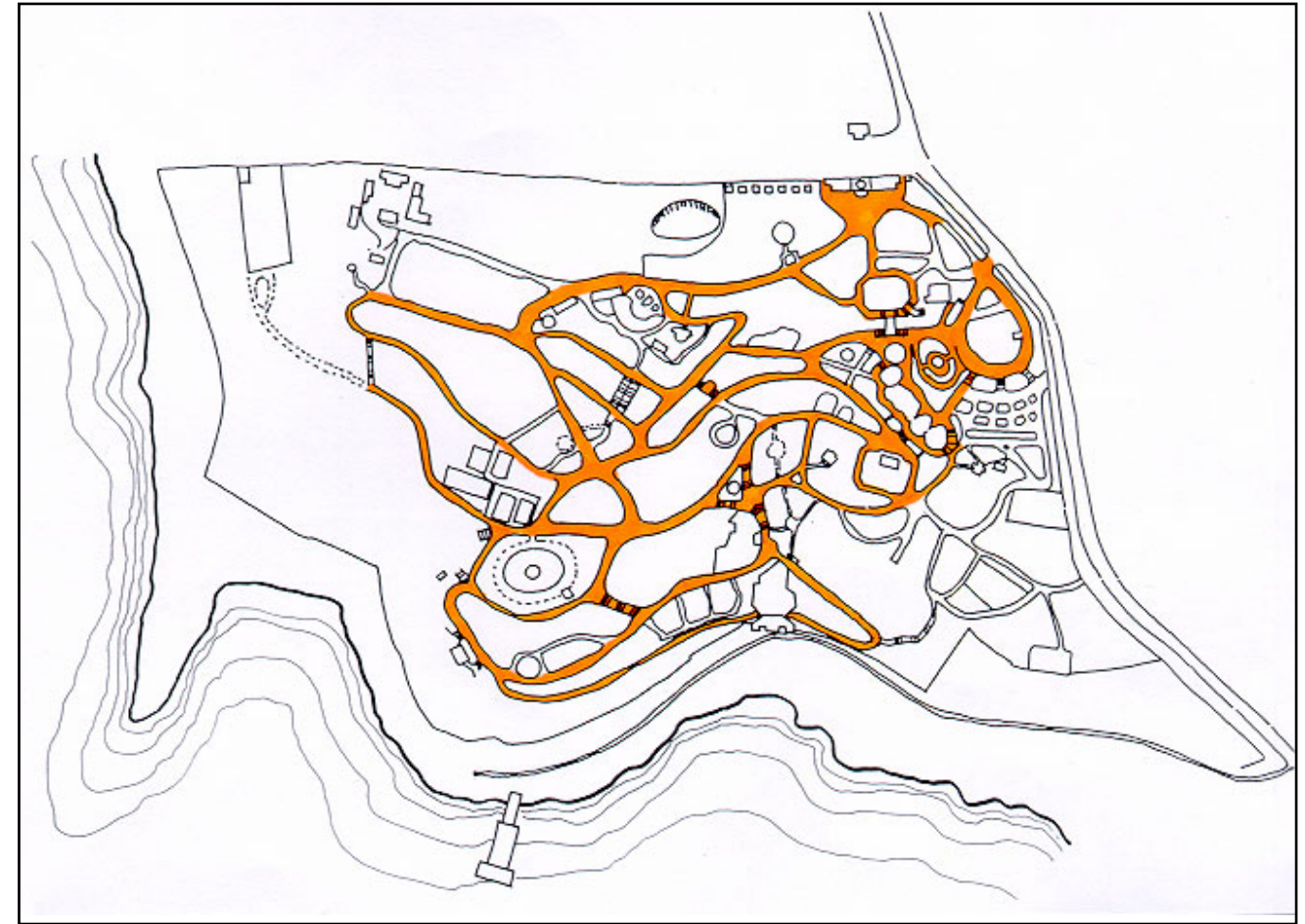


Figure 4.18 Taronga Zoo, 1943. (Note the shaded areas indicate the original path layout.)

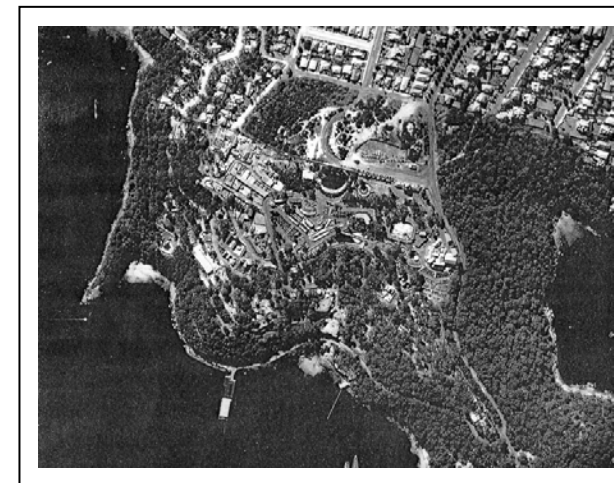


Figure 4.19 Taronga Zoo, 1951.

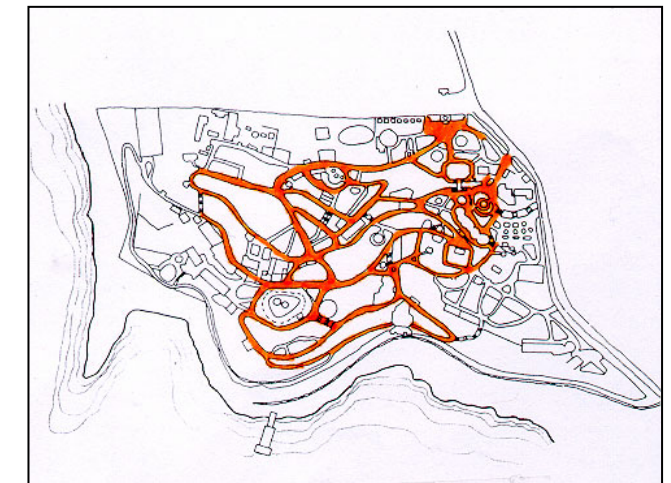


Figure 4.20 Taronga Zoo, 1956.



Figure 4.21 Taronga Zoo, 1970.

4.5 Restructure of Taronga Zoo, 1967–1986

This period is characterised by the restructuring of the Zoo, reflecting the changing physical and ideological approaches to the management of the Zoo.

Ronald Strahan, zoologist, was appointed director in 1967. Strahan’s aim was to create a ‘true’ zoological park at Taronga where zoological input was of greater importance than it had been previously.

The replacement of the Zoo’s ageing displays and the appointment of new in-house professional staff, namely zoologists, veterinarians and exhibit designers, also helped to establish Taronga as a Zoo of world-class standing with a growing national and international reputation in the zoological and biological fields.

Strahan’s legacy included:

- the first Masterplan for the site in 1970, which established a detailed design approach for new exhibits; and
- the revamp of the Australian collection. New exhibits included the Platypus House, Nocturnal House, Koala Exhibit, Waterholes for native waterfowl and a Rainforest Aviary, recognised as incorporating modern design and entertainment needs of a zoo.

From the mid-1970s to the mid-1980s Taronga repositioned itself as an authority in animal management. Significant new structures, included:

- the Chimpanzee Exhibit, opened in 1980, incorporating a moat design;
- the Veterinary Quarantine Centre, which opened in 1978, equipping the Zoo with world-class facilities;
- Taronga’s Education Centre, which was built in 1976, firmly established the evolution of key objectives at Taronga;
- the Seal Theatre, which opened in 1979, recognised the role of the place in providing both an educational and entertaining experience for the visitor; and
- the construction of the Taronga Function Centre, which was opened in 1987 on the site of the former Tea Rooms,.



Figure 4.22 Koala House, 1971.

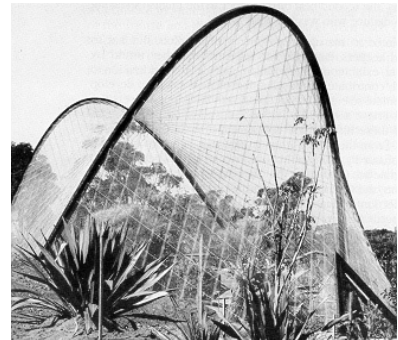


Figure 4.23 Rainforest Aviary, 1970.



Figure 4.24 Chimpanzee Park, 1980.



Figure 4.25 The Taronga Centre, opened November 1987.



Figure 4.26 Taronga Zoo, 1972. (Note the shaded areas indicate the original path layout.)

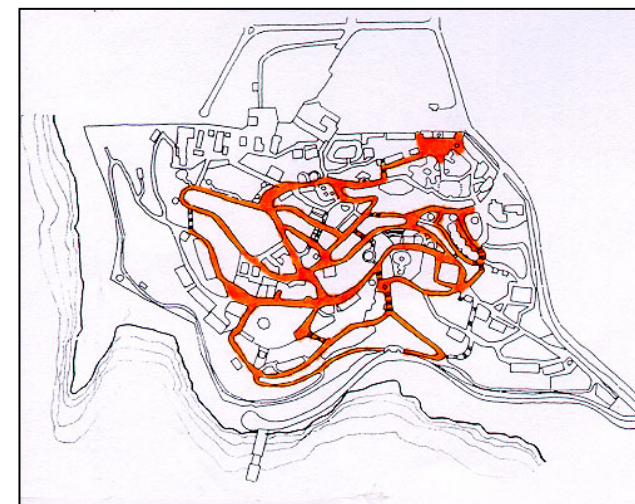


Figure 4.27 Taronga Zoo, 1981.



4.6 Planning for the New Millennium 1987–Present

The beginning of this period coincides with the appointment of Dr John Kelly as Director and Chief Executive of Taronga and Western Plains Zoos on 12 October 1987.

A major capital works program was undertaken during this time in order to ensure Taronga’s role as a world-recognised Zoo into the twenty-first century.

Dr John Kelly’s legacy during this period included:

- the 1989 Masterplan, prepared by the NSW Public Works Department, providing the framework for development at the Zoo;
- the Conservation and Research Centre, opened in 1989, utilising the skill and expertise within the Zoo and other external organisations and increasing the awareness of the Zoo’s role as a scientific institution; and
- the development of the ZPB’s educational programs.

Significant new structures during this period include those incorporating the most modern design for animal management, keeper facilities and visitor experience. Examples of these exhibits include:

- the Snow Leopard Mountain, 1990, was the first exhibit to be built to the new *OH&S Act* and *Exhibited Animals Protection Act* requirements and the first use of tension wires as a separation device.
- the adaptation and upgrading of the Cats of Asia project during the early 1990s, providing new glazed viewing bays for the public and modern animal den and keeper management facilities; and
- the Orang-utan Rainforest Home (1991) and the Gorilla Forest (1996), reinstating Taronga’s ape population into well-designed, modern exhibits.



Figure 4.28 Snow Leopard Mountain, 1990.



Figure 4.29 Cable Car Entrance Building, opened 1987.



Figure 4.30 Tiger Exhibit, adapted from previous Cats Exhibit, 1994.



Figure 4.31 ANZ Conservation Theatre, opened November 1999.

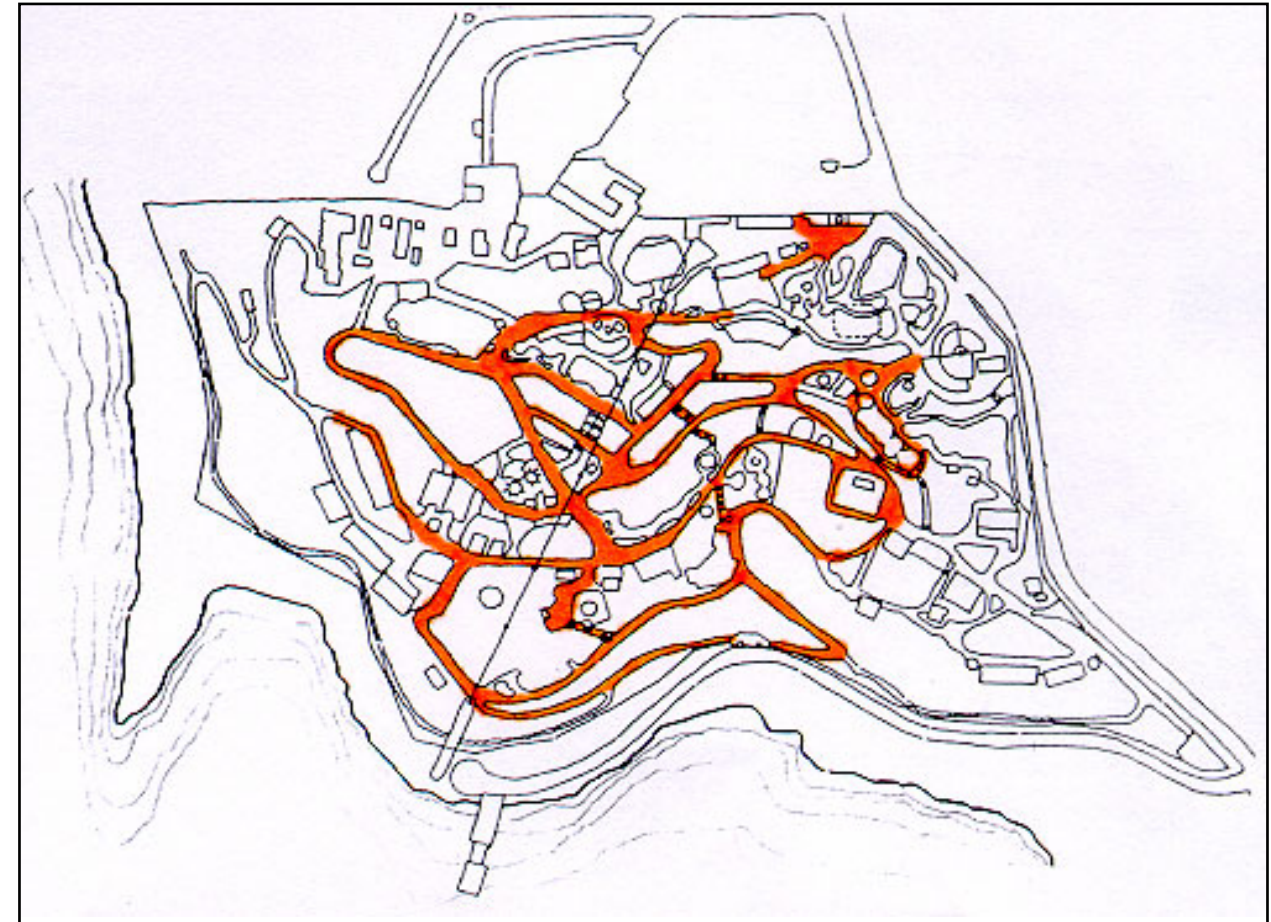


Figure 4.32 Taronga Zoo 1994. (Note the shaded areas indicate the original path layout.)



Figure 4.33 1998 Aerial Photograph of Taronga Zoo.

5.0 Landscape Analysis

5.1 Landscape Setting and Topography

Taronga Zoo is sited between the Mosman ridge and the northern foreshore of Sydney Harbour, on a south-facing slope of Hawkesbury sandstone, typically benched, with some small cliffs here and there (see Figure 5.1). Laterally it spans the area between the woodland of Bradleys Head to the east, and Little Sirius Cove to the west. However, for the purposes of this study, only the land within the Zoo boundary walls and the carpark to the north is being addressed.

The Taronga Zoo site slopes from the ridge on the southern edge of the suburb of Mosman down to the waters of Sydney Harbour, at an average grade of about 1:6. Running diagonally across the site, from near the northeast corner down towards the centre of the site near the southern (lower) entrance, is a seasonal watercourse which in pre-settlement times would have become a creek during sustained rain periods (see Figure 5.1). The naturally-occurring small spring at the top probably sustained a small flow during drier times.

The watercourse has created a rather concave, amphitheatre landform for the site, making it somewhat introspective. However, it has been substantially altered since the early 1920s, with water being captured in ponds high up the slope, leaving the lower section of the gully dry. This has had the consequence of reducing the moisture available for the original gully/rainforest vegetation along its course, therefore greatly reducing its presence as well as making the rustic bridge over it rather meaningless. The white sandy beach of Athol Bay would have originally derived much of its sand from the run-off from the creek above it.

The south-facing aspect of the site has certain consequences:

- the site does not receive as much direct sunlight and heat as north-facing slopes do;
- it captures more of the rain sweeping across the harbour from the cold fronts coming from the southwest, and does not dry out so rapidly afterwards;
- as a result, the vegetation is somewhat larger, lusher and more dense than on drier north-facing slopes; and
- it provides an excellent elevated platform from which to view the city of Sydney and much of the harbour.

5.2 Soils and Vegetation

The following subsection is a summary from the Development Masterplan for the Zoo, prepared by the Department of Public Works in June 1989. For a detailed inventory of the soil types and vegetation at Taronga Zoo reference should be made to the Horticultural Database, prepared and maintained by Botanic Estate Department.

5.2.1 Soils

The site's natural soils comprise poor sandy loams deficient in phosphorus and organic matter. Along the ridges of the site the soil is poorer and most shallow and within the gully, the soil is deeper and more moist.

5.2.2 Vegetation

From Sydney Harbour, Taronga is seen as essentially a 'native' forest with a number of ornamental landmark plantings that stand above the general canopy.

The site's indigenous forest is typical of the smooth-barked apple (*Angophora costata*), which once covered extensive sections of Sydney's north shore and is still evident in the adjoining Sydney Harbour National Park on the foreshore slopes of Sirius Cove, Whiting Beach and the eastern sections of Athol Bay. The dominant species of the Sydney Harbour National Park at Bradleys Head, generally supports 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.

Taronga Zoo's carpark to the north of the site also contains a ridgetop flat community of open woodland of red blood wood (*Corymbia gummifera*). Within the moist gully of Taronga are remnants of the same open forest, with a closed forest mid storey, containing additional species to the drier and shallower sandstone ridge soils.

Overlying the indigenous vegetation of the site is the historic pattern of ornamental plantings, including figs, palms, araucarias and flower beds and, more recently, functional plantings, including shrubs to create natural wind breaks and banana trees. There are other plantings to supplement the dietary requirements of the animals in the Zoo's care.

5.3 The Setting and Visual Qualities

With the progressive elaboration of the Sydney Harbour National Park and the determination of some State authorities to preserve or restore the natural qualities of the landscape along the harbour edges, a substantially natural context has been maintained and fostered around the Zoo site. Bounded by Bradleys Head to the east, and Whiting Beach and its headland to the west, the Zoo appears to 'fit' comfortably within, and contribute to, this natural landscape matrix. Although there are substantial dwellings above the site, on the ridgetop, and large structures within the Zoo core itself, these are substantially screened by the mature trees, mostly native, between the ridgetop edge and the footslopes. When viewed from boats on the flat platform of the harbour waters and the distant southern shore, the predominant visual quality of the Zoo site is of naturalness (see Figure 5.2).

5.4 Views and Visual Catchments/Corridors

Views of the Zoo site, in which the Zoo fits fairly comfortably within the harbour park setting, have been described above. However, it is the views – the visual catchments – out from the Zoo terraces, especially towards the city, that are by far the more dramatic. As noted in the 1989 Masterplan, the drama created by the tiers of man-made buildings, and especially the CBD tower blocks, the Harbour Bridge, the Opera House and the many maritime activities on the ‘stage’ of the harbour water itself, serve to enrich and heighten the intensity of the viewing experience. Indeed, from high on the slopes at the western end of the Zoo, the observer almost feels that one can reach out and touch the city. Enjoyment of these visual catchments are an integral part of the Zoo experience, and are a major factor in attracting people to visit and, when there, to savour it.

Visual corridors within the site (shown in Figure 5.1), existing from particular locations on the terraces and framed by trees or buildings, tend to follow the linear forms of the terraces and their ‘movement pathways’. They are manifold, and comprise another important part of the visitors’ perceptual experience as they move through the site (see Figures 5.3 to 5.19). Given the amphitheatre-like form of the topography of the core part of the site, many of these views are internal ones. While some may end in a framed picture of the harbour or city beyond, the majority will have a large mature tree, a building or an animal pen as their visual closer or focal point. When considering any future development at a point on the site, the development’s visibility and role vis-à-vis the visual corridors need to be carefully taken into account.

5.5 Site Layout

The layout of the site was originally planned by Le Souef to exploit the natural topography of the site, providing opportunities to view animals from above and eye-to-eye. The pathway was designed to draw the visitor along to each exhibit. As Figure 4.12 shows much of the original pathway layout remained clearly defined until the 1930s. Although the expansion of exhibits and extension of circulation routes since that time have partially obscured and overlaid the earlier paths, much of the original circulation layout and its associated fabric, including pathways, staircases, balustrades and seating, is retained as shown in Figure 4.32.

5.6 Development of the Site

The Taronga Zoo site was chosen because the land was available and had not already been developed, was relatively close to the city (at least by water), and offered the opportunity both to develop gardens and to present animals in as natural a setting as possible. As it was the original intention that the Zoo be in the form of a zoological garden or park, as much as possible of the native vegetation was retained. However, the large, mature trees had already been cut out during the nineteenth century, and what remained was a greatly thinned woodland with regrowth or immature trees (see Figure 3.6). In order to foster a garden/parkland quality, quite a number of ornamental

trees and some native, but not always local, trees (such as Port Jackson figs and hoop pines) were introduced.

Although the aim of the founders was to retain as many of the site's natural qualities as possible, it has been so modified over the last 80 years as to become a predominantly cultural landscape. The shallow terraces of varying widths below the five or six rows of benches have been widened to provide a sufficiently broad platform for various functional purposes. In some cases, rock benches or cliff faces have been cut into, to provide more suitable enclosures and shelter for particular animals. In other cases, faux sandstone walls or shelters have been created to provide better housing or features such as mounds, hills and caves, some for functional, others for aesthetic, purposes. Moats and fences have been built around the lower sides, thus enabling the public to view the animals from the rock bench above or the terrace below. The result was the creation of a variety of differently shaped spaces or enclosures, as well as of varying perceptual experiences.

5.7 Landscape Features

The narrow, linear terraces determined much of the layout of the site and the evolution of 'movement pathways' across it. The existing visitor path system within the site runs primarily along the natural rock terraces in an east-west direction with intermittent connections running north-south. These also accommodate all vehicular and pedestrian movements across the site.

The various levels were linked by staircases of varying degrees of grandeur or, less frequently, ramps. Many of these have balustrades of various styles, many with a rough cement stucco coating. At intervals along these pathways the early managers had sandstone seats constructed, long enough to accommodate a family group. All of these elements have been included and depicted in the Heritage and Conservation Register under Section 170 of the *Heritage Act, 1977*, and compiled in 1998.

A great deal of the landscaped works at the Zoo consist of manufactured rockwork, crafted to resemble the natural sandstone of the site as closely as possible. Precedents for such artefacts, especially grottoes, go back at least to Roman times, and were revived during the Renaissance. They have been used since to create romantic, picturesque or even fantastic structures that added to the richness of parks, zoos, and pleasure gardens. Perhaps the most noteworthy of these are the 'Tahr Mountain' for the mountain goats, the Monkey 'Pits', the Rustic Bridge, and some Bear Pits.

Other built elements comprise a variety of rock walls, some of them constructed of dressed (ashlar) sandstone blocks, while others are cement rendered with patterns or reliefs of various kinds and degrees of artistic skill on their outward vertical faces. Most of these are retaining walls of various kinds, some quite substantial and load-bearing, others low and simply edge-defining.

In a category all of its own is the Floral Clock, a favourite landscape feature of the 1920s and 1930s. It was designed specially for the Zoo by James Ritchie & Son of Edinburgh, and donated to it by Sir

Arthur Rickard in 1928. Although the planting around it has varied over the decades, the works have been restored and fascinate those who examine it closely. It also makes a picturesque composition.

Not all landscape elements, however, are hardworks. Mature vegetation such as hoop pines (*Araucaria cunninghamiana*), figs (*Ficus obliqua* and *F macrophylla*) and paperbarks (*Melaleuca quinquenervia*), and more recent plantings of eucalypts, provide height, shade, and softening/screening to the site, its animal enclosures, and its visitors. Of particular importance is the group of mature figs below the farmyard precinct which creates a unique sense of place, unparalleled elsewhere in the Zoo. Such vegetation helps to integrate the hardworks better into the site and maintain its largely natural appearance when viewed from the harbour. The native woodland on the lower slopes of the eastern and western ridges establishes a more natural character to the area and provides a basis for integrating the exotic plantings and built environment with the natural forested foreshores of Athol Bay and Whiting Beach.

Other 'natural' landscape elements include the waterbird lakes just below the main entrance (see Figure 5.19). Although very much 'improved' and manipulated by man, they capitalise on the small ponds and spring that originally existed at this spot, providing the chief source of water for the creek that runs through the centre of the site. Adjacent to these lakes, and benefiting from the moisture, is a small man-elaborated rainforest.

In yet other sectors, the aesthetic and functional potential of the original sandstone rock benches, small cliffs and boulders have been cleverly exploited. These have been used as focal points, backdrops, ledges, knolls, terraces and shallow caves for animal enclosures.

The western slopes precinct provides great views out and forms a transition between the intensive public exhibit precincts and the forested foreshore. The installation of the sewage treatment works in the foreground of views to the city has degraded the aesthetic value of this area.

One of the important factors in reinforcing the 'natural' appearance of the Zoo is the foreshore, alternating between shallow bays with white sandy beaches and rocky headlands.

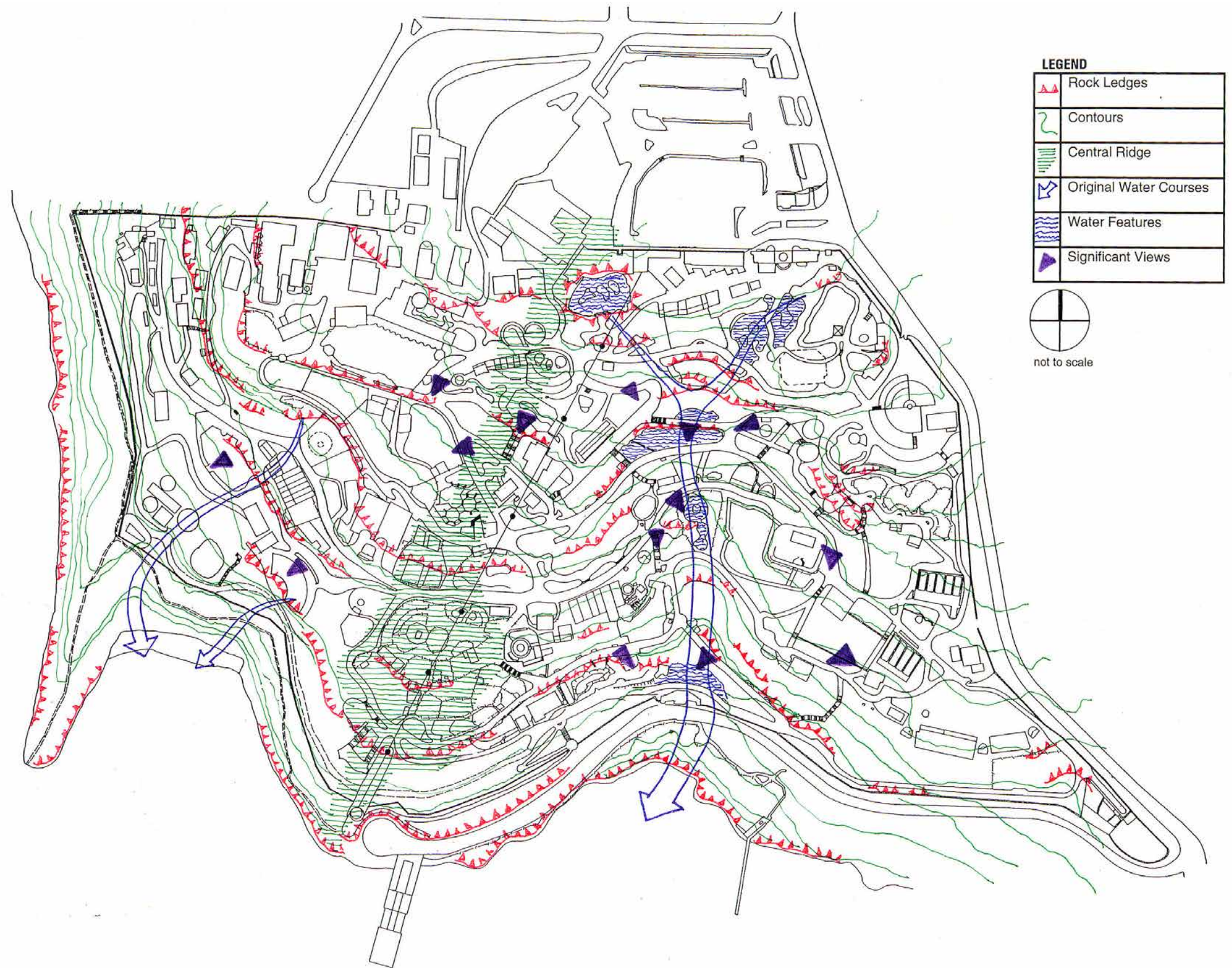


Figure 5.1 Natural features and important view corridors (refer to Figure 10.4 for identification of views).