



**MAJOR PROJECT ASSESSMENT:
NEW BULL ELEPHANT FACILITY,
TARONGA ZOO
Lot 22, DP 843294
BRADLEYS HEAD ROAD, MOSMAN
Proposed by ZOOLOGICAL PARKS
BOARD OF NSW**

Director-General's
Environmental Assessment Report
Section 75I of the
Environmental Planning and Assessment Act 1979

June 2007



© Crown copyright 2007
June 2007
NSW Department of Planning
www.planning.nsw.gov.au

Disclaimer:

While every reasonable effort has been made to ensure that this document is correct at the time of publication, the State of New South Wales, its agents and employees, disclaim any and all liability to any person in respect of anything or the consequences of anything done or omitted to be done in reliance upon the whole or any part of this document

1. EXECUTIVE SUMMARY

This is a report on project application seeking approval for a new Bull Elephant Facility at Taronga Zoo, Sydney.

The Zoological Parks Board of NSW (the Proponent) is a statutory body representing the Crown and is proposing to a new bull Elephant facility comprising a new single storey barn for elephant accommodation which varies in height from 9 to 10.9 metres with a floor plate of 370m², a 2000 m² exhibit paddock and a smaller 500 m² yard adjoining the barn at Bradleys Head Road, Mosman (Lot 22, DP 843294), also known as Taronga Zoo ("the proposal").

The estimated project cost of the development is \$5.1 Million. The proposal will create 30 full time equivalent construction jobs and 4 full time equivalent operational jobs.

During the exhibition period, the Department received a total of 4 submissions from public authorities and 2 submissions from the public. Key issues considered in the Department's assessment included:

- Heritage impacts;
- Built form, design and aesthetics;
- Visual impacts;
- Location and space requirements;
- Waste and construction management; and
- Achievement of ESD principles.

Preferred Project Submission - The Preferred Project was submitted on 22 June 2007 and involved a number of minor amendments to the barn building summarised below:

- A reduction in height of the barn building, which now varies in height from 7.2 metres to 9.3 metres;
- Shifting of the barn 1.2 metres to the north to create more yard area;
- An increase in the total area for yard and paddock to 2612m² (from a previous total of 2500m²).

These amendments further reduce the visual impacts of the proposal and also increase the amount of space available for the Elephant in terms of recreation and yard area. These amendments address concerns raised in submissions and in the assessment of the application.

Foreshores and Waterways Planning and Development Advisory Committee

The Committee considered the proposal at its meeting on 22 June 2007 and considered that the proposal is unlikely to have an adverse visual impact when viewed from the waters of Port Jackson. The Committee further acknowledged the aspects of the design that aim to blend the facility into the landscape and the significant scale of the screening provided by existing vegetation.

The Department has assessed the merits of the project and is satisfied that the impacts of the proposed development have been addressed via the Proponent's Statement of Commitments and the Department's recommended conditions of consent, and can be suitably mitigated and/or managed to ensure a satisfactory level of environmental performance. On these grounds, the Department is satisfied that the site is suitable for the proposed development and that the project will provide social and economic benefits to the region. The proposal has met all statutory requirements.

The Department recommends that the project be approved, subject to conditions.

CONTENTS

1. EXECUTIVE SUMMARY	3
2 BACKGROUND.....	5
2.1 ORIGINS OF THE PROJECT.....	5
2.2 THE SITE	5
2.2.1 Site context and location	5
2.2.2 Existing site features	5
2.2.3 Surrounding development	5
3. PROPOSED DEVELOPMENT	6
3.1 PROJECT AMENDMENTS	10
3.2 PROJECT CHRONOLOGY	11
4. STATUTORY CONTEXT.....	12
4.1 MAJOR PROJECT DECLARATION	12
4.2 PERMISSIBILITY.....	12
4.3 MINISTER'S POWER TO APPROVE.....	12
4.4 DIRECTOR-GENERAL'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS (DGRS).....	12
4.5 ENVIRONMENTAL PLANNING INSTRUMENTS (EPIs).....	12
4.5.1 Application of EPIs to Part 3A projects.....	12
4.5.2 State Environmental Planning Policy (Major Projects) 2005	13
4.5.3 Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005	13
4.5.4 Foreshores and Waterways Planning and Development Advisory Committee	14
4.5.4 Mosman Local Environmental Plan 1998.....	14
4.6 OTHER PLANS AND POLICIES	14
4.7 OBJECTS OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979.....	15
4.8 ECOLOGICALLY SUSTAINABLE DEVELOPMENT PRINCIPLES	15
4.9 SECTION 75I CRITERIA	16
5. ASSESSMENT OF ENVIRONMENTAL IMPACTS.....	18
5.1 VIEWS AND VISUAL IMPACT	18
5.2 BUILDING DESIGN	20
5.3 ECOLOGICAL SUSTAINABILITY.....	20
5.4 HERITAGE	21
5.4 LOCATION AND SPACE REQUIREMENTS	23
5.5 CONSTRUCTION IMPACTS	24
5.7 DRAINAGE/STORMWATER	24
5.8 WASTE MANAGEMENT	25
5.9 COMMENTS ON DRAFT STATEMENT OF COMMITMENTS	25
5.10 SECTION 94.....	25
5.11 PUBLIC INTEREST	25
6. CONSULTATION AND ISSUES RAISED.....	26
6.1 PUBLIC EXHIBITION DETAILS.....	26
6.2 SUBMISSIONS RECEIVED ON ENVIRONMENTAL ASSESSMENT	26
6.3 PUBLIC SUBMISSION	26
6.4 SUBMISSIONS FROM PUBLIC AUTHORITIES	26
6.4.1 Mosman Council	26
6.4.2 NSW Heritage	27
6.4.3 NSW Maritime	27
6.4.4 NSW Health	27
7. CONCLUSION.....	28
8. RECOMMENDATION.....	28
APPENDIX A - DIRECTOR-GENERAL'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS	29
APPENDIX B - COMPLIANCE WITH OTHER CONTROLS	30
APPENDIX C - RESPONSE TO SUBMISSIONS.....	31
APPENDIX D - ENVIRONMENTAL ASSESSMENT	36
APPENDIX E – STATEMENT OF COMMITMENTS	37
APPENDIX F – PREFERRED PROJECT	38

2 BACKGROUND

2.1 ORIGINS OF THE PROJECT

The Administrative Appeals Tribunal (AAT) determined on 6 February 2006 that Taronga Zoo could import 5 Asian Elephants from Thailand. The 5 Elephants comprise 4 females and 1 juvenile male known as 'Gung'. The AAT made this decision subject to a number of conditions. Of particular relevance to the origins of this proposal are the following requirements (i.e. not produced in full):

- The receiver of the specimens must comply at all times with the 'Guidelines for Management of Elephants in Australasian (ARAZPA) Zoos' produced by the Proboscid Perissodactyl Taxon Advisory Group December 2004.
- The old Elephant enclosure at Taronga Zoo to be used to house Gung, the male Elephant, must by 31 December 2008, be refurbished to a standard that is at least consistent with the concept presented by the zoo.

Further conditions deal with walking of Elephants at Taronga and the need for Gung (when he reaches maturity) to have appropriate opportunities for physical contact with one or more females for at least 9 months in any 12 month period.

The proposal to construct a new bull Elephant facility on the site of the earlier Elephant enclosure stems from this AAT decision. The response to submissions provided by Taronga Zoo (refer to **Appendix C**) states that the zoo is committed to meeting all of the conditions of the AAT determination. They also note that they have provided 30% more space than is required by ARAZPA guidelines.

The proponent has advised that a separate application has been made to the Department of Primary Industry who are required to ensure compliance with the conditions of the AAT and ARAZPA guidelines.

2.2 THE SITE

2.2.1 Site context and location

The site is located at Bradleys Head Road, Mosman (Lot 22, DP 843294), also known as Taronga Zoo and is located within the local government area of Mosman. Taronga Zoo is generally bounded by Bradleys Head Road to the east, Athol Wharf Road and Sydney Harbour to the south, Little Sirius Cove to the west and Whiting Beach Road to the north. The site is owned by the NSW Zoological Parks Board (refer to Figure 1).

2.2.2 Existing site features

The Taronga Zoo site is steeply sloping from Whiting Beach Road in the north to the harbour foreshores and Athol Wharf Road in the south. The site generally has a southerly aspect and has been substantially modified since the zoo moved to the location from Moore Park in 1916 with the creation of accessways, paths and level areas. The site of the new facility is currently vacant except for the existing old Elephant exhibit (or 'Elephant Temple') located in the north east corner of the site (refer to aerial view at Figure 2).

2.2.3 Surrounding development

The location of the facility is within the existing zoo and surrounded by other exhibits and zoo facilities and does not abut the external perimeter of the zoo. The nearest street is Bradleys Head Road with the Sydney Harbour National Park adjoining on the other side of the road (refer to Figure 1). The facility is well removed from the existing residential area to the north of the site.

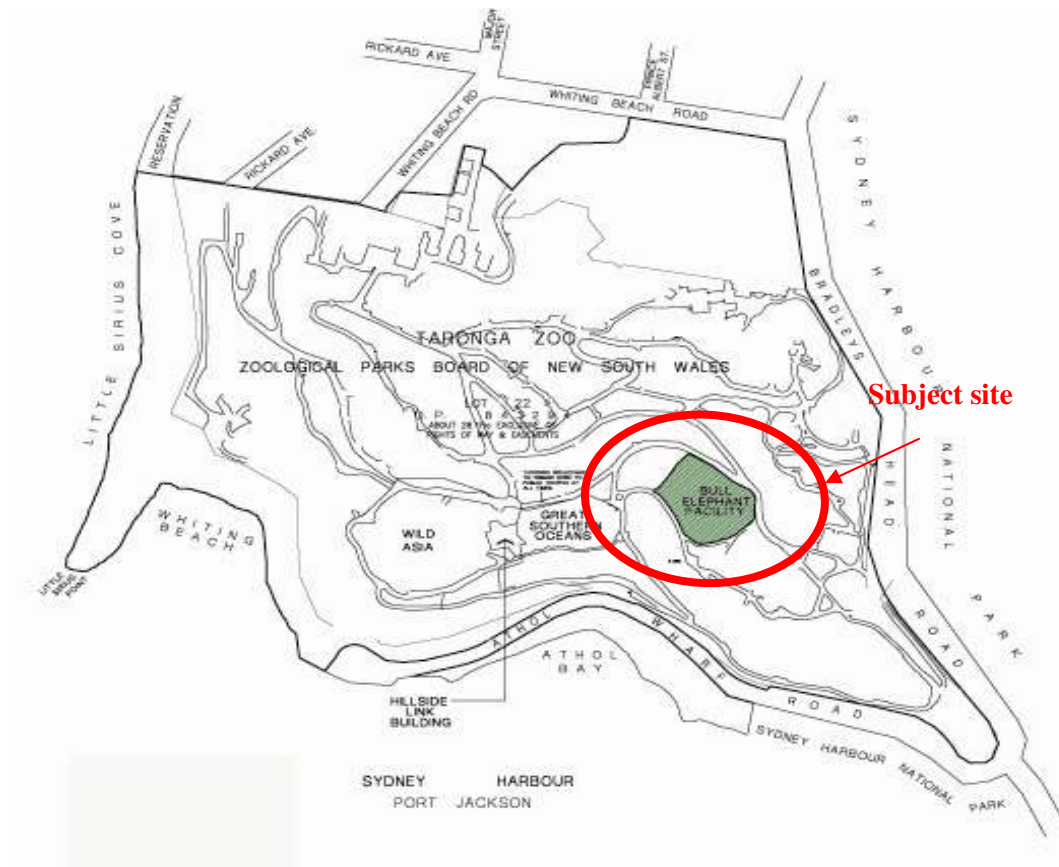


Figure 1 – Site location

3. PROPOSED DEVELOPMENT

This is an application for approval to carry out a project for a new Bull Elephant Facility. The original application as submitted comprised the following:

- A new single storey barn structure with 3 holding pens, Elephant Restraint Device, keeper equipment store, food preparation and storage with a 339m² floor plate and a height ranging from 9 to 10.9 metres;
- A 2000m² exhibit paddock with pool, wallow, exhibit enrichment devices, containment fences, landscaping and shade structure; and,
- A 500m² exercise yard adjoining the barn with pool, wallow, exhibit enrichment devices, containment fences, landscaping and shade.

The existing heritage listed Elephant House or Elephant Temple dating from 1916 does not form part of this application and was recently refurbished as a heritage interpretation centre and tells the story of Taronga's Elephants and the evolution of their display at the zoo. The Elephant Temple adjoins the site of the proposal to the north-east.



Figure 2: Aerial View of the Site – November 2005

The existing Elephant Temple was used as an Elephant exhibit space until the creation of the 'Wild Asia' exhibit in 2005. The Wild Asia exhibit (to the west of 'Great Southern Oceans' exhibit - refer Figure 1) houses the 4 female and 1 juvenile male Asian Elephants. The new Bull Elephant Facility is required to house the juvenile male, Gung as he reaches maturity and needs to be separated from the 4 females (refer to Section 2.1). The new facility is an integral part of the breeding program for the zoo. The new facility is designed to house 1 x adult male and 1 x visiting female. The facility has the potential to accommodate an additional juvenile male or visiting female. The visiting female may be brought to the facility from the existing herd at the Wild Asia exhibit or alternatively from another zoo.

The key component of the new facility is the proposed barn, which is a single storey structure and is located in the north-west corner of the site (refer to site plan at Figure 3). The exterior of the structure will comprise pre-cast concrete panels of a dark colour and will be textured and patterned to resemble shadows cast on the structure from mature palm trees. The concrete slabs will be designed with ventilation penetrations to provide for natural airflow. The structure will have a flat metal deck roof penetrated by ventilation skylights. A climbing and shade structure is proposed adjacent to the barn to the east. The height of the structure from ground level to top of parapet ranges from 9 to 10.9 metres, with the structure presenting a jagged parapet edge.



Figure 3: Proposed Site Plan

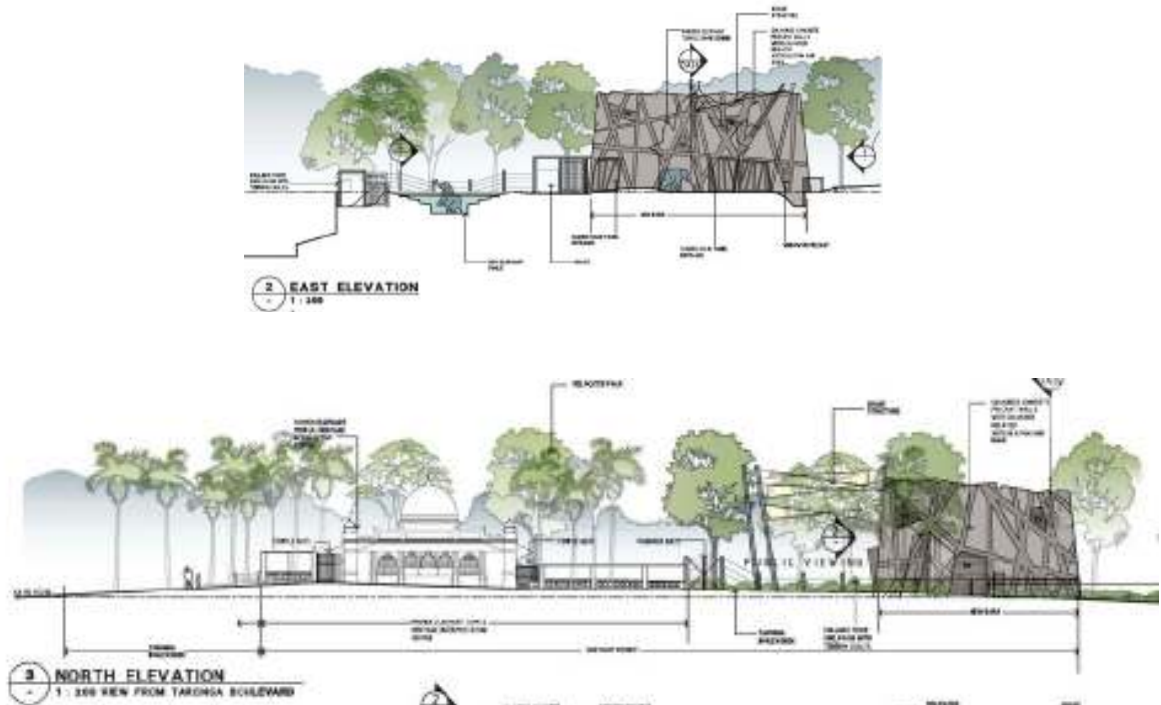


Figure 4: East and North Elevations of the Site

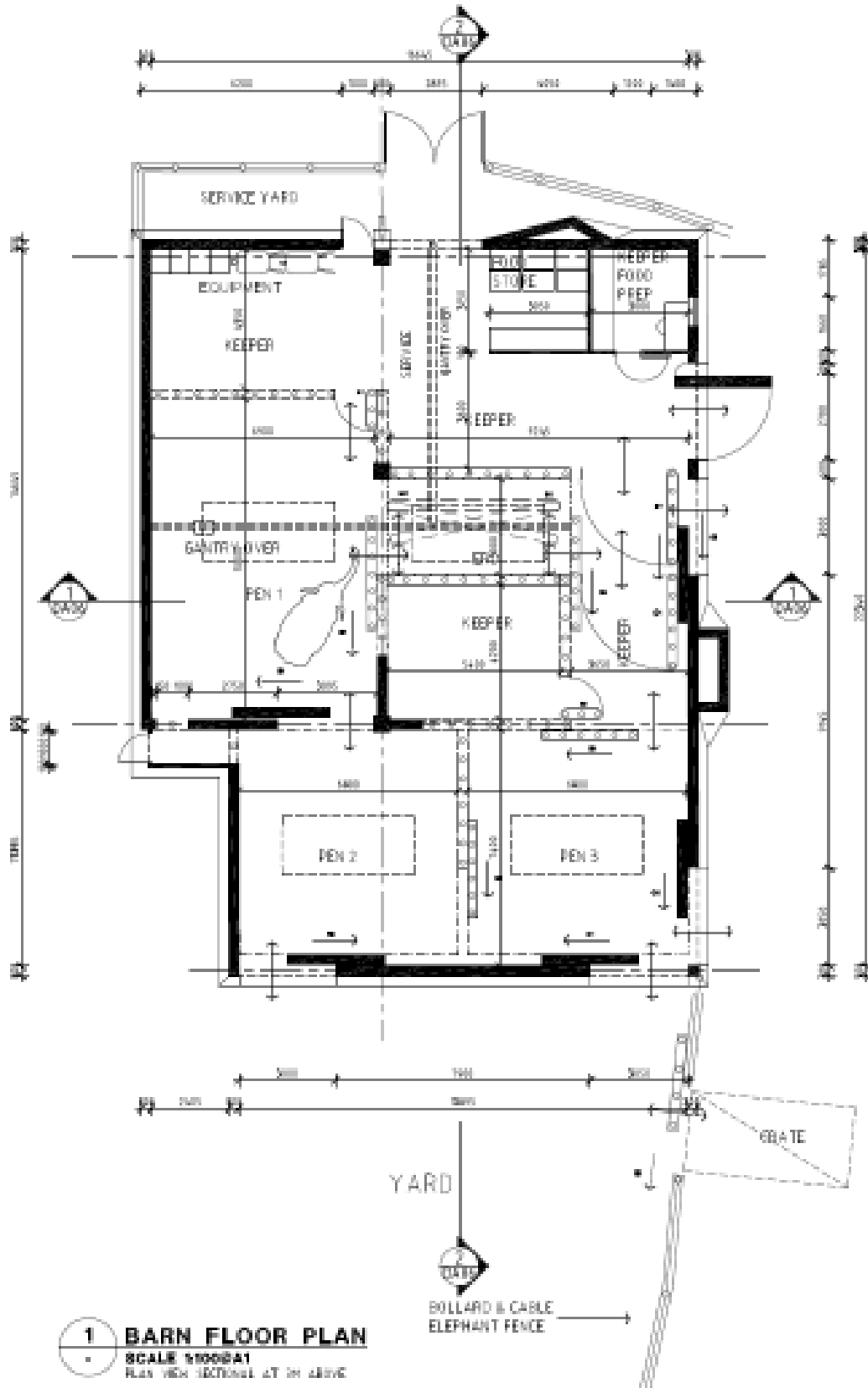


Figure 5: Proposed Barn (i.e. Bull Elephant Holding Facility) – Floor Plan

The barn is proposed to contain 3 Elephant holding pens, food storage area, food preparation area, circulation space and keeper equipment area. Gantries are proposed over the holding pens (refer to floor plan at Figure 5).

The exercise yard is located to the south and east of the barn and the main exhibit paddock stretches between the barn and the Elephant Temple. A safety setback zone of 3 metres is to be provided between these yards and adjacent public areas. Movement between the yards will be controlled by mechanical gates. Both yards will have water bodies, earth mounds and a mud bath. The two different yards are planned for animal management and husbandry purposes. Fencing between the Elephants and the public are integrated into landscape elements and are typically made of steel bollards painted black with stainless steel cable strung between them. Electrically charged horizontal wires will be used in some sections to keep Elephants away from the public. Refer to site layout plan at Figure 3 and artist impression at Figure 6.



Figure 6: Proposed development massing and layout

3.1 PROJECT AMENDMENTS

A preferred project report was submitted on 22 June 2007 incorporating the following minor amendments:

- A reduction in height of the barn building, which now varies in height from 7.2 metres to 9.3 metres;
- Shifting of the barn 1.2 metres to the north to create more yard area;
- An increase in the total area for yard and paddock to 2612m² (including open stall area).

This was not advertised due to the minor nature of the changes made and the changes reducing the environmental impacts of the proposal.

The amendments are important in terms of the resulting reduction in scale of the barn building and flow on reductions in visual impact. The slight movement of the barn building 1.2 metres northwards also creates an additional area of yard for the Elephant which is important in terms of allowing more space for movement and recreation.

The proponent is continuing development of the final façade details and is proposing to submit samples and details of the dark colours proposed for further approval when they are completed. This has been addressed in the conditions of approval which requires details to be submitted for the approval of the Department prior to the commencement of construction.

3.2 PROJECT CHRONOLOGY

- On 29 September 2006, the proponent requested a clause 6 opinion which was lodged with the Department.
- On 5 October 2006, the Director General as Delegate of the Minister formed the opinion that the proposal is a Project and that Part 3A of the Act applied.
- On 6 November 2006, the proponent lodged a Preliminary Assessment with the Department.
- On 24 January 2007, the Director- General's Environmental Assessment Requirements (DGRs) were issued.
- On 13 April 2007, the Environmental Assessment (EA) was lodged with the Department. The EA was deemed to be adequate.
- From 4 May 2007 to 4 June 2007, the EA was placed on public exhibition.
- On 30 May 2007, a site inspection of the zoo and the subject site was carried out.
- On 6 June 2007, the summary of submissions was provided to proponent.
- On 20 June 2007, a meeting was held with the proponent to discuss a draft of the response to submissions and minor amendments to the design.
- On 22 June 2007, preferred project submission was submitted and the proponent's response to the submissions forwarded to the Department.
- On 22 June 2007, the proposal and the preferred project was considered by the Foreshores and Waterways Planning and Development Advisory Committee (the 'Foreshores Committee').

4. STATUTORY CONTEXT

4.1 MAJOR PROJECT DECLARATION

The project is a Major Project under *State Environmental Planning Policy (Major Projects) 2005* (MP SEPP) as development at Taronga Zoo exceeding a Capital Investment Value (CIV) of \$5 million is identified in Schedule 2, clause 11 as development to which Part 3A applies. The CIV of the proposal is \$5.1 million. The opinion was formed by the Director General as Delegate of the Minister on 5 October 2006.

4.2 PERMISSIBILITY

Under the Mosman Local Environment Plan 1988 (LEP 1988) the site is zoned 5(a) Community Uses – Zoological Gardens, permitting structures solely for the purposes of exhibition, conservation and care of animals. The Proposal is consistent with clause 21 and the objectives of zone 5 (a) and the proposal is therefore permissible subject to the Minister's approval.

4.3 MINISTER'S POWER TO APPROVE

The Department has exhibited the Environmental Assessment (EA) in accordance with section 75H (3) of the Environmental Planning and Assessment Act, 1979. The project is permissible and meets the requirements of the Major Projects SEPP. Therefore, the Department has met its legal obligations and the Minister has the power to determine this project.

4.4 DIRECTOR-GENERAL'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS (DGRS)

The key issues component of the DGRs issued on 24 January 2007 required the following to be addressed:

- Statutory and Other Requirements;
- Building Design;
- ESD;
- Heritage Impacts;
- Construction Impacts;
- Waste Management; and,
- Drainage/Stormwater.

The DGRs are in **Appendix A**

The EA lodged by the proponent on 13 April 2007 and was considered to be adequate and satisfactorily addressed the DGRs.

4.5 ENVIRONMENTAL PLANNING INSTRUMENTS (EPIs)

4.5.1 Application of EPIs to Part 3A projects

To satisfy the requirements of section 75I (2) (d) and (e) of the Act, this report includes references to the provisions of the environmental planning instruments that govern the carrying out of the project and have been taken into consideration in the environmental assessment of the project. The primary controls guiding the assessment of the proposal are:

- Mosman Local Environmental Plan 1998; and,
- Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005.

Other controls to be considered in the assessment of the proposal are:

- Zoo 2000 'The View to the Future', December 1999;
- Taronga Zoo Master Plan Urban Design Principles and Visual Analysis (UDAS Guidelines, May 2001; and,
- Taronga Zoo Conservation Strategy, July 2002.

The primary controls are discussed below and compliance with the other controls are summarised at **Appendix B**. The provisions, including development standards of local environmental plans, and development control plans are not required to be strictly applied in the assessment and determination of major projects under Part 3A of the Act. Notwithstanding, these standards and provisions are relevant considerations as the DGRs require the proponent to address such standards and provisions. Accordingly the objectives of a number of EPIs and the development standards therein and other plans and policies that substantially govern the carrying out of the project are appropriate for consideration in this assessment as follows:

4.5.2 State Environmental Planning Policy (Major Projects) 2005

The MP SEPP applies to the project as discussed in section 4.1 above.

4.5.3 Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005

All of Taronga Zoo is located within the 'Foreshores and Waterways Area' identified in Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005. 9 principles are outlined for this area and they are provided below. Of these 9 principles, 2 are directly relevant to the subject application, these being (a) and (d) which refer to the protection and enhancement of the scenic qualities of the harbour and foreshores. It is considered that the application satisfies these principles and further consideration to these matters is given in Section 5 of this report. The proposal does not interfere with existing foreshore access arrangements in this part of Sydney Harbour.

a) development should protect, maintain and enhance the natural assets and unique environmental qualities of Sydney Harbour and its islands and foreshores,

(b) public access to and along the foreshore should be increased, maintained and improved, while minimising its impact on watercourses, wetlands, riparian lands and remnant vegetation,

(c) access to and from the waterways should be increased, maintained and improved for public recreational purposes (such as swimming, fishing and boating), while minimising its impact on watercourses, wetlands, riparian lands and remnant vegetation,

(d) development along the foreshore and waterways should maintain, protect and enhance the unique visual qualities of Sydney Harbour and its islands and foreshores,

(e) adequate provision should be made for the retention of foreshore land to meet existing and future demand for working harbour uses,

(f) public access along foreshore land should be provided on land used for industrial or commercial maritime purposes where such access does not interfere with the use of the land for those purposes,

(g) the use of foreshore land adjacent to land used for industrial or commercial maritime purposes should be compatible with those purposes,

(h) water-based public transport (such as ferries) should be encouraged to link with land-based public transport (such as buses and trains) at appropriate public spaces along the waterfront,

(i) the provision and use of public boating facilities along the waterfront should be encouraged.

In relation to the maintenance, protection and enhancement of views, clause 26 of Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 is also relevant and is outlined below.

(a) development should maintain, protect and enhance views (including night views) to and from Sydney Harbour,

(b) development should minimise any adverse impacts on views and vistas to and from public places, landmarks and heritage items,

(c) the cumulative impact of development on views should be minimised.

The proposal satisfies these provisions and it is considered that the views to the zoo will not be adversely impacted upon by the new barn and views from within the zoo to the harbour are readily available from many vantage points and the barn will have little impact in this regard. There will be no negative impacts on night views to or from the site. This matter is given further consideration in Section 5 of this report.

4.5.4 Foreshores and Waterways Planning and Development Advisory Committee

Under the provisions of Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005, Taronga Zoo is located within the 'Foreshores and Waterways Area' and development for the purposes of 'Flora and Fauna Enclosures' within this area is required to be referred to Foreshores and Waterways Planning and Development Advisory Committee ('Foreshores Committee') for comment.

The Foreshores Committee considered the proposal and the preferred project plans at its meeting on 22 June 2007 and formally advised that the proposal is unlikely to have an adverse visual impact when viewed from the waters of Port Jackson. The Committee further acknowledged the aspects of the design that aim to blend the facility into the landscape and the significant scale of the screening provided by existing vegetation.

4.5.4 Mosman Local Environmental Plan 1998

The site is zoned 5(a) Community Uses – Zoological Gardens under the provisions of Mosman LEP 1998. Clause 21 of Mosman LEP permits structures solely for the purposes of exhibition, conservation and care of animals. The proposal being for the purposes of housing and exhibiting Elephants is therefore a permissible use.

Clause 38B specifies that development consent of Council is not required for the carrying out of works in the Zoo unless it is for works to a heritage item specified in Schedule 2. The Upper Entrance Gate, Lower Entrance Gate, Elephant House, Aviary and the Floral Clock are zoo elements listed in Schedule 2, however none of these elements form part of the subject application. The Elephant House (or Elephant Temple) adjoins the site of the proposal, however no works are proposed for this heritage building and it does not form part of the site. The proposal also does not have any physical impact on this heritage item and it is further considered that the proposal does not detract from its heritage significance (refer assessment in Section 5.4).

4.6 OTHER PLANS AND POLICIES

The Proposal has been considered against the following non-statutory documents:

- Zoo 2000 'The View to the Future', December 1999
- Taronga Zoo Master Plan Urban Design Principles and Visual Analysis
- Taronga Zoo Conservation Strategy, July 2002

The proposed development has been assessed against these controls in **Appendix B** to this report.

4.7 OBJECTS OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

The objects of any statute provide an overarching framework that informs the purpose and intent of the legislation and gives guidance to its operation. The Minister's consideration and determination of a project application under Part 3A must be informed by the relevant provisions of the Act, consistent with the backdrop of the objects of the Act.

The objects of the Act in section 5 are as follows:

- (a) to encourage:
 - (i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,
 - (ii) the promotion and co-ordination of the orderly and economic use and development of land,
 - (iii) the protection, provision and co-ordination of communication and utility services,
 - (iv) the provision of land for public purposes,
 - (v) the provision and co-ordination of community services and facilities, and
 - (vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and
 - (vii) ecologically sustainable development, and
 - (viii) the provision and maintenance of affordable housing, and
- (b) to promote the sharing of the responsibility for environmental planning between the different levels of government in the State, and
- (c) to provide increased opportunity for public involvement and participation in environmental planning and assessment.

Of particular relevance to the assessment of the subject application is consideration of the Objects under section 5 (a) (vi) and 5 (a) (vii). Relevantly, the Objects stipulated under section 5 (a) and (c) are significant factors informing the determination of the application. The project does not raise significant issues with regards to the objects listed in Section 5.

With respect to ESD, the Act adopts the definition in the *Protection of the Environment Administration Act 1991* including the precautionary principle, the principle of inter-generational equity, the principle of conservation of biological diversity and ecological integrity, and the principle of improved valuation, pricing and incentive mechanisms.

The Department has considered the Objects of the Act, including the encouragement of ESD in the assessment of the project application.

4.8 ECOLOGICALLY SUSTAINABLE DEVELOPMENT PRINCIPLES

There are five accepted ESD principles:

- decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations (the integration principle);
- if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation (the precautionary principle);
- the principle of inter-generational equity - that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations (the inter-generational principle);

- the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making (the biodiversity principle); and
- improved valuation, pricing and incentive mechanisms should be promoted (the valuation principle).

The Department has considered the proposed development in relation to the ESD principles and has made the following conclusions:

Integration Principle - the social and economic benefits of the proposal are demonstrated in the documentation submitted for the assessment of this application. The environmental impacts are and will be addressed through the proponent's EA report including the SoC, and recommended conditions of consent. The Department's assessment has duly considered all issues raised by the community and public authorities. The proposal as recommended for approval does not compromise a particular stakeholder or hinder the opportunities of others. Taronga Zoo's promotion of good public transport and limited on-site parking is very important and supported.

Precautionary Principle – the EA is supported by technical and environmental reports which conclude that the proposal's impacts can be successfully mitigated. No irreversible or serious environmental impacts have been identified. The recommended conditions require additional information to ensure the proposal's extent and nature is fully documented and opportunities are provided for proposed mitigation and management measures to incorporate best practices.

Inter-Generational Principle – Through the implementation of various conditions of approval and environmental and management practices currently employed on the site, the proposal will ensure the environment is protected for future generations.

Biodiversity Principle – The site has limited remaining vegetation and this is proposed to be retained or relocated immediately adjoining the exhibit as part of the proposal. See Figure 2 in this regard. The site does therefore not contain any threatened or vulnerable species, populations, communities or significant habitats. The proposal will increase the vegetation on the site including advanced trees and additional palms further satisfying the biodiversity principle. The new barn is also integral to the zoo's Elephant breeding program, which is in itself ensuring species survival and biodiversity.

Valuation Principle – This principle is not directly relevant to the proposal which is a special land use.

The proponent is committed to ESD principles and has reinforced this through the Statement of Commitments and the Environmental Assessment which explores key ESD opportunities, including mechanical, electrical and hydraulic systems as well as architectural designs to ensure high environmental performance is delivered. Furthermore, the zoo has in place a wastewater treatment and recycling plant which the proposal will contribute to and utilise the treated water in the operation of the facility and exhibit. This will reduce demands on potable water supply and is a good example of successfully closing loops in the water cycle.

4.9 SECTION 75I CRITERIA

The DG's report to the Minister for the proposed project satisfied the relevant criteria under Section 75I of the Act as follows:

Section 75I(2) criteria	Response
Copy of the proponent's environmental assessment and any preferred project report; and	The Proponent's EA is included in Appendix D while the Proponent's Preferred Project is set out for the Minister's consideration at Appendix F along with the Statement of Commitments at Appendix E.
Any advice provided by public authorities on the project; and	All advice provided by public authorities on the project for the Minister's consideration is set out and discussed in Section 6.4.

Copy of any report of a panel constituted under Section 75G in respect of the project; and	No statutory independent hearing and assessment panel was undertaken in respect of this project.
Copy of or reference to the provisions of any State Environmental Planning Policy that substantially govern the carrying out of the project; and	Refer to Section 4.1.
Except in the case of a critical infrastructure project – a copy of or reference to the provisions of any environmental planning instrument that would (but for this Part) substantially govern the carrying out of the project and that have been taken into consideration in the environmental assessment of the project under this Division, and	An assessment of the development relative to the prevailing environmental planning instrument is provided in Sections 4 and 5 of this report
Any environmental assessment undertaken by the Director General or other matter the Director General considers appropriate; and	The environmental assessment of the project application is this report in its entirety.
A statement relating to compliance with the environmental assessment requirements under this Division with respect to the project.	The proponent's EA addressed the DGR requirements (Appendix A) and the EA is considered to have satisfied those requirements as addressed in this report. Refer to the Conclusion in Section 7 of this report for a statement relating to this requirement.

5. ASSESSMENT OF ENVIRONMENTAL IMPACTS

In addition to the EPIs and planning policies addressed above, the key issues considered in the Department's assessment (as indicated in the DGRs) of the EA and PPR includes the following:

- Views and Visual Impacts;
- Building Design;
- ESD;
- Heritage Impacts; and
- Location and Space Requirements.

Other impacts that have been considered are:

- Construction Impacts;
- Waste Management; and,
- Drainage/Stormwater.



Figure 7 – View of Taronga Zoo from the Harbour – Proposed Barn in Centre of Image

5.1 VIEWS AND VISUAL IMPACT

The site is visible from Sydney Harbour and the visual impact of the proposal is one of the key assessment considerations. In addition to views of the site from the Harbour, there are also internal views and views from the site to consider. The visual impact on the adjoining Elephant Temple is also an important consideration.

Views From The Harbour

The new barn structure will be visible from Sydney Harbour, from both distant and close vantage points (refer to Figure 7). The barn structure has been designed with the intent of blending with its setting rather than being a strong feature in the landscape. The design has incorporated colour variations in the pre-cast concrete panels to give the impression of light and shadow cast by trees. The design has also incorporated a shade and climbing structure to further soften it and assist it to blend into the predominantly green setting. In some ways the barn structure will appear more as a natural element in the landscape rather than a traditional built element, such as say the Elephant Temple, see Figure 7 in this regard. These design elements successfully reduce the impact of the proposed barn and the impact on views to the zoo will be minimal. The new barn will introduce a further element of interest in the zoo setting which is characterised by exhibits and structures protruding above the natural setting.

The Foreshores Committee, which is required to consider the visual impacts of development within the foreshore and waterway area of Sydney Harbour, considered the proposal at its meeting on 22 June 2007. The Foreshores Committee considered that the proposal is unlikely to have an adverse visual impact when viewed from the waters of Port Jackson. The Committee further acknowledged the aspects of the design that aim to blend the facility into the landscape and the significant scale of the screening provided by existing vegetation.

Impacts on Elephant Temple

The barn structure does not block or negatively impact upon views of the heritage listed Elephant Temple from the harbour. The Elephant Temple retains its distinctive position in the zoo landscape with its clearly identifiable dome. NSW Heritage Office advised in their submission that “the Bull Elephant facility has been designed to be a background structure, seeking to minimise the visual impacts of its considerable size, while leaving the ‘Temple’ as the dominant landmark”. These impacts are discussed in more detail in Section 5.4 to follow.



Figure 8 – Closer View of Taronga Zoo Showing the Barn, Shade Structure and Glimpses of the Dome.

Internal Views

Views from within the zoo will not be significantly affected by the new barn structure. Views to Hallstrom Square and the tops of the large pines are seen as an important landmark within the zoo and these will be retained when looking west from the eastern edge of the enclosure, although the barn will limit the current extent of the views. The zoo has many vantage points from which to obtain high quality views of the harbour and adjacent shorelines and these will not be significantly reduced by the proposal.

The 2 proposed yards and their contents will have little impact on the views to the site. The landscaping proposed as part of these yards will contribute to the landscape setting and will therefore make a positive contribution. In particular, the shade structure which doubles as a climbing frame for creepers will soften views of the barn and increases the quantum of vegetation in the yard. Similarly, these components of the exhibit will have little impact on internal views, with fencing in particular being designed to be as invisible and transparent as possible. Existing vegetation along the western and southern edges of the site will be retained as part of the proposal and their screening and other visual roles will remain.

In conclusion, the proposed barn structure will not negatively impact upon views to and from the zoo. Furthermore, the existing views of the Elephant Temple will not be detrimentally affected. The design elements incorporated into the proposal will successfully reduce the visual impact of the structure and this will increase

over time as the landscaping on the adjoining climbing structure becomes established and grows. The proposal will introduce a new and interesting visual element into the zoo setting and will not detract from the landscape quality of this part of the harbour foreshores.

Preferred Project Design

The Preferred Project involved a number of minor amendments to the barn building including a reduction in height, which now varies in height from 7.2 metres to 9.3 metres to the top of the parapet (as compared to the previous 9-10.9 metres). The reductions in height will further reduce the visual impacts of the building, on both internal views and distant views of the zoo from the harbour. The visual dominance of the Elephant Temple is also further supported by the amendments, with the top of the dome now being higher than the barn building.



Figure 9 – Internal View Along Taronga Boulevard of the Elephant Temple Juxtaposed with New Barn

5.2 BUILDING DESIGN

The design of the barn structure is not conventional. This is directly related to its unique function and location. The external cladding and incorporated landscape elements have been chosen to reduce the visual impacts of the building (refer also Section 5.1) and create a more natural aesthetic for the Bull Elephant exhibit. This has been largely successful and the barn structure will contribute to the exhibit theme and setting without dominating it.

The internal design of the structure has been largely driven by the requirements of housing and feeding Bull Elephants, visiting females, the needs of the keepers, ARAZPA guidelines and AAT conditions. The barn doors will remain open while the Elephant use the yard and exhibit area and the Elephant will move freely between the yard and barn and for this reason, the stall is included as open recreation area for the Elephants. The use of natural ventilation is applauded as is the integration of landscaping into the design with the climbing frame adjoining the barn, not purely for the resulting aesthetic improvements but also for the cooling effects on the surrounding environment.

Preferred Project Design

The Preferred Project involved a number of minor amendments to the barn building including a reduction in height, which now varies in height from 7.2 metres to 9.3 metres and shifting the barn 1.2 metres to the north to create more yard area. This slight movement of the barn increases the total area of yard and paddock available to the Elephants for recreation. The reductions in height will reduce the impact of the building without altering its character.

5.3 ECOLOGICAL SUSTAINABILITY

The proposed barn has incorporated the following design elements to improve its contribution to ecologically sustainable development principles:

- Utilise the structure and associated shade structure to provide shade from the western sun;
- Skylights to maximise natural light coupled with energy efficient artificial lighting;
- Use of operable louvres in the façade to maximise natural ventilation;
- Recycled water will be used for washing down and cleaning of the animal holding area and for filling of the 2 pools;
- Recycled building materials will be used wherever feasible; and,
- Use of Facilities Monitoring and Control System (FMCS) to monitor and reduce energy consumption.

The 2 yards are proposed to utilise recycled landscape materials (i.e. for mulching etc.), recycled rubber for in soft floor surfaces, use of recycled water for irrigation and wash down and planting to maximise shade possibilities for Elephants and visitors. It is also proposed that the irrigation system will minimise evaporation through appropriate timing of use.

Taronga Zoo has an existing wastewater recycling plant and currently uses recycled water for toilet flushing, moat filling and for other animal exhibit purposes. This is a significant existing ESD innovation and benefit for the site and it is proposed for the new Barn and exhibit to utilise and contribute to this existing wastewater recycling facility.

The design features built into the barn are considered to be appropriate and will reduce energy consumption for heating, cooling and lighting. The FMCS is considered to be an essential component to knowing what energy is consumed and where and then with this knowledge, pursuing further reductions in energy use. This approach is to be applauded.

5.4 HERITAGE

A heritage impact statement (HIS) for the proposal was prepared and based on consideration of the following documents:

- Taronga Zoo Conservation Strategy 2002; and
- Heart of the Zoo Strategic Heritage Advice 2003.

In addition the heritage assessment considered the various listings for the zoo, including the Zoological Parks Board (ZPB) Section 170 Register 1998 and the Mosman LEP 1998 (Schedule 2).

Heritage Background

There are no physical items of heritage significance on the subject site, although the yards themselves are identified in the Section 170 Register for the significance of their historic use and association with the Temple rather than any physical elements. There are also nearby Section 170 Register listed items such as the New Guinea Bird Aviary and the Gibbon Exhibit. Of particular significance for this proposal is the heritage listed Elephant Temple which adjoins the subject site and forms part of the visual curtilage of the site.

The Elephant Temple was used continuously as an exhibit for Elephants from its construction in 1915 until 2005. For this reason, the placement of the new facility nearby to the Elephant Temple and the associated yards running between the two structures is important for heritage interpretation of the site and for the maintenance and enhancement of its heritage significance through the continuity of use of the site for the housing and exhibition of Elephants.

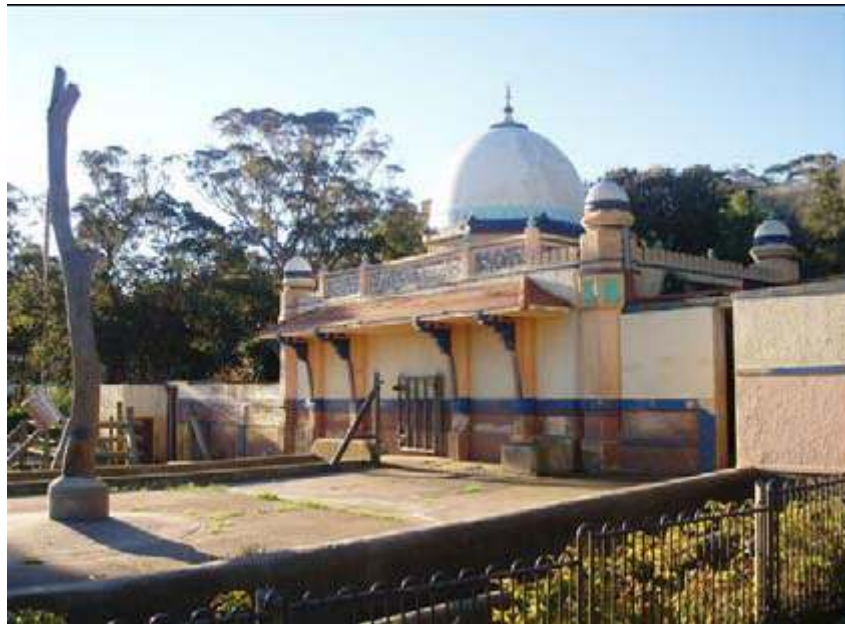


Figure 10 – Internal View of the Heritage Elephant Temple.



Figure 11 –Artist Impression - View of the Proposed Barn Juxtaposed Next to the Elephant Temple

Due to physical constraints of the Elephant Temple and requirements of the Australasian Regional Association of Zoological Parks and Aquaria (ARAZPA), it was not possible to continue the use of the building for the housing and breeding of Elephants. Similarly, the adjoining yards require modification to meet modern animal management and husbandry needs as well as ARAZPA guidelines, however the changes will not impact significantly upon the existing landform.

Heritage Significance

The heritage significance of the site has been maintained through the continuing use of the yards as an Elephant exhibit and through the nearby placement of the new barn building as part of the new facility. This juxtaposition of old and new creates an interesting and readily recognisable link with the past and will assist with the interpretation explained in the Elephant Temple (refer to Figure 11). A number of design and layout features of the proposal assist in mitigating the heritage impacts and these are listed below:

- Location of the new barn at the western edge of the site away from the Temple;
- Recessive design features of the structure, including recessive colours and patterning ensure it does not compete with the Elephant Temple;

- Retention of existing mature landscape elements and new planting, both on the site and adjoining; and,
- Retention of original moat fabric within the yard, albeit it buried.

As discussed in Section 5.1, the design of the new barn does not visually compete with the Elephant Temple. Its distinctive dome will remain as a dominant element in the zoo landscape when viewed from the harbour. In this regard, the HIS also states that the proposal does not compromise existing views of the Elephant Temple. The HIS mentions one view that will be compromised and that is an internal view from the site to Hallstrom Square within the zoo. A site inspection confirmed that this view will be retained when looking westwards from the eastern edge of the exhibit. An earlier slight encroachment on the eastern edge of the Gibbon enclosure has now been removed and the integrity of this adjoining exhibit retained.

Archaeological Impacts

Potential archaeological impacts associated with the construction of the barn and modifications to the yard have been assessed in the Heritage Impact Statement and considered by the Heritage Council and any such resources can be successfully managed through existing processes within Taronga Zoo. The Heritage Office have recommended a number of conditions as part of the Exception Application by the proponent, which adequately address potential circumstances should they arise during the construction process. The HIS also states that Aboriginal archaeological material is unlikely to be found on the site and this position is supported given the level of activity on the site during the 20th century, with the construction of zoo infrastructure in the period 1913-1916, the construction of the Elephant Temple and yard in 1915 and various subsequent modifications that have been carried out. There exists within the grounds of the zoo one location of Aboriginal archaeological significance, which was sighted during the site inspection and this location is well removed from the proposal. Suitable conditions also address this issue should any Aboriginal objects be uncovered in the construction process.

Preferred Project

The amended design reduces the height of the barn and therefore further minimises the impacts on the Elephant Temple.

In summary, the heritage impacts of the proposal have been mitigated through the design and layout of the new facility and through the use of the Elephant Temple as an interpretation centre. The result will be a successful blending of the old facility with a new barn and associated yards meeting ARAZPA guidelines. The continuing use of the site for Elephants is critical to maintaining the sites significance and this has been achieved. The proposal does not result in any significant negative heritage impacts. Potential archaeological impacts can be satisfactorily managed during the construction process.

5.4 LOCATION AND SPACE REQUIREMENTS

The submission received from the Humane Society International (HSI) and the submission from the resident of Whiting Beach Road both raise related issues concerning the space requirements of the bull Elephant facility. The HSI are concerned that the facility meets the minimum requirements set down by the Administrative Appeals Tribunal (AAT) when it granted consent to the importation of the Elephants from Thailand and despite this minimum, the HSI request that consideration be given to making the facility larger. The one resident submission received expresses the view that space at the zoo is limited.

Space is limited at Taronga Zoo and it is considered that the potential space for the exhibit has been maximised given the physical constraints of the location and the presence of adjoining exhibits which have their own requirements and heritage significance (i.e. adjoining Gibbon exhibit). The utilisation of this location is important for maintaining the on-going significance of the place for the exhibition of Elephants and the association with the Elephant Temple which abuts the proposed exhibit. Therefore, in addition to animal husbandry and breeding program reasons for having the bull Elephant located near to the females, there are important heritage reasons for maintaining the connection to this particular location.

The proponent has advised in their response to submissions that the space available is some 30% larger than the ARAZPA guidelines (refer to **Appendix C**). The compliance with these guidelines and the AAT decision will be assessed by the Department of Primary Industry.

Preferred Project

The Preferred Project shifts the barn 1.2 metres to the north to create more yard area. This amendment results in an increase in the total area for yard and paddock available to the Elephants for recreation.

5.5 CONSTRUCTION IMPACTS

The proponent has outlined that they intend to phase construction generally beginning at the north of the site and working to the south. This would see the construction of the new barn occurring at an early phase and the detailed landscaping occurring at the end of the construction.

Areas and exhibits around the site will remain open during the construction phases. Site sheds are proposed to be located on the existing contractor site shed area associated with the Great Southern Oceans exhibit site at the south eastern corner of the zoo. The construction site and the associated construction site sheds are well removed from any residential areas, by both actual distance and topography. Potential impacts from the construction phase are therefore limited and should be easily managed. The proponent has stated that noise will not increase above existing levels and has certain requirements and strict conditions such as fitting of silencers to construction equipment. This will ensure visitors, staff and animals are protected from noise impacts.

The zoo is proposing conditions to manage construction impacts and associated traffic and these are outlined below:

- Construction to be limited to 7.30am to 4.00pm Mondays to Fridays and 8.00am to 1.00pm on Saturdays with no work on Sundays or Public Holidays;
- Construction vehicles over 3 tonnes will be restricted to major roads only with no use of Prince Albert Street;
- Noise minimisation and suppression techniques to be employed on all construction equipment;
- Erosion and sediment control measures to be installed and maintained around the site during construction;
- Measures to protect existing trees during construction;
- Control of vehicular movement within the zoo;
- Signage to warn and protect zoo visitors;
- Erection of hoardings to protect the public and heritage buildings; and,
- Compliance with the BCA.

These proposed measures should satisfactorily manage the potential construction and noise related impacts from the proposal. These matters will be addressed individually as conditions of development approval to ensure they are fully implemented. Given the location of the site and the above measures, it is considered that construction impacts have been adequately addressed and should not pose a significant issue during the implementation of the development.

5.7 DRAINAGE/STORMWATER

All stormwater run-off from roadways and pathways will be directed towards the zoo wastewater recycling plant (see Section 5.3 in this regard) for treatment and reuse throughout the zoo. The design of the stormwater system will maximise usage of the existing system and all new stormwater lines will be designed to the 1 in 20 year average recurrence interval (ARI) as stated in Australian Rainfall and Runoff, 1997. Any existing stormwater pits that do not comply with AS 3500 are proposed to be upgraded as part of the development. This has also been addressed in the conditions of approval.

5.8 WASTE MANAGEMENT

The proponent intends to crush and reuse all spoil (where it is reusable) from the excavation associated with the barn for general filling and landscaping purposes.

5.9 COMMENTS ON DRAFT STATEMENT OF COMMITMENTS

The draft Statement of Commitments adequately deals with the environmental impacts associated with construction of the proposal. These were discussed in detail in Section 4.7 of the EA. Further conditions are required to place these matters within accepted frameworks, such as for example, 'Construction Management Plans'.

5.10 SECTION 94

Mosman Council propose a Section 94A levy in their submission to the EA. Section 94A is a fixed development contribution representing a percentage of the cost of the development. The contribution would go towards meeting the cost of provision or augmentation of new public facilities contained in Schedule 1 of the Mosman Section 94A Development Contributions Plan 2006. The schedule generally relates to open space improvements, cycleways and bushland regeneration. The levy amount proposed is \$48,500.00. The proponent in their response to submission objects to the proposed levy on the following grounds:

- Development consent is not required for the proposal under Council's LEP;
- The zoo is included in the quantum of open space with Mosman LGA; and,
- The proposal should be exempt on the basis of it being work to a heritage item.

The proposal does not require consent under Council's LEP and under other circumstances, Council would not be presented with the opportunity to levy such a contribution. Taronga Zoo is included in the calculation of open space in the Mosman Section 94A Development Contributions Plan 2006 and is placed in the category of 'regional open space' along with Sydney Harbour National Park. In terms of the last point, the proposal does not involve work to a heritage item, as the Elephant Temple which is on Schedule 2 of Council LEP does not form part of the proposal and has already been refurbished as an interpretation centre. Although not involving works to a heritage item, it could be argued that the proposal involves works that are for a conservation purpose, as reuse of the adjoining yards for the continuing exhibition of Elephants will enhance the heritage values of the Elephant Temple.

The arguments of the proponent are generally accepted and it would be unreasonable to levy a Section 94A contribution under the circumstances. The proponent is a statutory body representing the Crown and it is worth noting that Taronga Zoo is part of the open space network within the Mosman local government area and the upkeep and management of this open space is wholly financed by the proponent. The Elephant enclosure is an existing facility at the zoo and the Elephants themselves are also present at the zoo and therefore, there will be no intensification of use. Furthermore, although not as important under Section 94A, a clear nexus between the project works listed in Schedule 1 and the proposal for a new bull Elephant facility has not been made.

5.11 PUBLIC INTEREST

The proposal is considered to be in the public interest for the following reasons:

- The heritage significance and connection with the Elephant Temple is retained as part of the proposal;
- The design approach is innovative both in terms of aesthetics and achievement of ESD principles;
- The completed facility will enhance the overall attractiveness of the zoo through the provision of a new and interesting exhibit;
- A successful breeding program will raise the profile of the zoo, enhance species survival prospects and increase visitation rates; and,
- The construction management procedures will ensure minimal environmental impact and disruption to the functioning of the zoo.

6. CONSULTATION AND ISSUES RAISED

6.1 PUBLIC EXHIBITION DETAILS

The major project application was exhibited from 4 May 2007 until 4 June 2007 for 30 days and was published in the Mosman Daily. The EA was made available to the public in the Department's Information Centre and at the offices of Mosman Council.

6.2 SUBMISSIONS RECEIVED ON ENVIRONMENTAL ASSESSMENT

The Department received a total of 6 submissions, comprising 2 submissions in response to the public exhibition process and 4 submissions from public authorities being Mosman Council, NSW Heritage, NSW Maritime and NSW Health.

The 2 submissions from the public included 1 letter of objection from a Whiting Beach Road resident to the north of the zoo and 1 letter of objection from the Humane Society International (HSI). Of the public authority submissions, the submission from Mosman Council raised some issues of concern and the other three agency submissions did not raise any objection. These submissions are discussed in more detail below.

6.3 PUBLIC SUBMISSION

The following issues were raised in the 2 public submissions received:

- The enclosure is still considered much smaller than is adequate for a bull Elephant (HSI) ;
- The new facility needs to be at least consistent with the minimum requirements set down by the Administrative Appeals Tribunal (HSI);
- The new facility is inappropriate and a new space for a bull Elephant is not justified (resident); and,
- The facility would be better located at Dubbo Zoo where there is more space (resident).

Discussion on the key issues which include those raised in submissions is in **Section 5** of this report. The proponent responded to these submissions on 22 June 2007 and the proponent's response to submission is in **Appendix C**.

6.4 SUBMISSIONS FROM PUBLIC AUTHORITIES

The following submissions were received from public authorities:

6.4.1 Mosman Council

The submission from Mosman Council was prepared under delegation and a further note is made that should Council have any comments in addition, these will be sent separately. At the time of writing, no further comments had been received. Council raise concerns regarding the visual impacts of the proposal, in particular:

- High visibility of the building when viewed from the harbour which will detract from the aesthetic values of the site;
- The building will detract from the heritage significance of the Elephant Temple, due to scale, form and proximity of the new barn. The comment is made that there is inadequate space for the facility; and,
- No scope for future development remains as a result of the proposal without even greater impacts on heritage significance and visual amenity.

Council also provided some recommended conditions of approval should consent be granted. These generally relate to construction traffic arrangements, Section 94 contributions and site management during construction. The Section 94 issue is separately dealt with in Section 5.10 and the other environmental matters raised are reflected in the recommended conditions of consent.

The issues raised by Council are adequately discussed and covered in Section 5 of this report.

6.4.2 NSW Heritage

The NSW Heritage Office raise no objection to the proposal and note that the siting, design and layout of the new barn building retains the Zoo's social significance and has an acceptable impact on the Elephant Temple. The submission notes that there will be some loss of visual connection between Hallstrom Square and the Elephant Temple, however it is noted that this can be sustained on account of the reactivated occupation of the Elephant yard by Elephants. The submissions suggest a number of conditions of approval relating to archaeological matters and these are considered to have been adequately addressed by the Exception Approval discussed in the proponents response to submissions. The submission notes that work on the site should be guided by the endorsed Conservation Management Plan and the Archaeological Zoning Plan. Taronga Zoo has a permanent heritage officer employed on-site who is responsible for ensuring (amongst other things) this is implemented on site.

6.4.3 NSW Maritime

NSW Maritime raises no objection to the proposal. The submission states that new palms trees proposed should be indigenous species (i.e. *Livistona australis*). The submission also suggests a condition of approval to ensure that no sediment from the construction process can enter the waterway or drainage system. The suggestions regarding sediment control are supported and are reflected in the conditions. The new palms are also proposed to be *Livistona australis*.

6.4.4 NSW Health

NSW Health stated that there were no major issues for public health associated with the proposal.

7. CONCLUSION

The Department has assessed the EA and considered the submissions in response to the proposal. The key issues raised in submissions and in the assessment related to:

- Views and Visual Impacts;
- Building Design;
- ESD;
- Heritage Impacts;
- Location and Space Requirements;
- Construction Impacts;
- Waste Management; and,
- Drainage/Stormwater.

The Department has considered these issues and a number of conditions are recommended to ensure the satisfactory addressing of these issues and minimal impacts as a result of the proposal.

The proposed development will allow for a valuable new and interesting Elephant breeding facility at Taronga Zoo while at the same time preserving the aesthetic and heritage significance of the location for the continuing exhibition of Elephants. Furthermore, the project application has largely demonstrated compliance with the existing environmental planning instruments.

On these grounds, the Department considers the site to be suitable for the proposed development and that the project is in the public interest. Consequently, the Department recommends that the project be approved, subject to the conditions of approval.

8. RECOMMENDATION

It is recommended that the Minister:

- (A) consider the findings and recommendations of this Report; and
- (B) approve the carrying out of the project, under Section 75J *Environmental Planning and Assessment Act, 1979*; subject to modifications of the project and conditions and sign the Determination of the Major Project (**tag A**).

Prepared by:
Alan Bright
Contract Planner

Endorsed by:
Josephine Wing
Team Leader

Michael Woodland
Director

Jason Perica
Executive Director

APPENDIX A - DIRECTOR-GENERAL'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

The Environmental Assessment must address the following key issues:

1. Relevant EPIs and Guidelines to be addressed

- Planning provisions applying to the site, including permissibility and the provisions of all plans and policies including:
 - SREP (Sydney Harbour Catchment) 2005;
 - Zoo 2000 'The View to the Future' – December 1999;
 - Taronga Zoo Master Plan Urban Design Principles and Visual Analysis (UDAS Guidelines) – May 2001; and,
 - Taronga Zoo Conservation Strategy – July 2002.

2. Building design

The proposal must exhibit design excellence principles. Visual aids such as a photomontage must be used to demonstrate visual impacts.

3. Environmental Sustainable Development

- The environmental assessment shall detail how the development will incorporate ESD principles in the design, construction and ongoing operation phases.

4. Heritage

- A detailed heritage assessment for the site and the adjoining exhibits including impact of adjacent buildings regarding proposed demolition/destruction of heritage relics and an assessment of the desirability and viability of adaptive reuse of the existing structures, including the preparation of a Heritage Impact Statement and other applicable reports, prepared in accordance with the *Heritage Manual*, (NSW Heritage Office & DUAP 1996) and in consultation with any requirements of the NSW Heritage Office.
- If any impact is anticipated on any archaeological relics, it is recommended that a research design for the proposed excavation/demolition should be included in the Heritage Impact Statement.

5. Construction Impacts

- Address measures to ameliorate potential impacts including vehicular/pedestrian access and noise arising from the construction of the proposed development.

6. Waste Management

- Address demolition and construction wastes that may be generated - likely quantities, proposed disposal destinations and best practices for safe handling and disposal in accordance with WorkCover's Occupational Health and Safety requirements.

7. Drainage/Stormwater

The environmental assessment is to address drainage/stormwater issues associated with the development.

APPENDIX B - COMPLIANCE WITH OTHER CONTROLS

Zoo 2000 – The View to the Future

- This document is a Master Plan to guide the process of renovation, refurbishment and redevelopment of the zoo.
- The subject site is located within the “Heart of the Zoo” precinct identified in the Master Plan. The historic Elephant Temple is the key element of this location and precinct.
- The Heart of the Zoo and specifically the Elephant Temple is intended to be a place of interpretation and reflection on the past development of the zoo.
- The proposal to utilise the area surrounding historic Elephant Temple for the continuing exhibition of Elephants will strengthen the Heart of the Zoo precinct.
- The proposed exhibit will strengthen the role of this location as place for interpretation and reflection. A modern Elephant barn juxtaposed next to the Elephant Temple will provide an interesting point of reference and reflection on historic and modern Elephant keeping and exhibition.
- The Master Plan provides for the main Elephant exhibit to be located to the south-west of the subject site, where the current ‘Wild Asia’ Elephant is located. The proposal complies with the Master Plan in this regard as it is not the main exhibit but a facility for the Bull Elephant only and part of the breeding program.

Taronga Zoo Urban Design Principles and Visual Analysis

- The Analysis contained in this document places the subject site outside of identified visually sensitive zones, with for example the area to the south of the site adjacent the harbour being identified as ‘highly visually sensitive’.
- The proposed new barn building is considered to be responsive to the heritage Elephant Temple and its context generally and the resulting design will not detract visually from its context.
- By nature of its scale, the barn building will have some visual impact, however this is considered to have been satisfactorily managed through the design and materials used. The context and particularly the dense landscape curtilage to the building to the west will screen the building and further limit its impact.
- The visual impacts have been satisfactorily managed through the design of the proposal and significant views have not been impacted upon.

Taronga Zoo Conservation Strategy

- **Landscape Analysis** – The site has been so modified over time that it has become a ‘cultural landscape’ rather than a natural one. The proposal is yet another example of a structure designed to retain the sites natural qualities while further layering its rich cultural qualities. Thematically and in terms of the landscape character, the proposal is appropriate development.
- The proposal does not impede important view corridors identified in the Strategy and it does not block any views of important natural features. The visitors ability to experience the landscape, views to the harbour and views of the landscape will not be impeded by the proposal.
- **Significance** - Taronga Zoo is identified as a site of National significance in the strategy and demonstrates early links with modern zoo philosophy and the fabric of the zoo represents a rich history of the development of zoo exhibits woven into a steeply sloping natural setting.
- The location of the ‘Elephant Enclosure and Yard’ is identified as having ‘high significance’ and the ‘Elephant Temple’ is identified as having ‘Exceptional’ significance in the Strategy. See also the discussion of significance contained in the Heritage Impact Statement accompanying the application for summary of significance.
- **Impact of Proposal** - The continuing use of the yard as proposed will continue the historic association of the place with the exhibition of Elephants and ensure significance of the place is strengthened. The ability for the visitor to readily interpret the history of the site, with new and old Elephant accommodation, with the latter being used as an interpretation centre, will build upon the significance of the place and ensure on-going historic associations.

APPENDIX C - RESPONSE TO SUBMISSIONS

Taronga Zoo

Capital Works & Infrastructure
Bradleys Head Mosman
PO Box 20 Mosman
NSW 2088 Australia
Tel 02 9978 4545
Fax 02 99784525
alexh@zoo.nsw.gov.au
www.zoo.nsw.gov.au

Western Plains Zoo

Division /Department
Obley Road Dubbo
PO Box 831 Dubbo
NSW 2830 Australia
Tel 02 6882 5888
Fax 02 6884 1722
www.zoo.nsw.gov.au

21.06.07

**The Director
Urban Assessments
Dept of Planning
NSW Government
GPO Box 39
Sydney 2001**

For Attn Alan Bright, Planner Urban Assessments

Re; New Bull Elephant Facility – Taronga Zoo – MP 06-0270

Thank you for your letter dated Wednesday June 6th
Enclosed with this letter were copies of four submissions receive

NSW Heritage Office 01/06/07
Mosman Municipal Council 29/05/07
NSW Health 11/05/07
Humane Society International 30/05/07

Two more submissions were received from you office by fax's 08/06/07

NSW Maritime 06/06/07
Name withheld

Taronga Zoo has read these submissions and has taken counsel on these matters.

Submitted for your record are plans that have been further developed during the design process. Attached drwgs A010.04, A110.03, A300.02, A301.02, A040.03 Sections from plan A040 North, East and South include the perspective of the existing Elephant temple which has been updated to include recent surveys and heritage office plans recorded of this building.

Also submitted a Statement of Commitments

Response to the submissions received

NSW Heritage Office 01/06/07

This letter is considered as to supporting the application

" The heritage office accepts that the Bull Elephant facility has been designed to be a background structure seeking to minimize the visual impacts of its considerable size whilst leaving the temple as the dominant landmark the use of irregular facets in the walls, natural rock colours and planter boxes have potential to make the new building blend into the landscape that is characterized in part by exposed sandstone bluffs The heritage office appreciates the incorporation of previous advice designing the parapet with an irregular profile" [Vincent Sicari Heritage letter 1/06/07]

As we have discussed with your Mr. Alan Bright the developed design of this building has a reduced height and is slightly repositioned to the north to reduce the impact obstruction to the visual connection of one small ridge and another on the zoo's topography.

Archaeology;

The DA Conditions sent from Vince Sicari, Manger, Conservation Team, NSW Heritage Office, dated 1 June 2007, did not acknowledge the receipt or consideration of the Exemption Application, sent to same on 11 May 2007, (GML Ref 07-0141vsc1).

The Exemption Application, prepared by Godden Mackay Logan (GML), was sought by Taronga Zoo, based on GML's advice concerning the archaeological issues relating to this site and was submitted to the Heritage Office on the grounds that the works would comprise 'Minor Impacts'.

The Conditions imposed in the Heritage Office letter, (1 June 07) relate to how the subject area's archaeological issues should be dealt, under the Conditions for 'Nominated Archaeologist', 'Works' and 'Archaeology'.

Further to these Conditions, the ZPB believe that GML's application, on behalf of Taronga Zoo, should be considered and Conditions amended to reflect the conclusions made in the Application that the *proposed works should be carried out pursuant to the gazetted Exceptions for Section 140 Excavation Permits, under the direction of Taronga Zoo's in-house heritage advisor.*

Mosman Municipal Council 29/05/07

The Council concerns are noted and we respond

"... The likely visual impact of the facility is still likely to be significant."

"... likely to be highly visible when viewed from the Harbour..."

"...its form likely to detract from the aesthetic value of the site when viewed from the Harbour:"

The design development of proposed barn has allowed an additional reduction in the height by 1200mm from the height indicated in the current DA. This reduction in height further reduces the visual impact when viewed from the Harbour.

This reduction in height also improves the relationship between the scale of the new barn and old barn (Heritage Temple).

In addition the design development of proposed barn has allowed the barn to be moved 1700mm towards Taronga Boulevard i.e. away from the Harbour and back into the adjacent existing vegetation which further mitigates visual impact from the harbour.

Further measures to reduce the built form impact from the Harbour, Arborists have determined that the Fig tree nominated to be removed can be relocated on site. This mature tree replaces a proposed new tree located to the south east of the barn. This will locate the new barn between two fig trees one existing tree in the adjacent Crocodile Exhibit and the proposed relocated fig. Both trees will provide screening of the barn when viewed from the

harbour from the southwest and from the southeast. The relocated fig tree will provide built form screening well in advance of a proposed new young tree.

"The scale, form and proximity of the proposed new building will detract from the heritage significance of the Heritage Elephant Temple."

"... resulted in an uneasy relationship between the new and the old facilities."

The new barn been positioned within the site to have the least possible impact on the Heritage Temple. The Heritage Council of N.S.W. letter dated 1 June 2007 in their response to the DA "accepts that the building has been designed as a background seeking to minimise the visual impact of its considerable size while leaving the Temple as a dominant landmark. The location of the building is considered to be far enough away from the Elephant Temple to have an acceptable impact on the setting of the Elephant Temple.

The reduction of the parapet and roof heights as developed in the design further reduces the obstruction to any Harbour View.

The detraction from the Heritage significance of the Elephant temple, is mitigated, is fully understood and the measures used are supported by the Heritage Office letter received. The Bull Elephant Facility site of works are not intended for further development, An open space requirement for the containment of elephants as per the ARAZPA guidelines exist and will be maintained, preventing any further development.

Mosman Council requests for serious consideration of the matters listed for determining this matter

Site management – hours of work outlined in SEE

Heavy Vehicle traffic

Parking in residential streets

Contributions of 94A

Items 1 through 3 are expected and will be incorporated with the project and site management requirements.

Item 4 - request for section 94A contributions in accordance with Councils Contributions Plan 2006. Under the Mosman LEP the development would be deemed exempt and permissible with out consent based on its – *Community Use Zone – 5(a) – Zoo. Its states that, structures solely for the purpose of exhibition, conservation and care of animals on land zoned community use 5(a) – zoo.*

The ZPB contend that Mosman section 94(a) contributions are not applicable in this instance. Having viewed the Contributions plan, its intent is to...*assist the council to provide the appropriate public amenity and service delivery within the area.* Taronga Zoo is actually included in the councils overall open space calculations. *Part B – Administration and operation of the plan, 1.5 Are there exemptions to the levy.* It states that the Levy will not be imposed in respect of development: for the sole purpose of adaptive reuse of an item of environmental heritage. The Heritage Elephant Temple and associated facilities fall into this category.

NSW Health 11/05/07

This letter confirms no major issues for public health.

Humane Society International 30/05/07

It is contended that the matters raised are not relevant to the application for this Development Consent which has major projects approval from the Minister for Planning. [Refer correspondence dept planning Nov 6th & 9th 2006]

Not withstanding the above we further comment,

The ZPB have for some time planned to build a "Bull" Elephant exhibit and associated breeding facility.

Consistent with the ZPB's commitment to the findings of the Administrative Appeals Tribunal (AAT) decision of 6th February 2006, the ZPB will construct a new "Bull" holding facility for the Juvenile bull (Gung). This facility will incorporate the requirements of a breeding facility to fulfill the Taronga Zoo commitment to the ARAZPA Regional Elephant Breeding Program, and to further underpin the National Conservation Program.

Taronga Zoo is committed to meeting the requirements of all of the conditions to the Administrative Appeals Tribunal (AAT) determination dated 6th February 2006. In particular the proposed Male Elephant Facility will be constructed "to a standard at least consistent with the presented concept plan and spatial requirements annexed to or included within the affidavit by Guy Cooper of December 2005". A copy of the relevant AAT determination is attached for your record.

The proposed facility meets the requirements of the Australasian Regional Association of Zoological Parks and Aquaria (ARAZPA) guidelines for Management of Elephants in Australasian Zoos, produced by the Proboscoid and Perissodactyl Taxon Advisory Group - Dec 2004, which are also a requirement of the AAT determination of Feb 6th 2006.

We also note that the revised design incorporates total available space (2612 m²) for the keeping of elephants that exceeds these (ARAZPA) guidelines (2000 m²) by 30% or more. Attached for your information is scenario plan SK 20 issue (D) please note this information is not for public view and should not be posted with any such information (intent of SK20 is for ZPB internal elephant management protocols).

The proposed design utilizes the maximum available space within the available site layout and topography.

We also advise that in addition to the Development Consent / S.E.E, the Zoological Parks Board NSW is bound to make a concurrent application to the Department of Primary Industry (DPI), whom are responsible to review compliance of the application with the above AAT and ARAZPA requirements. This application has been lodged with DPI we have received comment from DPI and are responding to the issues raised. It is acknowledged that available exhibit space is compliant with these requirements.

NSW Maritime 06/06/07

All new palms on site will be Cabbage Tree Palm - *Livistona australis*. An inspection of the existing Fig in the temple paddock by Taronga Zoo's arborist has identified the potential of transplanting the tree within the paddock.

The mature cabbage tree palm (*Livistona australis*) is to be removed and transplanted outside the facility and adjacent to the Elephant Temple.

Sediment controls, site works will be carried out in accordance with the relevant site management plan in respect to environmental management safeguards.

Name withheld 06/06/07

The correspondence states that the proposed Bull Elephant Facility is totally inappropriate. The facility is a requirement of the AAT determination of Feb 6th 2006. The planned facility meets all the spatial requirements of the ARAZPA guidelines for the management of elephants in Australasian Zoo's and the determination of the AAT. The proposed facility reflects the ZPB commitment to the Regional breeding and Conservation programs. The

focus of these programs is at Taronga Zoo and is integral to the recently completed Wild Asia precinct.

**Yours faithfully
Taronga Zoo Capital Works and Infrastructure**

**Alex Halliburton
General Manager**

APPENDIX D - ENVIRONMENTAL ASSESSMENT

APPENDIX E – STATEMENT OF COMMITMENTS

Statement of commitments Taronga Zoo Bull Elephant Facility Dept Planning NSW MP06-0270 June 2007

Scope of Development.

The proposed development will be carried out in accordance with the described development as detailed in section 4.7 of this application for Development Approval and the architectural plans as prepared by Jackson Teece Architects.

Mitigation of Construction impacts

The demolition and building contracts will stipulate conditions for carrying out these works with the Zoos environmental protections. These include

Construction will be limited to normal construction work hours. This work will be from 7.00 am to 6.00 pm Mondays to Fridays and 8.00 am to 1.00pm Saturdays with no work allowed on Sundays or Public holidays.

Construction vehicles over 3 tonnes will be restricted to use of major roads only and not Prince Albert St

Noise minimisation and suppression techniques will be employed on all construction equipment

Erosion and sediment control measures to be installed and maintained around the site during construction.

Stormwater run-off from the site of works as proposed development will not exceed the existing levels of run-off from the site.

Measures for protection of non affected trees will be implemented

Control of vehicular movements within the Zoo

Various signage to warn or protect visitors

Erection of hoardings to protect the general public.

Compliance with BCA and other applicable statutes

Protection of Heritage items.

The ZPB Conditions of Entry to and for working at Taronga Zoo impose strict conditions for control of noise.

APPENDIX F – PREFERRED PROJECT
