

# CONSTRUCTION MANAGEMENT PLAN

State Significant Development Application - Upper Australia Precinct,  
Taronga Zoo



Taronga Zoo  
V1  
12 June 2020

## CONSTRUCTION MANAGEMENT PLAN

---

### Document status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
V1	Draft	RW	MO	MO	15-06-20

### Approval for issue

Mark Owens

[Signature]

[Date]

---

This report was prepared by RPS within the terms of RPS' engagement with its client and in direct response to a scope of services. This report is supplied for the sole and specific purpose for use by RPS' client. The report does not account for any changes relating the subject matter of the report, or any legislative or regulatory changes that have occurred since the report was produced and that may affect the report. RPS does not accept any responsibility or liability for loss whatsoever to any third party caused by, related to or arising out of any use or reliance on the report.

---

Prepared by:

#### RPS

Rebecca White  
Project Manager / Planner

Level 13, 255 Pitt Street  
Sydney NSW 2000

T +61 2 8099 3200  
E rebecca.white@rpsgroup.com.au

Prepared for:

#### Taronga Zoo

Kristine Marshall  
Senior Project Manager

Taronga Zoo Sydney  
Bradleys Head Road  
Mosman, NSW 2088

T 0417 266 163  
E kmarshall@zoo.nsw.gov.au

---

## Contents

<b>1</b>	<b>INTRODUCTION .....</b>	<b>1</b>
1.1	OVERVIEW .....	1
1.2	PURPOSE .....	1
1.3	BACKGROUND.....	2
<b>2</b>	<b>SITE LOCATION AND ACCESS.....</b>	<b>3</b>
2.1	TARONGA ZOO.....	3
2.2	UPPER AUSTRALIA PRECINCT .....	3
2.3	ACCESS.....	4
2.3.1	PUBLIC TRANSPORT.....	4
2.3.2	PRIVATE TRANSPORT .....	5
2.4	ACCESS AROUND THE ZOO.....	5
<b>3</b>	<b>DESCRIPTION OF WORKS .....</b>	<b>6</b>
3.1	UPPER AUSTRALIA PRECINCT SSDA WORKS.....	6
3.2	EARLY WORKS PACKAGE .....	7
<b>4</b>	<b>CONSTRUCTION PHASING AND SCOPE OF WORKS.....</b>	<b>10</b>
4.1	SCOPE OF WORK .....	11
4.1.1	PRE-CONSTRUCTION ACTIVITES (PHASE 1).....	11
4.1.2	EXCAVATION ACTIVITIES (PHASE 2) .....	12
4.1.3	CONSTRUCTION ACTIVITIES (PHASE 3) .....	12
4.1.4	POST CONSTRUCTION ACTIVITIES (PHASE 4).....	14
4.2	CONSTRUCTION DURATIONS .....	14
<b>5</b>	<b>GENERAL MANAGEMENT.....</b>	<b>16</b>
5.1	SITE ESTABLISHMENT .....	16
5.2	SITE SIGNAGE.....	17
5.3	SITE SECURITY .....	17
5.4	DAILY TASKS .....	17
5.4.1	Prior to Work Commencing.....	17
5.4.2	During Hours of Work .....	18
5.5	TARONGA ZOO INDUCTION.....	18
5.6	HOURS OF WORK .....	18
5.7	SAFETY EQUIPMENT .....	19
5.8	HOT WORK.....	19
5.9	NO SMOKING POLICY.....	19
5.10	FIRST AID .....	19
5.11	CONFINED SPACES .....	19
5.12	UTILITIES.....	20
5.13	SOIL EROSION AND SEDIMENTATION .....	20
5.14	HAZARDOUS MATERIAL REMOVAL .....	20
5.15	HERITAGE MANAGEMENT .....	20
5.16	NOISE, VIBRATION AND DUST .....	21
5.16.1	Dust.....	21
5.16.2	Noise and Vibration .....	21
5.16.3	Sources of Noise and Vibration .....	21
5.16.4	Noise and Vibration Levels .....	22
5.16.5	Procedure for Mitigation of Impacts .....	22
5.16.6	General .....	23
5.17	RUBBISH REMOVALS .....	24
5.18	DELIVERIES .....	24
5.19	WORKFORCE.....	24
5.19.1	FACILITIES.....	24

## CONSTRUCTION MANAGEMENT PLAN

---

5.19.2	STORAGE .....	25
<b>6</b>	<b>WASTE MANAGEMENT PLAN .....</b>	<b>26</b>
6.1	OBJECTIVES.....	26
6.2	INITIATIVES.....	26
6.3	IMPLEMENTATION .....	26
<b>7</b>	<b>ACCESS PLAN.....</b>	<b>28</b>
7.1	OCCUPIED PREMISES.....	28
7.2	VEHICLE ACCESS .....	28
7.2.1	CONSTRUCTION ACCESS .....	28
7.2.2	TARONGA ZOO VEHICLE POLICY .....	29
7.2.3	GOODS AND CONSTRUCTION EQUIPMENT MOVEMENT THROUGH ZOO GROUNDS.....	29
7.2.4	CONSTRUCTION VEHICLES .....	29
7.2.5	CRANAGE AND TRUCK MOVEMENTS ONSITE .....	30
7.2.6	ACCESS FOR EMERGENCY VEHICLES .....	30
7.2.7	PARKING .....	30
7.3	PEDESTRIANS.....	31
7.3.1	ACCESS FOR VISITORS.....	31
7.3.2	ACCESS FOR CONSTRUCTION PERSONNEL .....	31
<b>8</b>	<b>COMMUNICATION .....</b>	<b>32</b>
8.1	STAKEHOLDERS .....	32
8.2	STAKEHOLDER COMMUNICATION .....	32
8.2.1	Regular Meeting.....	32
8.2.2	Contact List: .....	32
<b>9</b>	<b>RECORD KEEPING.....</b>	<b>33</b>
9.1	SITE QUALITY ASSURANCE AND DAILY RECORDS .....	33
9.2	INCIDENT / ACCIDENT MANAGEMENT AND REPORTING.....	33
9.2.1	Incident Management .....	33
9.2.2	Accident Management .....	33
<b>10</b>	<b>EMERGENCY PROCEDURE .....</b>	<b>34</b>

# 1 INTRODUCTION

## 1.1 OVERVIEW

In developing the Construction Management plan for the Upper Australia Precinct, Taronga Zoo confirms its commitment to ensuring a safe work site for its employees, contractors, suppliers, subcontractors, visitors, pedestrians and the travelling public.

This Plan allows for reasonable disruption (e.g. noise, dust, vibration) for the respective Contractors during the construction of the Upper Australia Precinct. However, provides guidance to ensure this is appropriately managed throughout with minimum disruption to staff, visitors and the wider community.

This Plan ensures that the Works Contractors understand:

- The Construction Phasing and scope of works;
- General management of the site;
- Waste management plan;
- Access Plan;
- Communication Plan;
- Record keeping; and
- Emergency procedure.

This Plan shall be revised to consider altered or unexpected site conditions. In such instances, an addendum to the Plan will be issued to all copy holders to reflect such changes.

## 1.2 PURPOSE

This Construction Management Plan Report accompanies a SSDA outlining the approach to be taken for managing the following construction works:

1. Existing wetland ponds to be removed;
2. Construction of a Koala Tree Walk;
3. Construction of a Tree House;
4. Construction of Koala Talk Area;
5. Refurbishment of Nocturnal House;
6. Consolidation and construction of Wild Ropes Course;
7. Construction of Western Pavilion;
8. Construction of Macro pod Exhibit;
9. Back of house animal areas;
10. New southern link ramp;
11. Other supporting infrastructure and walkways;
12. New landscaping; and
13. Reconstruction of heritage wall along Bradley's Head Road.

This CMP ensures that possible impacts that may arise from the works have been appropriately identified, managed and minimised.

### 1.3 BACKGROUND

The Upper Australia Precinct is one of the pillars of Taronga's Centenary Capital Plan and is intended to be commence construction in early 2021, with supporting early works being undertaken in the second half of 2020.

The project has been structured into two DA pathways to support the accelerated construction process that is intended to be put in place. The purpose of an accelerated design and construction program is to take advantage of the downturn of the Taronga business due to COVID19 and enable the zoo to be in the best possible position to welcome guests when business returns.

The project is proposed to be constructed in 2 main construction stages:

1. Cut and Fill earthworks and Demolition (subject to a DA with Mosman Council); and
2. Construction of the Upper Australia Precinct (as defined through this SSDA).

Both phases of the project have a combined construction budget of \$16m.

A separate CMP has been prepared for the Early Works which includes site preparation and enabling works (including demolition and site removal). This work will be undertaken in advance to allow the Upper Australia Precinct to be constructed immediately upon approval from the consenting authority. This work (and the accompanying CMP) was reviewed by Mosman Council under a separate development application.

DRAFT

## 2 SITE LOCATION AND ACCESS

### 2.1 TARONGA ZOO

The zoo is located at Bradleys Head Road at the southern end of Mosman on the Bradleys Head Peninsula. The zoo is approximately 28 ha and is legally described as Lott 22 in DP 843294.

The zoo is located within the Mosman Local Government Area.

The site is bounded by:

- Whiting Beach Road to the north.
- Bradleys Head Road to the east;
- Athol Wharf Road and Sydney Harbour to the south; and
- Little Sirius Cove to the west.

Figure 1: Map of site



The Zoo consists of several state heritage items, and the register states the zoo is:

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

Access is from Bradleys Head Road which extends alongside the entire eastern boundary of the zoo grounds.

### 2.2 UPPER AUSTRALIA PRECINCT

The site is immediately adjacent the main entry plaza and incorporates the existing Australian animal precinct within the zoo which includes the Wetlands Ponds, Koala Encounters, Macropod Walkthrough, Ropes Course and Nocturnal House.

Figure 2: Location of the Upper Australia Precinct



## 2.3 ACCESS

Taronga Zoo is located on Bradley's Head Road, and is easily accessible by various modes of transport:

### 2.3.1 PUBLIC TRANSPORT

#### Ferry

- Taronga Zoo Sydney is 12 minutes from Circular Quay by ferry. Sydney Ferries services depart Circular Quay every 30 minutes.

#### Bus

- The 430 Bus travels to Taronga Zoo Sydney every 10 - 15 minutes from Central, Town Hall and Wynyard train stations;
- Northern suburb bus routes can change at either Spit Junction or Mosman Junction to join the M30 to the Zoo; and
- The 238 bus route travels between Balmoral Beach, the Taronga Zoo Sydney main entrance and the Taronga ferry wharf on the water's edge for passengers arriving or leaving by ferry

#### Train

- Passengers can change at Circular Quay train station and join the ferry to Taronga Zoo Sydney.

### 2.3.2 PRIVATE TRANSPORT

Parking is available at Taronga Zoo Sydney, entry from Bradleys Head Road.

## 2.4 ACCESS AROUND THE ZOO

The site is accessible by both pedestrians and small motor vehicles. The access to the Upper Australia Precinct is demonstrated on the map below with access around the Upper Australia Precinct shown in yellow:

Figure 3: Taronga Zoo Site Map

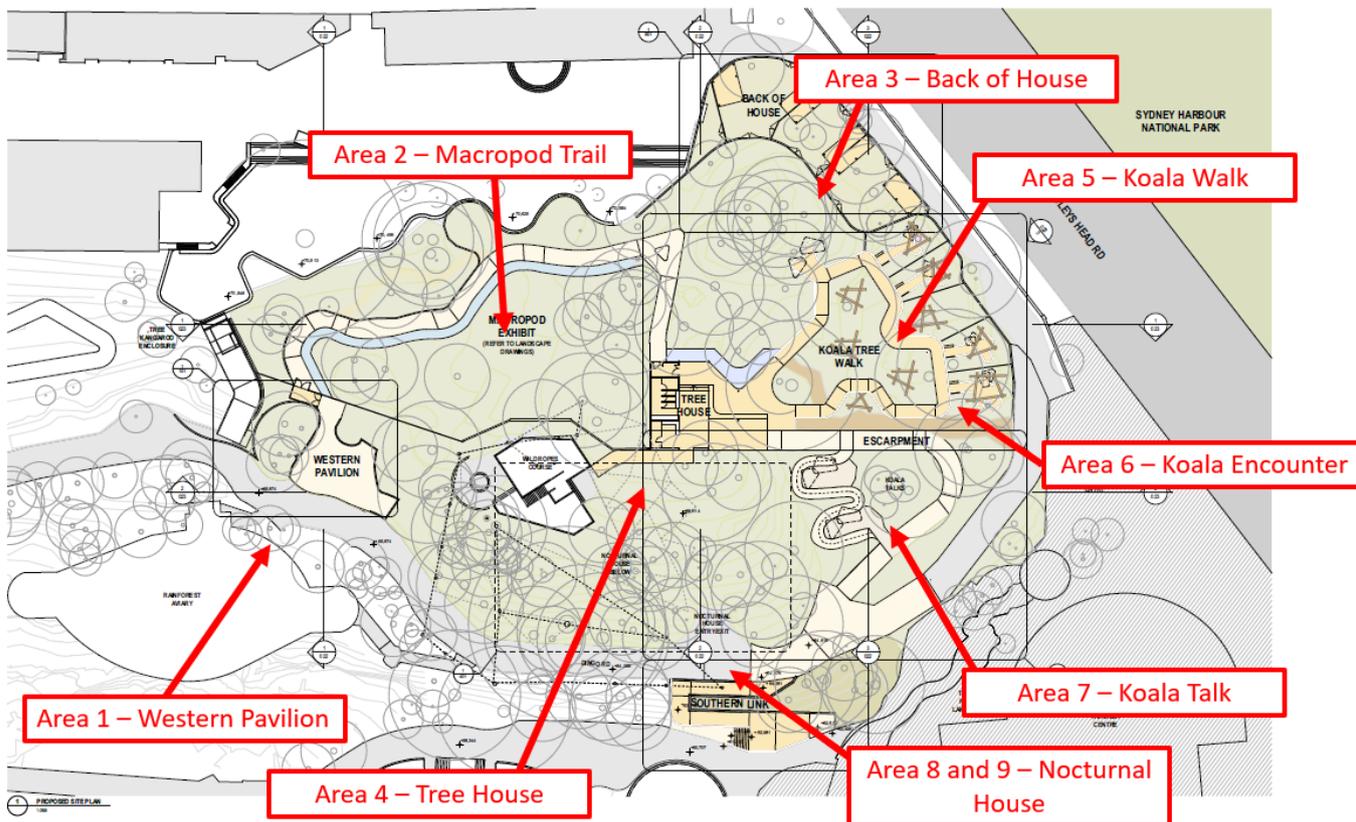


### 3 DESCRIPTION OF WORKS

#### 3.1 UPPER AUSTRALIA PRECINCT SSDA WORKS

The Upper Australia Precinct SSDA (Works) redevelopment will include nine distinct areas as shown on the plan below:

Figure 4: Upper Australia Precinct Areas



These areas include the following:

- **Area 1 – Western Pavilion** - Construction of Western Pavilion to be 140sqm and measures 12m x 12m. Pavilion will include large sculptural built element, area for interpretative storytelling, break out space, air lock to enter Macropod Trail and timber walkway;
- **Area 2 – Macropod Trail** - Construction of Macropod trail to be 1,987sqm and measures 87m x 35m. Area will be a barrierless enclosure with exploration paths and water stream. Entry will be from Western pavilion with exit to Tree house;
- **Area 3 - Back of House** -Construction of four Macropod holding yards to be 420sqm and measures 34m x 10m. Area to include holding areas, storage shed and cool room for macropods and koalas;
- **Area 4 – Tree House** - Construction of a Tree House including ticketing, gift area, toilet facilities and seating areas. Building to be 220 sqm and 19.5m x 13.5m;
- **Area 5 – Koala Walk** -Construction of a Koala Tree Walk including elevated timber deck viewing platform and boardwalk around Koala Exhibit. Area to be 175sqm and measures 25m x 25.5m;
- **Area 6 – Koala Encounter** - Construction of Koala Encounter including four encounter bays. Area to be 312sqm and measures 34m x 11m;

## CONSTRUCTION MANAGEMENT PLAN

- **Area 7 – Koala Talk** - Construction of Koala Talks Areas including two koala talks viewing bays with talk shade structures, one Koala Exhibit with designated Koala bays and meandering accessible sidewalk. Area is 700sqm and measures 28.5m x 37.5m;
- **Area 8 – Nocturnal Exhibit** - Refurbishment of Nocturnal House including open and closed exhibits (internal layout to be confirmed). Area is 720sqm and measures 41m x 23.5m;
- **Area 9 – Nocturnal Back of House** – Refurbishment of Nocturnal House with back of house area to service the nocturnal exhibits including kitchen, stores, aviaries and access area. Area is 175sqm and measures 30m x 8.5m;
- Adjustments, consolidation and construction of new portions to the Wild Ropes Course;
- New southern link ramp with new retaining walls;
- Other supporting infrastructure and walkways; and
- New landscaping throughout.

The Proposed Site Plan is shown on drawing A-DA-021 prepared by Lahznimmo Architects.

**Figure 5: Proposed Site Plan**



### 3.2 EARLY WORKS PACKAGE

The initial early works package which will allow the main construction works for the Upper Australia Precinct will have been completed prior to construction commencing under the SSDA. This work included:

- Demolition of the Platypus house and minor excavation works;
- Cut and fill to site. No material to leave site;
- Removal of a portion of the heritage perimeter wall and construction of a site-specific construction traffic entry;
- Removal of Heritage Item 153L – Bridge; and
- Removal of Heritage Item 123L - Brick Walls and pathways.





## 4 CONSTRUCTION PHASING AND SCOPE OF WORKS

The following construction sequence is based upon the current design and may be subject to change upon conditions derived after the SSDA. This sequence will be amended to suit the SSDA as well as discussions with the appointed contractor.

The proposed construction sequence is as follows:

- **Pre-construction Activities (Phase 1):**
  - Notifying residents;
  - Erection of site fencing, signage and site amenities (if not retained from Early Works Package); and
  - Set up of site office and contractor facilities (if not retained from Early Works Package)
- **Demolition Activities (Phase 2 – Site Preparation):**
  - Removal of existing wetlands ponds;
- **Construction Activities (Phase 3 – Construction):**
  - **Area 2 – Macropod Trail** - Construction of Macropod trail to be 1,987sqm and measures 87m x 35m. Area will be a barrierless enclosure with exploration paths and water stream. Entry will be from Western pavilion with exit to Tree house;
  - **Area 1 – Western Pavilion** - Construction of Western Pavilion to be 140sqm and measures 12m x 12m. Pavilion will include large sculptural built element, area for interpretative storytelling, break out space, air lock to enter Macropod Trail and timber walkway;
  - **Area 4 – Tree House** - Construction of a Tree House including ticketing, gift area, toilet facilities and seating areas. Building to be 220 sqm and 19.5m x 13.5m;
  - Consolidation and construction of Wild Ropes Course;
  - **Area 8 – Nocturnal Exhibit** - Refurbishment of Nocturnal House including open and closed exhibits (internal layout to be confirmed). Area is 720sqm and measures 41m x 23.5m;
  - **Area 9 – Nocturnal Back of House** – Refurbishment of Nocturnal House with back of house area to service the nocturnal exhibits including kitchen, stores, aviaries and access area. Area is 175sqm and measures 30m x 8.5m;
  - New southern link ramp with new retaining walls;
  - **Area 7 – Koala Talk** - Construction of Koala Talks Areas including two koala talks viewing bays with talk shade structures, one Koala Exhibit with designated Koala bays and meandering accessible sidewalk. Area is 700sqm and measures 28.5m x 37.5m;
  - **Area 3 - Back of House** - Construction of four Macropod holding yards to be 420sqm and measures 34m x 10m. Area to include holding areas, storage shed and cool room for macropods and koalas;
  - **Area 5 – Koala Walk** -Construction of a Koala Tree Walk including elevated timber deck viewing platform and boardwalk around Koala Exhibit. Area to be 175sqm and measures 25m x 25.5m;
  - **Area 6 – Koala Encounter** - Construction of Koala Encounter including four encounter bays. Area to be 312sqm and measures 34m x 11m;
  - Other supporting infrastructure and walkways; and
  - New landscaping throughout all areas.
- **Post Construction Activities (Phase 4)**
  - Reconstruction of heritage wall along Bradley’s Head Road.
  - Review of existing site fencing and tree protection measures;
  - Cleaning and finishing works; and
  - Inspections.

Upon the contracting of the project builder this sequence may change, any changes will be documented in the Final Construction Management Plan.

## 4.1 SCOPE OF WORK

The general scope of works and activities will be carried out as per the construction sequence and the sections below will further explain the items detailed in the construction sequence and their timings on site.

Please note that we have not given specific dates as it is not currently known when the Development Application will be approved.

We have categorized the community impacts as follows:

- **Very Minor or Minor** – Light or duties with very minimal impact or noise. Increase of personnel for short periods.
- **Medium** – Higher level of noise with small tools or small excavation equipment up to 8 tonnes. Increase in personnel for duration of construction with spikes in personnel on occasions.
- **High** – Heavy machinery above 8 tonnes, heavy breaking using hydraulic breakers for prolonged periods. Increase in truck movements for removal of material.

### 4.1.1 PRE-CONSTRUCTION ACTIVITIES (PHASE 1)

Table 1: Pre-Construction Activities

Phase 1				
Item	Details	Timing/Duration	Community Impacts	Mitigation measures
Notification to residents of commencement of activities	This will be carried out in advance of starting any activity on site and is good practice to let the near-by residents know what's going to happen and when. Contact details of personnel responsible for the construction will be included in the notification.	2-4 weeks before starting on site.	None – positive communication.	None required.
Erection of site fencing, signage and site amenities (if existing site establishment works cannot be reused from Early Works)	Minor clearing might be carried out to erect the site fence and install the site amenities. Site amenities to be located as detailed in Section 5. Minor traffic impact as vehicles enter site near the entrance to provide the portable building and connect to existing services	Start of project for 1 weeks duration.	<b>Minor</b> - some vehicles requiring entry to the site. Slight impact to passing pedestrians and staff as pedestrian routes are amended.	Keep staff and visitors informed with flyers and notice board. Brief construction personnel of their responsibility. Ensure correct signage is erected.
Set up of site office and contractor facilities	Existing Zoo facilities within the work site to be used for early Works.	Start of project for 1 weeks duration.	<b>Minor</b> - some vehicles requiring entry to the site. Slight impact to passing pedestrians and staff as pedestrian routes are amended.	Provide alternative routes for pedestrians. Ensure signage and site fencing is in situ.

## 4.1.2 EXCAVATION ACTIVITIES (PHASE 2)

Table 2: Excavation Activities

Phase 2				
Item	Details	Timing/Duration	Community Impacts	Mitigation measures
Excavation of existing wetlands ponds and removal of existing water features and pond lining	Water from existing wetlands ponds to be pumped and removed from site. Removal of pond lining and features around edge of the pool e.g concrete edging, paving, pond lining.	1 weeks	Medium – trucks used for water removal	Environmental impact measures to be employed (dust suppression for concrete items). Limit use of heavy breakers with respite periods. Traffic management to be used to handle large amounts of trucks. Limit truck movements to 0930 and 1430 during Taronga Zoo opening hours.
Earthworks to regrade wetland ponds	Once water is removed, site to be regraded to correct levels for construction	2 weeks	Medium – trucks and machinery used for regrading site. May be a requirement for additional material to be delivered to site	Traffic management to be used to handle large amounts of trucks. Limit truck movements to 0930 and 1430 during Taronga Zoo opening hours.

## 4.1.3 CONSTRUCTION ACTIVITIES (PHASE 3)

This sequence of work will go from west to east anticlockwise to ensure appropriate access to all areas by the required vehicles and equipment.

Table 3: Construction Activities

Phase 3				
Item	Details	Timing/Duration	Community Impacts	Mitigation measures
Area 2 – Macropod Trail	Construction of Macropod trail to be 1,987sqm and measures 87m x 35m. Area will be a barrierless enclosure with exploration paths and water stream. Entry will be from Western pavilion with exit to Tree house.	8 weeks (to be completed with Western Pavilion)	Medium – At the commencement of works in each area there will be disturbance from material delivery and the need for more contractors on site	Vehicle access established into site and traffic to be managed as vehicles required access. Once material is on site, minor vehicle movement around Taronga Zoo.
Area 1 – Western Pavilion	Construction of Western Pavilion to be 140sqm and measures 12m x 12m. Pavilion will include large sculptural built element, area for interpretative storytelling, break out space, air lock to enter Macropod Trail and timber walkway	8 weeks (to be completed with Macropod trail)	As construction progresses and work some vehicles requiring entry to the site will require traffic management.  Slight impact to passing pedestrians and staff inside Taronga Zoo as pedestrian routes are amended.	All works carried out in daytime work hours.  Environmental impact measures to be employed throughout.

## CONSTRUCTION MANAGEMENT PLAN

### Phase 3

<b>Area 4 – Tree House</b>	Construction of a Tree House including ticketing, gift area, toilet facilities and seating areas. Building to be 220 sqm and 19.5m x 13.5m.	8 weeks	Some construction noise within the Zoo from increased level of activity. This will decrease as work reaches fit out stage.
Consolidation and construction of Wild Ropes Course	New Wild Ropes Course to existing trees	8 weeks (to be completed with Area 4 – Tree House)	
<b>Area 8 – Nocturnal Exhibit</b>	Refurbishment of Nocturnal House including open and closed exhibits (internal layout to be confirmed). Area is 720sqm and measures 41m x 23.5m;	8 weeks (all Nocturnal House works to be completed together)	
<b>Area 9 – Nocturnal Back of House</b>	Refurbishment of Nocturnal House with back of house area to service the nocturnal exhibits including kitchen, stores, aviaries and access area. Area is 175sqm and measures 30m x 8.5m	8 weeks (all Nocturnal House works to be completed together)	
New southern link ramp with new retaining walls	Construction of new southern link ramp with creation of ramp, stair access, viewing platform and retaining walls	4 weeks (to be completed with Areas 8 and 9 – Nocturnal House)	
<b>Area 7 – Koala Talk</b>	Construction of Koala Talks Areas including two koala talks viewing bays with talk shade structures, one Koala Exhibit with designated Koala bays and meandering accessible sidewalk. Area is 700sqm and measures 28.5m x 37.5m	4 weeks	
<b>Area 3 - Back of House</b>	Construction of four Macropod holding yards to be 420sqm and measures 34m x 10m. Area to include holding areas, storage shed and cool room for macropods and koalas.	8 weeks (to be completed with Koala Talk)	
<b>Area 6 – Koala Encounter</b>	Construction of Koala Encounter including four encounter bays. Area to be 312sqm	8 weeks	

## CONSTRUCTION MANAGEMENT PLAN

Phase 3		
	and measures 34m x11m.	
<b>Area 5 – Koala Walk</b>	Construction of a Koala Tree Walk including elevated timber deck viewing platform and boardwalk around Koala Exhibit. Area to be 175sqm and measures 25m x 25.5m.	8 weeks (to be constructed with Area 6 – Koala Encounter)
Other supporting infrastructure and walkways	Creation of walkways, pathways, seating areas, signage and water dispensers etc throughout the Upper Australia Precinct (not included already in areas above)	Ongoing throughout completion of areas
New landscaping	Landscaping of areas on completion of construction work	Ongoing throughout completion of areas. Final landscaping to take 2 weeks.

### 4.1.4 POST CONSTRUCTION ACTIVITIES (PHASE 4)

Table 4: Post Construction Activities

Phase 4				
Item	Details	Timing/Duration	Community Impacts	Mitigation measures
Reinstate Heritage Wall	Contractor to instruct a qualified stone mason to reconstruct the heritage wall in line with guidelines	1 week	Minor	Contractor to ensure there is no interruption to the movement of traffic along Bradley Head Road
Removal site fencing and tree protection measures ready for construction works	Removal of all site fencing and tree protection measures	1 week	Minor	All works will be contained on site with minor truck movements required.
Cleaning and finishing works.	Cleaning of site	2 weeks	Minor – small amount of people all contained on site.	All works will be contained on site with minor truck movements required.
Inspections and post construction activities.	Final inspections by authorities and client.	2 weeks	Minor – small amount of people all contained on site.	All works will be contained on site.

## 4.2 CONSTRUCTION DURATIONS

The total duration for the pre-construction works is approximately 4-5 **weeks** and construction activities will take approximately **36 weeks** and is subject to weather conditions and standard stoppages at Easter and Christmas.

It is not possible at this time to give a full programme of works or firm dates until the SSDA has been approved and a builder has been appointed.

It is likely that some of these activities slightly overlap and this has been allowed in the overall duration.

All heavy breaking will be carried out with periods of respites as per the environmental management plan.

DRAFT

## 5 GENERAL MANAGEMENT

### 5.1 SITE ESTABLISHMENT

Taronga Zoo will ensure suitable and safe access, including any applicable social distancing precautions, is maintained at all times around the site for staff, and visitors by the Contractor, including but not limited to the preparation of, and consultation regarding, the maintenance of an Access Plan which, shall incorporate:

- temporary signage around the site at key locations accessible to visitors (indicatively shown with a ‘S’ on the plan below);
- temporary pedestrian crossing, paths and ramps (if required);
- hoardings and protective screens and covers (as shown in indicatively in red on the plan below); and
- temporary lighting.

During the Early Works the contractor will have installed the above measures. Between the Early Works completing and the construction work commencing these measures will stay in place to prevent any access to the site while in its temporary state.

Dependent on the final contractor this site fencing may be reused. The fencing, if retained for construction, will be reviewed by the Contractor and any replacement will be undertaken to ensure safety is maintained.

If new fencing is installed, the same measures are put in place.

**Figure 87: Proposed location of signage and fencing/screens/covers**



### 5.2 SITE SIGNAGE

The Taronga Zoo logo must be on project signage, shade cloth to site fences, hoardings and any permanent fencing that forms part of the site boundary. Contractors' are not allowed use their company branding on Taronga Zoo construction sites.

Details of the proposed cover covering the extent and design is to be developed by Taronga Zoo and will be placed at key locations at the normal entrances and pedestrian routes to the Upper Australia Precinct.

### 5.3 SITE SECURITY

The Contractors will secure the boundaries of the site for the duration of works. The external area will be fenced off using temporary fence panels 1.8m to 2.4m in height. Taronga Zoo branded banner mesh (shade cloth – 90% shade factor) will be placed on the site screens and fencing to help minimise dust and present a clean and well managed site.

All temporary fencing with banner mesh installed at the site shall be constructed to eliminate risk of a fence blowing away due to high winds. Mitigation while installation is carried out by the Contractors will include:

- Install additional bracing every second panel instead of the standard every third panel;
- Install additional counterweights to the bracing;
- Install lightweight ties to the bottom which snap in high wind allowing the shade cloth to flap away from the fence;
- Limiting the length of straight runs in the layout of the fencing, i.e. corners add additional bracing; and
- Check fencing regularly for stability and comply with safety regulations.

Appropriate site safety signage will be displayed at all access points to the site warning staff, visitors and the general public that an area which is fenced and/or hoarded off is a construction site.

All access points allowing entry to the demolition and construction site will always be locked except for the main entry gate on Bradleys Head Road which will be manned for security and remain open during normal working hours. The Contractors will consult with Taronga Zoo to determine an appropriate employee to be authorised to allow access to the construction site in emergency situations for emergency services teams only.

Emergency Site Access procedure will be implemented and will be issued to the contractor for use after normal hours. Where Taronga Zoo allows access to site for emergency services teams to the construction site for an emergency, Taronga Zoo must notify the Contractors immediately, and thereafter in writing of the date and time they have entered the site and an explanation of the emergency must be provided.

Taronga Zoo staff will not be able to access the construction works unless prior arrangements have been made with the Contractor. If access is granted for Taronga Zoo staff to gain access, the staff member must be accompanied by the Contractor. It is also recommended that Taronga Zoo staff wishing to gain access to the construction site during the project, undertake the Building Industry Induction Course and obtain a white card.

### 5.4 DAILY TASKS

#### 5.4.1 Prior to Work Commencing

The Contractor's Supervisor will always carry out the following operations to ensure acceptable safety, before work starts each day:

1. Daily prestart toolbox talks with Subcontractors;
2. Inspect all signs and devices, note any signs out of place or damaged overnight and rectify as soon as possible;

3. Inspect all emergency and pedestrian egress paths and ensure that they are clear of construction plant and materials;
4. Make the programmed adjustments to the site management provisions for the day. Check for safety and effectiveness by an inspection around the job; and
5. Maintain, regularly clean and repair or replace signs and devices as necessary.

### 5.4.2 During Hours of Work

The Contractor's Supervisor will:

1. Attend to problems as they occur;
2. Where there are hazards to staff and public, the Contractors staff will ensure these are attended to immediately;
3. Reposition barriers and signs as necessary; and
4. Co-ordinate maintenance of access paths, footpaths with other job operations.

## 5.5 TARONGA ZOO INDUCTION

Contractors, key employees and where appropriate Subcontractors must attend an induction process at the Zoo conducted by the Principal's Representative at the beginning of the Contract.

In addition, the Contractor must conduct an induction process for all employees and subcontractors not previously inducted. All work must always be supervised by an inducted person.

## 5.6 HOURS OF WORK

Contractors must make prior arrangements with the appropriate Zoo personnel for themselves, their employees, subcontractors and suppliers to enter Zoo grounds.

Contractors, employees, Subcontractors and suppliers must initially report to the Zoo Security Officer at the booth in the Goods and Services Entrance at the intersection of Prince Albert Street and Whiting Beach Road. Once construction work is underway a separate Security point will be created at the Construction Gate on Bradley's Head Road.

Contractors are advised to not use the visitors or other entrances to the Zoo except with the prior approval of the Principal's Representative.

Access to the Site and normal working hours are limited to the hours of:

- 7.00am to 5.00pm on Monday to Friday; and
- 8.00am to 1.00pm on Saturday.

However, this may be subject to change following receipt of the DA consent for these works.

The Principal's Representative may authorise variations outside those hours at such times and under such conditions as the Principal's Representative sees fit.

Out of hours work will be considered for special applications only when it becomes necessary. Relevant authority approvals will be obtained by the Contractors prior to any work being performed outside the approved development consent working hours.

Working outside these hours will only be considered by the Contractor where:

- it is an emergency;
- a situation that would create hazardous conditions;
- plant breakdowns have delayed an activity that cannot be stopped; and
- the extended working hours will not impact on Taronga Zoo operations.

## CONSTRUCTION MANAGEMENT PLAN

The Contractor will ensure that the Taronga Zoo representative and the relevant government authority are notified of this work with the details and the reasons for performing outside the designated hours. No work will proceed outside of hours without the prior approval of Taronga Zoo.

The following criteria are set up for the project to ensure the hours of operation remain appropriate throughout the works:

Parameter	Measurement	Criteria/KPI
Construction noise	Monday to Friday 7 am – 5 pm Saturday 8 am – 1 pm Boundary with nearest Users	No breaches
Complaints	Surrounding community	No public complaints of noise.

### 5.7 SAFETY EQUIPMENT

Contractors are always required to wear hard personal protective equipment on Site including hard hats, appropriate PPE clothing and steel toe boots.

Contractors, employees and Subcontractors must have suitable identification such as company cards/tags which should be clearly visible or produced on demand or wear company clothing.

Contractors must maintain all tools, plant or equipment in safe working condition. There is a requirement to ensure all electrical equipment is checked and tagged monthly before use on site.

### 5.8 HOT WORK

Before contractors undertake any hot work on site, they must obtain Hot Work Permits, as required by Australian Standard AS 1674.1 1997 “Safety in welding and allied process - Fire precaution”. Hot Works will be detailed in the contractors “Work Method Statement”.

### 5.9 NO SMOKING POLICY

Taronga Zoo is a smoke free workplace. Smoking is not permitted within the Site except where the Principal’s Representative has approved a “Designated Smoking Area” which is to be clearly sign posted. This area is to be located away from flammable materials, visitors and animals and will be outside the site boundary of the zoo.

Contractors will comply with Taronga Zoo’s Policy and ensure there is no smoking on site including site offices and subcontractor facilities.

### 5.10 FIRST AID

The Contractor is required to provide a regularly serviced First Aid kit and register. A First Aider must always be on site.

The Zoo will provide Occupational First Aid assistance if required. The number for emergencies is 9969 2777 (Zoo Main Switchboard). Switchboard will coordinate any emergency First Aid requirement, including Ambulance and Security guidance.

### 5.11 CONFINED SPACES

The Contractor is required to comply with the requirements of Taronga Zoo Confined Space Entry Procedures.

A competent person will be authorised by Taronga Zoo management as responsible for the safe execution of the work. They must be qualified by training, education, practical experience and technical knowledge of working in confined spaces. They will be responsible for the safe execution of the work in deemed confined spaces at Taronga Zoo.

A standby person with the appropriate training must also be in attendance.

All personnel working inside deemed confined spaces at Taronga Zoo must attend an induction and receive instructions which include covering emergency procedures, entry/exit procedures and requirements of the above Procedures.

The contractor is required to obtain a Taronga Zoo 'Permit of Entry to a Confined Space' before any work starts.

### 5.12 UTILITIES

For work involving utilities such as gas, electricity, communications, potable water, stormwater, treated water and firefighting services, the contractor must make prior arrangements through the Principal's Representative for appropriate Zoo personnel to be in attendance to provide advice and information about the systems. This will ensure that work is carried out safely and timely advice is given of any possible disruption to Zoo activities.

### 5.13 SOIL EROSION AND SEDIMENTATION

Contractors will be required to submit an erosion/sedimentation control plan prior to commencement of works. The control plan will address the risk of sediment and pollutants from the site entering the stormwater drainage system.

### 5.14 HAZARDOUS MATERIAL REMOVAL

All removal of Hazardous Material from buildings and structures identified for demolition will be in accordance with Statutory requirements.

Timings will be identified to remove hazardous material outside of operational hours, where staff and the public will not be impacted.

### 5.15 HERITAGE MANAGEMENT

**The Heritage Wall** will be carefully deconstructed by a qualified stone mason during the Early Works package, following the guidelines below:

- Archival recording of the wall and numbering of the stone to allow correct reinstatement (Pre-Construction);
- Taronga's perimeter containment and security is paramount and needs to be maintained for human and biosecurity purposes. The gate must be fox proof and have an operational plan to support this;
- Temporary 24hr CCTV will be required to be installed by future contractors to monitor the access point and (linked into Taronga's NVR's);
- Erect temporary fencing to maintain Zoo perimeter whilst undertaking the construction of the temporary works;
- Disconnect electric fencing at top of wall;
- Number blocks which form part of dismantled section;
- Photograph and Catalogue existing wall components and record existing condition;
- Carefully dismantle wall placing dismantled blocks onto pallets;
- Plastic wrap pallets and shift to on-site storage position using all terrain forklift;
- Cover with further plastic protection as required;
- Install fencing (exclusion zone) around pallets until the wall is to be re-built at project completion;

The contractor must ensure the above measures are still in place on commencing work. The wall will then be re-constructed to its previous state at the completion of the construction works works.

The following heritage management guidelines must be adhered to:

- Reverse process at project completion to re-build heritage wall;
- Re-build brick buttresses; and
- Make good effected streetscape and shrubbery.

It is expected a Construction Heritage Management Plan may be required by Mosman Council as a condition of consent for the Early Works Package. If required, this will be provided to the contractor prior to construction to ensure any works adhere to the agreed management measures and guidelines around the protection of heritage items and landscape heritage items.

If any questions arise from the contractor during works to heritage items, these should be directed immediately to the Project Manager to seek advice from the Heritage Consultant.

**Brick paving** will be salvaged during the Early Works Package and may be reinstated in the new design of the Upper Australia Precinct. Quantity of bricks to be salvaged is to be determined at detailed design phase under the guidance of the heritage consultant. Below is the preferred methodology for salvaging these bricks/ pavers, if required:

- Bricks/ pavers to be retained should be taken from stairs, paths and walls. Preference is to salvage earliest bricks in best condition;
- Bricks/ pavers to be retained should be whole and free of structural defects with minimal chipping and surface damage;
- Bricks/ pavers should be cleaned of dirt or mortar and stacked by hand on a timber palette in an orderly manner allowing safe storage without risk of collapse and damage.
- Pallets to be stored on site in designated storage area to avoid disturbance and damage until required for reinstatement.

## 5.16 NOISE, VIBRATION AND DUST

### 5.16.1 Dust

The Contractors erosion/sedimentation control plan will identify a detailed strategy and plan to minimise dust emission from the site during the demolition, construction and ground works. The Contractor will carry out site remediation work in accordance with the Site Remediation Plan (RAP)

Perimeter fencing will be erected around the site, with shade cloth/hessian used, to minimise dust emission. In addition, during demolition, continuous water spray or wetting down will be undertaken.

Housekeeping practices will be implemented by the Contractors to ensure work areas are kept clean.

### 5.16.2 Noise and Vibration

The Construction Noise and Vibration Management Plan details how noise and vibration sources will be identified and managed on this project. Compliance with the Environmental Protection Act (EPA) is required

Special reference is also made to controls identified in:

- Environmental Protection Regulation;
- Environment Noise - Environment Protection Policy;
- AS2436-1981 Guide to Noise Control on Construction, Maintenance and Demolition Sites; and
- Development Consent Conditions.

### 5.16.3 Sources of Noise and Vibration

The Contractor will identify the sources of noise on the project and determine the acceptable noise levels based on the criteria set-out in the management plan with special regard to statutory, project specific requirements and in consultation with Taronga Zoo.

## 5.16.4 Noise and Vibration Levels

### 5.16.4.1 Noise

The Contractor is to identify indicative sound power levels for specific items of plant and equipment used, to estimate noise impacts in accordance with the relevant guidelines.

### 5.16.4.2 Vibration

Given the location of the site, some exceedance of daytime vibration limits may be expected in terms of either the potential for building damage or in terms of exceedance of human comfort levels, and operational limits of equipment from any construction activities.

## 5.16.5 Procedure for Mitigation of Impacts

**Table 5: Mitigation of Impacts**

Control Measures	Responsibility	Timing / Frequency
<b>General and Construction Hours</b>		
Implement this Noise and Vibration Control Plan	Contractor	Throughout works
Ensure that construction work is restricted to the stated normal working hours unless otherwise approved: Work outside these hours will only be considered where: It is an emergency; A situation that would create hazardous conditions; Plant breakdowns have delayed an activity that cannot be stopped (e.g. concrete pour); The extended working hours will not impact on surrounding users/buildings	Contractor	Daily
Ensure the relevant government authority approval is obtained for any work occurring outside normal working hours	Contractor	Prior to works outside normal working hours
Train site personnel in noise and vibration impacts and management, including techniques to minimise noise and vibration emissions to residences.	Contractor	Prior to on-site construction commencing
<b>Noise</b>		
Inform surrounding neighbours of intended scope of works regarding noise.	Contractor	Prior to on-site construction commencing
Where practical, construct earth mounds or screening in sensitive locations, to act as acoustical barriers and to minimize noise emissions.	Contractor	Prior to on-site construction commencing
Select and use the quietest available plant and equipment. Minimise the use of 2 stroke engines.	Contractor	Prior to on-site construction commencing
Monitor individual vehicles, plant and equipment for noise generation.	Contractor	When first brought onto site & every 3 months throughout the project
Regularly maintain vehicles, plant and equipment and fit engine exhaust systems with properly maintained noise suppression devices such as mufflers, silencers and enclosures in accordance with manufacturer's recommendations.	Contractor	Prior to on-site construction commencing and ongoing

## CONSTRUCTION MANAGEMENT PLAN

As far as practicable, locate compounds, parking areas and activities located in positions away from noise sensitive locations	Contractor	At all times
Minimize noise-intensive activities as far as possible.	Contractor	At all times
Where possible, face engines of large plant and equipment away from neighboring properties.	Contractor	At all times
Notify client and other relevant authorities and surrounding neighbors prior to predicted noisy or vibration-intensive activities	Contractor	Prior to noisy activities commencing
Notify client, the relevant government authority and adjacent neighbors of any works undertaken outside normal working hours, which could result in noise impacts.	Contractor	Prior to works outside normal working hours
Record and action all noise complaints.	Contractor	When required
Monitor general noise levels during working hours.	Contractor	Throughout construction period
Compare noise levels to the KPI's. If greater than KPI's or background, raise a Non-conformance report and implement further noise control strategies.	Contractor	Throughout construction period
<b>Vibration</b>		
Evaluate likely vibration impacts on nearby structures, sewer mains, and pipelines and develop mitigation measures as appropriate with Taronga Zoo	Contractor	Prior to on-site construction commencing
Implement a weekly / daily communication process with stakeholders to inform of construction activities, particularly any excavation in rock, that may cause vibration issue with adjacent buildings. Works to stop immediately if vibration from construction works interfere with neighboring properties	Contractor	Prior to commencing any construction activities that may cause vibration issues with SINSW equipment.
<b>Monitoring</b>		
The Contractor shall monitor noise and vibration objectively of plant and sensitive receptors. The results of these tests shall be recorded on a regular basis.	Contractor	Regularly
Physical monitoring (using Sound Level Meters or vibration meters) shall be performed in accordance with the relevant Australian Standards or other prescribed standards. Short term attended noise and vibration monitoring shall be performed at locations nominated at the commencement of works.	Contractor	When required
<b>Recording</b>		
Observations shall be noted in weekly Site Inspection Report	Contractor	Weekly

### 5.16.6 General

Contractors will ensure that any dust caused by the works is reduced to a minimum. Areas worked in by Contractors will be adequately screened to prevent dust spreading to neighbouring buildings via the installation of pre filters.

The Contractors shall notify Taronga Zoo in advance of work which may require additional dust protection.

Jack hammers and other noisy equipment including hand-held tools used in the performance of the work will be fitted with effective silencers of a type recommended by the manufacturers.

Compressor sets and motors used in the performance of the work will be fitted with effective acoustic canopies and special engine exhaust silencers of a type recommended by the compressor manufacturer. Where possible the Contractor is to undertake all noisy works between 7.00am to 9.00am Monday to Saturday.

Portable radios and CD players will not be permitted on site. The Contractors shall ensure that all structural borne noise will be kept at a minimum to avoid disruption for the users and occupiers of neighbouring properties for periods outside the agreed noisy works periods. The Contractors will use “best practice” methods of work to obviate any generated noise.

### 5.17 RUBBISH REMOVALS

The Contractors shall remove from site rubbish resulting from the works. Rubbish shall be handled in a manner to confine the material completely and to minimise dust emissions and disposed of in accordance with Contractor’s Environmental Plan.

The Contractors will ensure facilities, grounds and adjacent properties or public areas are not used for the disposal of rubbish from site. The Contractors will engage a waste removal specialist to manage and recycle all waste that leaves the project. To encourage recycling, bins will be located close to areas of work and in a position where access for removal by trucks is possible.

The work is to be undertaken in accordance with the Waste Management Plan detailed in this CMP and will be furthered detailed by the chosen contractor.

### 5.18 DELIVERIES

Deliveries to the site will be carried out in accordance with the work hours as approved by the development consent approvals and Traffic Management Plan.

All deliveries of material to site will be scheduled with relevant sub-contractors and suppliers to be carried out either side of the morning and afternoon peak arrival, pick-up and drop-off periods, as well as key zoo operation times for example coach arrivals.

Agreement on the delivery times will be finalized in consultation with Taronga Zoo and in accordance with the Preliminary Traffic Management Plan. All material movements shall be carried out in accordance with Contractor’s material handling procedures and Construction Traffic Management Plan (TMP).

### 5.19 WORKFORCE

It is estimated there will be between 5 – 30 contractors on site at any one time.

#### 5.19.1 FACILITIES

The contractor will use a portacabin located on the Taronga Zoo Entry Plaza (within the work zone) as office and lunch facilities for the contractors and sub-contractors.

The location is shown below:

**Figure 5: Location of entrance**



The contractor entrance to the site will be from adjacent to the visitor entrance. As shown above by an arrow. Security personnel will ensure this entrance is not used by the public.

### 5.19.2 STORAGE

Storage of equipment to be used day to day will be securely kept near the portacabins. Other equipment will be stored within the relevant work area.

**Table 6: Storage requirements**

Phase	Stage	Work Force (Approximately)	Storage Requirements
One	Pre-construction Activities.	Less than 5	Materials stored on site in work area.
Two	Demolition Works.	Up to 5	Stockpiling of materials in the demolition area from the removal of the wetland area
Three	Construction Works	Up to 30	Storage of equipment and materials
Four	Post Construction Activities	Up to 10	Storage of fencing and equipment prior to removal from site

If materials/equipment arrives on site in advance of requiring its use, the contractor can utilise a storage facility area within the staff car parking (approximately 50sqm).

## 6 WASTE MANAGEMENT PLAN

### 6.1 OBJECTIVES

The objectives of the Waste Management Plan is to ensure the maximum amount of waste material resulting from demolition and early works construction activities are reused and/or recycled to reduce the environmental impact of waste disposal. This can be achieved by:

- Minimise waste generation;
- Ensure appropriate storage, separation and collection of waste;
- Avoid illegal dumping; and
- Promote improved project management and implementation of the WMP.

### 6.2 INITIATIVES

The provisions to achieve the objectives are to be identified by Contractor in a detailed Waste Management Plan (WMP) incorporating waste minimisation strategies prior to commencing construction works. The WMP will be developed in accordance with the Contractor's Environmental Management System to ensure optimum waste management initiatives are implemented.

The Contractor will be encouraged to implement the following initiatives to ensure waste minimisation;

- Special attention in design and the estimating of materials to minimise waste on-site in off-site fabrication of components for the building;
- Separate building waste from other stockpiled materials in an allocated area on site;
- Separate waste streams on site and place into clearly labelled collection bins for each waste stream;
- Minimise site disturbance and limit unnecessary excavation; and
- Implement measures to prevent damage from the elements, odours, health risks and windborne litter.

### 6.3 IMPLEMENTATION

Contractors are to discuss waste management strategies for the project with material suppliers and waste handling facilities prior to their engagement. The Main Contractor is to outline waste management plan objectives during site inductions and toolbox talks to ensure all sub-contractors are aware of the legal requirements for disposing of waste.

In carrying out the works, footpaths, public reserves, street gutters are not to be used to store or manage waste materials of any kind with SSDA approval. Material moved offsite is to be transported in accordance with requirements of the EPA and relevant WHS legislation administered by WorkCover NSW.

Sub-contractors and suppliers are to be encouraged to:

- Estimate accurate volumes of material to be used in the works;
- Identify potential reuse and recycling opportunities of excess construction material;
- Incorporate the use of prefabricated components and recycled materials when appropriate;
- Arrange for the delivery of materials so that materials are delivered 'as needed' to prevent the degradation of material through weathering and moisture damage;
- Organise with suppliers or manufacturers the return of excess material; and
- Clearly sign post the purpose and waste stream content of the separate collection bins or areas for residual waste.

During the construction phases there will be different waste produced at different times, the below table will identify the waste generated, recycling options and segregation methods.

## CONSTRUCTION MANAGEMENT PLAN

All quantities are estimates only and sources of recycling centres or land fill will be confirmed once the building contractor has been appointed.

Imported materials will be use exact quantities to reduce waste generation and if possible, re-used in the works or taken away for re-use on other projects.

**Table 7: Waste Disposal**

<b>Phases</b>						
<b>Phase</b>	<b>Activity</b>	<b>Waste Generated</b>	<b>Recycling Method</b>	<b>Estimated Quantity</b>	<b>Disposal Method</b>	<b>Estimated Qty</b>
Phase 1	Pre-Construction Works	None	None	None	None	None
Phase 2	Demolition and excavation Works	Excavation material	All material to be separated into contaminated or VENM	Nominal 500m3	Reuse VENM on site for levelling ground	Nominal 500 m3
Phase 3	Construction	Excess material from construction	Recycle and reuse where possible.	140 tonnes	Contractor to estimate appropriately the material required so excess material does not need to be disposed of.  Recycle and reuse where possible	140 tones / 10 skips
Phase 4	Post Construction Works	Waste generated as a result of cleaning the site	Recycle where possible	28 tonnes.	General rubbish will be disposed of at licensed landfill.	28 tonnes tonnes / 2 skips.

## 7 ACCESS PLAN

### 7.1 OCCUPIED PREMISES

The Principal or persons authorised by the Principal will continue in possession and occupancy of all areas of the Zoo.

The Zoo will always remain fully functional during work on Site.

Contractors to the Zoo shall be deemed to be authorised by the Principal to access all public areas of the Zoo normally open to visitors and at the times the Zoo is normally open to visitors except as otherwise provided in the Contract or advised by the Principal's Representative.

### 7.2 VEHICLE ACCESS

#### 7.2.1 CONSTRUCTION ACCESS

Access to construction vehicles will be via Bradleys Head Road. Vehicles will be required to use the bus turning circle at Taronga Zoo Wharf before returning up Bradleys Head Road and accessing the site on their left.

An access point will be created in the wall as part of the Early Works package to allow the appropriately sized vehicles to access the site. The location of this access is shown on the image below. The access point will be 11m wide.

Figure 6: Access to the site



This access has been chosen due to its minimal impact on the trees in this area, which require retention. Appropriate tree protection measures will be in place throughout construction. This is demonstrated on plan A-DA-701 'Tree Protection and Removal Plan' which demonstrates the removal to require three trees within the Koala Encounters area to allow access for Early Works.

A minimal amount of the wall will be taken to allow for the maximum vehicle to enter - 11m. The wall will be reconstructed once work is completed in line with heritage guidelines.

### 7.2.2 TARONGA ZOO VEHICLE POLICY

Taronga Zoo operates a strict vehicle policy within the site:

1. Restrict movements of vehicles to the minimum requirements for executing the Works;
2. Main site entry will be external to the Zoo proper. Any deliveries requiring access to the site from within the zoo will need to comply with the zoo policy listed below;
3. Do not exceed 10 km per hour;
3. Do not drive vehicles including suppliers' delivery vehicles within the Zoo between the hours of 9.00am to 5.00pm during school holidays and 10.00am to 3.00pm at other times;
4. Between 7.00am and 9.00am and between 5.00pm and 6.00pm during school holidays and between 8.00am and 10.00am and between 3.00pm and 6.00pm at other times, up to ten (10) vehicle movements are permitted per day;
5. Escort larger vehicles to the construction Site;
6. Use a route as directed by Zoo staff;
7. The Contractor is responsible for any damage caused by its and its Subcontractors' vehicles using the roads and must repair any such damage at the Contractor's cost;
8. Keep access roads and adjacent footpaths, gutters and drains clear of construction waste, debris and mud, clean as required and remove waste, debris and mud from the Zoo, all at the Contractor's cost;
9. There are physical limitations on the height of vehicles using some roads, this should be discussed with Taronga Zoo before work commences;
10. Where it is necessary to remove fences within the Zoo to enable access to be gained to work areas, keep the areas secure at all times and reinstate the fences as soon as practical;
11. Park vehicles on Site within the site compound or at locations as directed by Zoo staff; and
12. The Zoo is a pedestrian park and pedestrians have right of way.

### 7.2.3 GOODS AND CONSTRUCTION EQUIPMENT MOVEMENT THROUGH ZOO GROUNDS

The following policy applies to include all goods and construction equipment movement through the Zoo grounds:

1. Must be in line with the appropriate "Safe Work Method Statement" and complete a "Risk Assessment" for each task prior to commencement;
2. For larger trucks transporting goods and construction cranes have a person walk the vehicle through the grounds;
2. Take extreme care with cranes in the vicinity of the remaining high robes course;
3. Notify the Principal's Representative before these vehicles enter the Zoo ground; and
4. Ensure that these movements occur within an agreed time frame which has been predetermined in consultation with the Principal's Representative and if necessary, also with the Zoo's CW&I Division.

### 7.2.4 CONSTRUCTION VEHICLES

The type and size of the construction vehicles are likely to be as follows:

- Up to 5m long work / utility trucks;
- 6.5m, 9m and 11m long flatbed / work trucks;
- 7.3m long concrete trucks carrying 6m<sup>3</sup> of concrete;
- 8m long mobile concrete trucks carrying 7.4m<sup>3</sup> of concrete;
- 9.5m long concrete pump;

## CONSTRUCTION MANAGEMENT PLAN

- 11m long 200 tonne crane (may be required); and
- 19m long truck and trailer combination – may be required for final excavation works.

The approximate number of vehicles are as follows:

**Table 8: Construction Vehicles**

Phase	Item/Element	Type of Vehicle	Approximate number
Phase 1	Pre-construction works.	Up to 5m long work / utility trucks.	
Phase 2	Excavation of remaining wetland area	19m long truck and trailer combination.	
	Levelling of earthwork	19m long truck and trailer combination.	
Phase 3	Construction Works	Up to 5m long work / utility trucks; 6.5m, 9m and 11m long flatbed / work trucks; 7.3m long concrete trucks carrying 6m <sup>3</sup> of concrete; 8m long mobile concrete trucks carrying 7.4m <sup>3</sup> of concrete; 9.5m long concrete pump	
Phase 4	Cleaning and finishing works.	Up to 5m long work / utility trucks.	
	Commissioning and inspections.	Up to 5m long work / utility trucks.	

Concrete trucks have been allowed for all levels based on carrying 6m<sup>3</sup> each and will be able to enter and exit site with all concrete pumped from within site.

No parking is required on the main road.

All traffic movements will be in strict accordance with the traffic management plan.

### 7.2.5 CRANAGE AND TRUCK MOVEMENTS ONSITE

Traffic management measures will be used to control access into and exiting the site.

Depending on construction methods and the ability to get materials onto site a crane may be for these works. Appropriate traffic management will be in place on Bradley Head Road to ensure there is no disruption to vehicular or pedestrian movements.

### 7.2.6 ACCESS FOR EMERGENCY VEHICLES

Construction Works will not affect the access for emergency vehicles and personnel during the project, however in the event of a construction activity affecting the access path:

- Taronga Zoo and the Contractor shall ensure suitable access is always maintained by the Contractors for emergency vehicles and the general public on and off the site; and
- All construction traffic to and from the Project will be appropriately managed.

### 7.2.7 PARKING

Contractors and sub-contractor personnel are not permitted to park vehicles in the Taronga Zoo carpark unless agreed otherwise with Taronga Zoo. Eight spaces will be provided within the staff parking compound. Other parking facilities are available in public space on Bradley's Head Road.

All contractors are always to keep Bradley Head Road clear to allow road users unobstructed access in and out of the area.

The Contractors shall ensure that all persons inducted on the project are advised of the traffic and parking policy for this project for the proposed parking areas on site for construction workers.

### 7.3 PEDESTRIANS

#### 7.3.1 ACCESS FOR VISITORS

Access for Taronga Zoo Staff and visitors to the operational part of the site will be maintained however alterations will be made to suit the staging and sequence of the construction activities. The final access arrangement will be agreed with the Contractor prior to the commencement of the early works. This will be demarked with agreed barrier, fencing and signs.

Taronga Zoo shall ensure suitable and safe access is always maintained around the site for staff, visitors and general public. The Contractor will be responsible for the implementation and management of access plans during construction. The Contractor will consult with Taronga Zoo and develop access plans that will be incorporated within the Contractor's Site Management Plan.

The plans will include:

- Exact location of temporary Signage around the site;
- Exact location of temporary pedestrian crossings and access points;
- Exact location of temporary paths and ramps; and
- Exact location of hoardings and site fencing.

#### 7.3.2 ACCESS FOR CONSTRUCTION PERSONNEL

Contractors must make prior arrangements with the appropriate Zoo personnel for themselves, their employees, subcontractors and suppliers to enter Zoo grounds.

Subcontractors and suppliers must initially report to the Zoo Security Officer at the booth in the Goods and Services Entrance at the intersection of Prince Albert Street and Whiting Beach Road.

Access by the Contractor, subcontractors, suppliers, and workers to the project site once operational will be via Bradley Head Road, at the main entrance.

All demolition and construction personnel will be advised of the requirements of access as part of the site Inductions prior to commencing work on site.

General circulation from the Contractor's site establishment area and the site will be in accordance with the site establishment plan.

## 8 COMMUNICATION

### 8.1 STAKEHOLDERS

Taronga Zoo will coordinate with the Contractors and principal consultants working on project.

Planning and implementation of the works on site, including access to, from and around the site, Taronga Zoo shall consult and coordinate with the Contractors and all relevant stakeholders, Authorities and agencies including:

- Taronga Zoo staff;
- NSW Fire Brigade;
- NSW Police;
- NSW Department Planning & Environment;
- Environmental Protection Agency (EPA);
- Mosman Council;
- NSW Roads & Maritime Services (RMS);
- National Broadband Network Ltd;
- Ausgrid;
- Transport for NSW; and
- Sydney Water.

### 8.2 STAKEHOLDER COMMUNICATION

#### 8.2.1 Regular Meeting

Stakeholder communication meetings will be established to keep all key staff informed on key milestones and develop both staff and visitor access/circulation plans, including any applicable social distancing requirements.

#### 8.2.2 Contact List:

This contact list will be prepared by the contractor upon engagement and made available to all parties.

## 9 RECORD KEEPING

### 9.1 SITE QUALITY ASSURANCE AND DAILY RECORDS

Contractor's representative will keep adequate records of daily activities and any significant departures or additions in the Project Diary. An Inspection and Test Plan (ITP) shall be completed ensuring compliance with the management plans.

### 9.2 INCIDENT / ACCIDENT MANAGEMENT AND REPORTING

#### 9.2.1 Incident Management

The objective of the incident plan is to minimise such disruptions and provide a clear and simple guideline for disruptive events. Contractor's Incident Management Plans are to be implemented on the project upon award of the Contractor.

#### 9.2.2 Accident Management

The Contractors shall promptly notify Taronga Zoo of the occurrence and furnish a written report of the following incidents and accidents:

- Accident involving death or personal injury;
- Accident involving lost time; and
- Incidents with accident potential such as equipment failure, slides, cave ins, and the like.

In the case of accidents either witnessed or reported, involving Taronga Zoo staff, public or contractors from which legal proceedings might arise:

- Record the actual type, size and location of signs and devices in use at the time of the accident;
- Notify Taronga Zoo as soon as possible; and
- Take photographs of the arrangement for subsequent reporting.

## 10 EMERGENCY PROCEDURE

In the event of any emergency arising during the contract, including:

- Emergency evacuation;
- Fire;
- Flooding and water damage;
- Gas leak;
- Mains power failure;
- Explosion;
- Bomb threat;
- Chemical Spill;
- Construction accident;
- Medical Emergency;
- Theft of Collection items; and
- Criminal or accidental damage.

Taronga Zoo will instigate the appropriate procedure for the remainder of the site depending on the emergency present. Trained Zoo staff will coordinate all emergencies.

Taronga Zoo expects all staff to take Emergency Drills seriously and follow Zoo staff instructions in the event of an emergency.

A constant beeping sound over the Public Address System would indicate an emergency with a Dangerous Animal. Seek refuge in the nearest lockable building on hearing this sound. Report any unannounced emergency to the Zoo telephone switchboard (9969 2777).

The Contractor responsible for the demolition and construction work site will be responsible to ensure that all construction personnel associated with the works are evacuated from the work site in accordance with the Contractor's procedures. On evacuation of the work site the Contractor's representative will notify Taronga Zoo and advise the status of the site and await any further instructions.

The Contractors should ensure that Taronga Zoo Evacuation Plans are displayed within the worksite and the Contractor's site establishment to assist construction personnel evacuating Taronga Zoo in the event of an emergency.

Taronga Zoo shall ensure emergency procedures are incorporated into the Contractor's plans and incorporated during inductions of workers and include the specific requirements of Taronga Zoo in the event of an emergency.

In the event of any emergency the following project team personnel will be contactable during all hours of the day:

Emergency contact table to be completed on award of Contractor

No.	Position	Name	Telephone Numbers
1	Site Foreman		
2	Site Manager		
3	Contractors, Project Manager		
4	Taronga Zoo, Project Manager		

The number designates the order of precedence, which may depend on availability at a particular time of day or period of construction.