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SIMMONS CIVIL CONTRACTING

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP)

Castle Hill Powerhouse MDC – Early Works Carpark Construction

TABLE OF CONTENTS

1. BACKGROUND

1.1 Introduction

This project is a Simmons Civil Contracting managed project which involves construction works for Castle Hill Powerhouse Museum Discovery Centre (MDC) – Early Works Carpark Construction project.

1.2 Project Description

LOCATION	Castle Hill Powerhouse MDC 2 Green Rd, Castle Hill NSW 2154
CONSTRUCTION OPERATION	• Removal of vegetation, site preparation and earthworks • Demolition of an existing carpark area and construction of new car park on the TAFE site • The construction and operation of a new building (Building J) for the storage of the Powerhouse collection and archives, spaces for education and public programs • Construction of a new accessway connecting the MDC and TAFE sites • Building identification signage, new landscaping, services infrastructure, and a roof mounted photovoltaic system • Site subdivision and consolidation • Implementation of a tree replacement strategy
OPERATING HOURS [refer to DA Condition B27a) (i)]	Monday to Friday: 7am-5pm, Saturday: 8pm-1pm; and No work on Sunday and public holidays
NO AND TYPES OF WORKERS	8 workers approximately, includes site foreman, labourers, plant operators and various subcontractors
PLANT AND EQUIPMENT USED	Excavators, Water carts, bobcats, various trucks, graders, rollers
LOCATION OF SITE FACILITIES	Located near the site entrance

1.3 Context

This environmental management plan will be effective from the commencement of the project. Regular audits and reviews are to be done to ensure the environmental management plan is being followed. Other Simmons Civil environmental control documents should be used within context to assist the understanding and undertaking of this management plan. These documents are located on the Simmons Civil project server, with each file being changed to be project specific. A copy of these files can be provided when requested.

1.4 Objectives

This environmental plan's main objective is to ensure that proper environmental controls are installed to ensure the safety of all workers on site and the surrounding environment.

Project specific objectives:

- Ensure bulk/detail excavation environment is set up properly
- Ensure dust does not spread across site barriers and control system
- Ensure noise is not an issue for neighbours
- Ensure no contamination to ground is caused by refuelling elements or Simmons Civil plant equipment
- Ensure nearby water ways (i.e., nearby creek) are not contaminated with runoff or site materials
- Removal of rubbish regularly on site

1.5 Integrated Management System (IMS) Policy

Our aim is to demonstrate and ensure safety, environmental and quality compliance with legislation using a system that meets AS/NZS ISO 4801, AS/NZS ISO 14001 and AS/NZS ISO 9001, together with the standards specified in relevant contracts, codes of practice and other relevant requirements.

Input and involvement of all staff and stakeholders is essential and must be sought when identifying and mitigating workplace hazards and risks in order to achieve a safe workplace and an environmentally sustainable environment. Management must ensure that all staff and contractors are to be inducted so they become familiar with project processes and risk management techniques.

In order to achieve our objective of promoting safety, environmental and quality awareness and to optimise client satisfaction on our projects, we:

- Set measurable objectives and targets
- Focus on these at every level
- Eliminate work related injuries, illnesses, and pollution
- Ensure that all staff and contractors understand our policy and their responsibility in maintaining the highest levels of performance

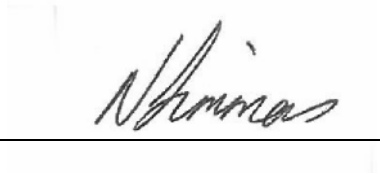
Our core objectives are to:

- Comply with certification criteria and the relevant prequalification requirements with the clients we work with,
- Maintain or target an increase in profit each year by reducing rework and minimising waste in all processes,
- Keep up with technology, plant and equipment changes,
- Target improvement in staff and employee's competency by ongoing training,
- Provide a level of quality in our work, which is not less than that specified within the contract and aims to meet the client's expectations while undertaking risk assessments on design to ensure that the project can be constructed, operated, and maintained safely.
- Have <0 workplace notifiable incidents per year and have <0 lost time injuries.
- Have ongoing consultation with staff in regard to WH&S, environmental and quality matters
- Have zero reportable environmental breaches. To reduce any form of pollution in the vicinity of the project. Work with the client to improve the environmental integrity of the area in which we are to be working.
- Ensure our suppliers and subcontractors operate with the same objectives in mind
- Strive for continual improvement in service delivery through reviews and measurement of defect notices
- Comply with relevant WH&S, environmental and quality legislation and with other requirements placed upon the organisation or to which the organisation subscribes
- Comply with other requirements, including statutory, legal and any other contractor/client requirements.
- Simmons Civil will aim to keep all work areas clean, reducing the amount of rubbish produced on site. If rubbish is reduced, we aim to remove the rubbish properly as per statutory, code of practice and standard requirements.

- Simmons Civil will effectively train/teach their staff in regard to environmental sustainability, WHS and Quality requirements on a project.
- Simmons Civil will aim to keep/improve the environmental integrity of the area of the construction sites before and after work begins/finishes.
- Simmons Civil will aim to review each project to see if the environmental controls placed by us were effective.
- Simmons Civil will ensure continuing satisfaction of its stakeholders.
- Simmons Civil will aim to complete its work and deliver its services in a timely manner.
- Simmons Civil will aim to complete projects in accordance with approved/adjusted plans/specifications.

We continuously monitor the IMS through System, Process and Management Review to ensure its ongoing suitability and improve our operations to achieve excellent safety, environmental, quality and cost standards. This enables us to respond to any client concerns in an efficient and effective manner, ensuring client satisfaction.

Management must regularly review this policy and the IMS to ensure that it remains relevant and appropriate. This policy is available to interested parties on request.

Signed:  Date: 21/05/2021

Managing Director

2. SUB-PLAN REFERENCE DOCUMENTS

Simmons will comply with all sub-plans, standards and guidelines, all client and DA conditions, as nominated within the Hills Shire Council. Prior to the commencement of this project, management sub-plans are implemented according to the DA conditions:

CLAUSE	DESCRIPTION
B27	Prior to the commencement of construction, a **Construction Environmental Management Plan (CEMP)** must be submitted to the Panning Secretary, Council and Certifier. The CEMP must provide / address the following matters: a. Details of: - Hours of work - 24-hour contact details of site manager - Management of dust and odour to protect the amenity of the neighbourhood; - Stormwater control and discharge - Measures to ensure that sediment and other materials are not tracked onto the roadway by vehicles leaving the subject site - Groundwater management plan including measures to prevent groundwater contamination - External lighting in compliance with *AS4282-1997* control of the obtrusive effects of outdoor lighting - Community consultation and complaints handling - Detail the quantities of each waste type generated during construction and the proposed reuse, recycling and disposal locations b. Construction Traffic and Pedestrian Management Sub-Plan (see **Condition B28**); c. Construction of noise and Vibration Management Sub-Plan (See **Condition B29**); d. Construction Soil and Management Sub-Plan (see **Condition B30**); e. Construction Waste Management Sub-Plan (see **Condition B31**); f. An unexpected finds protocol for contamination and associated communications procedure; g. An unexpected finds protocol for contamination, Aboriginal and non-Aboriginal heritage, and associated communications procedure; and h. Waste classification (for materials to be removed) and validation (for materials to remain) be undertaken to confirm the contamination status in these areas of the site. i.
B28 **[refer to DA Condition B27 (b)]**	The **Construction Noise and Vibration Management Sub-Plan (CNVMSP)** must address, but not be limited to, the following: (a) be prepared by a suitably qualified and experienced noise expert; (b) incorporate recommendations of the Acoustic Report for *State Significant Development Application* *Powerhouse Museum Discovery Centre* revision 6 prepared by Northrop, dated 20.02.2021 (c) describe procedures for achieving the noise management levels in EPA's *Interim Construction Noise Guideline* (DECC, 2009); (d) hours of construction in accordance with **Conditions C6** to **C9**; (e) outline regular community liaison with sensitive receivers around the site (f) outline how noise and vibration impacts would be monitored during construction (g) describe the measures to be implemented to manage high noise generating works, in close proximity to sensitive receivers; (h) include a complaints management system that would be implemented for the duration of the construction; and (i) include a program to monitor and report on the impacts and environmental performance of the

	development and the effectiveness of the management measures
B29 **[refer to DA Condition B27 (c)]**	The **Construction Noise and Vibration Management Sub-Plan (CNVMSP)** must address, but not be limited to, the following: (a) be prepared by a suitably qualified and experienced noise expert; (b) incorporate recommendations of the Acoustic Report for *State Significant Development Application* *Powerhouse Museum Discovery Centre* revision 6 prepared by Northrop, dated 20.02.2021 (c) describe procedures for achieving the noise management levels in EPA's *Interim Construction Noise Guideline* (DECC, 2009); (d) hours of construction in accordance with **Conditions C6** to **C9**; (e) outline regular community liaison with sensitive receivers around the site (f) outline how noise and vibration impacts would be monitored during construction (g) describe the measures to be implemented to manage high noise generating works, in close proximity to sensitive receivers; (h) include a complaints management system that would be implemented for the duration of the construction; and (i) include a program to monitor and report on the impacts and environmental performance of the development and the effectiveness of the management measures.
B30 **[refer to DA Condition B27 (d)]**	The **Construction Soil and Water Management Plan (CSWMSP)** must address, but not be limited to the following: a. Be prepared by a suitably qualified expert; b. Describe all erosion and sediment controls to be implemented during construction as a minimum, in accordance with the publication Managing Urban Stormwater: Soils & Constructions (4th edition, Landcom 2004) commonly referred to as the 'Blue Book'. c. Provide a plan of how all construction works will be managed in wet weather events (i.e. storage of equipment, stabilisation of the Site); and d. Detail all off-site flows from the site.
B31 **[refer to DA Condition B27 (e)]**	Prior to the commencement construction, a **Waste Management Plan (WMP)**, prepared in accordance with Appendix A of Council's DCP, must be submitted to the Planning Certifier, Council and Certifier. The WMP must: a. Detail the quantities of each waste type generated during construction and the proposed reuse, recycling and disposal locations; b. Identify an appropriate area for the storage of garbage bins and recycling containers for all waste and recyclable material generated by the works c. Demonstrate compliance with relevant legislation, particularly regarding the removal of asbestos and hazardous waste, the method of containment and control of emission of fibres to the air d. Require that all waste generated during the project is assessed, classified and managed in accordance with the EPA's "Waste Classification Guidelines Part 1: Classifying Waste".

Table 1 - Sub-Plan Documents

3. ENVIRONMENTAL MANAGEMENT

2.1 Environmental Management Structure and Responsibility

The site will have the following organisation structure **[complies with DA Condition B27a) (ii)]:**

PROJECT MANAGER:	Marc Jamieson (02 9620 6100)
PERSON RESPONSIBLE FOR ENVIRONMENTAL MANAGEMENT:	Marc Jamieson (02 9620 6100) Rhys Jones (02 9620 6100)
NOMINATED SITE PERSONNEL FOR 24 HOUR CONTACT:	Rhys Jones (02 9620 6100)

Table 2 - Contact Details

2.1.1 Roles and Responsibilities

Foreman/Site Manager:

- Ensure that the dust control system is setup and works properly
- Ensure that noise protection measures are in place
- Ensure that work that includes loud noise and or requires specialist measures is conducted during the set hours outlined.
- Implementing the Environmental Management Plan
- Communicating with workers to reduce environmental issues
- Carrying out audits to ensure the environmental controls are correct and maintained
- Leading by example and promoting safety of the environment
- Coordinating incident investigations and reporting to the controller of the workplace and or authorities
- Assisting in the remediation of the environment if required
- Advising others on project specific environmental matters
- Setting up meetings in regard to environmental control
- Actioning environmental reports and carryout workplace inspections
- Carrying out hazard report and inspections

Environmental Coordinator

- Communication to employees on environmental issues and implementation of the environmental issues within the IMS
- Assisting the foreman in regard to environmental requirements for the site
- Monitoring environmental controls where the risk to the environment is serious enough to warrant it
- Provide the foreman/project manager with the sufficient resources to keep the environmental sustainability to the worksite.

2.2 Reporting

After an audit has been carried out, the following reports should be created when required. This includes:

- Non – compliance report with corrective actions

    - Noncompliance reports should list all non-compliances with environmental controls that have occurred on site. These reports should be followed up as soon as possible so that corrective actions can be implemented.
    - After corrective actions have been implemented on site, a follow up to the noncompliance report should be made, stating all corrective actions taken for each specific noncompliance, along with whether they were effective in each case.
    - After the follow up, an action plan should be created for each audit on the site. This action plan shall include the steps that Simmons Civil staff will take to attempt to rectify the non-conformance.
- Monitoring of the environment during work report
    - This report should all information on the current progress of work on the project. This report should be carried out every 6 months and should include events that have occurred due to environmental controls.
- All reports required by government guidelines
- Incident reports in regard to the environment

All reports should be distributed to all stakeholders who request it after top management approval, along with the final copies being given to the office administration staff for recording and storage in the project folders. A copy of these reports should be kept on site.

All reports are to follow the Simmons Civil document control policy located in the Simmons Civil Integrated Management system server.

2.3 Environmental Training

All employees under The Gables Precinct H Stage 4A & 4B Subdivision project should be trained in general environmental awareness and should be informed of their responsibilities under this environmental management plan. All contractors and subcontractors are also to be trained according to this report. Types of training include:

- Site Induction
    - The Site manager/foreman should run through the possible environmental controls located on site, along with the any hazards that may cause danger to the workers. All environmental issues with the site are also to be explained, along with possible environmental outcomes due to the work being carried out on site. This is to be carried out in conjunction with the environmental training procedure provided.
    - All workers in this time should familiarise themselves with the requirements of this environmental management plan
- Emergency response drills and training
    - Emergency response and evacuation drills are to be carried out every 6 months on site where Simmons Civil Contracting is the principal contractor. These emergency response drills, along with the procedures are to be stored in the site office.
    - A record of this training should be noted, using the emergency drill register which should be given to the site manager by the office administration personnel. Once this is completed, it is then to be given to the office for recording and storage.
- Toolbox Talks
    - Toolbox talks, as per the environmental training procedure, shall be used to inform the workers on site about any further environmental conditions that may affect the site. They will also be used to update the workers on changing environmental circumstances on site.
- Environmental Questionnaire
    - Site personnel are quizzed on their ability to identify various environmental contaminations. They are also asked for the procedure that should follow once an environmental incident has occurred. This is done to test the competence of the

workers in regard to identifying and responding to possible environmental incidents on site.

2.4 Emergency Contacts

The emergency contacts for Castle Hill Powerhouse MDC – Early Works project include the following:

- Nicholas Simmons – 0433 183 253
- Marc Jamieson – 02 9620 6100
- Rhys Jones – 02 9620 6100
- Nhat Nguyen – 02 9620 6100
- Emergency Services - 000
    - Ambulance – 000
    - Hospital
        - Lakeview Private Hospital
          17-19 Solent Cct, Castle Hill NSW 2154
          02 8624 500
    - Fire
        - Fire and Rescue NSW Kellyville Fire Station
          Windsor Rd & Poole Rd, Kellyville NSW 2155
          02 9629 3222
    - Police
        - Castle Hill Police Station
          Castle St & Pennant St, Castle Hill NSW 2153
          02 9680 5399

- Hazardous Materials
    - These are located with the appropriate Simmons Civil storage area or storage cage located on site. All Material Safety Data sheets should be accompanied with this.
- Steps to minimise damage
    - If an environmental emergency has occurred, the site manager/relevant site personnel is to isolate the area and contact the relevant emergency personnel
    - The director is to be informed of the situation, along with the principal contractor.
- Authorities
    - Council
        - The Hills Shire Council
          3 Columbia Court
          02 9843 0555
    - NSW Environmental Protection Authority – 131 555
- Services:
    - Water –
        - Sydney Water – 13 20 90
    - Gas –
        - Jemena Gas North – 1300 880 906
    - Communications
        - Telstra – 1800 653 935
        - Optus/Uecomm – 1800 505 777
    - Electricity
        - Endeavour Energy – 02 9853 4161

4. IMPLEMENTATION

3.1 Risk Assessment

All activities which are to be carried out on site include those listed under the SWMS, this includes but is not limited to:

SWMS	**Environmental Impacts/Hazards**
HRCW SWMS - 1	Spillage of toxic/hazardous materials, improper environmental control setup
SWMS 387-1 R3 Refuelling Plant	Spillage of toxic/hazardous materials
SWMS 387-2 R3 Working with Mobile Plant	Spillage of toxic/hazardous materials
SWMS 388-3 R3 Site Establishment	Improper environmental control setup
SWMS 388-5 R3 Bulk and Detailed Excavation	Asbestos contamination, Spillage of toxic/hazardous materials
SWMS 388-3 Bulk Excavation	Asbestos contamination, Spillage of toxic/hazardous materials
SWMS 388-4 R3 Trim and Placement	Spillage of toxic/hazardous materials
SWMS 388-5 R1 Road-base Installation	Spillage of toxic/hazardous materials
SWMS 388-7 R3 Back Filling Retaining Walls	Asbestos contamination, Spillage of toxic/hazardous materials
SWMS 388-7 R1 Rock Wall	Asbestos contamination, Spillage of toxic/hazardous materials
SWMS 388-8 R1 Bonded Asbestos Removal	Asbestos contamination
SWMS 388-9 R3 Bulk Filling	Asbestos contamination, Spillage of toxic/hazardous materials
SWMS 388–10 R2 Asphalt Placement	Spillage of toxic/hazardous materials
SWMS 388-11 R1 Demolition of Structures	Asbestos contamination, Spillage of toxic/hazardous materials, Noise Issues
SWMS 388-12 R2 Stormwater Construction	Contamination of water areas/pits, rubbish
SWMS 388-13 R3 Working around live services, potholing	-
SWMS 388-14 Manual Handling	-
SWMS 388-15 Traffic Control	-
SWMS 388-16 Operating a Smooth Drum Roller	Spillage of toxic/hazardous materials
SWMS 388-17 Operating a small dumper truck	Spillage of toxic/hazardous materials
SWMS 388-18 Operating a mustang Bobcat	Spillage of toxic/hazardous materials
SWMS 388-19 Working in confined space	-
SWMS 388-20 Working in public space	-

SWMS 388-21 Potential Emergency Situations	-
SWMS 388-22 Operating a Pad Foot Roller	Spillage of toxic/hazardous materials
SWMS 388-23 R3 Operating an Excavator	Spillage of toxic/hazardous materials
SWMS 388-24 Operating a 12M Grader	Spillage of toxic/hazardous materials
SWMS 388-25 Asbestos Removal	Asbestos contamination, Spillage of toxic/hazardous materials
SWMS 388-26 Demolition and Construction of Footpaths	Rubbish, noise issues
SWMS 388-29 Saw Cutting	Dust
SWMS 388-35 Concrete Placement	Spillage of toxic/hazardous materials
SWMS 388-36 Concrete Removal or Demolition	Spillage of toxic/hazardous materials
SWMS 388-37 Site Clearance	Improper environmental control setup

Table 3 - SWMS

Potential Environmental Hazards		
No	**Impact/Hazard**	**Level**
1	*Spillage of toxic/hazardous materials*	Medium probability, Catastrophic level of impact. Ensure that all plant and machines are maintained properly, ensure no leaks whilst refuelling and only refuelling in a designated area, or if possible off site.
2	*Asbestos contamination*	No probability, Catastrophic level of impact. If asbestos if uncovered, stop work, isolate area and tell supervisor. Call relevant authorities. If asbestos is a listed probability prior to work, ensure that safety equipment and isolation gear is at the ready prior to work. Follow the appropriate asbestos removal plan if found.
3	*Improper environmental control setup*	Medium probability, medium impact. Controls should be checked regularly to ensure they are performing up to standard.
4	*Runoff*	High probability, medium impact. Runoff is to be controlled via silt fences being installed around site. To be regularly checked to ensure they are working effectively. Kerb pit areas to be protected by infill sock around entrance of kerb pit. Pit areas to be protected by silt fence around pits lower than ground level. All areas near the creek should be fenced off.
5	*Dust* **[refer to DA Condition B27a) (iii)]**	Medium Probability, low impact. Dust to be controlled via use of water cart to wet down soil to ensure particles clump and do not escape into the air in large amounts. Fence shading cloth is also to be put up if dust levels rise due to high winds.
6	*Flora/Fauna*	Low Probability, low impact. There is various type of flora located around the perimeter of the site. Measures should be taken to not endanger them due to construction activities. Trees associated with final landscaping works should be protected.
7	*Noise*	High Probability, Low Impact. As the site is quite isolated, noise is not an issue. However, if the noise goes above the safe 85dB limit, then earmuffs are to be worn in areas where noise may be damaging. If neighbours complain about noise, they shall be consulted.

8	*Rubbish and Recycling*	High probability, Low Impact. All rubbish is to be removed into the bins located on site with the site office and lunchroom/ablution block. Any recyclable materials are to be stockpiled and sorted.
9	*Water Quality*	Low Probability, Medium Impact. Water used for dust control is to be taken from a safe source prior to use. Used water not to be removed into the creek area.
10	*Plant damage to land*	Medium Probability, Medium Impact. Plant are to be cleaned prior to leaving site to ensure no soil is spread across surrounding environment. Paths for plant travel are to be determined prior to use to ensure minimisation of damage to ground in and around site.

Table 4 – Potential Environmental Hazards

All environmental controls for potential environmental issues and hazards that may be caused have controls outlined in their respective SWMS, which is located on site. These SWMS should be consulted conjointly with all Simmons Civil Environmental documentation located on the Simmons Civil server. All environmental aspects and considerations are also located on the project environmental emergency response plan/procedure.

Activities

No	Activity	Impacts/Hazards Associated
1	Site Establishment	1, 3
2	Floating of plant to/out of site	5, 7, 10
3	Bulk/Detail Earthworks to levels	3, 4, 5, 7, 8, 10
4	Demolition and Sawcutting	3, 4, 5, 7
5	Service Trenching	3, 4, 5, 7, 8, 10
6	Stormwater	N/A
7	Service Construction	N/A
8	Concreting	1, 7, 9, 10
9	Asphalting/Paving	1, 4, 7
10	Line marking	1
11	Landscaping	N/A

Table 5 - Environmental Impacts

Risk Matrix					
	Impact/Consequence				
	Insignificant	Minor	Moderate	Major	Catastrophic
Almost Certain	10	16	20	23	25
Likely	7	11	17	21	24
Possible	4	8	12	18	22
Unlikely	2	5	9	14	19
Rare	1	3	6	13	15

Score	Level of Risk
18 to 25	High
10 to 17	Significant
6 to 9	Moderate
1 to 5	Low

Activity	Level of Risk without controls	Level of risk with controls	Overall significance to Project:>

1	11	2	Major Significance
2	17	6	Moderate Significance
3	21	3	Major Significance
4	17	1	Major Significance
5	21	3	Minor Significance
6	21	3	Moderate Significance
7	21	3	Moderate Significance
8	16	2	Minor Significance
9	23	5	Moderate Significance
10	4	1	Insignificant
11	1	1	Insignificant

Table 6 - Environmental Risk Matrix

Environmental risk assessments should be carried out at the start of the project and should be updated during each internal audit/site inspection.

3.2 Environmental Controls

3.2.1 Sediment Control

Objective

The objective is to protect open drains and natural drainage lines from sedimentation deposits by minimising erosion of lands and transportation of sediments during construction **[refer to DA Condition B27a) (iv)].**

Control Measures

The following measures should be undertaken to minimise erosion.

- Set up silt traps to stop sediment laden rainwater going into drains. When sediment traps are up to 1/3 full of silt, the silt should be removed.
- All sediment laden water is not to be discharged to drains.
- Kerb inlet drains and pits to have geotextile sock to stop water from entering/direct water away from pit.
- Keep exposed soil to a minimum
- Avoid highly erodible soils and steep slopes
- The amount of vehicles entering and travelling through exposed soil areas is to be minimised.
- Divert clean stormwater by small levees away from those parts of site where the soil is exposed.
- Cover stockpiles as soon as practicable.
- Where/when practicable, all trenches should be backfilled at the end of the working day.
- Machine activity is to be kept to an absolute minimum.
- Construction Plant and machinery is to remain within the construction site for the duration of the project. If they are required to leave site, they should leave over the cattlegrid rumble bar to negate soils being attached onto the truck wheels as they are leaving the site.
- All drainage channels carrying stormwater runoff are to be stabilised.
- Works which require the use of dirty water or works which could contaminate water should drain the water away from water sources. If possible temporary work actions should occur on the opposite side of the site (e.g. refuelling) to ensure that no hazardous materials escape into the local environment.

3.2.2 Dewatering of Work sites

Objective
To ensure that dewatering operations do not result in turbid water entering natural waterways **[refer to DA Condition B27a) (iv)].**

Control Measures
Treat turbid water to remove sediment prior to being pumped into stormwater system or natural waterway. Treatment may be done by placing turbid water into dam or tank to allow sediment to settle.
De-water by pumping water, wherever practicable on to vegetated areas of sufficient width to remove suspended soil or to sediment control devices.

3.2.3 Erosion & Dust Control

Objective
To minimise / avoid the health risks or loss of amenity due to emission of dust to the environment and the loss of soil from the environment **[refer to DA Condition B27a) (iii and iv)].**

Control Measures
- Ensure that the area of cleared land is minimised.
- Implement dust suppression measures such as promptly watering exposed areas when visible dust is observed.
- Use geotextile fabrics to cover stock piles and unvegetated areas where practical
- Locate stockpiles where they are protected from wind.
- Minimise the number of stockpiles, the areas and the time stockpiles are exposed.
- Smooth surfaces should be deep ripped and left rough and cloddy to reduce wind velocity at the soil surface.
- All sediment laden water is not to be discharged to drains.

3.2.4 Air Quality (Plant Emissions and Other Discharges to Air)

Objective
To ensure there is no health risk or loss of amenity due to emission of exhaust gases or other discharges to air.

Control Measures
- Vehicles and machinery to be maintained regularly and serviced to the manufacturer's specifications.
- Generally if smoke is visible after 10 to15 seconds of engine start-up or during normal operation, the vehicle may need to be serviced.
- Vegetation, building materials (such as timbers) must not be burned off. Vegetation should be mulched. Constructions materials such as timber should be recycled.

3.2.5 Noise and Vibration

Objective
To ensure that nuisance from noise and vibration does not occur.

Control Measures
- Working hours to be in keeping with the local By-laws and EPA Noise Guidelines.
- Limit rock breaking operations to the hours of 8am to 5pm Monday to Friday.
- Advise local residents when unavoidable out of hours work should occur.
- Give site personnel ear muffs to ensure their auditory passages are protected whilst working near plant/machinery that may go over the 85dB safe limit.

3.2.6 Construction Waste Management

Objective
To minimise generation of solid wastes from construction activities and to appropriately dispose of generated solid waste **[refer to DA Condition B27a) (ix) and B27h)].**

Control Measures

- All solid wastes should be placed in appropriately designed storage areas during construction.
- As part of Progressive rehabilitation of areas any solid waste should be removed from site and disposed of appropriately. Work and surrounding areas should be maintained in a tidy condition.
- There should be no vegetation burning. All waste vegetation should be chipped or mulched on-site and reused or appropriately disposed of.
- Weeds are to be disposed of offsite in appropriate disposal facilities.
- Wastes should be collected for recycling and or disposal at designated tip sites.
- Maintain a high quality of housekeeping and ensure that materials are not left where they can be washed or blown away to become litter.
- Sending waste concrete from demolition to a concrete recycler instead of landfill.
- Conduct site clean-up weekly
- Using overburden to construct temporary noise barriers.
- Collecting lubricating oil from the construction vehicle fleet and sending it to a recycler.
- Collect steel, timber, concrete and plastic waste into recycling bins and arrange to be used on other project if possible

3.2.7 Storage of Fuels & Chemicals on Site

Objective

To ensure that chemicals and fuel storage is safe, and that any materials that escape do not cause environmental damage such as groundwater or soil contamination **[refer to DA Condition B27a) (iv and vi)]**.

Control Measures

- Minimise chemicals and fuel stored on site.
- Store dangerous chemicals in a roofed and bunded area with an impervious floor, separated and signed as required by relevant codes and standards. (Simmons Civil storage cage)
- Bunds should be impervious to prevent spilled product from escaping.
- Any spillage should be cleaned up immediately.
- Where possible store each type of chemical/ fuel in a separate area so that spilled product can be retrieved and re-used (providing that it has not been contaminated with water or other debris).
- Maintain a record of Material Safety Data Sheets.
- Restrict the area in which hazardous materials can be stored during construction works.
- Have a spill kit which is available on site at all times.

3.2.8 Dirty Roads

Objective

To ensure that roads are kept clean of soil.

Control Measures

- Prevention of soil being deposited on roads is preferable to cleaning them afterwards.
- All loads of soil being transported for off-site disposal should be covered.
- If required, install litter traps lined with filter cloth in entry pits.
- If required, roads are to be swept or washed down.
- Clean vehicles prior to site exit.
- The proposed site egress/exit point will have no exposure to any soils. Therefore, no materials will be tracked onto roadways by trucks, and no wheel washing will be required **[refer to DA Condition B27a) (v)]**.

3.2.9 Management of Stockpiles

Objective

To manage soil stockpiles so that dust and sediment in run-off is minimised **[refer to DA Condition B27a) (iii and v)]**.

Control Measures

- Minimise the number of stockpiles, and the area and the time stockpiles are exposed.
- Locate stockpiles away from drainage lines and at least 10m away from natural waterways and where they should be less susceptible to wind erosion.
- Ensure that stockpiles have slopes no greater than 2:1 (horizontal: vertical).
- Stabilise stockpiles if left more than 28 days by covering with anchored fabric or by seeding.
- Establish sediment controls around unstabilised stockpiles.
- Suppress dust generation from stockpiles as circumstance demand via water cart.
- Stockpiles should not be located under the drip line of trees or across drainage lines or gutters.

To detail all of quantities of each waste type generated during construction and the proper reuse, recycling, and disposal locations, 117m^2 of asphalt and 50m^3 of native tree mulch is to be removed. All mulch removed is to be removed and passed through a mulcher chipper for recyclable reuse. A general waste skip bin will be near the asphalting works, adjacent to the site shed. A detailed constriction plan as well as more details on waste management are found through the Waste Management Plan **(see Condition B31)** will be provided for your reference.

3.2.10 Vegetation

Objective

To protect indigenous vegetation and habitat in construction works area and to reinstate vegetation and habitat as the works progress.

Issues

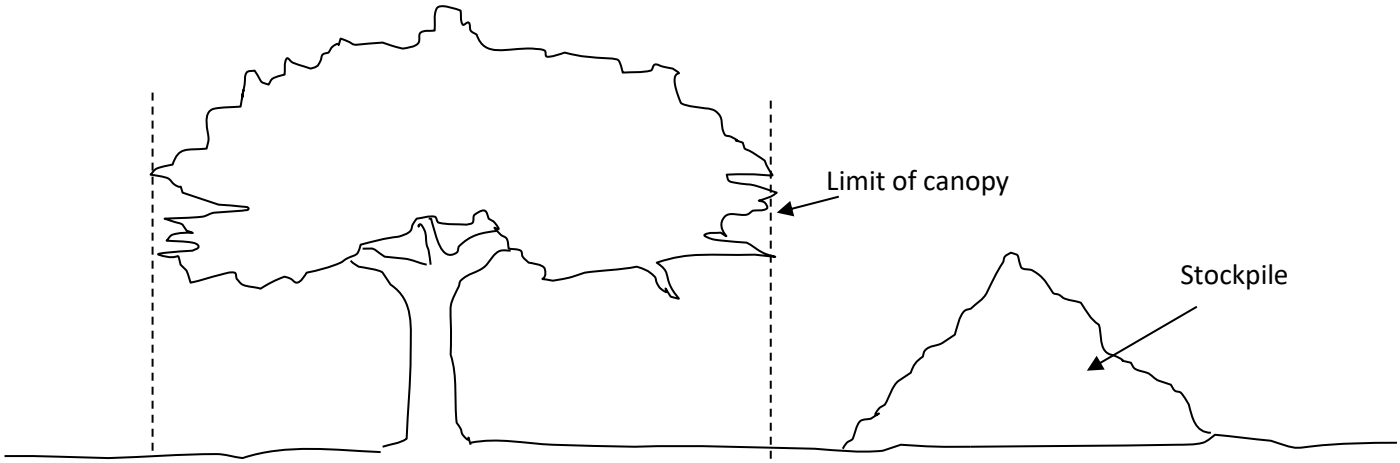
- Weed contamination in construction works area
- Soil compaction especially under tree canopy
- Protection of indigenous vegetation
- Protection of topsoil

Control Measures

- Check site to assess if there are noxious weeds. Contact EPA or visit www.weeds.gov.au to find out what are noxious weeds.
- If there are noxious weeds, you must ensure that any noxious weed part or seed is not taken out of the site.
- To control weed contamination of site, trucks and other construction plant should not move from areas where there is significant weed contamination to areas where there is minimal weed contamination.
- Prior to commencing work on site, all construction equipment and trucks shall be free of weed contamination.
- Works to be programmed to minimise the potential for weed contamination. Trucks should start work in minimal weed contaminated areas and move to areas where there is a higher degree of weed contamination.
- All construction vehicles to be prevented from travelling too close to trees or under a tree canopy (see picture below).
- Vehicular traffic should be prevented from travelling close to trees by placing some star pickets and webbing around the tree
- Appropriate treatment and disposal of removed vegetation.
- Topsoil should be stockpiled and returned to the site from which it was removed with the original contours.
- In pasture or recreation areas, grasses should be sown appropriate to the use of the site in consultation with the local council and landowners.
- Materials for rehabilitation should be from areas which are not infested with weeds or other exotic flora.
- The sources should be checked for weeds prior to transportation to site.
- Any existing trees which form part of the final landscaping plan will be protected from construction activities.
- Trees to be protected with barrier fencing or similar materials installed outside the drip line

- Nothing to be nailed to protected trees.
- Nothing to be paved, graded, sediment washed or stockpiled within drip line unless encroachment occurs only on 1 side and no closer to the trunk than 1.5m or half the distance between the outer edge of the drip line and the trunk.
- Refer to image below for drip line (limit of canopy)

Clearance from tree:



3.2.11 Protection of Fauna

Objective
To protect native vertebrate fauna from being trapped.

Control Measures
- All open trenches should be inspected prior to commencement of work each day for trapped vertebrate fauna such as frogs, reptiles, birds or mammals.
- If it is found that there are trapped vertebrate fauna in open trenches then an appropriate shelter for animals should be contacted to remove it from the trench.
- Wherever possible ensure that all trenches are backfilled each night.
- Before excavating or dumping soil check if there are any animals such as lizards or frogs.

3.2.11 Heritage & Archaeology

Objective
To prevent damage or loss to heritage places and objects which would result in loss of cultural, historic and educational value to the community.

Control Measures
- Fence heritage or archaeological site
- Place signs to indicate area is a "no go" area
- Ensure that the appropriate permits / authorisations have been received prior to commencing work
- Protection of scar trees

Corrective Action
All environmental incidences and breaches should be logged using Environmental Controls Inspection Forms and the Non Conformance Reports. Defects/Suggestion report form (Non Conformance Report Form) should be completed for each environmental breach or incident.

3.2.12 Energy Use

To minimise the use of non-renewable energy.
Control Measures:

- Do not leave machinery or vehicle engines on when this is not necessary.
- Switch off lights when rooms are not used.

3.2.13 Concrete and Masonry

Objectives
To minimise pollution of drains or soil from concreting operations **[refer to DA Condition B27a) (v)]**

Control Measures

- Concrete Pumps operating on roads or near drains must set up bunds to stop any potential spills.
- Dirty water from washing concrete mixers or from concrete or masonry cutting machines must not be allowed to flow into drains. It must be captured and allow sediment to settle. Sediment is then disposed in appropriate waste treatment facility. This should be caught in an appropriate site catchment basin/area.

The following section will identify all environmental management activities with their associated mitigation measures that will be used to minimise the impact upon the environment.

3.2.14 Odour Management

Objectives
To minimise odour pollution from construction works **[refer to DA Condition B27a) (iii)]**

Control Measures

- No general waste is to be collected within the early works of the carpark.
- Odour emissions from all operational machinery are to be reported to the Project Manager immediately.
- Maintenance and handling of construction machinery are to be properly executed.

3.3 External Lighting

During the replacement of the carpark lighting, the control measures of any obtrusive effects on all external lighting is to comply with AS 4282-1997 **[refer to DA Condition B27a) (vii)].** Drawings provided by Northrop (see J-WD-EW-E10.00-[C]).

Impact/Hazard	Time effective	When to Inspect	Controls
Spillage of toxic/hazardous materials	Start to Finish	Every Week	Materials are to be stored in the designated Simmons Civil Contracting material storage area. All hazardous and toxic materials are to be stored further into the area, to ensure they are contained and not out in the open. All hazardous materials are to be accompanied by a relevant MSDS. In regards to refuelling, all machines are to be refuel in designated zones on site only if necessary. It is strongly preferred that all machines are to be refuelled off site. Prior to refuelling, ensure that there are no leakage areas in/on the vehicle. Turn off the vehicle prior to refuelling. Once the vehicle has been refuelled, safely remove all potentially hazardous refuelling material from the area. Ensure that they are properly secured and tightened, so that no spillage can occur from the storage device. Fuel is to be stored in the hazardous material storage area.
Asbestos contamination	When Asbestos is found	Prior to asbestos removal completion to ensure all material has been removed	If there is the potential for asbestos contamination, all safety controls should be put in place prior to starting work. This includes access to safety equipment such as coverall suits, latex gloves and face masks/safety glasses. When asbestos contaminated material has been discovered, work in area is to be stopped and area isolated, with the relevant authorities being called. The site is to be isolated until the asbestos material has been tested and removed by the certified Class A or B licensed asbestos remover. All asbestos material is to be removed and delivered to a nominated licensed asbestos removal dump area, encapsulated or sealed where possible. Asbestos is to be wet down prior to removal, to ensure particles do not escape into the air.
Improper environmental control setup	Site Establishment	Every Week	All environmental controls including those for dust, runoff, noise, rubbish and spillages are to be inspected every week to ensure that all controls are working effective each week. This is to ensure there are no problems for the system. After the initial site establishment, all environmental controls are to be inspected and tested prior to first usage. This is to ensure all controls have been set up properly and are not faulty/have not been damaged.
Runoff	After Site Establishment to Finish	Each Week	Silt fences are to be installed around the boundary of the site according to the site plan/drawings. These fences are to be installed within the site, with the foreman/site manager ensuring that there are no perforations/penetrations in the silt fence which may cause the runoff the escape through. In regards to general pits and kerb pits, they are also to be protected. General pits with grating are to be protected with a silt fence with star posts surrounding all four sides of the pit. Kerb and gutter pits are to be protected using a gravel infill sock around the open area, to redirect flow around the pit to ensure runoff water does not escape into the storm water system.

			All water prior to wetting down of stockpiled soil and work area is to be tested to ensure there are no contaminants in it. Water is only to be taken from trusted sources which have been tested.
Dust **[refer to DA Condition B27a) (iii)]**	After Site Establishment to Finish	Each Week	Removed spoil and excavated ground area is to be wet down via use of a water cart to ensure dust particles do not form in the air and fly away. Prior to ending the day, the spoil in the stockpile area should be checked to see if has been wet down, if not then wetting down of this stockpile is necessary. After that, the stockpile mound is to be covered using a tarp/cloth to ensure winds at night don't blow away excess materials that may create dust particles. This control is to be used in combination with temporary fence mesh so that dust particles do not escape the site. If the above 2 controls do not prove to be effective, then misters are to be installed on the temporary fencing surrounding the site. They are to be connected to a trusted and tested water source. If misters are being used, they are to be tested prior to be used for dust control, to ensure there are no faults in the system. These dust controls should be checked regularly every week. Wetting down of excavated and spoil stockpiled areas should occur before work finishes every day, to ensure that the site will not produce too much dust particles overnight due to wind.
Flora/Fauna	Before Site Establishment	After removal	All flora and fauna hazards are to be identified prior to site establishment. All trees which are deemed to be protected and/or not removed on the site plan are to be marked and kept safe with barriers surrounding the protected vegetation. This includes the insulation of minor silt barriers around trees to ensure that spoil runoff does not affect the trees. All trees/vegetation marked for removal are to be removed by chopping it down in a safe manner. The stump is to be removed and the area checked to see it there are roots left. All leftover root material is also to be removed. If possible, removed trees are to be removed as a whole, with the entire root system so that they can be replanted on site or moved to another area. The remaining area is to be filled with appropriate soil material that may be taken from other areas on the site.
Noise	After Site Establishment to Finish	Each Week	Noise levels are to be kept to as low as possible measurements whilst working. Plant is not to be left unattended and idle if not working as this creates extra unneeded noise. Works are only to be conducted during the allocated working hours unless expressed otherwise. In areas where noise exceeds the 85dB limit, earmuffs are to be worn. When work which may produce loud noise is being conducted, the council and any surrounding neighbours that may be affected are to be informed beforehand. Complaints by neighbours are to be reviewed with top management, with a suitable solution being found as a result of this.
Rubbish and Recycling **[refer**	Start to Finish	Each Day	Construction waste is to be stockpiled into piles which are separated from excavated material. Rubbish should be

to DA Condition B27a) (ix)]			located and thrown into the bins located on site. Any recyclable materials should be gather analysed whether they are able to be recycled.
Water Quality	After beginning to use water cart	Each time related activity occurs	Ensure quality of water/source of water prior to using it. Water that used on the site (i.e. for dewatering) should be clean and not contaminated
Dirty Roads **[refer to DA Condition B27a) (v)]**	Start to Finish	After Works	Prevent soil from entering roads. Ensure that trucks taking soil are covered. Ensure that all sediment that may fall onto the road is cleaned up each day.

Table 7 – Control Measures

3.3 Additional Environmental Guidelines

The environmental controls should follow the principal contractors environmental control plan and or maps. The principal's traffic management plan should be followed in regards to restrictions on traffic movement. In addition to Simmons work, the emergency evacuation plan should be followed in regards to storage areas. All other Simmons documentation regarding guidelines include the following, which can be found on the Simmons server.

Guidelines
Air Quality (Dust Control and Plant Emissions)
Cleaning Plant & Machinery to Minimise the Distribution of Weeds & Seeds
Clean-up after Concrete Delivery
Contaminated Material Found During Site Works
Dewatering & Pumping Wastewater
Disposal of Prescribed Waste
Effect on Water Quality
Excavation Soil Management
Flora & Fauna Protection Before Grubbing & Clearing
Fuel Spill Control & Clean-up
Heritage & Archaeology
Identification of Environmental Aspects & Impacts
Identification & Protection of Flora & Fauna
Identification, Excavation & Disposal of Contaminated Material
Noise Pollution
Recycled Water Use
Site Protection & Restoration of Vegetation

Site Visual Impacts and Amenities
Stopping Sediment in Drains & Waterways
Storage of Fuels & Chemicals on Site
Use of Energy
Vibration Control
Waste Minimisation & Recycling

Table 8 – Additional Environmental Guidelines

3.4 Environmental Schedules

The following files should be used to conduct audits/reports and training in regard to environmental management.

- Toolbox Talk
- Audit Checklist
- AS/NZS 14001
- Environmental Project Review Form
- Non-Conformance Report
- Non-Conformance Report Log
- Simmons Civil Environmental Objective, Target, and Programme Policy
- Environmental Emergency Response Plan
- Simmons Civil Environmental Training Procedure
- Site Induction Form
- Visitor Site Induction Form
- Workplace Inspection Form
- Site Inspection/hazard identification form
- Environmental Training register
- Material safety Data Sheets
- Environmental Control Inspection Form
- Environmental Competence Questionnaire

3.4.1 Monitoring and Review

Environmental Monitoring

All environmental management activities and controls are to be monitored on a regular basis, to ensure that all systems and controls are working suitably and correctly. This includes dust, noise and asbestos control.

These are to be identified on a site environmental control inspection form, which is to be completed weekly by the site manager or foreman.

Dust control is to be created via the use of a watercart. Dry excavated material is to be stockpiled and wet down via a water cart to ensure dust particles do not spread whilst the wind is blowing.

Run off is to be controlled via a silt fence along the boundary of the site, inside the fence area and the specified areas as per the drawings. All pit areas are also to be protected via a geotextile silt fence. In the case of kerb gutter pits, they are to be protected by a geotextile infill sock.

If there are any flora/fauna on site which may be endangered due to excavation activities, they are to be protected. All site documented drawings are to be followed in regard to the removal and protection of trees.

Hazardous materials that are in danger of spilling or that may cause extensive contamination to the surrounding environment are to be stored in the designated hazardous material storage area designed on the site/evacuation plan. These hazardous materials are to be accompanied by the relevant material safety data sheets. These materials are only to be used whilst being supervised by the site foreman/manager and are to be only used by trained personnel.

All environmental controls are the responsibility of the site foreman/managers (Joe Goodacre/Brian McSpadden) to ensure that they are in place and are working correctly.

Monitoring records are to be stored on site, with copies being given to office staff for safe keeping, recording and storage on the Simmons Civil Server.

Environmental Auditing

For all sites where Simmons Civil is a principal contractor including The Gables Precinct H Stage 4A & 4B Subdivision regular audits must be undertaken and implemented every 6 months. The information and results stemming from these audits are to be compiled and put into a report, which can be reviewed. Additional audits should be carried out when required.

All non-conformances found due to the result from an internal audit are to be reported and to be fixed as soon as possible. All audits are to determine whether this environmental management plan is being properly implemented and maintained.

The audit programme should follow the following procedure:

Time	Actions
2 Months prior to audit	Inform Site foreman/manager and director of upcoming audit to site
2 Months prior to audit	Site manager and foreman are to communicate with administrative staff to fix all still existing non-conformances prior to audit during this time
Day of Audit	Site Manager/Foreman to be informed prior to visit of auditor
Day of Audit	Audit begins
Day of Audit	Auditor to inspect all site-specific environmental documentation and controls in place
Day of Audit	Auditor to inspect site via walk a bout with site foreman to identify and see if all controls are in place in regards to environmental management
Day of Audit	Auditor to inspect office documentation for records of environmental management
Day of Audit	Audit ends
Within month after audit	Auditor to produce report detailing and listing all non-conformances, their causes and areas of potential improvement.
Within month after report	Simmons Civil administrative staff to produce action plan for non-conformances.
As soon as possible after audit	Staff are to being fixing non-conformances found by audit

Table 9 - Environmental Auditing

All non-compliances with environmental management controls, environmental incidents and emergencies should be followed up as soon as possible. If the issue is site related, they are to be investigated and fixed by the site foreman (Rhys Jones). After a corrective action has been installed, it is to be reviewed to see if it is effective. This should be added to the corrective actions report for the project.

If the issue is office related, the relative office staff (Kirk Wilson, Nick Simmons, Kathy Binley, Elie Antoun, Benny Ho, or Gerhard Groenewald) are to follow up and investigate the cause of the non-

conformances and fix it as soon as possible. This is to be followed up to see the controls put in to stop the non-conformance have been effective.

3.4.2 Environmental Management Plan Review

This environmental management plan should be reviewed at 6-month intervals following the review schedule set out by the Simmons Civil Contracting Integrated Management system. Unless the project has been completed this document is to be reviewed. If the project has been completed, the success of the project is to be examined and analysed, looking at areas of improvement that may be possible. This is done via the project environmental review form.

All non-conformances should be listed and stored in the Simmons civil integrated management system under "non-conformance reports". These lists are to be reviewed to try to ensure that the environmental non-conformances from The Gables Precinct H Stage 4A & 4B Subdivision project are minimalized in future projects.

This environmental management plan is to be reviewed jointly by the site foreman (Brian McSpadden) and the office administrative staff (Benny Ho). Decisions are to be made conjointly with reasons supporting decisions to be detailed in the changelog, which is located later within this document.

All site staff are to be informed via the weekly toolbox talk held on site. This Environmental Management plan should be submitted to the client, after significant changes have been made, or when this environmental management plan is requested. If a government authority wishes to see the plan. A copy of this plan is to be given via email or post to them immediately. If this environmental management plan is required to be submitted for approval, it is to be submitted immediately after changes have been made to this plan that bring this plan up to standard. These changes are also to be noted in the changelog.

5. LOGBOOK

4.1 Changelog

This changelog will detail all changes to the environmental management plan The Gables Precinct H Stage 4A & 4B Subdivision. It should include the version number starting from 1, with the description of the change and the reasons for the change being recorded.

CHANGE/ VERSION NUMBER	DESCRIPTION OF CHANGE	REASON
1	Document created	Document created

Table 10 - Change Logbook

4.2 Complaints Handling Procedure

The complaints handling procedure **[refer to DA Condition B27a) (viii)]** is to ensure all members within the community can voice their concerns with the ongoing project here at the Castle Hill Powerhouse MDC. All consultations and complaints will be investigated, and measures will be taken to guarantee resolutions. A draft of the complaints handling procedure will be provided below:

DATE	TIME	CONTACT DETAILS	COMPLAINT DESCRIPTION	RESOLUTION	FOLLOW-UP ACTION (IF REQUIRED)
		Name: _____ Contact Number: _____			

Table 11 - Complaints Logbook

4.3 Protocols Procedure

During our early works here at the Powerhouse MDC, an unexpected finds protocol for contamination, Aboriginal and non-Aboriginal heritage is implemented. The associated procedure below will provide the crucial steps taken in order to adhere to certain protocols **[refer to DA Condition B27 (f & g)]**:

1. **STOP WORKS IMMEDIATELY**
2. Coordinate and fence off area of unexpected protocol
3. Notify the Project Manager, HSEQ Manager and Superintendent
4. Wait for further instructions before proceeding
5. Ensure unexpected protocol is to be managed and/or removed by a certified removalist