

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

**MADEW
DEVELOPMENT GROUP**

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Project				Revision	1
Prepared in Consultation With:					
Name	Position	Signature	Date		
	Environmental Consultant				
	Project Architect				
	Arborist				
	Traffic consultants				
Approved By:					
Peter Madew	Client – Director Environment				

1.0 POLICY

**MADEW DEVELOPMENT GROUP PTY LTD
ENVIRONMENTAL POLICY**

Purpose of the policy

Madew Development Group Pty Ltd (herein after called MDG) recognises the need to operate the business in a manner that reflects good environmental management. Madew Development Group is aware of the environmental impacts of its operations and will balance its aims with the need to protect both the local and global environment.

It is our objective to ensure that our Environmental Management Systems comply with all requirements of including:

- Legislation, Australian Standards, Codes of Practice and all other relevant guidelines.
- MDG Construction Environment Management Plan, plans, procedures and instructions.

Objectives and Coverage of the policy

MDG is committed to providing the necessary financial and personnel resources to fulfil our environmental policy.

The Managing Director is personally accountable for the environmental performance of MDG and the Managing Director signs this policy in acknowledgement of this overall duty.

Policy

Our company is committed to preventing pollution, to minimising its environmental impacts and to developing a culture of continual environmental improvement by establishing clear set environmental objectives and targets within the framework of an environmental management system.

We will seek to comply with all relevant environmental legislation and, where practicable, will strive to achieve environmental performance to the requirements specified by AS/NZS ISO14001:2004.

MDG will develop environmental performance evaluation procedures and will periodically review its environmental performance. Further-more MDG will incorporate environmental factors into business decisions.

Our company is committed to exploiting environmental opportunities by active resource management (materials, fuel, energy and technologies) and waste minimisation.

We will endeavour to use sustainable materials and products that are reusable or can be recycled. Where necessary it will ensure that all waste, particularly hazardous waste such as contaminated spoil are tested, transported and disposed of in an environmentally acceptable manner, in accordance with statutory duty of care requirements.

During construction activities we will take action to minimise noise levels, traffic nuisance, emission of pollutants and disturbance to the public and local ecosystems.

We are committed to minimise the risks of environmental accidents through the adoptions of appropriate risk management procedures. In conjunction with appropriate authorities it will establish emergency response procedures to deal with accidental pollution.

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P Madew

Peter Madew

Managing Director

Dated: 20/06/2021

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2.0 INTRODUCTION

This Construction Environmental Management Plan (CEMP) is the prime document for the management of environmental issues in all works undertaken by Madew Development Group Pty Ltd (herein after called MDG). The Plan provides information and guidance on how MDG will meet all and Environmental requirements by the contract and legislation.

By implementing this management plan, MDG aims to ensure that appropriate environmental protection measures are implemented on works undertaken within the work site.

The CEMP is the essential link between environmental impacts assessment and project activities. It is to ensure that environmental impacts identified during the assessment stage are properly managed on site and control measures are implemented.

2.1 PROJECT DOCUMENTATION

Project Site Folders shall be established to hold the documentation associated with the environmental aspects of this project this shall contain documents including but not limited to:

DRAWING AND DOCUMENT SCHEDULE

- Architects' drawings
- survey
- Geotech report
- FLORA AND FAUNA SURVEYS AND BIODIVERSITY IMPACT ASSESSMENT (Ecology Report)
- Stormwater management
- Landscaping design drawings.
- Arborist Report.
- Parking & Traffic Management Report.
- Construction Traffic Management Plan PDD-521 Barrenjoey Rd (Bilgola Beach)-CTMP-R1-1
- BASIX compliance
- Bushfire report
- Statement of effect Sub-Management Plans
- Environmental Checklist
- Waste Tracking
- Contamination Reports

The full Project List will be populated once the Development Application has been approved.

2.2 PROJECT DESCRIPTION

The works are located at 521 Barrenjoey Road Bilgola Beach NSW 2107 also known as Lot 129 of Deposited Plan # 16902 dated 27/08/1930.

The main activities to be carried out during the project are:

- Site establishment and mobilisation of plant, equipment and amenities.
- Tree felling and removal of overgrowth off site.

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- Construction of a house and garage.
- Landscaping surround.

2.1.1 WORKING HOURS / SITE DESCRIPTION AND ACCESS

Approved working hours on this project are standard working hours from 7:00 am to 18:00 pm Monday to Friday and 7:00 am to 13:00 pm Saturday.

Works outside these hours will require written approval from the Northern Beaches Council, Consultation may be required with nearby residents and businesses for alternate hours of work and letter box drops.

The site is located on the Bilgola Bends (attached Site Map)

Limited car park will available on the site and parking on Plateau Road and further down Barrenjoey road will be utilized for construction teams.

For deliveries, trucks and vehicle will enter only from the southern carriage way and exit onto the southern carriageway. Due to limited site parking and unloading all deliveries will contact the site manager prior to entry.

A separate Construction Traffic Management Plan is included in the Attachment F PDD-521 Barrenjoey Rd (Bilgola Beach)-CTMP-R1-1

Pedestrians can access the site from along Barrenjoey Road or along Bilgola Terrace.

Site office and toilet facilities will be located inside the confines of the site.

The area of environmental sensitivity is the boundary between the verge and the road for control of sedimentary flows from the work site. Sediment control fencing and capture will be maintained along the length of this boundary.

3.0 OBJECTIVES OF THE CONSTRUCTION ENVIRONMENT MANAGEMENT PLAN

The CEMP outlines the environmental controls applying to pre-works and construction works associated with the Project. It has been developed based on information for the site provided by the client and general environmental requirements which apply to most construction projects and also incorporates project specific environmental sensitive work practices.

The general objectives of this CEMP include:

- reduce or eliminate the release of pollutants to the environment;
- reduce waste and resource depletion by utilising recycling principles where practical;
- document all environmental management activities, including verification and corrective actions;
- implement an effective program for monitoring of environmental issues relating to the MDG's role in the Project.
- promote environmental awareness among workers.
- support ecologically sustainable development;
- protect and enhance the aesthetic environment;

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- minimise impacts on the local community during works.

The CEMP is a working document to be updated as necessary.

4.0 PLANNING

4.1 ENVIRONMENTAL RESPONSIBILITIES AND CONTACT NUMBERS

The person with primary responsibility for implementing the CEMP, monitoring its effectiveness and rectifying any deficiencies is the Project Manager. The Project Manager can delegate some responsibilities to other members of the team.

The Project delivery team contact numbers and emergency contact numbers are detailed in **Attachment A**.

4.2 ENVIRONMENTAL LEGISLATION, APPROVALS, LICENSES AND PERMITS

All activities carried out on the site and in relation to the Project shall comply with the relevant provisions of all legislation relating to the construction of the Project. A detailed Schedule of Environmental Legislative Requirements with obligations relevant to the Project is detailed in **Attachment B**.

MDG will ensure that any approvals, licenses and permits as required by the Development Application conditions of approval and legislation are obtained before works commence. See **Attachment B**.

5.0 IMPLEMENTATION

5.1 ENVIRONMENTAL PROTECTION REQUIREMENTS

Works carried out under this project has the potential to damage the environment. The list of documents and drawings outlines the method and details used to protect the environment. A site risk assessment is carried out by the Project team before works commence; Findings from the risk assessment are then incorporated into the Environmental Protection Measures. (**Attachment C**) which are incorporated into the site induction which is undertaken by all site personnel.

In general, all activities carried out on the site will comply with the relevant provisions of all environmental legislation and requirements of the DA for the construction of this Project.

The environmental issues identified as requiring planning and control measures during the delivery of the project are detailed in Environmental Protection Measures (**Attachment C**). They cover three distinct phases of activity in accordance with the sequence of operations.

These are requirements:

- prior to construction;
- during construction; and
- post construction.

5.2 ENVIRONMENTAL PROTECTION RULES

Environmental Protection Rules have been included in **Attachment D**.

All workers and sub-contractors working on site will be inducted on the rules. Furthermore, the rules will be displayed on notice boards or at other suitable locations on the work site.

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5.3 SITE ENVIRONMENTAL INDUCTION

All personal, sub-contractors and visitors MUST complete the MADEW DEVELOPMENT GROUP Site Environmental Induction. Personnel will not be permitted on site until they have completed the induction. Visitors to the site may not require a full site induction (if they will not be working on site), but must sign in / out, wear appropriate PPE whilst on site and only move around the site when accompanied by Inducted Site Personnel.

All inductions shall be entered onto the Site Register.

6.0 HAZARD IDENTIFICATION

The Environment section of the Hazard Identification Checklist (below), is a list of the hazards identified arising from the work activities. The site specific environmental hazards will be identified and each hazard will have its own controls..

Environment			
<input type="checkbox"/>	Air quality (dust/emissions)	<input type="checkbox"/>	Biological/bacteria
<input type="checkbox"/>	Bulk excavation/spoil	<input type="checkbox"/>	Concrete Product / Waste
<input type="checkbox"/>	Contaminated soil/water	<input type="checkbox"/>	Dangerous Goods/Hazardous Substances (use/storage/spills)
<input type="checkbox"/>	Dewatering/pump out	<input type="checkbox"/>	Flooding
<input type="checkbox"/>	General Waste disposal	<input type="checkbox"/>	Habitats (protected flora/fauna)
<input type="checkbox"/>	Heritage & Archaeology	<input type="checkbox"/>	Hot/cold working environment
<input type="checkbox"/>	Noise or vibration (neighbourhood)	<input type="checkbox"/>	Soil Erosion / Sedimentation
<input type="checkbox"/>	Slurry or other discharges	<input type="checkbox"/>	Spills & response
<input type="checkbox"/>	Stormwater/sediment control	<input type="checkbox"/>	Traffic & parking
<input type="checkbox"/>	Waste hazardous (paint sludge, synthetic min fibre, asbestos/other)	<input type="checkbox"/>	Water Suppression
<input type="checkbox"/>	Vibration	<input type="checkbox"/>	Other.....
<input type="checkbox"/>	Other.....	<input type="checkbox"/>	Other.....
<input type="checkbox"/>		<input type="checkbox"/>	

The following are the common hazards found on a typical site and outline the basic controls for managing the risks. The site will be totally fenced with 1800mm high temporary fencing.

6.1 DUST

The Project Manager is responsible for ensuring appropriate measures / actions are initiated through SWMS or other documented process.

Silica Dust may be released if rock or hardened concrete is cut, drilled, sawed or broken up etc. It can also irritate eyes or cause dermatitis. Therefore appropriate PPE to be utilised (i.e.: P2 Dust Mask is appropriate for works being performed and that it fits well / secure). If affected, wash eyes and skin with plenty of water and move to a “Fresh Area” – advise Site Supervisor immediately.

Water suppression may be used with appropriate controls, specifically around electrical assets. Electricity & Water = DANGER.

6.2 FLYING DEBRIS

A real hazard will be the falling of rocks from and during excavation. Exclusion zone will be set up and confirmed prior to any excavation works. All personnel to be aware of plant operation and to adhere to exclusion zones.

Only authorised personnel are to enter the exclusion zone, if in close proximity to plant operation a spotter must be used. Personnel must wear full PPE.

6.3 NOISE

Site Hours must be adhered to at all times

Works required outside normal working hours are only permitted on approval by the Northern Beaches Council.

During tasks i.e.: Working near plant / equipment, use correct PPE and wear required this may include Ear Plugs in addition to earmuffs.

Noise limitations are to be in accordance with the Northern Beaches Guidelines for works on a construction site.

6.4 STORMWATER / EROSION & SEDIMENT CONTROL

All stormwater / drainage systems must be protected. The Project Manager is to ensure all approved erosion and sediment controls are implemented before works commence.

Silt fences & silt socks to be used. Controls must be check at beginning and end of each week. During inclement weather, ensure more frequent checks (as required) are carried out to ensure controls are appropriate.

6.5 GENERAL WASTE

General housekeeping must be maintained at all times. A skip bin will be located within the site area. This is for general waste. It is the responsibility of all workers / sub-contractors to adhere to housekeeping standards. The Project Manager will ensure bins are secured at end of each shift and emptied as required.

All disposal of waste is to be recorded on the Waste Tracking Register and in accordance with Waste Management process.

7.0 INSPECTION, TESTING AND SERVICING

Inspection and testing will occur at key stages of the works. The Inspection Test Plans will be developed by MADEW DEVELOPMENT GROUP in accordance with relevant works. These will be complete at the appropriate stage of the project and issued to the client at the completion of the each project / stage.

The work activities, work methods, materials plant & equipment will be subject to planned inspections and test programs to verify compliance and conformity.

7.1 PROJECT SCHEDULE

MADEW DEVELOPMENT GROUP will ensure the Project Manager develops a project schedule for inspection and testing and servicing for project during the work process for both Quality, Environmental & Work Health & Safety risks involved in each specific project. This can be part of the overall program of works.

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7.2 INSPECTION TEST PLANS & CHECKLIST

Inspection and testing plans will be developed for work process, prior to commencement, allowing for the WH&S risks involved taking into account the following issues:

- The identified work site hazards, and the risks and controls associated with these hazard
- Inspection & testing to be carried out on the particular work site environment to ensure the DECC (E.P.A.) Legislation is being complied with on the site.
- Client Hold / Witness Points

7.3 RECORDS

All completed records are to be signed off and logged in the Onsite Filing System (Site Folder) with supporting dockets, certificates, test results etc.

8.0 WASTE MANAGEMENT

Waste will be managed on site through a system of bins. There will be segregation of was materials. Some will be recycled and others go to general waste.

All dockets will be recorded on the Waste Tracking Register and copies electronically saved.

9.0 CORRECTIVE AND PREVENTATIVE ACTION

A non-conformance occurs when a procedure or environmental safeguard is not followed or does not perform as required by this CEMP. MDG will monitor non-conformances to the CEMP and initiate a corrective and preventive action where required. Non-conformance is reported on the NCR-CAR Form.

10.0 COMMUNICATION AND COMPLAINTS PROCEDURE

10.1 COMMUNICATION

The project Manager is the contact point to deal with all environmental issues and emergencies on site. The project manager is responsible for ensuring all such issues are resolved. Work team members must notify the Project Manager of any environmental issues on site.

The Project Manager is nominated to be available to relevant external authorities on a 24-hour basis

All relevant authorities, affected property owners and others in the vicinity or affected by specific works will be informed of the project, activity and timeframes.

Inquiries about the works from external parties will be recorded on the Complaints Register.

10.2 COMPLAINTS MANAGEMENT

Any complaints which concern any aspect of the project are recorded and investigated using the Incident Report A Complaints Report will be maintained. The Complaints Report shows the details and nature of the complaint, the complainant, the date and actions taken as a result of the investigation.

If an environmental complaint (such as a complaint regarding noise or pollution) is received, a written report will be prepared. This report includes details of the complaint, action taken to correct the problem and proposed measures to prevent the future occurrence of a similar incident.

11.0 EMERGENCY RESPONSE PROCEDURES

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All environmental incidents are dealt with promptly to minimise any potential impacts. Unexpected or accidental environmental incidents will be managed in accordance with the sites' incident response and reporting procedures. All environmental incidents are reported using the Incident / Near Miss Report. Likely emergencies and incidents may involve:

- fuel or chemical spills;
- unlicensed discharge of pollutants into the environment (air, water, noise, soil); and
- dumping of waste to an unauthorised site.

The Project Manager is responsible for undertaking the incident response according to the procedure.

Any incidents on site, which are likely to cause material harm to the environment, will be immediately reported to the Northern Beaches Council.

The Environmental Protection Authority (EPA) will be notified of pollution incidents on or around the site which have occurred in the course of the works, in the following instances:

- the actual or potential harm to the health or safety of human beings or ecosystem is not trivial; and
- the actual or potential loss or property damage (including cleanup costs) associated with a pollution incident exceeds \$ 10,000.

Emergency contact numbers (refer to **Attachment A**) will be displayed at the work sites.

11.1 PROCEDURE IN CASE OF ANY INCIDENT

- First check that you are not in danger yourself.
- Notify your Site Supervisor or most senior management person on site immediately.
- The Site Supervisor or most senior management person handles the emergency according to company procedures.
- Complete an Incident / Near Miss Report.

11.2 PROCEDURE IN CASE OF FIRE

- Warn & rescue any person in immediate danger - only if safe to do so!
- Call the fire brigade on 000.
- Extinguish the fire using the right fire extinguisher if safe to do so.
- Evacuate to the emergency assembly area if directed or in danger.
- Remain at assembly area & ensure everybody is accounted for.

11.3 PROCEDURE IN CASE OF CHEMICAL SPILLS

Spills on the worksite are most likely to be hydraulic oil or engine oil spilled from plant items. If a spillage occurs the following procedure is to be followed:

- Immediately identify the spilled material and notify the Project Manager.
- Contain the spill as soon as possible so it doesn't spread. Refer to the Safety Data Sheet (SDS) for personal protective clothing needed.

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- If containment is required, contain using earth mound and/or absorbent socks/spill kit. If you can't do this let your Site Supervisor know.
- Use the relevant clean up procedure as instructed by the SDS.
- Once the spill has been contained, your Site Supervisor will arrange removal and disposal as soon as possible. Dispose of material using a licensed contractor and keep records of disposal on site.
- Complete an Incident / Near Miss Reporting Form and forward it to the Project Manager.

12.0 ENVIRONMENTAL TRAINING

All Project personnel, sub-contractors, consultants and visitors will receive training into applicable environmental obligations through the following training packages:

- Project Induction (overview of the Project risks).
- Site environmental specific induction (overview of risks specific to site/activity).
- On the job training (e.g. tool box talks, environmental tools, environmental control maps, emergency or environmental risk assessments); and
- Specialist training (e.g. dust monitoring).

13.0 SUB-CONTRACTOR MANAGEMENT

13.1 SELECTING AND ENGAGING SUB-CONTRACTORS

MDG engages only sub-contractors who have the appropriate competencies and experience to perform the work satisfactorily.

13.2 MANAGING SUB-CONTRACTOR ON SITE

The Project Manager applies a level and type of control to sub-contractors appropriate to the risks associated with the sub-contracted works.

13.3 SELECTING AND ENGAGING SUPPLIERS

MADEW DEVELOPMENT GROUP engages only suppliers who have the appropriate competencies and experience to provide the goods in a satisfactory manner.

14.0 ENVIRONMENTAL PERFORMANCE MONITORING

14.1 DAILY SITE INSPECTIONS

The Site Supervisor shall carry out a daily inspection of the site and use this to discuss with site workers each day the hazards on the site.

14.2 WEEKLY SITE INSPECTIONS

To demonstrate compliance with the CEMP, the Project Manger shall conduct a weekly and after rain environmental inspections to monitor the performance of environmental controls implemented on site. Any actions resulting from the inspections are promptly resolved.

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The Project Manager ensures that environmental performance is evaluated on a regular basis and includes a review of inspections records, complaints/enquires received, waste generated/disposed, incidents and other environmental issues.

14.3 SITE AUDITS

The Project Manager shall undertake routine site audits in accordance with the program set out in the Internal Audit Schedule, which is attached to this CEMP. The audit shall be reported on the Audit Observation Sheet and the outcomes reported to the Project Manager. Any serious non-conformances from the internal audit shall initiate an NCR / CAR which shall be followed up and closed promptly. The NCR / CAR form and outcome shall be reported.

14.4 CLIENT & EXTERNAL AUDITS

The Client may carry out audits of the site to ensure conformance, and the outcomes shall be provided to the Project Manager who will promptly action any matters.

15.0 STANDARD FORMS

Refer to **Attachment F** for forms to be used with the project.

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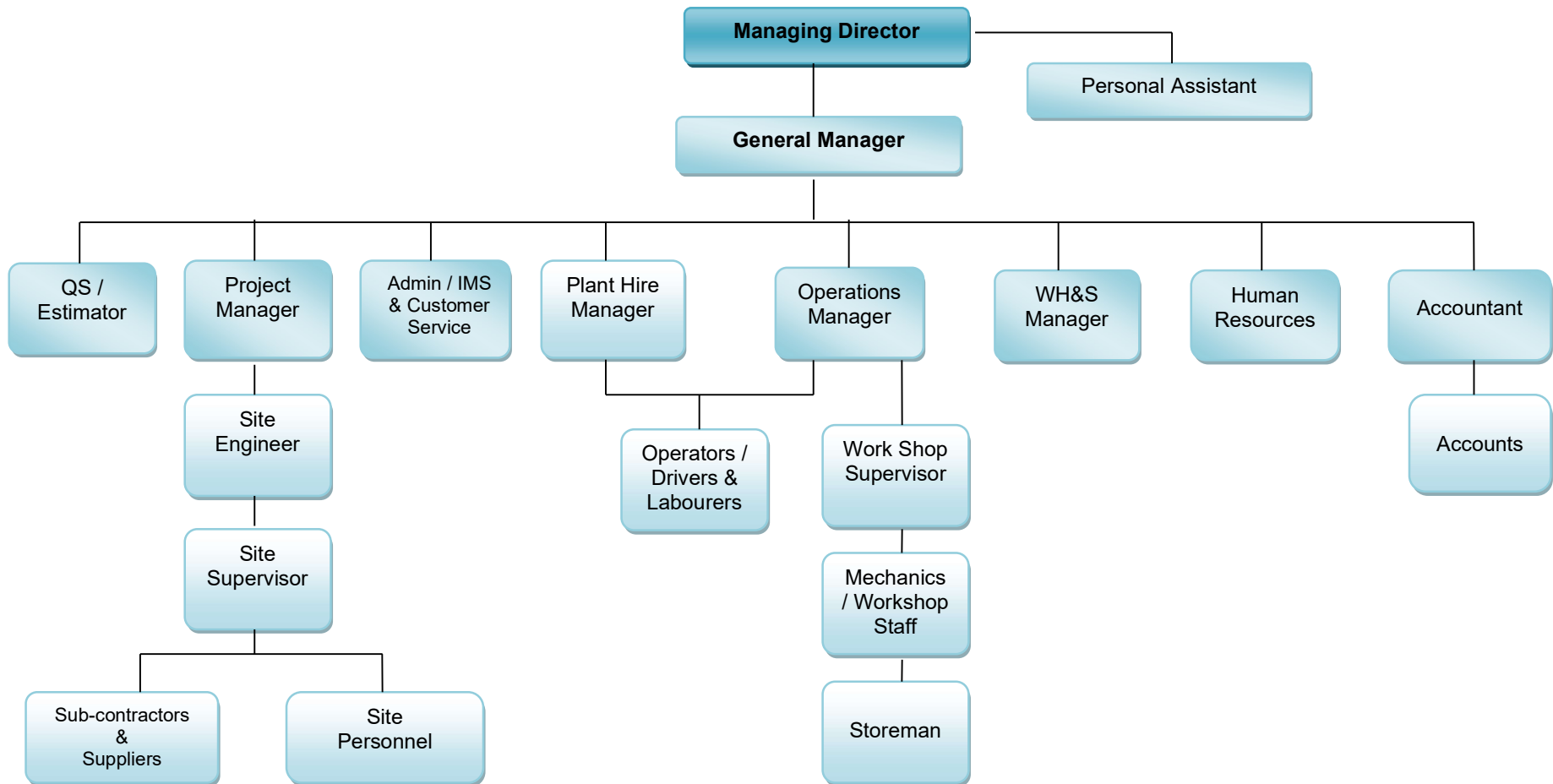
ATTACHMENT A

Organisation details, project delivery team & Contact numbers

ORGANISATION DETAILS			
Business or trading name and address:	MADEW DEVELOPMENT GROUP PTY LTD 12 Idaline St Collaroy Plateau NSW 2097		
ACN/ABN:			
Telephone:			
Email:			
Name:			
Position:			
Insurances (Attach copies of certificates of currency)	Company	Policy number	Expiry date
Workers compensation			
Public liability			
Motor Vehicle			
COMPANY LICENSES			
WorkCover	203362	Un-Restricted Demolition / Bonded Asbestos	18/11/13
DECC	EPA 12928	Transporter Of Waste	26/06/14

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

Project Delivery Team - Organisation Structure



CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

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SITE & EMERGENCY CONTACT DETAILS

Company	Name	Position	Mobile	Fax
MADEW DEVELOPMENT GROUP	Peter Madew	** Project Manager		02 4677 3457
MADEW DEVELOPMENT GROUP	Harrison Madew	** Site Engineer		02 4677 3457
TBC		** Site Supervisor		02 4677 3457
TBC		Operations Manager		02 4677 3457
TBC		WH&S Manager		02 4677 3457
TBC		** Project Engineer		02 9200 0290
TBC		** Planning & Environment		02 9200 0290
TBC		** Safety Facilitator		02 9200 0290
EMERGENCY SERVICES				
Police Station				
Medical Practice				
General Hospital				
SERVICES				
Council		24HRS / 7 DAYS		
RMS		24HRS / 7 DAYS	131 700	
EPA		24HRS / 7 DAYS		
Pipe Networks		24HRS / 7 DAYS	07 3233 9895	
Ausgrid		24HRS / 7 DAYS	131 388	
Telstra		24HRS / 7 DAYS	13 22 03	
Optus		24HRS / 7 DAYS	1800 505 777	
Uecomm		24HRS / 7 DAYS	1800 707 447	
Jemena Gas		24HRS / 7 DAYS	1300 665 380	
Sydney Water		24HRS / 7 DAYS	13 20 90	

(**) These contacts are available on a 24-hour basis. Both persons have the authority to halt the progress of the works if required.

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ATTACHMENT B

Environmental Legislation, approvals, licenses and permits

Legislation	Approval/Licence Requirements	Relevance to the Project	Approval/ Licence Obtained (Yes/No/NA)
Contaminated Land Management Act 1997.	Must report to EPA if land contamination presents "a significant risk of harm".	If contaminated land is found.	
Environmental Planning and Assessment Act 1979.	<ul style="list-style-type: none"> • Part IV – Development Consent from Council. • Part V – REF/EIS/SIS. 	Works assessed under Part V of the EP & A Act.	
Environmental Protection and Biodiversity Conservation Act 1999.	All environmental impact assessment undertaken for Part 4&5 of the EP&A Act must consider NES matters as well as any Commonwealth land. If a significant impact is proposed the approval of the Commonwealth Minister for Environment is required.	Any action that has, will have or is likely to have a significant impact: <ul style="list-style-type: none"> • on a matter of National Environmental Significance; or • on the environment on Commonwealth land (whether action takes place inside or outside Commonwealth land). 	
Heritage Act 1977.	<ul style="list-style-type: none"> • Approval required doing certain things that will affect an object subject to an Interim Heritage Order or listed on the State Heritage Register. • An excavation permit required under certain circumstances. 	If works disturb an object subject to an Interim Heritage Order or listed on the State Heritage Register.	
Noxious Weeds Act 1993.	<ul style="list-style-type: none"> • You must notify relevant control authority within 3 days of becoming aware that a notifiable weed is on your land. • You must control spread of noxious weeds onto adjoining land. 	If listed weeds are found or imported on site.	
Protection of the Environment Operations Act 1997.	<ul style="list-style-type: none"> • Environmental Protection Licences required for scheduled activities or activities that may cause water pollution. • Approval required to construct and operate sediment control structures. • Licence necessary if water discharges from structures required. • Must notify EPA of a pollution incident. • Licence required if the proposed works are likely to generate, store, transport or dispose of industrial or hazardous waste. 	<p>If works involve a spill or other pollution incident.</p> <p>If works are likely to involve industrial or hazardous waste which requires a licence</p>	

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Legislation	Approval/Licence Requirements	Relevance to the Project	Approval/ Licence Obtained (Yes/No/NA)
Threatened Species Conservation Act 1995.	Applies to any threatened species (flora and fauna) found on work site.	If works locate threatened species (flora or fauna) listed under the Act.	
Waste Avoidance and Resource Recovery Act, 2001.	None	Waste management to be done in accordance with waste hierarchy (Avoid, Reuse, Recycle, Energy Recovery, Disposal)	
Water Management Act 2000.	To obtain access licences to access different water sources, and additional approvals for use, water management works and certain activities. The Act provides for Water Management Plans to be made which govern the grant of relevant licences and approvals. The Act also sets out the powers of water supply authorities, for instance, to interfere with public roads and sewers, drains or tunnels under public roads		
National Parks and Wildlife Act 1974.	None		
Pesticides Act 1999.	None	Control of weeds subsequent to vegetation clearing	
Protection of the Environment Operations (Clean Air) Regulations, 2002.	None	Applicable to the emissions caused by activities and plant	

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

ATTACHMENT C

Environmental Protection Measures

Aspect	Impact	Mitigation Measures	Hold Points	Responsibility	Records
Clearing of areas leaving soils exposed.	<ul style="list-style-type: none"> Adverse health effects including eye, nose and throat irritation from excessive inhalation of fine particles and excessive exhaust emissions, (particularly around works where there is a closer interface of construction activities with pedestrian) Dust deposition on surfaces where it may cause damage and/or lead to a need for increased cleaning or repair with sensitive receivers being adjacent or in close proximity to dust generating Project activities and access points; 	<ul style="list-style-type: none"> Discussion on dust sources, impacts and mitigation measures during Site Induction and ongoing Toolbox Talks. Implementation of a proactive air quality and dust monitoring program. Safe Work Method Statements (SWMS) includes assessment of potential impacts to sensitive receivers and be reviewed if there are changes to the construction activity. Water sprays and / or water carts used as required for dampening exposed surfaces to control dust generation (recycled water is to be used over potable water where practical). Areas of exposed soil during earthworks will be minimised. Hard stand to be installed as soon as possible and maintained to prevent dust. Disturbed areas and any long-term stockpiles during construction will be sealed or revegetated as soon as practicable after completion of construction works, to reduce wind-borne dust and erosion. 		Construction Environmental Coordinator	
High dust generating activities in close proximity to residences and public areas along the alignment.				Project Manager Site Engineers Construction Environmental Coordinator	
Main earthworks: cut and fill activities adjacent to sensitive receiver boundaries.				Project Manager Site Engineers	
Site traffic movements on unsealed site surfaces causing excessive dust generation.				Project Manager Site Engineers	
Spoil and fill transportation resulting in queuing				Project Manager	

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

Aspect	Impact	Mitigation Measures	Hold Points	Responsibility	Records		
of idling haulage trucks (excessive exhaust fumes) and tracking of soil along local roads the proximity of access gates.	<ul style="list-style-type: none"> Complaints from the public relating to visible airborne dust plumes, deposits of dust on surfaces / within operating units and excessive exhaust emissions and odours. Excessive dust production may have potential impacts on local fauna species. 	<ul style="list-style-type: none"> Where particularly sensitive residents or other land uses (e.g. schools) have the potential to be impacted by wind-borne dust, the installation of dust screens (e.g. shade cloth material) on Project boundaries will be considered. Burning or incineration of green waste or any other wastes is not permitted at any of the construction worksite areas. Vehicle speeds will be limited on site to ensure dust generation is minimised and, if required, enforced below site speed limits in windy/dusty periods. Zones adjacent to residents will have enforced reduced speed limits if dust is an issue. All vehicles and plant equipment will be shut down when not in use. There will be no idling of any vehicle or plant equipment. Vehicles will undertake pre-start checks before use and any non-compliant or faulty vehicle will be removed from site. Any dirt or spoil tracked onto public roadways resulting from construction vehicles exiting the worksite(s), will be removed and appropriately disposed of using brooms or a street sweeper as required. 		Site Engineers			
Impacts from open sewage mains during service relocations and earthwork activities, releasing odours and potentially resulting in community complaints.						Project Manager Site Engineers Construction Environmental Coordinator	
Exhaust from vehicles and plant equipment.						Construction Environmental Coordinator	

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

Aspect	Impact	Mitigation Measures	Hold Points	Responsibility	Records
		<ul style="list-style-type: none"> • Trucks carrying spoil onto or off site will be covered. Tailgates, under-rigs and towing apparatus of all trucks will be checked to ensure they are secured, prior to trucks leaving the worksite. • Plant or equipment will not be parked with the motors running when not in use, to reduce the potential impact on air quality. • Exhaust systems of construction plant, vehicles and machinery to be maintained to minimise exhaust emissions to atmosphere. All equipment and vehicles are to be regularly maintained and records kept of maintenance inspections. • Dust generating activities during high wind periods will be avoided as far as possible. • Any fine dry material stockpiles excluding temporary spoil stockpiles are to be covered. • Odours from open excavations including associated with soil contamination or sewer systems will be monitored and if an issue is identified, treatment actions / covers / masking agents may be used. • Residents potentially affected by odour 			

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Aspect	Impact	Mitigation Measures	Hold Points	Responsibility	Records
		issues will be notified.			
Biodiversity					
Unapproved clearing of vegetation within and outside rail corridor.	<ul style="list-style-type: none"> • Unnecessary loss / damage of vegetation. • Potential prosecution and significant Project delays. 	<ul style="list-style-type: none"> • Site induction and regular toolbox talks will address vegetation clearing procedures, protection of any significant vegetation, weed identification and control measures, construction of any permanent perimeter fencing to minimise vegetation damage and fauna rescue. • Any identified threatened species will be demarcated with interpretive signage and retained if possible. If retention is not possible, the option of transplanting the species to an area outside of the construction zone will be investigated. • Limits of clearing will be clearly marked and fenced prior to clearing and documented on <i>Environmental Control Maps</i> then tool boxed. • Prior to vegetation and soil clearance commencing, the <i>Pre-Clearance Checklist</i> must be completed and a pre-clearing survey must be undertaken to determine the presence of active nests 	<i>Pre-Clearance Checklist</i>	Construction Environment Coordinator	
Services relocation works outside Project corridor.	<ul style="list-style-type: none"> • Unnecessary loss / damage of vegetation. • Potential prosecution and significant Project delays. 		Encountering Fauna - If any fauna is encountered, stop work in the immediate area and contact the Construction Environment Coordinator (refer to the <i>Fauna Handling Management Tool</i>).	Construction Environment Coordinator Project Manager	
Excessive clearing / trimming of vegetation required along Project boundary.	<ul style="list-style-type: none"> • Unnecessary loss / damage of vegetation. 		<i>Pre-Clearance Checklist</i>	Construction Environment Coordinator	

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Aspect	Impact	Mitigation Measures	Hold Points	Responsibility	Records
Poor fauna handling during clearing / trimming of trees within / outside rail corridor.	<ul style="list-style-type: none"> Loss of fauna during vegetation clearing and earthworks. 	<p>of birds and arboreal mammals. All habitat trees will be marked accordingly. Trees will not be removed or pruned until the animals have been moved or relocated.</p> <ul style="list-style-type: none"> Any tree trimming required will be undertaken by appropriately qualified contractor with input from an arborist where required. No clearing outside approved areas. Equipment storage areas and stockpile areas will be located in cleared areas and not be within drip zones of trees. 	Encountering Fauna - If any fauna is encountered, stop work in the immediate area and contact the Construction Environment Coordinator (refer to the <i>Fauna Handling Management Tool</i>).	Construction Environment Coordinator	
Clearance and or trimming of vegetation.	<ul style="list-style-type: none"> Erosion of topsoil, uncontrolled runoff, sediment deposited into surrounding vegetated areas and invasion of weeds / uncontrolled runoff. Erosion of topsoil, uncontrolled runoff, sediment deposited into surrounding vegetated areas and invasion of weeds. Unauthorised works / damage / removal of areas of EECs / conservation area 	<ul style="list-style-type: none"> Seed of local endemic species to be collected if practicable in accordance with the Florabank Native Seed Collection Code of Practice prior to the commencement of construction to provide seed stock for revegetation. Pesticides and/or herbicides only to be applied to weeds prior to their removal and soil clearance activities. No large scale applications to be undertaken. Pesticides and/or herbicides not to be used when residue could enter a watercourse (i.e. the storm water system) and/ or impact potential foraging habitats. 	<i>Pre-Clearance Checklist</i>	Construction Environment Coordinator	

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

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Aspect	Impact	Mitigation Measures	Hold Points	Responsibility	Records
	<p>outside defined area of impact.</p> <ul style="list-style-type: none"> Potential for injury to native fauna. 	<ul style="list-style-type: none"> All staff using pesticides and/or herbicides will have appropriate training and appropriate records will be kept in accordance with the <i>Pesticides Amendment (Record) Regulation, 2001</i>. 			
Vehicle movements affecting Flora & Fauna.	<ul style="list-style-type: none"> Weed dispersion from vehicles on site which enter adjacent vegetated areas and / or waterways. 	<ul style="list-style-type: none"> Any weed growth observed during environmental inspections will be noted and actions to be taken will be discussed i.e. timing of weed removal. All weed removal will be undertaken in accordance with the Noxious Weeds Act. Landscaping and habitat rehabilitation works to incorporate specific measures to recreate and enhance vegetation and other flora and fauna habitat, in accordance with the Urban Design and Landscape Plan as per SoC 36. 	Encountering Fauna - If any fauna is encountered, stop work in the immediate area and contact the Construction Environment Coordinator (refer to the <i>Fauna Handling Management Tool</i>).	<p>Construction Environment Coordinator</p> <p>Site engineer</p>	
Pest / rodent disturbance from site establishment.	<ul style="list-style-type: none"> Potential to relocate into residential areas / cause of community complaint 	<ul style="list-style-type: none"> Landscaping works will be monitored to assess weed growth and weed control will be undertaken in landscaped areas as part of a scheduled maintenance program. If any animal is injured on site or requires removal from the site (i.e. snake) the Fauna Handling Management Tool will be followed and advice will be sort from a Terrestrial Ecological Advisor and if required 	Encountering Fauna - If any fauna is encountered, stop work in the immediate area and contact the Construction Environment Coordinator (refer to the <i>Fauna Handling Management Tool</i>).	Construction Environment Coordinator	

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Aspect	Impact	Mitigation Measures	Hold Points	Responsibility	Records
Native seeds / mulch mix not treated and certified.	<ul style="list-style-type: none"> • Introduction of exotic species • Introduction of parasites on planted flora leading to offsite spread 	<p>WIRES.</p> <ul style="list-style-type: none"> • If any endangered species is found on the Project site that has not been identified and assessed in any Project documentation, work will cease in immediate vicinity and OE&H (Threatened Species Unit) will be notified to determine the appropriate course of action. • A Compensatory Habitat Package will be developed in consultation with OE&H and relevant councils to offset the Endangered Ecological Communities (EECs) and threatened flora/ fauna species in non-certified areas affected by the proposal. 		Construction Environment Coordinator	
Stockpiling of vegetation and topsoil	<ul style="list-style-type: none"> • Wind and water erosion causing weed/seed dispersion offsite • Location of stockpiling next to waterways causing weeds/seeds to disperse from construction site 			Construction Environment Coordinator Project Manager Site Engineers	
Heritage					
Excavation works unearthing or damaging previously unidentified Indigenous Heritage items and sites or human remains.	<ul style="list-style-type: none"> • Potential damage of unidentified Indigenous Heritage items and sites or human remains and potential for delays and/or prosecution. 	<ul style="list-style-type: none"> • For any unexpected heritage find, works shall stop immediately and contact the Environment Manager and TCA. • Immediate contact to be made with OE&H's Planning and Heritage Section. Protective fencing shall be installed until relevant authorities have been contacted and the best practice, feasible method of action has been decided upon. • Identified artefacts potentially impacted by works will be salvaged and curated, 	Unexpected heritage Find - for any unexpected heritage find including uncovering human remains, works shall stop immediately in that area and contact made with the Environment Manager who will alert the relevant	All site personnel	

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Aspect	Impact	Mitigation Measures	Hold Points	Responsibility	Records
		in consultation with OE&H and the registered Aboriginal stakeholder.	authorities. The area will be cordoned off immediately.		
Noise					
Excessive noise disturbing the surrounding areas	<ul style="list-style-type: none"> Complaints from the public relating to excessive noise and disturbances. 	<ul style="list-style-type: none"> Works only undertaken during specified working hours unless written consent has been obtained from the relevant parties. 		Construction Environment Coordinator Project Manager	
Plant and cars arriving to site	<ul style="list-style-type: none"> Complaints from the public relating to excessive noise and disturbances. 	<ul style="list-style-type: none"> Cars and machinery turned off and not left idling when not in use. Site induction briefing all personnel on noise issues. 		Construction Environment Coordinator Project Manager Site Engineers	
Waste/Chemical Storage					
Generation of excessive waste	<ul style="list-style-type: none"> Increased project costs. 	<ul style="list-style-type: none"> Implementation of waste avoidance/management procedures. 	Classification in accordance with OE&H 2009 prior to removal offsite.	Project Manager Site Engineers	
Incorrect disposal of waste materials	<ul style="list-style-type: none"> Poor reflection on the company. Potential prosecution and significant Project delays. 	<ul style="list-style-type: none"> Implementation of waste avoidance/management procedures. All storage and use of hazardous substances will be in accordance with the SDS. All hazardous substances will be stored in their original containers with 		Project Manager Site Engineers	
Storing of Hazardous					

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Aspect	Impact	Mitigation Measures	Hold Points	Responsibility	Records
Chemicals	<ul style="list-style-type: none"> Potential damage to environment and unidentified Indigenous Heritage items Poor reflection on company 	<p>the label intact at all times.</p> <ul style="list-style-type: none"> Hazardous substances of any large quantities or products that cannot be stored together will not be stored in crib rooms, container sheds or offices. All areas where Chemicals/Hazardous Substances will be stored will have adequate Warning Signage. 		<p>Project Manager</p> <p>Site Engineers</p>	
Utilities					
Disruption of services through damage to utilities	<ul style="list-style-type: none"> Poor reflection on the company. Potential prosecution and significant Project delays. 	<ul style="list-style-type: none"> Discussions with utility and service providers will be undertaken prior to commencement of any service adjustments or relocations and all relevant approvals sought prior to the commencement of works. Permits to Disturb will be required prior to any excavation works. Detailed service location to identify an mark underground services undertaken prior to works commencing. 	Permit to Disturb	<p>Site Engineers</p> <p>Project Manager</p>	

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ATTACHMENT D

Environmental Protection Rules

Environmental Protection Rules
Project/Location:

General Site Management	
1.	Implement the Soil and Water Management Plan for the site
2.	Sweep roads free of dirt each day
3.	Regularly check and clean silt from behind silt fences and barriers if required
4.	All vehicles to remain on clean all weather surface within the site or cleaned prior to exiting
5.	Minimise water use for cleaning
6.	Install appropriate silt fences and other sediment control structures
7.	Ensure sediment control measures are in place before starting clearing and excavation activities
8.	Install a fence at the site boundary to limit site access from footpath
9.	Minimise clearing of vegetation
10.	Fence off no-go areas to minimise disturbance
11.	Stockpile materials only in designated areas behind sediment fences
12.	Limit vehicle entry points and lay geo-textile and blue metal to stabilise vehicle access ways
13.	Do not disturb the nature strip between the site and the roadway
14.	Implement the site Construction Waste Management Plan
15.	Order only the required quantities of materials
16.	Separate recyclable from non-recyclable waste
17.	Ensure the correct waste containers are used by all site personnel
18.	Minimise chemicals stored on site
19.	Make staff aware of emergency phone numbers (such as the Fire Brigade) to use in the case of a large spill
20.	Keep Safety Data Sheets (SDS's) on site at all times
21.	Keep clearly marked booms and/or absorbent material on site to contain spills if they occur
22.	If a spill occurs, stop the source, contain it, clean up in accordance with SDS's and notify relevant authorities
23.	Damp down dusty areas as required
24.	Do not bum off any waste products or off cuts
25.	Identify site access with minimal impacts on residents and instruct trucks to use this access
26.	Avoid parking site vehicles where they will unduly impact local use of the street
27.	Do not place waste containers, skip bins or building materials on road or footpath - store all materials within the work site
28.	Limit hours of operations to suit council requirements listed in consent conditions
29.	Use noise suppressors on machinery
30.	Do not use loud radios where neighbours can be disturbed
31.	Take appropriate care when using construction equipment adjacent to any buildings

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32.	Advise the adjoining neighbours of the work at least one week prior to commencement, including hours of work
33.	Protect trees during construction
34.	Do not stockpile soil or other materials under the canopy of a protected tree as designated by Resitech or the local council
35.	Ensure site amenities such as sheds and material storage areas are not sited underneath tree canopies or in a position to disturb neighbours
36.	Identify and protect heritage items present on site
Demolition	
37.	Stockpile materials only in designated areas behind sediment fences
38.	Cover stockpiled materials with plastic to prevent erosion by wind and rain
39.	Install a fence around the site with a cloth barrier to act as a wind break if dust is a problem
40.	Damp down surfaces such as stockpiles as required to reduce wind blown dust
41.	Implement the site Demolition Waste Management Plan
42.	Do not bury or burn demolished materials on site
43.	Ensure hazardous materials such as asbestos are handled and disposed of correctly by licensed contractors, following Environment Protection Authority requirements
44.	Do not mix hazardous materials with other demolition materials
45.	Identify and protect heritage items present on site
Concreting	
46.	Wash out trucks at supplier's depot
47.	Wash out in an area where water cannot enter waterways, stormwater drains, footpaths or roads up slope from a sediment control device
48.	Collect wash water in plastic container carried by delivery truck and return with the truck to the supplier for recycling or proper disposal
49.	Collect wash water in an on-site container to allow solids to settle
50.	Irrigate a flat grassy area with diluted wash out water, ensuring that it does not enter waterways or storm water
51.	Implement the site Construction Waste Management Plan (attached)
52.	Order and supply only sufficient quantities of concrete
53.	Return excess concrete with delivery truck to supplier for recycling or proper disposal
54.	Use excess concrete as fence post footings or place on areas to be used for paths or driveways
55.	Store excess concrete in a lined bin or pit for eventual recycling or disposal
Bricklaying	
56.	Wash out in an area where water cannot enter driveways, storm water drains, footpaths or roads, preferable up slope from a sediment control device
57.	Collect wash water in an on-site container to allow solids to settle
58.	Irrigate a flat grassy area with diluted wash out water, ensuring that it does not enter waterways or storm water
59.	Ensure brick cutting is undertaken where waste water will not run onto footpaths or roads
60.	Implement the site Construction Waste Management Plan
61.	Store excess mortar with waste concrete in a lined bin or pit for eventual recycling or disposal
Painting	

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62.	Wash out in an area where water cannot enter waterways, storm water drains, footpaths or roads, preferably up slope from a sediment control device
63.	Transfer as much paint as possible back to the tin
64.	Spin brushes and roller sleeves in a waste paint drum
65.	Irrigate a flat grassy area with diluted wash out water, ensuring that it does not enter waterways or storm water
66.	For solvent based paints, return solvent to a solvent recycling depot
67.	Dispose of solid paint waste with other solid waste
68.	Determine if lead is present in surfaces to be painted
69.	Seal the area with plastic sheeting to prevent escape of dust
70.	To prevent lead fumes, do not use open flame torches on lead paint
71.	Use a high efficiency particulate air (HEPA) vacuum cleaner to clean up lead dust
72.	Wash surfaces with a small amount of high phosphate detergent
73.	Minimise paints and chemicals on site by ordering the minimum quantities
74.	Store paints and chemicals in a bunded area where they can be contained if spills occur
75.	Keep Safety Data Sheets (SDSs) on site at all times
76.	Keep clearly marked booms and/or absorbent material on site to contain spills if they occur
77.	If a spill occurs, stop the source, contain it, clean up in accordance with the SDSs and notify relevant authorities
Building services	
78.	Fill in service trenches as soon as work is completed to minimise erosion
79.	Cover service trenches with plastic sheeting or another suitable cover if filling cannot be immediately completed
80.	Connect guttering and downpipes to the storm water system as soon as the roof is completed
81.	Ensure there are no cross connections made between the storm water and public sewerage system
Landscaping	
82.	Once no longer required, reinstate ground level around the works, fill spoon drains and sediment basins, level banks and remove surplus soil
83.	Complete landscaping and revegetation as soon as possible following building activities
84.	Ensure sediment control measures are in place until all vegetation is established
85.	Regularly check all sediment control structures to ensure they are working effectively
86.	Ensure that no disturbance of the nature strip occurs between the site and the roadway
87.	Do not locate stockpiles within 2 metres of hazard areas such as spoon drains or areas of high flow
88.	Ensure stockpiles and open dusty areas are damped down as required
89.	Cover stockpiles as needed to minimise dust
90.	Ensure that soils and fill used in landscaping area are free from weeds and weed seeds
91.	Ensure appropriate trees are chosen for the site and location relative to building and services considering their eventual height and root system

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ATTACHMENT E

ENVIRONMENTAL CHECKLIST:

Indicate by marking: √ Acceptable X Not Acceptable N/A Not Applicable	Results √ X N/A	Actions / comments
Water Quality		
Are all drains, channels and gutters clear?		
Is runoff from stockpiles and other disturbed areas being adequately intercepted and treated prior to discharge off site?		
Has all mud from truck movements been cleared from the road?		
Are creeks/riverbanks undisturbed?		
Are watercourses not obstructed?		
Are concrete trucks/agitators washed out in designated areas and slurry collected or returned to licensed facilities for washout?		
Erosion and Sedimentation Controls		
Are all erosion and sediment control measures in place according to the Erosion and Sedimentation Control Plan?		
Are all erosion and sediment control measures in good condition?		
Do any erosion and sediment control structures need clearing out? (Sediment to be cleared when traps reach 60% of capacity). (If yes, state work to be carried out.)		
Are all temporary stockpiles surrounded with silt fences?		
Have all newly disturbed areas been protected?		
Have all sediment and erosion controls been inspected within 24 hours of all rainfall events greater than 10mm and the after rain checklist completed? (Contained in the Erosion and Sedimentation Control Inspections Checklist).		
Fuels and Chemicals/ Spills		
Are all fuel and chemicals being stored in secure, lockable bunded, sealed and covered areas with a capacity of not less than 120% of the volume of the largest container?		
Are all bunds in good condition?		
Are fuels/chemicals stored at least 20m away from watercourses?		
Are fire extinguishers available both on site and within the containment area?		
Are emergency procedures displayed in a prominent position adjacent to the fuel/chemical storage area within the site working area?		
Are spill absorbent materials kept on site?		
Have all spills been reported to the Site Supervisor?		
Have Environmental Incident Reports been completed for all spills and investigated?		
Noise and Vibration		
Is construction occurring within normal working hours (weekdays 7.00am to 6.00pm, Saturdays 7.00am to 1.00pm (8 – 1 near residences) and no work on Sundays and Public Holidays)?		
Has the local community been kept informed of working hours		

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Indicate by marking: √ Acceptable X Not Acceptable N/A Not Applicable	Results √ X N/A	Actions / comments
and the level and duration of noise to be expected (including notification in advance for work outside of normal working hours)?		
Are there any adverse noise conditions on site?		
Have noise emissions from plant/equipment been monitored?		
Is variable volume reversing alarms operable on all plant and trucks used on night works?		
Have all possible steps been taken to limit vibration?		
Have any complaints been received and have they been actioned out?		
Waste		
Is the site and surrounding area free of waste, litter and rubbish?		
Are all bins being emptied when three-quarters full?		
Has all site generated waste been collected and removed from the site to a licensed landfill, or made available for recycling?		
Has hazardous and contaminated material been disposed of as per EPA requirements?		
Is waste being controlled in accordance with the Waste Management Plan?		
Air Quality		
Is a water cart being used to reduce dust generation from exposed surfaces whenever necessary?		
Are materials in trucks being covered before transporting?		
Are stockpiles covered or watered down?		
Is any plant/equipment emitting excessive exhaust emissions?		
Has burning off been prevented from occurring on site?		
Has dust monitoring indicated excess dust from works and have extra controls been required?		
Flora and Fauna		
Is all vegetation to be retained clearly marked with temporary fencing (paraweb or similar)?		
Are site works being limited to clearly defined areas?		
Are all stockpiles located 5 metres away from trees and protected vegetation?		
Have turning and parking areas for vehicles been established to minimise vegetation disturbance?		
Is cleared and excavated material containing noxious weed being removed from site to a licensed waste management facility/landfill?		
Are any noxious weeds on site being destroyed and any newly germinating noxious weeds being controlled?		
Have disturbed areas been stabilised and revegetated with local species where necessary?		
Is it ensured that vehicles/heavy plant is not parked under trees?		
Acid Sulphate Soils		
Have only approved areas been disturbed?		
Have exposed ASS areas been lime treated?		
Have soil handling procedures been followed?		
Are retention basins in place?		

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Indicate by marking: √ Acceptable X Not Acceptable N/A Not Applicable	Results √ X N/A	Actions / comments
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Heritage/Archaeology		
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Have any indigenous or non-indigenous heritage items been discovered on site?		
If so, was work stopped immediately and appropriate notifications made?		
Have provisions been made to minimise vibration around any identified heritage items?		

Other (insert any other controls necessary for this project).		
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Sub-contracted Works (insert details of environmental controls to be implemented by sub-contractors).		
--	--	--

Inspected by: _____		
Comments		

Reviewed by: Project Manager	Signature:	Date:

Madew Development Group

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

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Project:		Project Number	
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Environmental Protection Measures	Sign Off
Note: 'Sign Off' for simple, once-only actions the sign off column may be initialled and dated; Sign off on reoccurring actions will be evidenced in the Environmental inspection checklist.	
Access and Traffic Management	
Pre-works phase	
A Traffic Control Plan (TCP) minimises disruption as much as possible, a single lane closure is required and pedestrians to be diverted to the other side of the road during pouring stage of the ramp, columns and bases.	
Where possible, all works shall be programmed and undertaken in a manner least disruptive to local businesses and access ways shall not be blocked at any time.	
All landowners potentially impacted by construction works or associated activities shall be consulted regarding any practicable and cost-effective measures to minimise impacts which may be beneficially implemented prior to the commencement of construction or within such time frame as agreed with the relevant landowner.	
Local residents shall be notified in advance of potential disruption to property accesses and traffic flows.	
The works site shall be appropriately fenced to prevent unauthorised access.	
Works phase	
Care should be taken to ensure access is not affected. If work is near roads warning signs should be erected.	
Warning signs need to be erected to alert road users of the change in conditions. Any council conditions will be followed. Nearby residents will be advised by mail of the changes.	
Warning signs need to be erected to alert road users of the change in conditions. For major road closures signs should be erected a few days before the works commence. Any council or Roads Authority conditions will be followed. Nearby residents will be advised by mail of the changes.	
Post-works phase	
All temporary traffic signs will be removed and, where appropriate, new permanent signs erected.	
Air Quality	
Pre-works phase	
All construction facilities erected on site must be designed and operated to minimise the emission of smoke, dust, cement dust and other substances into the atmosphere. Indicate here how you are going to control of dust or odours would be eliminated or controlled	
Works phase	
Vehicular access will be kept to sealed roads wherever possible or to designated site access points	
A 25km/hr speed limit shall be imposed on all vehicles within the construction site, including haul roads.	
A garden water hose for spraying to reduce dust generation from exposed surfaces will	

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Environmental Protection Measures	Sign Off
be available at all times.	
A water cart shall be available at all times for spraying all exposed areas to reduce dust generation.	
The area to be disturbed for excavations will be minimised	
Stockpiles, access roads and work areas will be watered down or covered	
Excess spoil will be placed in skip bins or covered stockpiles, reused on-site or disposed off-site.	
Materials transported in open trucks will be covered to prevent generation of dust.	
The tailgates of all vehicles transporting material from the construction site will be securely fixed prior to loading and immediately after unloading.	
Complete landscaping and re-vegetation as soon as possible following building activities	
Ensure that no disturbance of the nature strip occurs between the site and the roadway	
Machinery will be well maintained with no noxious emissions and not left idling when not in use.	
Exhaust systems and engines for plant/equipment will be maintained according to the manufacturers' specifications and regularly monitored to ensure that exhaust emissions are satisfactory (smoke for no longer than 10 seconds). Periodic visual checks will be made on exhaust system emissions	
The burning of timber and other combustible materials is not permitted on site at any time.	
If winds are high and the works are creating high levels of dust that are likely to cause discomfort to local residents or a safety hazard to traffic or work personnel, the works shall be modified or stopped until the dust hazard is eliminated or is reduced to an acceptable level.	
Post-works phase	
All exposed soil areas shall be stabilised and revegetated as soon as possible on completion of works to prevent the generation of dust.	
Fire Precautions	
Pre-works	
Equipment to control fire on site will be fire extinguishers, all plant are fitted with individual fire extinguishers	
Works phase	
No cutting, welding, grinding or other activities likely to generate fires should be undertaken on "total fire ban" days	
One general-purpose fire extinguisher and one fire extinguisher suitable for control of oil/petrol fire will be available on site at all times.	
A minimum of one person on site will be familiar or trained in the use of fire-fighting equipment.	
All flammable materials will be kept in a locked area within the site working area.	
All personnel involved in welding, grinding, thermal or oxygen cutting, heating or other fire or spark-producing operations will be trained in fire prevention, safety and basic fire-fighting skills.	
Burning off is not permitted under this contract. There must be no burning off on site..	
Fuels and Chemicals	
Pre-works phase	
The storage area for fuels and chemicals is the site container situated in the car park. All fuels, chemicals and liquids are to be stored in a area minimum 40 metres away from: <ul style="list-style-type: none"> • Rivers, creeks or any areas of concentrated water flow • Flooded or poorly drained areas 	

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Environmental Protection Measures	Sign Off
<ul style="list-style-type: none"> Slopes above 10% 	
Works phase	
A hazardous substance register is kept on site (Form F04)	
Where fuel, oil or other chemicals are to be stored on site, a secure, lockable and floored area will be provided before any of these substances are accepted on site. This area will be imperviously bunded with a capacity to contain not less than 110% of the volume of the largest container. This bunded area is monitored weekly and drained when required, to ensure that bund capacity is maintained, by pumping out to an oil-water separator.	
Relevant Safety Data Sheets (SDSs) are available on-site for all chemicals used or stored on site.	
All chemicals are stored in accordance with the manufacturer's instructions and the SDS	
In the event of spillage of hydrocarbon products such as fuels and/or chemicals, on-site spill containment equipment/kits will be used to contain spills and cleaned in accordance with the SDS requirements.	
Fuel, oil and chemicals will be used in a bunded area.	
A 50-litre container of spill absorbent will be retained within the site working area to be used for emergency spills of fuel, oil or other chemicals.	
Ensure that any spills or accidents on site that are likely to cause pollution are managed as per this plan	
If storm water discharges from bunded fuel or hazardous storage areas are required, records are kept of water quality checks, discharges and remedial actions.	
If drums of chemicals and fuels must be used outside a bunded area, a spill kit will be readily available nearby, the drums will not be left unattended, and they will be returned to the bunded area for storage overnight.	
If an Environmental Incident occurs on site, the Incident Report form F09 will be completed and forwarded to the Client.	
If refuelling or maintenance cannot take place at this site, temporary bunding will be provided and adequate spill kits kept readily available.	
Refuelling operations will not be left unattended while in progress.	
Post-works phase	
Nil	
Indigenous and Non-indigenous Heritage	
Pre-works	
Nil	
Works phase	
Any evidence of Heritage relics or sites discovered during construction will be reported immediately to the Site Supervisor. Work in the immediate area of the relic/site will be halted until advice is received from the Project Manager	
Post-works phase	
Nil	
Noise Management	
Pre-works phase	
Works to be carried out during normal working hours 7am to 6pm Monday to Friday, 7am to 1pm Saturday. Other hours may be worked if approved by the relevant authority.	
Residents potentially affected by night works will be notified by letter, 5 days before works commence. The letter will include details of the works, timing, potential disruptions to traffic and a contact name and number. An after-hours number will also be provided.	

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Environmental Protection Measures	Sign Off
Works phase	
Construction noise is to be confined to 7am to 6 pm Monday to Friday and 7am to 1pm on Saturdays. No work will be undertaken on Sundays or Public Holidays unless approved by Client.	
Noise mitigation measures if required will be implemented during construction to ameliorate the effects of construction noise. Noise generated from construction, maintenance or demolition of a building or other structure at an airport should not exceed 75 dB(A), measured at the site of a nearest sensitive receptor (existing taxi parking facility amenities).	
No blasting will be permitted during construction	
Affected pre-schools, schools, universities and any other affected permanent educational institutions must be consulted in relation to noise mitigation measures to identify any noise sensitive periods. As much as reasonable possible noise intensive construction works in the vicinity of effected educational buildings are to be minimised.	
All plant and equipment used on this job is operated by appropriately trained staff in accordance with regulations and is regularly maintained and serviced by qualified staff.	
All plant and equipment used on site will comply with EPA Guidelines. Construction noise would be managed in accordance with TCA construction noise strategy (rail projects) or other relevant guidelines.	
Equipment not in use will not be left idling.	
All stationary and mobile equipment will be fitted with residential type silencers.	
Post-works phase	
Nil	
Ground Vibration and air blast	
Pre-works phase	
Nil	
Works phase	
Nil	
Post-works phase	
Nil	
Plant and Equipment	
Pre-works phase	
Nil	
Works phase	
All plant/equipment operators and workers will be instructed to confine operations to within the clearly marked area of site operations.	
All machinery will be secured against vandalism outside working hours.	
All plant/equipment will be inspected daily to avoid leakage of fuel, oil or hydraulic fluid to the worksite. Machinery found to be leaking should be repaired or replaced.	
Maintenance and cleaning of mechanical plant and equipment is not permitted on site to prevent pollution of existing drains.	
Post-works phase	
Nil	
Waste Management	
Pre-works phase	
Waste avoidance is a priority on this project, followed by reuse of waste products, then	

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Environmental Protection Measures	Sign Off
recycling, with disposal of waste as a last resort If you are going to dispose of VENM on private property (the landholder requires a DA from Council for this to be permitted) you must include the following section:	
Waste avoidance is a priority on this project, followed by reuse of waste products, and then recycling, with disposal of waste as a last resort. This section constitutes the waste minimisation and management plan	
A Waste Register (Form-F11) has been established which identifies: <ul style="list-style-type: none"> ▪ waste streams and their classification ▪ reuse, recycling and disposal options ▪ waste transporters. The waste register records amounts generated and transported and by who. The Waste Register is part of the project waste management plan.	
Any sub-contractors on this project must maintain a Waste Register if their waste is not being recorded by the principal contractor. A copy will be provided as part of the sub-contract documents.	
Works phase	
Wastes will be stored in a manner that does not pose harm to the environment.	
Any contaminated soil will be classified and disposed off to legally operating waste management facility. Records of disposed waste will be kept in project records.	
Waste material generated by the works will be minimised or recycled where feasible and cost effective.	
Spoil material that cannot be reused on site, will be disposed of through an appropriate waste management facility.	
All waste material that cannot be recycled will be collected and removed from the site to be disposed of in a legal manner, ie. at a legally operating waste management facility. A register of disposed waste will be kept on site	
Bins will be provided within the site compound for personal litter.	
Bin lids will be kept closed at all times, and all bins will be emptied when they are three-quarters full.	
All site sewage will be collected and disposed of off-site in accordance with relevant regulations.	
A daily inspection will be carried out to ensure the worksite is left in a rubbish free state.	
All loads of rubbish will be securely covered to prevent spillage during removal.	
Only compatible wastes will be transported together	
No waste is to be burnt or buried on site.	
The site will contain separate bins for recyclable and non-recyclable material; these will be disposed of appropriately.	
Skip bins will be provided to contain waste materials and spoil.	
Post-works phase	
The worksite will be left in a tidy and rubbish free state upon completion of the project.	
Site Working Area	
Pre-works phase	
The site compound will be located in the staff car-park, this will include a site storage container and a small office/eating room. The toilet will be located within the site compound and easily accessible for cleaning and services. The plant will also be within the confines of the site.	
The site compound will include amenity sheds, portable toilets, and plant and equipment	

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Environmental Protection Measures	Sign Off
storage areas.	
The site compound and working area will be protected from theft and vandalism using security fencing.	
Environmental protection measures will be established at the site compound as outlined in previous sections.	
Works phase	
Keep site compound clean at all times	
Post-works phase	
The compound site will be left in a tidy and rubbish free state upon completion of the project	
Stockpile Sites	
Pre-works phase	
Temporary stockpiles must be located at least 5 m from the base of retained trees in the area disturbed by construction activities. Stockpiles must be protected by having a sediment fence installed on the downhill slope or by being covered with black plastic. Water must be diverted away from stockpile sites and appropriate temporary sediment control structures placed on the down slope side of the area	
Temporary stockpiles will not be established on site. Contaminated soil if found would remain in excavated area waiting classification and removal	
Works phase	
Stockpiled materials must not be placed inside vegetation protection areas or within 5 m of trees to be retained.	
Topsoil material is stockpiled separately from other soil materials. Topsoil stockpiles must be no greater than 1.5 m in height.	
Post-works phase	
All temporary stockpile sites will be restored to a standard at least similar to their original condition.	
Water Quality management	
Pre-works phase	
All required sediment control structures shall be installed prior to construction commencing and shall remain in place until all construction is complete. See <i>Erosion and sediment control</i> section	
Works phase	
All chemicals, fuels and wastes will be kept in sealed containers or banded. Inappropriate containment of chemicals, fuels and wastes can lead to water pollution and soil contamination	
Post-works	
Not required	
Erosion and sedimentation control	
Pre-works phase	
An Erosion and Sediment Control Plan will be prepared and kept on site to show the layout of the erosion and sediment control structures to be installed prior to any construction commencing.	
Temporary erosion and sediment controls shall be installed prior to the commencement	

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Environmental Protection Measures	Sign Off
of any works with the potential to cause soil erosion, including stockpiling.	
All site personnel shall receive training in matters pertaining to the control of soil erosion and sediment for the site.	
Works phase	
Existing drainage lines likely to be affected by the worksite will be identified and protected using siltation barriers, placed such that they intercept run-off from exposed surfaces	
Mud deposited on the current road network due to truck movements to and from the site works is to be cleaned immediately. Street sweeper may be used for the purpose	
Erosion and sedimentation controls are inspected weekly, and after rainfall greater than 10 mm in a 24 hr period to ensure they are maintained in a fully functional condition. Inspections are carried out using environmental inspection checklists	
All erosion and sediment controls will be checked daily and after rain	
Any sediment that accumulates behind the silt fences or straw bales will be cleaned out and used during rehabilitation	
Cleaning of concrete mixing trucks is not allowed on site	
Guttering will be connected to the storm water system or the rainwater tank as soon as practicable	
Surface water entering the site will be limited as it increases erosion and the potential for sediment laden water to leave the site. Overburden will be placed in the form of a bund upslope of the site to reduce surface water entering the site (only where safe to do so).	
Sediment laden water will be prevented from entering the storm water system by placing geotextile fabric over the grate, the fabric will be secured with sandbags.	
Sandbags, hay bales wrapped in geotextile fabric etc. will be used to slow water flow and trap sediment	
Linear silt stop fencing will be installed down slope of all affected areas and stockpiles	
The work area will be kept to the smallest possible size. The work area will be rehabilitated as soon as work is finished in an area	
All sediment control measures will be left in place until the site has been stabilised.	
Landscaping and revegetation will be completed as soon as possible following building activities	
Do not locate stockpiles within 2 metres of hazard areas such as spoon drains or areas of high flow	
Once no longer required, reinstate ground level around the works, fill spoon drains and sediment basins, level banks and remove surplus soil	
Connect guttering and downpipes to the storm water system as soon as the roof is completed	
Fill in service trenches as soon as work is completed to minimise erosion	
Cover service trenches with plastic sheeting or another suitable cover if filling cannot be immediately completed	
All discharges will be monitored to prevent erosion. If discharges are causing erosion flow will be slowed or energy dissipaters used.	
Post-works phase	
Temporary erosion and sediment control structures shall be retained for six months or until at least 70% of the exposed ground surface has been successfully stabilised against erosion (whichever is the shortest).	
All exposed soil areas shall be stabilised and revegetated as soon as possible on completion of works to prevent potential erosion.	
Flora and Fauna	
Pre-works phase	

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Environmental Protection Measures	Sign Off
All reasonable measures shall be undertaken to ensure that no native fauna is harmed or placed at risk during the course of the clearing activities.	
Mature trees that occur in close proximity to the construction zone shall be assessed on an individual basis to determine if it is possible to retain these within the project's design.	
Works phase	
Any excavation under the drip line of trees will be done by hand, thrust boring or something similar.	
No equipment or stockpiles will be placed under the canopy of any vegetation.	
Trees that are to be removed will be clearly marked. Any vegetation adjacent to the work area will be protected with exclusion fencing.	
Any noxious weeds within the work area will be removed and stored in sealed containers and disposed appropriately.	
Weed infested topsoil shall not be re-used in the rehabilitation works unless it is sterilised.	
Measures shall be implemented to control weed re-invasion during the works such as cleaning of tyres of plant and trucks coming to and going from the site and the use of clean, sterile topsoil in rehabilitation works. Topsoil to be reused at the site shall only be supplied from local sandstone-based materials.	
Cleared vegetation shall not be bulldozed into adjacent bushland, and mulched vegetation shall not be dumped into adjacent areas.	
Newly exposed surface areas shall be mulched and replanted as soon as possible in order to reduce the potential for erosion.	
All vehicle movements or other construction activities shall be restricted to the delineated construction zone, the existing road network or previously disturbed areas. Construction vehicles, personnel and machinery shall not enter fenced off areas or areas beyond the delineated construction zone.	
Vehicles and machinery shall not be parked or stored in the vicinity of trees or any areas of natural vegetation to be retained, nor in proximity to any ephemeral drainage lines.	
The condition of the construction zone boundary fencing and any other exclusion fencing shall be regularly checked to ensure its effectiveness.	
To prevent soil compaction, no stockpiles or other materials shall be stored, and no vehicles shall be parked under, the canopy of trees to be retained in the construction zone.	
Where practicable, a qualified ecologist shall capture and relocate any fauna (eg. Snakes) that are displaced towards residential areas.	
All native wildlife must be protected. No firearms are allowed on site except for security purposes permitted by law.	
Any injuries to protected wildlife caused through or because of construction activity must be reported to WIRES (Sydney metro) or other wildlife care service.	
When trees are to be removed from site, the following three phase felling process is used: 1. Clear small trees. 2. Knock larger trees (that potentially contain habitat) with machinery to scare off animals. 3. Fell large trees at least 24 hours later.	
Post Works phase	
Any bare areas of the site shall be rehabilitated and revegetated with native vegetation where appropriate.	

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ATTACHMENT F

- 9284-521BJR-CEMP-Site Plan R0
- PDD-521 Barrenjoey Rd (Bilgola Beach)-CTMP-R1-1

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