

Prepared by  
Brookfield Multiplex Constructions Pty Ltd

# Construction Environmental Management Plan

Energy from Waste Facility  
Eastern Creek

**Revision 3**  
Brookfield Multiplex Constructions Pty Ltd  
Level 22, 135 King Street  
Sydney NSW 2000  
T. +61 2 9322 2000  
[www.brookfieldmultiplex.com](http://www.brookfieldmultiplex.com)  
ABN 70 107 007 527

---

<b>1.0</b>	<b>Introduction.....</b>	<b>4</b>
1.1	Purpose	4
1.2	Description of the Project	4
1.2.1	Client	6
1.2.2	Project Location	6
1.2.3	Hours of work	6
1.2.4	Contact details	6
1.2.5	Scope of work	6
1.2.6	Environmental considerations for the project	7
1.3	Scope of this Plan	7
1.4	Precedence	7
1.5	Interface with other Operational Procedures and Project Plans	7
1.6	Document Control	7
1.7	Definitions of acronyms and terms	8
<b>2.0</b>	<b>Environmental Management System Framework .....</b>	<b>8</b>
<b>3.0</b>	<b>Environmental Objectives and Targets.....</b>	<b>9</b>
3.1	Environmental Policy	9
3.2	Objectives, Targets and programs	9
<b>4.0</b>	<b>Planning and Legislative Requirements .....</b>	<b>10</b>
4.1	Legal and Other Requirements	10
4.1.1	Legislative References	10
4.1.2	Approvals, Licenses and Permits	10
4.1.3	Development Conditions	10
<b>5.0</b>	<b>Responsibility and Accountability .....</b>	<b>11</b>
5.1	Organisational Structure	11
5.2	Roles and Responsibilities	11
<b>6.0</b>	<b>Environmental Management Strategies .....</b>	<b>12</b>
6.1	Environmental Risk Management	12
6.2	Environmental Aspects and Impacts	12
6.3	Environmental Controls Map	13
6.4	Procurement	13
6.5	Subcontractor Management	13
6.6	Consultation and Communication	14
6.7	Induction and Training, Competency and Awareness	15
6.8	Incidents and Investigations	16
6.9	Emergency Management	16

6.9.1	Environmental Emergency Response Procedure	17
6.9.2	Environmental Emergency Contacts	17
6.10	Environmental Site Inspections and Audits	17
6.11	Hazardous Substances	18
6.12	Non-Conformances	18
6.13	Environmental Audits	18
6.14	Document and Records Management	19
6.15	Reporting	19
6.16	Management Review	20
<b>7.0</b>	<b>Environmental Management Sub Plans .....</b>	<b>20</b>
7.1	Construction Noise and Vibration Management Sub-Plan	20
7.2	Dust and Air Quality Management Sub-Plan	24
7.3	Water Quality Management Sub-Plan	26
7.4	Erosion and Sediment Control Management Sub-Plan	28
7.5	Chemicals Management Sub-Plan	29
7.6	Land Contamination Management Sub-Plan	31
7.7	Waste Minimisation and Management Sub Plan	32
7.8	Heritage Management Sub-Plan	35
7.9	Flora and Fauna Management Sub-Plan	36
7.10	Site Office Environmental Management Sub-Plan	37
<b>8.0</b>	<b>Appendices .....</b>	<b>38</b>
	Appendix 1 – Environmental Policy	38
	Appendix 2 - NSW Environmental Legislation Regulations Guidelines and Standards	39
	Appendix 3 – Environmental Roles and Responsibilities Matrix	51
	Appendix 4 – Environmental Aspects, Impacts Risk Register	55
	Appendix 5 – Environmental Competency Matrix	73
	Appendix 6 – Integrated Erosion and Sediment Control Plan + Environmental Controls Plan	75
	Appendix 7 - Unexpected Finds Protocol	

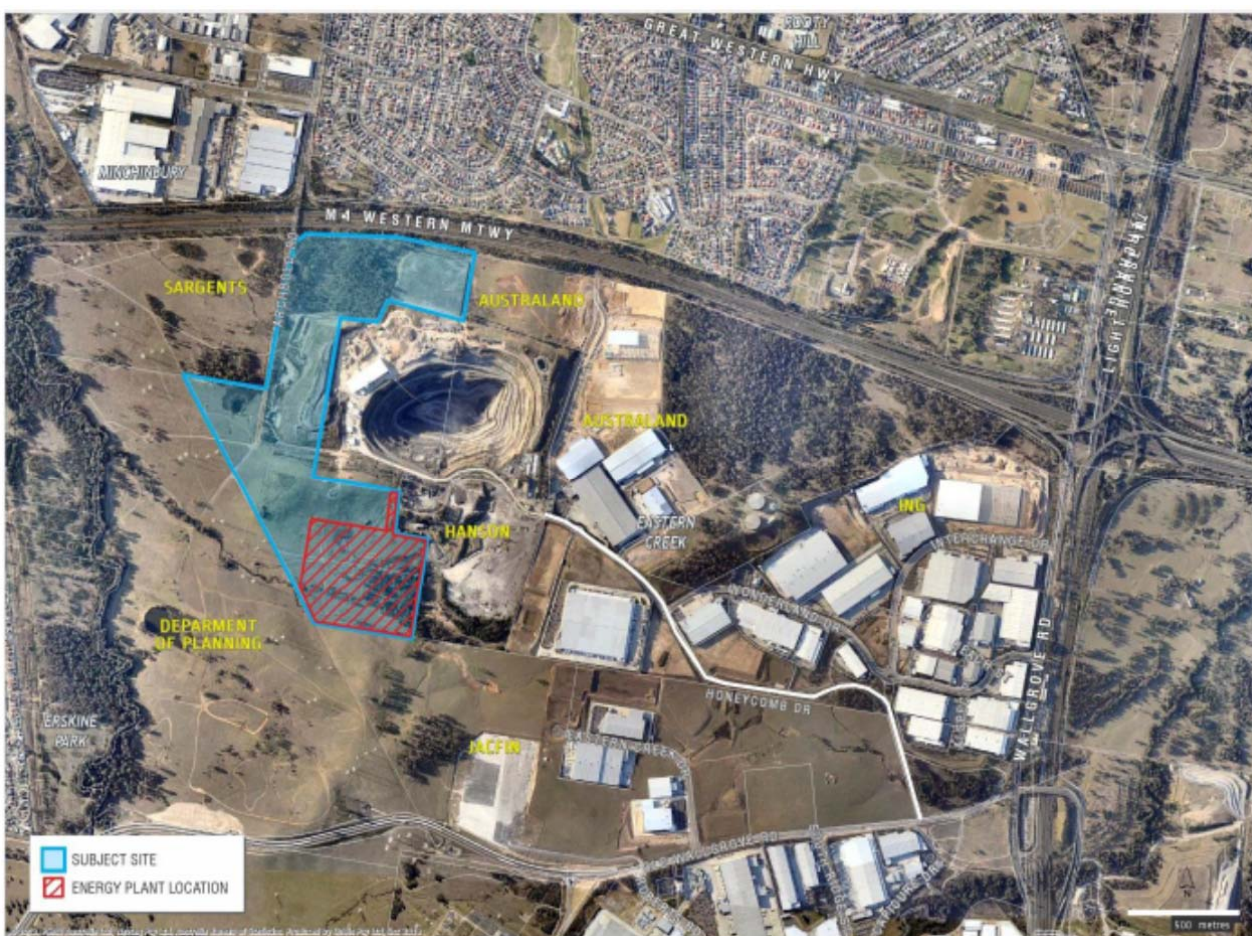
## 1.0 Introduction

### 1.1 Purpose

This Construction Environmental Management Plan (CEMP) outlines Brookfield Multiplex (BM) approach and procedures for environmental management during the construction phase of Energy from Waste Facility, Eastern Creek (SSD 6236).

This plan forms part of the BM Management System which is certified to AS/NZS ISO 9001:2008 – Quality Management, AS/NZS ISO 14001:2004 – Environmental Management System and AS/NZS 4801:2001 – Occupational Health and Safety Management System.

### 1.2 Description of the Project



The proposed development involves the construction of an Energy from Waste (EFW) Electricity Generation Plant for The Next Generation NSW Pty Ltd (TNG) in Eastern Creek, approximately 36km west of the Sydney CBD.

The development involves the construction and operation of an Electricity Generation Plant, which will allow for unsalvageable and uneconomic residue waste from the Genesis Xero Material Processing Centre (MPC) and Waste Transfer Station (WTS) to be used for generation of electrical power. The EFW Plant is proposed to be located on Lots 2 and 3, DP 1145808.

This development site is part of a proposal to construct and operate NSW's largest Energy from Waste Plant using as fuel, residual waste which would otherwise be land filled, to allow for a "green" electricity generation facility. The plant, powered by burning non-recyclable combustible waste material, will have a capacity for up to 1.35 million tonnes of waste material per annum.

The proposed EFW Facility will employment of a total of up to 55 staff upon operation, working over 3 shifts (i.e. not on site at any one time).

The project is identified as State Significant Development (SSD) under Schedule 1 of the State Environmental Planning Policy (State and Regional Development) 2011 being:

*Cl. 20 Electricity generating works and heat or co-generation:*

*Development for the purpose of electricity generating works or heat or their co-generation (using any energy source, including gas, coal, biofuel, distillate, waste, hydro, wave, solar or wind power) that:*

*(a) has a capital investment value of more than \$30 million, or*

*(b) has a capital investment value of more than \$10 million and is located in an environmentally sensitive area of State significance*

The proposal has a capital investment value of greater than \$30 million and therefore is classified as a State Significant Development.

The site which is accessed off Honeycomb Drive at Eastern Creek is surrounded by land owned by the Corporate Group Alexandria Landfill Pty Ltd, ThaQuarry Pty Ltd, Australand, Hanson, Jacfin, the Department of Planning and Infrastructure and Sargents. The site and surrounding land is identified as part of the '*State Environmental Planning Policy (Western Sydney Employment Area) 2009 (WSEA SEPP)*' to be redeveloped for higher end industrial and employment uses over the next decade. The site has a total area of approximately 56 Ha including the Riparian Corridor, with a specific development area circa 9 Ha.

The proposed works will, in addition to the Energy from Waste Electricity Generation Facility, include the adoption of a plan of subdivision and the following ancillary works:

- Earthworks associated with the balance of the site;
- Internal roadways;
- Provision of a direct underpass connection (Precast Arch and Conveyor Culvert) between TNG Facility and the Genesis Xero Waste Facility;
- Staff amenities and ablutions;
- Staff carparking facilities;
- Water detention and treatment basins;
- Services (Sewerage, Water Supply, Communications, Power Supply).

Further to the above physical works associated with the proposed Energy from Waste Facility, this application seeks approval for the subdivision Lot 1, 2 and 3 in DP 1145805 in order to create a separate lot of 10,000 m<sup>2</sup> for

the Transgrid Switching or Substation and additional lots to allow for future development of land not associated with the Energy from Waste Facility and the Genesis Xero Material Processing Plant.

## 1.2.1 Client

The Client is The Next Generation NSW Pty Ltd (TNG NSW)

## 1.2.2 Project Location

The site has a total area of approximately 56 Ha including the Riparian Corridor, with a specific development area of 19.95 Ha and is located at Eastern Creek in the Central Western Suburbs of Sydney NSW, approximately 36km west of Sydney CBD, 18km west of Parramatta and 12km east of Penrith. The site is wholly within the Blacktown Local Government Area (LGA), situated in the area known as the M7 Business Hub.

## 1.2.3 Hours of work

It is intended that the following work hours will be permitted:

Monday to Friday - 7.00am to 6.00pm

Saturday - 8.00am to 1.00pm

Sundays and Public Holidays - No work permitted

Brookfield Multiplex (BM) has applied for extended construction hours for 7:00am to 8:00am and 1:00pm to 6:00pm Saturdays in conjunction with specific periods of 24 hour operation for the reasons listed in section 7.1 of this report.

## 1.2.4 Contact details

### Brookfield Multiplex

**Site Manager:** Ramy Azzam

**Contact Number:** 9322 2000

## 1.2.5 Scope of work

Brookfield Multiplex (BM) has been contracted to provide advice on Early Contractor Involvement (ECI) during the development phase of the Project. The staged works include:

- **Stage 1:** EIS Period
- **Stage 2:** Construction enabling works consisting of:
  - Site establishment.
  - Bulk earthworks.
  - Piling and foundations.
  - Services location and reticulation.
  - Internal and external road works.
  - Car Parking and other civil infrastructure.
- **Stage 3:** Main construction works consisting of:
  - Structure Works (Concrete and Structural Steel)
  - Fuel reception and storage.
  - Main process area.
  - Conveyor delivery facility.
  - Finishes of façade, roofing and internal areas.
  - Landscaping



## 1.2.5 Environmental considerations for the project

Emissions associated with the project require detailed consideration and planning. The tallest structure will be the stack, which will be 100m high and the boiler house which will be approximately 50m high.

The Preliminary Environmental Impact Statement has identified the following key environmental issues during the construction of the facility:

- Air quality
- Noise management
- Soil and water – impacts on the riparian corridor referred to as the Ropes Creek Tributary;
- Flora and fauna, and
- Visual amenity

This CEMP will address the management of these issues.

## 1.3 Scope of this Plan

This CEMP applies to the construction works associated with the EFW and includes a description of:

- The Environmental Management System (EMS)
- The organisational structure for environmental management
- Applicable legislative requirements
- Procedures developed to manage the environmental aspects of the Project
- Reporting processes between the Client and project staff
- Environmental Incident management processes
- Processes to monitor and evaluate environmental performance

## 1.4 Precedence

Where ambiguity is detected between the procedures and requirements in this plan and the BM Management Systems, the procedures nominated in this plan shall take precedence.

## 1.5 Interface with other Operational Procedures and Project Plans

This CEMP forms part of an integrated set of Management Plans and should be read in conjunction with the Management Plans described in detail in the Project Management Plan.

The Operational Procedures are confidential documents and, as such, are not to be issued outside of BM. However, they shall be made available, on the Project, for the purpose of surveillance and auditing of the CEMP.

## 1.6 Document Control

Amendments to this Management Plan are approved by the Environmental Manager, Project Manager or Construction Manager and distributed to all holders of controlled copies.

Controlled Copy No.	Date	Name of Recipient	Organisation
Revision 1	May 2014	Denise Woods	Brookfield Multiplex Constructions Pty Limited
	May 2014	Ramy Azzam	Brookfield Multiplex Constructions Pty Limited
Revision 2	May 2014	Ramy Azzam	Brookfield Multiplex Constructions Pty Limited
Revision 3	January 2015	Chris Mathews	Brookfield Multiplex Constructions Pty Limited

Uncontrolled copies of this plan may be distributed to BM personnel, subcontractors and client. These copies are not subject to automatic amendment and the receiver should verify currency of the document.

Revisions to this Management Plan shall be made as required to reflect the current system requirements. Amendments to this Management Plan are approved by the Environmental Manager, Project Manager or Construction Manager.

Revision	Date	Description	Page	Reviewed By	Approved By	Signature
1	May 2014	Original Issue	ALL			
2	May 2014	Amendments throughout	ALL	Ramy Azzam	Ramy Azzam	
3	January 2015	Amendments throughout	All	Chris Mathews	Phillip Slood	

## 1.7 Definitions of acronyms and terms

Acronym or Term	Definition
AS/NZS	Australian and/or New Zealand Standard
ASS	Acid Sulfate Soil
BM	Brookfield Multiplex Pty Ltd
BOS	Brookfield Multiplex Operating System
CEMP	Construction Environment Management Plan
DEC	Department of Environment and Conservation
DIA	Department of Indigenous Affairs
EMS	Environmental Management System
OHSE	Occupational Health, Safety and Environment
ISO	International Standards Organisation
MSDS	Material Safety Data Sheet
NEPC	National Environment Protection Council
NEPM	National Environmental Protection Measures
SWMS	Safe Work Method Statement

## 2.0 Environmental Management System Framework

Brookfield Multiplex use a proven ISO14001 accredited environmental management system to ensure a high standard of environmental management. Each environmental aspect has a specific environmental management sub-plan designed to incorporate a hierarchy of control and best practice environmental management.

The Framework is a cornerstone of our commitment to managing risk and achieving excellence in performance and is hierarchical, where documents and systems must meet and support the requirements of those of higher levels.

At the project level this means that all project members have a specific role in ensuring management of environmental aspects in their respective area of the project. This includes responsibility for participating in risk assessments, overseeing Safe Work Method Statement (SWMS) preparation, environmental innovation, improvement, awareness and education, regular on-site inspections, auditing and reporting.

These processes and templates are included within the BM propriety electronic management system called the Brookfield Multiplex Operating System (BOS). This provides both a resource library and prompt to project staff & an ongoing auditable record of environmental performance through the life of a project.

Above the project level, BM employs a regional Environmental Manager to provide support and audit function to the projects.



## 3.0 Environmental Objectives and Targets

### 3.1 Environmental Policy

The BM Environmental Policy describes BM commitment to providing a working environment and culture where environmental protection and sustainability are core values (Refer to Appendix 1).

The Environmental Policy is displayed on the project website and at the site office, and communicated to staff and other interested parties via inductions and ongoing awareness programs.

### 3.2 Objectives, Targets and programs

As a means of assessing environmental performance during construction of the project, environmental objectives and targets have been established.

The performance of the project against the objectives and targets will be statused and reviewed by project senior management.

The key project environmental objectives and targets are outlined below and included in each of the sub-plans.

Core Objective	Target	Key Performance Indicator
To provide a working environment and culture where environmental protection and sustainability are core values	To manage the environmental aspects	<ul style="list-style-type: none"> <li>Develop and maintain a program of 3 monthly Environmental risk workshops to develop control measures against perceived risks.</li> <li>No environmental prosecutions/breaches brought against the project.</li> <li>No reportable environmental incidents.</li> </ul>
	Implement an effective EMS compliant with ISO14001	<ul style="list-style-type: none"> <li>Maintain accreditation to ISO 14001.</li> <li>Continuously monitor and improve environmental performance through a program of inspections, audits and reviews.</li> </ul>
	Conduct training and or mentoring	<ul style="list-style-type: none"> <li>Provide the relevant environmental training and instruction to site personnel.</li> <li>Maintain Training Register on BOS</li> </ul>
	Create a positive and proactive partnership with the local community and key stakeholders	<ul style="list-style-type: none"> <li>No adverse media or complaints.</li> </ul>
	To comply with applicable legal requirements (environmental laws, regulations, statutory requirements and 'instruments of approval').	<ul style="list-style-type: none"> <li>Identify and address environmental incidents promptly and in accordance with legislative requirements and the Project CEMP.</li> </ul>
	Support the principles and practices of Ecologically Sustainable Development (ESD)	<ul style="list-style-type: none"> <li>Minimise greenhouse gas emissions</li> <li>Minimise pollutants and the demand for non-renewable resources</li> <li>Promote the use of certified sustainable products wherever possible (e.g. timber products)</li> </ul>

Organisational responsibility for achieving the project Environmental Objectives and Targets ultimately rest with the Regional Director.

#### Reference Documents

#### Management Standards and Procedures

Management Standard 2 Objectives and Targets  
BU AUS IMS P DIV 030 Planning and Performance Measurement

#### Forms and Guides

Monthly Report

## 4.0 Planning and Legislative Requirements

### 4.1 Legal and Other Requirements

A schedule of environmental legislation has been developed to identify all environmental legal and other requirements that are applicable to BM operations. The Schedule of Environmental Legislation is located at Appendix 2

The schedule summarises applicable legislation, associated regulative requirements relating to environmental management and information on access to the legislation. The schedule is maintained on BOS and is reviewed annually and on significant changes to BM operations by the Environmental Manager.

Brookfield Multiplex personnel have access to this schedule and will be made available to subcontractors upon request.

#### 4.1.1 Legislative References

The relevant legislative requirements for the project are outlined below:

Legislative Title	Application	Relevant Authority
Schedule of Environmental Legislation and Other Requirements	All jurisdictions in NSW	Listed in Schedule

#### 4.1.2 Approvals, Licenses and Permits

The relevant approvals, permits and licenses for the project are outlined below:

Approval/Licence/Permit	Relevant Authority	Details
TBA		

#### 4.1.3 Development Conditions

The relevant development conditions relating to environmental management for the project are outlined below:

Condition No.	Requirement
TBA	TBA

#### Reference Documents

##### Management Standards and Procedures

Management Standard 4 Documentation and Legal Requirements  
BU AUS IMS P DIV 050 Document and Records Management

##### Forms and Guides

Schedule of Environmental Legislation

## 5.0 Responsibility and Accountability

Organisational responsibility for achieving the project environmental objectives ultimately rest with senior management. However, responsibility and accountability will pass successively from senior management to supervision and to all employees in accordance with the EMS and specifically this CEMP. All personnel are required to work in a cooperative and consultative manner and to the full extent of their respective authorities to proactively identify, assess and to control risks associated with the project activities.

### 5.1 Organisational Structure

The organisational chart in *Appendix 3* details the environmental organisational structure and the communication paths. The chart forms part of the overall organisation charts located in the Project Management Plan.

### 5.2 Roles and Responsibilities

Brookfield Multiplex has identified appropriate levels of individual responsibility and accountability for managing environmental aspects across all roles within the Project Team.

In addition to the individual position descriptions, the general responsibilities and accountabilities of key project personnel in relation to Environmental management are outlined in the Environmental Roles and Responsibilities Matrix contained in *Appendix 3*.

#### [Reference Documents](#)

#### [Management Standards and Procedures](#)

*Management Standard 1 Commitment and Accountability*  
*BU AUS IMS P DIV 140 Management Review*  
*BU AUS IMS P DIV 010 Responsibility and Accountability*

## 6.0 Environmental Management Strategies

The Environmental Management Strategies have been prepared and form the key controls within this CEMP by providing operational controls to minimise the potential impact to the environment from construction activities.

The Environmental Management Strategies are designed to protect environmental values, identify controls for construction activities and provide monitoring and reporting requirements for the project.

### 6.1 Environmental Risk Management

The Project shall incorporate a process of environmental risk identification, assessment and monitoring into all activities. Typically this shall be implemented through one of more of the following as appropriate:

Risk Management Activity	Frequency/Requirement	Responsibility
Completion of an Risk Register to identify aspects and impacts	Commencement and reviewed 3 monthly	Brookfield Multiplex
Completion of Project Risk Workshops	Commencement and reviewed 3 monthly	Brookfield Multiplex
Development of Environmental Management Plans and sub-plans	Prior to commencement and reviewed 6 monthly	Brookfield Multiplex and selected subcontractors
Development of Environmental Work Method Statements	Prior to commencement	Selected subcontractors
Environmental Site Inspections	Weekly	Brookfield Multiplex
Implementation of the Construction Environmental Management Plan and Sub plans	During construction	Brookfield Multiplex and all subcontractors

### 6.2 Environmental Aspects and Impacts

Key activities carried out by or on behalf of BM in connection with the Project are identified in the Environmental Aspects and Impacts Risk Register – *Appendix 4*. This register is completed during the preliminary risk assessment process to help establish key project risks in accordance with the *BU AUS IMS P DIV 020 Risk and Opportunity Management Procedure*. For each activity the environmental aspects and associated actual and potential environmental impacts are identified for normal operations and uncommon events. All aspects are assessed for risk based on standard controls being in place. Any aspects with a risk rating of high or extreme will be considered a significant aspect and require additional controls / plans to minimise the risk. Additional controls or plans will be referenced in the Environmental Management Sub-plans.

#### Reference Documents

##### Management Standards and Procedures

Management Standard 3 Risk Management  
 Management Standard 11 Environmental Management  
 BU AUS IMS P DIV 020 Risk and Opportunity Management  
 BU AUS IMS P DIV 060 Contractor Management  
 BU AUS IMS P DIV 070 Inspection Testing and Monitoring  
 Risk Management Plan  
 Environmental sub-plans

##### Forms and Guides

Project Risk Register  
 OHSE Plan Review Checklist  
 OHSE SWMS Review Checklist  
 Environmental Site Inspection

## 6.3 Environmental Controls Map

The Environmental Controls Map is integrated with the Erosion and Sediment Control Plan at *Appendix 6* and has been prepared for the project to include key information from the sub-plans and other sources. The plan will be displayed on site notice boards and introduced in the projects including the following **where relevant**:

- The worksite layout and boundary
- Location of the nearest noise sensitive receivers
- Sediment and erosion control measures
- Noise barriers
- Site Offices
- Car parking
- Construction traffic routes within and adjacent to the worksite
- Dust control measures
- Monitoring equipment (e.g. dust and noise monitors)
- Location of environmentally sensitive areas (e.g. Conservation areas, protected trees)
- Location of heritage (indigenous and non-indigenous) items (e.g. Artefacts, Registered Sites)
- Location of spill containment and clean-up equipment
- Location of hazardous substance storage
- Stormwater drainage and watercourses
- Location of worksite waste management facilities
- Demolition works

## 6.4 Procurement

Potential environmental risks shall be considered when purchasing, hiring or leasing goods, materials, substances or equipment. In particular consideration will be given to:

- Legislative requirements
- Issues identified during the risk management workshops
- Industry practices
- Practicalities of transport, handling and storage
- Client specific requests

### Reference Documents

#### Management Standards and Procedures

Management Standard 10 Consultants, Subcontractors and Suppliers  
BU AUS IMS P DIV 060 Contractor Management

## 6.5 Subcontractor Management

All subcontractors are required to operate within the requirements of the CEMP and associated documents.

Based on the CEMP and risks identified in the Project Risk Assessment, BM shall assess the subcontractor's environmental management strategies against the following:

---

- The potential environmental impacts of the subcontractors activities
- The environmental sensitivity of the area(s) in which the subcontractors shall be working
- The nature and scope of the subcontractors activities
- The scale of the subcontractors activities
- The subcontractors capacity to manage its own environmental performance effectively
- The subcontractors previous performance

Where a subcontractor is determined to be working in an area identified as high risk, for potential impact to the environment, additional management controls will be put in place. This may include the submission of a dedicated CEMP / SWMS to address the specific work package(s) awarded and be submitted for approval to BM prior to commencement of work on site. The plan must assess the level of environmental risk and implement appropriate management controls for the subcontractor's full scope of work.

Monitoring of work activities shall be undertaken by BM to establish that subcontractors are carrying out work in accordance with the environmental documentation provided to BM. Monitoring may be achieved by one or more of the following:

- Ongoing visual inspections by supervisors
- Inspections
- Subcontractor audits of the CEMP or SWMS

## Reference Documents

### Management Standards and Procedures

Management Standard 11 Environmental Management  
 Management Standard 10 Consultants, Subcontractor and Suppliers  
 BU AUS IMS P DIV 060 Contractor Management  
 BU AUS IMS P DIV 020 Risk and Opportunity Management

### Forms and Guides

OHSE Management Plan Review Checklist  
 OHSE SWMS Review Checklist  
 OHSE SWMS Template

## 6.6 Consultation and Communication

Brookfield Multiplex aims to ensure that the environmental management processes use available methods of communications, both internally and externally. This enables individuals to be aware of environmental issues, participate in environmental management activities, identify risks, and assist in developing corrective and preventative actions.

Consultation and communication on environmental matters may occur through one or more of the following mechanisms:

Event	Frequency/Requirement	Participants	Record/Evidence
Project specific induction	Prior to commencement of contracted work	All personnel	Project induction and declaration form and Induction Training Handout
Work activity Induction (in EWMS or equivalent).	Prior to commencing any building/construction work	Personnel carrying out specific work activities	Record of training – listed on the EWMS or Toolbox Talk Record
Toolbox Meetings	During the introduction of a new process (EWMS) or when discussing environmental issues / topics	Supervisors and their employees including contractors, their employees, suppliers and service providers	Toolbox Talk Record or other
Subcontractor Meetings	Weekly or as required	Project team / contractors, their	Minutes of meeting



Event	Frequency/Requirement	Participants	Record/Evidence
		employees, suppliers and others as required	
Project team meetings.	Fortnightly or as required	Project team	Minutes of meeting
PCG Meetings	Monthly	Client and Project Manager.	PCG Report
WIT Group meetings	3 monthly	Project team	Minutes of meeting.
Environmental Report	Monthly	Project Team	Monthly Environmental Reports
Electronic media (i.e. Aconex)	As required	All personnel	Aconex
Project Notice Board and general signage	As required	All personnel	Project Notice board
Site Inspections	Weekly	Project team	Site Inspection Report
Audits	As per schedule	Project team	Audit Report
Enquiries and Complaints	As required	As per Communications Management Plan	Communications Register
External stakeholders	As required	As per Communications Management Plan	Communications Register

## Reference Documents

### Management Standards and Procedures

Management Standard 7 Communication and Consultation  
 Management Standard 11 Environmental Management  
 BU AUS IMS P DIV 040 Communication and Consultation  
 BU AUS IMS P DIV 130 Reporting  
 Communications Management Plan

### Forms and Guides

Communications Register  
 Meeting Minutes Record  
 Toolbox Talk Record  
 Environmental Site Inspection

## 6.7 Induction and Training, Competency and Awareness

Several levels of training activity are managed within the project. Training will be developed to incorporate the requirements of the contract and will include:

- All personnel working on site including subcontractors and, where applicable, visitors are required to attend the site induction training. The induction will contain content on the Construction Environmental Management Plan such as; environmental aspects, risks, management and mitigation measures for the project.
- Emergency and incident response training
- Ongoing training and awareness activities throughout the Project Term
- Competency based training (e.g. erosion sediment control for construction work)

- On-the-job training (e.g. tool box talks, training in system procedures, environmental work method statements particularly those which include significant environmental risks for the project)
- Brookfield Multiplex specific training (e.g. training to use Reporting System, non-compliance, monitoring, reporting and auditing obligations)

Brookfield Multiplex will ensure systems are in place to identify, plan, document and monitor training needs so that employees and subcontractors can competently meet their environmental responsibilities.

All persons working on site will be required to attend and satisfactorily complete the site induction. Where training of BM staff and employees is required in order to gain particular skills and or knowledge, the training shall be authorised by the Project Manager and Environmental Manager. Records of training and/or competency will be maintained on the divisional training matrix.

Brookfield Multiplex has defined its minimum environmental competencies for management, supervisors and workers on its Environmental Competency Matrix contained in Appendix 5. Environmental competency requirements are dependent on roles and responsibilities.

#### Reference Documents

##### Management Standards and Procedures

Management Standard 5 Awareness, Competency and Behaviour  
Management Standard 11 Environmental Management  
BU AUS IMS P DIV 040 Communication and Consultation  
BU AUS IMS P DIV 110 Training and Competency

##### Forms and Guides

Induction training handout  
Training Attendance Register  
Training Matrix  
Environmental Fact Sheets  
Environmental Posters

## 6.8 Incidents and Investigations

Environmental incidents on the project shall be communicated to the appropriate internal personnel and the client, formally recorded and where appropriate reported to regulatory authorities. Where required incidents are investigated and any lessons learned for future prevention will be made available and distributed.

Incidents are to be reported to the Environmental Manager or Project Manager by the Site Supervisor at the site of an incident. The Environmental Manager or Environmental Representative on site shall then respond to the incident in accordance with the environmental emergency response procedure. Incident investigation shall be undertaken in line with the requirements of the BM's Incident Investigation Procedures.

The findings of incident investigation related to incidents will be sent to the Communications Manager to form the basis of any responses to external questions and to respond to any external queries or complaints.

## 6.9 Emergency Management

Emergency incidents and emergency situations shall be managed in accordance with the Emergency Management Plan which has been developed for the Project. The plan provides guidance in the event of any environmental or safety related emergency affecting the Project.

Relevant details of the Emergency Management Plan shall be provided to all personnel during the site induction and information posted on notice boards. The environmental spill response procedure details processes to be followed in the event of an oil or fuel spill or a hazardous substance incident on site and is located at section 4.10 of the Emergencies and Evacuation protocol of the Emergency Management Plan.

#### Reference Documents

##### Management Standards and Procedures

Management Standard 13 Emergency Management  
BU AUS IMS P DIV 090 Emergency Management  
Emergency Management Plan

## 6.9.1 Environmental Emergency Response Procedure

Environmental emergencies are generally related to spills of liquids such as oil or gases. If safe to do so:

- Stop – Stop what you are doing and address the source of the spill by turning off any equipment or taps, valves etc
- Contain – block any drains or waterways with the contents of the nearest spill kit (on site)
- Report – to supervisor immediately
- Clean-up – begin cleaning up spill with contents of spill kit, this may include contacting a contaminated waste removal specialist particularly concerning liquid waste. Remember to complete the paperwork. Keep accurate records of labour, plant and equipment and materials used on the project associated with clean up and landfill disposal. Ensure all incident reporting is completed and include photos where possible.
- Reconstitute – re-order contents of the spill kit as soon as possible.

## 6.9.2 Environmental Emergency Contacts

At any time where an environmental incident needs to be communicated to senior staff or authorities, the following contact numbers are to be used in respect to the severity of the incident.

Serial	Name	Position	Company	Contact Number
1	TBA	Site Manager	BM	
2	TBA	Site Supervisor	BM	
3	TBA	Site Foreman	BM	
4	TBA	Environmental Site Representative	BM	
5	Jeremy Charlton	Environmental Manager	BM	0412 925641

### Reference Documents

#### Management Standards and Procedures

Management Standard 12 Incidents, Investigation and Reporting  
 Management Standard 11 Environmental Management  
 BU AUS IMS P DIV 100 Incident Management  
 BU AUS IMS P DIV 130 Reporting

#### Forms and Guides

Environmental Incident Notification Report  
 Investigation Report

## 6.10 Environmental Site Inspections and Audits

Inspections to ensure environmental management/compliance shall be undertaken by Brookfield Multiplex in accordance with the requirements outlined in the environmental management sub-plans. Where required, specialist consultants may be engaged to help establish monitoring equipment.

Project shall ensure that regular environmental inspections are undertaken of all work activities being carried out at the project. Inspection shall be carried out in conjunction with personnel responsible for a particular work area and shall include the following:

- Daily Inspections – site supervisory staff as part of their daily duties shall conduct daily inspections of the site (incl. all subcontractor activities), and issues noted in daily diaries if applicable, and
- Regular Site Inspections – formal inspections recorded on the Environmental Site Inspection Checklists which shall be developed to cover aspects which present significant environmental risk.

Site supervisory staff shall manage corrective actions arising from inspection.

## 6.11 Hazardous Substances

Hazardous substances supplied to the project shall be approved for use and accompanied by a current SDS. All hazardous substances shall be registered, correctly stored, decanted, used and disposed in accordance with the SDS and regulatory requirements. Employees shall be trained in the SWMS based on the SDS and provided with the appropriate PPE.

### Reference Documents

#### Management Standards and Procedures

Management Standard 6 Health and Safety  
OHS P DIV 260 Hazardous Materials and Dangerous Goods

#### Forms and Guides

Hazardous Materials and Dangerous Goods Register  
Hazardous Materials and Dangerous Goods Risk Assessment

## 6.12 Non-Conformances

Deficiencies identified during audits and site inspections shall generally be recorded on the Audit Report or Inspection Report/Checklist and actioned. In the event of a non-conformance being raised, BM shall document on the Non-Conformance Report and upload it to Aconex.

When non-compliance is identified, the recipient and/or BM shall identify strategies in order to rectify the non-conformance. Where appropriate, the recipient and/or BM shall also develop measures to prevent recurrence of the non-conformance. The measures to rectify and to prevent recurrence of the non-conformance shall be documented on the Non-Conformance Report and a time frame established. The instigator shall carry out a follow up review and closeout of the Non-Conformance Report to verify completion of measures taken to rectify and to prevent recurrence.

### Reference Documents

#### Management Standards and Procedures

Management Standard 14 Monitoring, Audit and Review  
BU AUS IMS P DIV 080 Control of Non Conformances

#### Forms and Guides

Non-Conformance Report

## 6.13 Environmental Audits

An environmental auditing programme shall be established and consist of:

- Internal systems audits which shall focus on those sections of the Environmental Management Plan that is relevant to current operations. These occur on a quarterly basis;
- Subcontractor compliance audits based on a risk assessment of the activities being undertaken;
- Audits by external organisations.

Results of the audits shall be documented and brought to the attention of personnel having responsibility for the area audited and reported to the Project Manager. For any deficiencies or non-compliances found, correction action shall be initiated using the 'Non-Conformance Report' or detailed as 'Observations' in the audit report.

### Reference Documents

#### Management Standards and Procedures

Management Standard 14 Monitoring, Audit and Review  
IMS P DIV 050 Control of Non Conformances  
IMS P DIV 060 Reporting  
IMS P DIV 070 Auditing Process

#### Forms and Guides

*Environmental Subcontractor Audit Report*

*Environmental Internal Audit Checklist*

## 6.14 Document and Records Management

Brookfield Multiplex shall establish a uniform system of document management and record keeping on BOS that maintains currency of information and is able to demonstrate compliance to the CEMP, regulatory requirements and retains all required documents for commercial protection.

[Reference Documents](#)

[Management Standards and Procedures](#)

*Management Standard 4 Documentation and Legal Requirements  
BU AUS IMS P DIV 050 Document and Records Management*

## 6.15 Reporting

The project management team shall establish and maintain a uniform system of record keeping on Aconex to enable accurate reporting of environmental matters.

Reporting on environmental matters on the project shall include the following:

Type of Report	Report By	Frequency	Recipient/s
Monthly Report	Project Manager/Site Manager	Monthly	Client, Client's Representative and Regional Director.
Environmental Incident Notification Report	Project Manager/Site Manager	As required	Managing Director, Directors, Environmental Manager and DEC where required.
Environmental Incident Investigation Report	Project Manager/Site Manager or others nominated by Project Manager /Site Manager	As required	Managing Director, Directors, Environmental Manager and DEC where required.
Environmental Internal Audit Report	Project Manager / Site Manager / Environmental Manager	As required	Managing Director, Directors, Environmental Manager
Subcontractor Audit Report	Environmental Manager	As required	Regional Directors , Site Manager and or Site Supervisors
External Accreditation Audit Report	External Auditor	As required	Environmental Manager, Systems Manager, Managing Director, Directors, Project Manager
External Surveillance Audit	External Auditor	As required	Environmental Manager, Systems Manager, Managing Director, Directors, Project Manager

The Environmental Manager will report to regulatory authorities in accordance with the legal requirements.

[Reference Documents](#)

[Management Standards and Procedures](#)

*Management Standard 14 Monitoring, Audit and Review  
BU AUS IMS P DIV 130 Reporting*

[Forms and Guides](#)

*Monthly Report  
Environmental Incident Report  
Environmental Investigation Report  
Environmental Internal Audit Checklist*

## 6.16 Management Review

Management review is to take place to ensure that the management systems meet the specified statutory legislation, policies, objectives and procedures on a corporate and project level. The review will also include assessing opportunities for improvement and the need for changes to the CEMP, the Environmental Policy and objectives and targets.

Management Review meetings will be scheduled and carried out at least every 12 months at a corporate level.

### Reference Documents

#### Management Standards and Procedures

Management Standard 14 Monitoring, Audit and Review  
BU AUS IMS P DIV 140 Management Review

### Forms and Guides

[Management Review Meeting](#)

## 7.0 Environmental Management Sub Plans

The identified environmental impacts for the project have been split into separate management sub-plans and are outlined in the following pages.

### 7.1 Construction Noise and Vibration Management Sub-Plan

Construction sites may generate noise and vibration which can affect nearby structures or residents and therefore must comply with State and Local requirements.

#### Objectives and Targets

Objective	Target	Key Performance Indicator
To ensure any works causing noise or vibration do not effect nearby structures or residents.	No complaints from the community regarding noise or vibration.	No. of complaints from residents / businesses related to noise.
Compliance with State and Local requirements as required.	Compliance with the Environmental Protection (Noise) Regulations 1997 - Section 6 of AS 2436-2010 (Standards Australia, 1981). Compliance with 10mm/s vibration limit or as otherwise specified.	Results from environmental inspections Noise and vibration monitoring records

#### Management Strategies

Parameter	Action	Timing	Responsibility
Communication and Notification	A contact list will be prepared to enable nearby residents and owners to be notified regarding works that may impact them as a result of noise and vibration. This will be managed in accordance with the Communication Management Plan and approved Noise Management Plan (where applicable).	Establishment / Construction	BM
Induction	All construction staff shall be inducted on noise and vibration control measures and instructed on management actions required under the CEMP.	Establishment	BM / All Subcontractors
Construction Work	All construction work shall take place during the hours as determined by the development consent.	Construction	BM/ All Subcontractors
Plant and Equipment	Plant and equipment noise control equipment to be maintained in accordance with manufacturer's specification to reduce noise levels. Equipment used is the quietest reasonably available.	Construction	All Subcontractors
Plant and Equipment Noise Control	All mobile machinery and stationary equipment shall be fitted with noise control equipment as per the manufacturer's specifications.	Construction	All Subcontractors



Parameter	Action	Timing	Responsibility
Noise Monitoring	Noise monitoring shall be undertaken if required by the Client and Council conditions or if complaints are received due to unreasonable levels of noise in a noise sensitive area. These levels are to be assessed against levels set in the Environmental Protection (Noise) Regulations 1997. Where applicable a Noise Management Plan will be prepared by an appropriately qualified external consultant. This plan is to be approved by the Local Council. As an alternative, consideration is to be given to undertaking works at more suitable times to the complainant.	Establishment / Construction	BM / Subcontractor
Vibration Monitoring	During operation, if equipment is likely to cause excessive vibration, sensitive structures or areas shall be monitored for vibration levels. An appropriately qualified external consultant will develop a Vibration Management Plan which will be attached to this CEMP. Vibration levels monitored at sensitive premises will not exceed 10mm/s (as per German Standard DIN 4150-03, <i>Structural Vibration Part 3 - Effects of Vibration on Structures</i> ) or as otherwise specified in the Vibration Management Plan. Regardless of the criteria above, constant observation of vibration levels and any effects on adjoining structures will be monitored closely during construction, as this may alter vibration monitoring trigger levels. Dilapidation studies should be undertaken of surrounding structures and building prior to any construction.	Establishment / Construction	BM / Subcontractor
Noise / Vibration – Control Measures	If noise and / or vibration complaints are received, the following techniques should be considered to reduce impact to adjoining owners: <ul style="list-style-type: none"> <li>• Undertaking works outside of adjoining building operating hours / peak hours as per approved Noise Management Plan.</li> <li>• Isolate work activity using noise barriers.</li> <li>• Ring Saw instead of hammering column / beams.</li> <li>• Use smaller machinery or quieter alternative.</li> <li>• Use static rolling where possible.</li> </ul>	Construction	BM / Subcontractor

## Monitoring and Reporting

Type of Monitoring / Reporting	Timing	Responsibility	Record
Vibration monitoring if required by Client, local authority and in response to complaints	At commencement and during excessive vibration	BM	Vibration monitoring records
Noise monitoring if required by Client, local authority and in response to complaints	At commencement and during excessive Noise	BM	Noise monitoring records
Integrity of noise control equipment (if deemed applicable)	During construction	BM / All Subcontractors	Environmental Site Inspection
Number of noise and/or vibration complaints	As required	BM	Communications Register

## Justification of Extension of Standard Construction hours

### Delivery of Large Plant and Equipment

With the large scale of The Next Generation project various construction and installation processes will require the delivery of oversized plant, equipment and structures. Due to their size these deliveries will need to travel on NSW roads at a time that is outside of the EPA recommended Construction Hours. These deliveries will consist of:

- Plant – such as:-
  - o Piling rigs
  - o Earthmoving Equipment
  - o Crawler Cranes
  - o Tower Cranes
- Equipment – to be integrated into the works that are indivisible and are considered to require special permits to travel on the roads to get to site. In some instances, these loads should be transported on to site

and unloaded immediately to minimize possible safety issues with the loads. Examples of this type of equipment would include:-

- Substation equipment
- Boilers
- Flue Gas treatment equipment
- Tanks
- Generators and transformers
- Structures – items such as:-
  - Stacks – which are in excess of 3.9m in diameter steel structures
  - Structural steel work including bridging components, long loads, wide loads

As these items, will require special permits to travel on the roads and in some instances outside EPA standard working hours, it would be safer for the operation to:-

- Arrive to its final destination on site
- Be unloaded off trailers as quickly as possible – which in most cases require construction site plant.
- Set it down and make it safe.

## Emergency works

A project of this size will have many technically challenging activities that need to occur daily. The quality of the completed works will need to achieve exceptional standards for the completed plant to operate within the given standards, guidelines and parameters.

Construction activities will be planned to be carried out within standard EPA working hours, however, activities may not be able to be completed for reasons beyond our control, that need to be completed to ensure the works remain safe and of an acceptable standard.

Some of these activities may be:-

- Concrete casting – concrete needs to be cast to predetermined joints. Casting durations may get extended for reasons unforeseen, such as:-
  - Concrete Batch plant or delivery break downs
  - Formwork failure
  - Inclement weather
  - Construction plant breakdown
- Inclement Weather – works may need to be carried out to:-
  - minimize damage to the works and/or;
  - Minimize environmental effects

## Safety Works

To ensure that the site is safe and the works unaffected, it is mandatory that inspections are carried out prior to operatives commencing works on a daily and ongoing basis.

These inspections are proposed to be carried out prior to the operative's works commencement times. These inspections will also occur after the operatives have completed works each day.

If safety issues are found, some works may need to occur to rectify the unsafe situation.

## Maintenance and Utility Works.

The project will require interfacing, connections to, maintenance of and upgrading of utility services addressed in section 2.3 of the construction noise guideline. In order to sustain the operational integrity of public infrastructure some works will need to be done outside EPA working hours. The hours of works will be nominated by the Utility stakeholder.

## Construction Plant Maintenance

During the construction phase of the Project, construction plant will need to be serviced. Due to the specialist nature of this plant and to achieve efficiency in its use, this plant is normally maintained outside normal operating hours. It is unlikely that these works will cause excessive noise.

## Concrete Casting

There are structural elements in the Project such as the Waste and Ash bunkers that will require the use of a “slip form” formwork system for vertical wall elements, to ensure the integrity of the finished product. The waste and ash bunkers will be containing hazardous materials and need to be treated as a water tight tank. If there is any inconsistencies in the construction of the walls this could cause leaks which could see harmful leachate seep out of the plant into the soil and potentially the waterway. The slip form method is the only type of formwork system that will produce one solid ‘tank’ without any holes for core ties. To achieve this casting continuously over periods of 24 hour operation over several days at a time is required.

The noise generating activities with slip form operations are:-

- Concrete pump and concrete trucks to supply concrete to the slip form – one of the main sources of noise
- Concrete placing boom, to distribute the concrete to the forms of the slip form – minimal noise generated
- Vibrators, to compact the concrete in the forms of the slip form – can be another source of noise
- Climbing of the slip form, this is done by electric, hydraulic pumps – minimal noise generated
- Installation of block outs and cast ins in forms of slip form – minimal noise and very intermittent. Generally noise source may be hand held hammering and electric tools such as saws.
- Installation of reinforcement in forms of slip form – minimal noise created
- Mobile and or Tower crane operation, to replenish materials, such as reinforcement, to the slip form – operation noise is minimal. Cranes will be used intermittently and minimized at night.
- Man and Material Hoists (such as an Alimak), to transport operatives to the slip form working decks from the slab on ground where amenities are located – used intermittently.

## Plant Installation

The process plant equipment will be imported from specialist suppliers from overseas, in components that are shippable and transportable by road to site.

The majority of the components are “oversized” and will need to be transported to site outside standard construction hours.

The components are then preassembled in to units on site in laydown areas and quality tested. These individual units vary greatly in size and weight. The size is maximized, to minimize works that may be require dangerous work practices or affect quality of the finished product. Individual units can weigh up to 110 tons.

The units need to be installed in a very specific order to complete the plant installation process.

The preassembled units are then traversed from the laydown areas (within the site) to where a mobile crane or tower crane will lift them into their final position. Given the size of these units, lifting, placing, securing, releasing the mobile or tower crane and ensuring the unit is safe to leave in a temporary state can take in excess of the available standard working hours. Breaking these activities up in to smaller elements will only compromise safety of the operatives and or quality of the completed unit.

There are 100's of these units to be placed in final positions to complete the plant installation process.

## 7.2 Dust and Air Quality Management Sub-Plan

Dust may be generated from construction activities at the Project, particularly during dry, windy conditions. Excessive dust generation may be detrimental to human health, reduce visual amenity, smother vegetation and interfere with fauna. Emissions generated from activities at the Project are a potential nuisance and can have related health issues.

### Objectives and Targets

Objective	Target	Key Performance Indicator
Ensure that dust or odour emissions do not adversely affect the health or visual amenity of surrounding communities.	No complaints from adjoining owners in relation to dust emissions from the works.	No. of public complaints from the public related to dust.
Compliance with State and Local regulatory requirements in relation to dust management.	No visual evidence of deposited dust or suspended particulate matter.  Compliance with National Environment Protection Measures (NEPM) standards (where required) and DEC standards during construction.	Visual monitoring of dust movement during environmental inspections.  Dust monitoring results (where required).

### Management Strategies

Parameter	Action	Timing	Responsibility
Induction	All construction staff shall be inducted on dust control measures and instructed on management actions required under the CEMP.	Establishment	BM / All Subcontractors
Stabilised Driveways	A stabilised driveway is to be installed to minimise the tracking of dirt on public roadways.	Establishment	BM
Dust Control Method - Physical Barriers	A physical barrier can be erected perpendicular to prevailing winds prior to the commencement of works along the boundary or around uncontrolled dust sources. Fences can be standard hoarding panels / fence or a fence with a screening material with a porosity of 50% or less.	Establishment	All Subcontractors
Dust Control Method - Chemical Stabilisation	Where an exposed area or stockpile is located away from traffic and needs to sit for up to 3 months or where an area needs immediate stabilisation, a chemical soil stabiliser can be used such as Zerosion or the area hydro mulched (seed free).	Construction	Bulk Earthworks / Civil / BM
External Roads	If any sediment is deposited onto the roads adjoining the site, the roads are to be swept regularly and including prior to any rainfall. No hosing is to be undertaken external to the site.	Construction	BM
Haul roads	Haul roads shall be covered with gravel / road base to minimise dust production or at best regularly swept concrete.	Construction	BM
Speed limits	The speed of all vehicles on-site shall be restricted to 20 km/hr. This speed shall be further reduced if large amounts of dust are still being generated.	Construction	All Subcontractors
Windy Conditions	Dust generating activities shall be assessed during periods of excessively windy conditions (>40km/h). Where dust cannot be adequately controlled work is to be ceased and rescheduled where adequate control of dust generation can be achieved.	Construction	All Subcontractors
Complaints	Where a complaint is received regarding dust, dust monitoring is to be undertaken to confirm the levels of dust / particulates. Either of the following is applicable depending on the nature of the complaint according to the <b>National Ambient Air Quality Standards</b> .  <ol style="list-style-type: none"> <li>Maximum dust fallout rates of 1000ug/m<sup>3</sup> measured over 15 min.</li> <li>Maximum of 50ug/m<sup>3</sup> for PM<sub>10</sub> (expressed as a 24 hour average not to be exceeded for more than 5 days in a year).</li> <li>Maximum of 25 ug/m<sup>3</sup> for PM<sub>2.5</sub> averaged over 24 hours and 8 ug/m<sup>3</sup> averaged over one year.</li> </ol> Where a complaint is received regarding further compounds, monitoring is	Construction	BM

# Environmental Management Sub-Plans

Parameter	Action	Timing	Responsibility																								
	to be undertaken to confirm the levels of compounds measured as a time weighted average over a shift. (Source NEPC 2003 and DEC 1996)																										
	<table><tr><th>Compound</th><th>Maximum Exposure</th></tr><tr><td>Respirable Crystalline Silica</td><td>0.1 mg/m<sup>3</sup></td></tr><tr><td>Carbon Monoxide</td><td>9.0 ppm</td></tr><tr><td>Nitrogen Dioxide</td><td>0.12 ppm</td></tr><tr><td>Arsenic</td><td>0.05 mg/m<sup>3</sup></td></tr><tr><td>Cadmium</td><td>0.01 mg/m<sup>3</sup></td></tr><tr><td>Chromium</td><td>0.5 mg/m<sup>3</sup></td></tr><tr><td>Copper</td><td>1 mg/m<sup>3</sup></td></tr><tr><td>Lead</td><td>0.15 mg/m<sup>3</sup></td></tr><tr><td>Nickel</td><td>1 mg/m<sup>3</sup></td></tr><tr><td>Zinc</td><td>10 mg/m<sup>3</sup></td></tr><tr><td>Mercury</td><td>0.025 mg/m<sup>3</sup></td></tr></table>			Compound	Maximum Exposure	Respirable Crystalline Silica	0.1 mg/m <sup>3</sup>	Carbon Monoxide	9.0 ppm	Nitrogen Dioxide	0.12 ppm	Arsenic	0.05 mg/m <sup>3</sup>	Cadmium	0.01 mg/m <sup>3</sup>	Chromium	0.5 mg/m <sup>3</sup>	Copper	1 mg/m <sup>3</sup>	Lead	0.15 mg/m <sup>3</sup>	Nickel	1 mg/m <sup>3</sup>	Zinc	10 mg/m <sup>3</sup>	Mercury	0.025 mg/m <sup>3</sup>
	Compound			Maximum Exposure																							
	Respirable Crystalline Silica			0.1 mg/m <sup>3</sup>																							
	Carbon Monoxide			9.0 ppm																							
	Nitrogen Dioxide			0.12 ppm																							
	Arsenic			0.05 mg/m <sup>3</sup>																							
	Cadmium			0.01 mg/m <sup>3</sup>																							
	Chromium			0.5 mg/m <sup>3</sup>																							
	Copper			1 mg/m <sup>3</sup>																							
	Lead			0.15 mg/m <sup>3</sup>																							
	Nickel			1 mg/m <sup>3</sup>																							
	Zinc			10 mg/m <sup>3</sup>																							
Mercury	0.025 mg/m <sup>3</sup>																										
Water Carts/ Sprays	Water carts or sprinklers are to be used for specific process activities that may cause dust and can be used to assist in the dust control on access tracks. Consideration should be given to water efficiency and the possible use of a dust control method above.	Construction	Excavation / Demolition Subcontractor																								
Housekeeping	During construction the site shall be kept clean to reduce dust lift off during windy days.	Construction	All Subcontractors																								
Plant and Equipment Maintenance	All construction plant and equipment with access to the site shall be properly maintained and serviced in accordance with the manufacturer's specification.  During the works maintenance logs will need to be maintained and available during inspections and audits.	Construction	All Subcontractors																								
Exhaust Fumes	Operating machinery and vehicles shall be visually checked to ensure exhaust fumes are not discharged to adjoining buildings air intakes.	Construction	All Subcontractors																								
Truck Transportation	Trucks transporting materials such as sand, soil, landscape materials and gravel shall have covered loads and tailgates secured.	Construction	All Subcontractors																								
Paint-Spraying	Paint-spraying activities shall not be undertaken in adverse weather conditions or near building air intakes.	Construction	All Subcontractors																								
Exposed Areas	Measures including watering down exposed areas and access will be undertaken to reduce dust generation.	Construction	All Subcontractors																								
Asbestos	Any asbestos discovered on the project shall be left undisturbed and subsequently managed in accordance with the Safety Management Plan.  Asbestos material found in ground will require assessment in accordance with State requirements or in the absence in accordance with Guidelines for the Assessment, Remediation and Management of Asbestos - Contaminated Sites in Western Australia – May 2009.	Construction	All Subcontractors																								
Sweeping	Where applicable, sealed roads shall be swept to remove deposited material that could generate dust.	Demolition , Excavation and Construction	All Subcontractors																								

## Monitoring and Reporting

Type of Monitoring / Reporting	Timing	Responsibility	Record
Inspect dust control measures are in place and implemented.	Weekly	BM	Environmental Site Inspection
Visually inspect emissions from plant to ensure they are not contributing to ill health effects.	Weekly	BM	Environmental Site Inspection

Dust monitoring in response to community complaints or in accordance with regulatory requirements.	As required	BM	Dust monitoring records
--	-------------	----	-------------------------

## 7.3 Water Quality Management Sub-Plan

### Objectives and Targets

Objective	Target	Key Performance Indicator
Avoid the release of contaminants to waterways or drainage systems.	All water discharged complies with minimum water quality criteria.	Water quality records conforming to minimum water quality criteria (where applicable). No breaches of management strategies in applicable Management Plans. Results from environmental inspections.
Ensure that groundwater quality or height is not significantly affected by the construction.	No significant change in groundwater levels and quality during dewatering activities (if applicable).	Groundwater quality reports.

### Management Strategies

Parameter	Action	Timing	Responsibility
Dewatering for construction purposes	<p>As noted in the IGGC report (June 2014) and via extensive bore log studies by Pells Sullivan Meynink (August 2014 Report), it is unlikely that the construction works will need to lower the water table. There is some perched aquifers that may be encountered, which will seep into the works and may need localized de watering.</p> <p>All dewatering is to achieve the below water quality. Where this water is achieved, direct discharge to stormwater / river can take place without prior pre-treatment.</p> <p>Monitoring shall be undertaken daily for the first 3 weeks, and weekly thereafter where consistent compliant results are achieved (check DA and local requirements).</p> <ul style="list-style-type: none"> <li>turbidity: &lt;20 NTU</li> <li>suspended solids: &lt;50 mg/L</li> <li>pH: 6.5-8.5</li> <li>DO 6mg/L or +/- of background</li> <li>Oil and Grease (visual only)</li> </ul> <p>A groundwater abstraction licence is to be obtained for all project before dewatering can commence.</p> <p>Exemption from a dewatering licence is only available if:</p> <ul style="list-style-type: none"> <li>Abstraction is from the water table aquifer</li> <li>Abstraction is solely for the purpose of removing groundwater to facilitate construction</li> <li>Abstraction pump rate does not exceed 10L/sec over a period of 30 consecutive days</li> <li>The volume of water taken over the 30 days period does not exceed 25,000 kL</li> </ul>	Establishment	BM / Excavation Subcontractor
Abstraction of groundwater for construction purposes	A Licence to Take Water is to be obtained from Department of Water before abstraction of groundwater can commence for use in dust suppression and other construction activities. A Dewatering Management Plan may be required to be prepared by an appropriately qualified external consultant and attached to this CEMP.	Establishment	BM / Excavation Subcontractor
Acid Sulfate Soil	All excavation with potential to expose Acid Sulfate Soils (ASS) shall be determined prior to commencement and an ASS Management Plan is to be prepared to be prepared by an appropriately qualified external consultant and attached to this CEMP.	Establishment / Construction	BM / Excavation Subcontractor
Trade Waste	Installation of a 3 x 1m <sup>3</sup> settlement system for wet-trade washout. Ensure a permit is obtained by BM from the Water Corp if discharging to sewer.	Establishment	Hydraulic Subcontractor
Erosion and	1. Evaluate Site Limitations	Establishment / Construction /	BM / Excavation



# Environmental Management Sub-Plans

Parameter	Action	Timing	Responsibility
Sediment Control	<ul style="list-style-type: none"> <li>Isolate retained vegetation from clearing with fencing and signage.</li> <li>Identify highly erodible soils with advice from geotech.</li> <li>Identify up-slope drainage catchments to be diverted around works.</li> <li>Identify work areas allow for erosion and sediment controls.</li> </ul> <p>2. Stabilise all Site Entry / Exit Points. Inspect earth moving plant for residual mud and remove before leaving the site if there is the potential to track dirt/mud on public roadways. Street sweeping (never hose down) is to be carried out to reduce sediment on roads.</p> <p>3. Install sediment fence(s) down-slope of the site. Treat sediment laden water with the use of sediment fencing installed to allow ponding.</p> <p>4. The runoff from any slope catchment area exceeding 1500m<sup>2</sup> is to be diverted around works. The diversion drain is to be appropriately lined to prevent erosion and discharged to lawful stormwater connection outlet.</p> <p>5. Clear only those areas necessary for building works to occur.</p> <p>6. Commence building activities.</p> <p>7. Ensure all clean stormwater from concreted and roof areas are immediately connected to the stormwater or diverted as required.</p> <p>8. Regularly inspect all drainage, erosion and sediment controls and maintain.</p>	Completion	Subcontractor
Tool box talk	All construction personnel undertaking discharge of water to on-site or off-site areas shall undergo a tool box talk to ensure the correct controls are in place.	Establishment	BM / Subcontractor
Static Concrete Pumping	A designated washout area and purpose built bunded structure shall be provided for concrete pumps and their attachments.	Establishment	Concrete Subcontractor
Mobile Concrete Pumping	An impervious catch tray shall be placed below the pump's hopper to contain any possible spillage or droppings. Concrete washout shall be undertaken in designated concrete washout area. Prevent runoff of contaminated water into stormwater or water course.	Construction	Concrete Subcontractor
Concrete Truck Washout	Concrete washout shall occur in designated concrete washout area. Prevent runoff of contaminated water into stormwater or water course.	Construction	Concrete Subcontractor
Spills	All spills on site of hazardous chemicals should be cleaned up immediately to minimise pollution of stormwater/groundwater. If water contaminated by hazardous chemicals requires discharge it will need to be sampled and analysed before release to ensure it meets ANZECC water quality criteria for Aquatic Ecosystems. If contaminated it will need to be removed and treated by an appropriately licence waste contractor.	Construction	BM / Subcontractor
Chemical Storage	Paint, form oil, solvents and fuels shall be stored correctly and bunded in accordance with Chemical Management Sub-plan.	Construction	All Subcontractors
Paint Washout	The painting subcontractor is required to wash out into purpose built tanks that shall be removed by the painting contractor through a licensed liquid waste facility with an arrangement to attain verifiable proof of disposal.	Construction	Painting Subcontractor

## Monitoring and Reporting

Type of Monitoring / Reporting	Timing	Responsibility	Record
Dewatering process and water quality results (as per ASS or Dewatering Management Plan (where applicable))	Daily (while dewatering) or as specified in the management plan	Supervisor / Environmental Coordinator	Environmental Site Inspection Water Quality Records Tool Box Talks Subcontractor EWMS
Monitor abstraction of ground water to ensure compliance with licence	Weekly or as per licence requirements	Supervisor / Environmental Coordinator	Environmental Site Inspection Abstraction Records
Trade waste and washouts	Weekly	Supervisor / Environmental Coordinator	Environmental Site Inspection Subcontractor EWMS
Inspect erosion and sediment controls are effective and maintained	Weekly or after a shower / rain event.	Supervisor / Environmental Coordinator	Environmental Site Inspection Subcontractor EWMS

## 7.4 Erosion and Sediment Control Management Sub-Plan

### Objectives and Targets

Objective	Target	Key Performance Indicator
Prevent clay, silt or sand from entering stormwater drains and waterways.	All disturbed stormwater to pass through primary erosion and sediment controls listed below.	Environmental Inspection records of no uncontrolled release of disturbed stormwater to drains and waterways.

### Management Strategies

Parameter	Action	Timing	Responsibility
Erosion and Sediment Control Plan	<p>For sites with a soil disturbance less than 2500m<sup>2</sup> and with slopes &lt;10%, an Erosion and Sediment Control Plan is to be prepared in accordance with BMC minimum requirements (refer <i>Appendix 6</i>).</p> <p>For sites with a soil disturbance greater than 2500m<sup>2</sup> or on a site with a slope of &gt;10%, an Erosion and Sediment Control Plan is to be prepared by a Certified Practitioner in Erosion and Sediment Control. The plan is to be attached as an Appendix to this Construction Environmental Management Plan.</p>	Establishment	Brookfield Multiplex
Minimum Requirements for sites <2500m <sup>2</sup> and less <10% slopes	<ol style="list-style-type: none"> <li>Evaluate Site Limitations <ul style="list-style-type: none"> <li>Isolate retained vegetation from clearing with tape.</li> <li>Identify highly erodible soils with advice from geotech.</li> <li>Identify up-slope drainage catchments to be diverted around works.</li> <li>Identify work areas allow for erosion and sediment controls.</li> </ul> </li> <li>Stabilise all Site Entry / Exit Points in accordance with BMC minimum requirements. Inspect all vehicles for residual mud and remove before leaving the site. Street sweeping (never hosing down) is to be carried out to reduce sediment on roads.</li> <li>Install sediment fence(s) down-slope of the site. Treat sediment laden water with the use of sediment fencing installed in accordance with BMC minimum requirements to allow ponding.</li> <li>The runoff from any slope catchment area exceeding 1500m<sup>2</sup> is to be diverted around works. The diversion drain is to be appropriately lined to prevent erosion and discharged to lawful stormwater connection outlet.</li> <li>Clear only those areas necessary for building works to occur.</li> <li>Strip and stockpile any weed-free topsoil to be reused in revegetation works. Ensure the top soil stockpile is long and low to maintain aeration and microbiological properties and ensure is stabilised to prevent erosion.</li> <li>All stockpiles are to be located away from drainage areas and surrounded with sediment fence or covered with a product that will prevent erosion if in an area where it has the potential to enter the stormwater system. All stockpiles stored for longer than 2 weeks are to be covered to prevent erosion.</li> <li>Prevent erosion by mulching areas that have achieved final levels but are not ready for landscape works immediately, for completed areas ensure appropriate top soil is available and establish grass cover within 10 days.</li> <li>Commence building activities.</li> <li>Ensure all clean stormwater from concreted and roof areas are immediately connected to the stormwater.</li> <li>Regularly inspect all drainage, erosion and sediment controls and maintain.</li> <li>Progressively revegetate / stabilise the site.</li> <li>Remove any remaining temporary drainage, erosion and sediment control measures upon complete stabilisation of the site.</li> </ol>	Establishment / Construction / Completion	Brookfield Multiplex

## Monitoring and Reporting

Type of Monitoring / Reporting	Timing	Responsibility	Record
Inspect erosion and sediment controls are effective and maintained	Weekly or after a shower / rain event.	BM	<ul style="list-style-type: none"> <li>- Weekly Environmental Inspection</li> <li>- Training for responsible staff</li> <li>- Tool Box Talks</li> <li>- Subcontractor EWMS</li> </ul>

## 7.5 Chemicals Management Sub-Plan

The storage and handling of hydrocarbons and chemicals on the site during construction creates the risk of environmental contamination from spills or leakage.

### Objectives and Targets

Objective	Target	Key Performance Indicator
Avoid contamination of soil and water from chemicals.	No release of chemicals/pollutants as listed under the Environmental Protection (Unauthorised Discharges) Regulations 2004 to the environment during construction.	No instances of uncontrolled spills.

### Management Strategies

Parameter	Action	Timing	Responsibility
Induction	All site personnel to be inducted in storage and handling of chemicals and emergency procedures.	Establishment	All subcontractors
Hazardous Chemicals	Material Safety Data Sheets which outline the procedures for handling, storage and emergency response for all hazardous chemicals stored or used on the Project shall be available in the first aid facility.	Establishment	BM
Spill Kits	Spill kits are to be established at locations adjacent to where chemical spills have the potential to occur. The spill kits are to be maintained and readily available in the event of a spill.	Establishment	BM / All Subcontractors
Toolbox Talks	Toolbox talks will be undertaken in the use of spill kits and the steps taken in the event a spill.	Construction	BM / All subcontractors
Tank and Mobile Tankers	Tank and mobile tankers to be fitted with a screw fitting or overflow protection connected to prevent leaks.	Construction	All subcontractors
Bunds	Bunds capable of storing 110% of the largest container volume shall be installed around areas where chemicals are stored. The bund is to be impervious, chemically resistant and fire resistant. Further, the bund is to be protected from weather to avoid rain reducing the bund capacity. Must be compliant with AS 1940 -2004.	Construction	All subcontractors
Labelling of Chemicals	All chemicals and dangerous goods used on site shall be appropriately labelled.	Construction	All subcontractors
Fuel Tankers	Fuel tankers shall be equipped with an appropriate device to prevent overfilling. An emergency shut off valve is also to be installed.	Construction	All subcontractors
Handling of Chemicals	Handling of chemicals is to take place in a designated area where there is no potential for spills or contaminated run-off could reach stormwater. Fuel stored on vehicles is to be stored in a spill tray or other approved container capable of handling a spill.	Construction	All subcontractors
Fuelling of Vehicles or Construction Plant	Refuelling is to take place in designated areas or where contaminated run-off could reach the stormwater. Fuel tankers will use a spill tray beneath the refuelling connection to prevent spills on ground.	Construction	All subcontractors

# Environmental Management Sub-Plans

Parameter	Action	Timing	Responsibility
Fluid Leaks	Trucks that leak any sort of mechanical fluid shall not be permitted on or adjacent to the site.	Construction	All subcontractors
Oil Contaminated Stormwater	Oil contaminated water shall be disposed of to a licensed waste facility by a licensed subcontractor.	Construction	All subcontractors
Minor Spills (<100L)	In the event of a spill, the spill kit is to be utilised and the cleaned up material taken to a licensed facility as trackable waste and reported.	Construction	All subcontractors
Major Spills (>100L)	In the event of a spill of major spill, the procedures contained in the Emergency Management Plan shall and reported.	Construction	All subcontractors
Volume of Fuel and Chemicals	Volumes of fuels and chemicals kept on site are to include only those volumes necessary to complete the works within a reasonable delivery schedule.	Construction	All subcontractors
Solvent Based Paints	Containers of solvent based paints shall be disposed of at an appropriate recycling depot by the subcontractor and a verifiable receipt or docket retained on file by the sub-contractor and produced upon request to Site Management.	Construction	All subcontractors

## Monitoring and Reporting

Type of Monitoring / Reporting	Timing	Responsibility	Record
Check all bunds are the appropriate size and functioning.	Weekly	Subcontractors / BM	Environmental Site Inspection
Check all chemicals are labelled, stored in a container in good condition and in a bunded area.	Weekly	Subcontractors / BM	Environmental Site Inspection
Check equipment is free from faults and leaks.	Weekly	Subcontractors / BM	Environmental Site Inspection
Check the spill kit is available and adequately stocked.	Weekly	Subcontractors / BM	Environmental Site Inspection

## 7.6 Land Contamination Management Sub-Plan

Contamination soil, groundwater or surface water may be found onsite which will need to be managed appropriately to prevent further contamination.

### Objectives and Targets

Objective	Target	Key Performance Indicator
To manage contamination in accordance with regulatory requirements.	No spread of contaminants onsite	No Environmental Notices issued to BM. Waste disposal receipts (where applicable)

### Management Strategies

Parameter	Action	Timing	Responsibility
Induction	During inductions all personnel shall be made aware of individual responsibilities in regards to contamination management.	Establishment	All subcontractors
Contamination Investigation	Where a site is to have known contamination, and has not been remediated, a qualified environmental consultant/professional is to be engaged to determine whether a Contaminated Site Investigation is required. Where required, a Contaminated Site Investigation is to be carried out in accordance with State and Local Government requirements.	Establishment	BM
Management of Contamination	Where contamination is found and requires additional management measures to what is found in this CEMP, a Site Management Plan is to be developed and attached to this CEMP as an appendix.	Establishment	BM
Contaminated Water	Where contaminated water is proposed to be discharged a full suite of contamination analysis is to be undertaken on the water prior to works commencing and prior to discharge. Where water is found to be contaminant free in accordance with the ANZECC Water Quality Guidelines, water is to be discharged in accordance with the Water Quality Management Sub Plan. Where water is found to contain contaminants above the criteria in the ANZECC Water Quality Guidelines, water management is to be undertaken with advice from a qualified environmental consultant/professional.	Establishment	BM / Excavation Subcontractor
Acid Sulfate Soils (ASS)	Where a project is in a known ASS risk area and involves excavation, dewatering, or compacting saturated soils or sediments then an ASS Investigation is required. The ASS Investigation and further management are to be undertaken with State and Local Government requirements. Any ASS Management Plan to be prepared by a qualified environmental consultant/professional and is required to be attached to this EMP as an Appendix.	Establishment	BM / Excavation Subcontractor
Excavated Materials	All excavated materials removed from the site shall be removed in accordance with the approved plan for the management of contamination and disposed of to a facility licensed to take that level of contamination.	Excavation	Excavation Subcontractor
Asbestos	Any asbestos discovered on the project shall be left undisturbed and subsequently managed in accordance with the Health and Safety Management Plan. Asbestos material found in ground will require assessment in accordance with state requirements or, in the absence, in accordance with Guidelines for Asbestos-Contaminated Sites - May 2009. Disposal receipts required.	Establishment	All Subcontractors
Lead based paint removal/stripping	All lead based paint removed or stripped from walls shall be in accordance with AS4361 "Guide to Lead Paint Management". Disposal receipts required.	Establishment	Subcontractors
Waste Transport Certificate	A Waste Transport Certificate for all contaminated material shall be required from the responsible contractor.	Excavation	Excavation Subcontractor
Unexpected Contamination	If unexpected contaminants are identified, all associated activities shall be ceased and a reassessment of the area/contaminants shall be undertaken by a qualified environmental consultant/professional. Contamination is to be managed as per State and Local Government requirements. See Unexpected	Excavation	BM / Subcontractor

Parameter	Action	Timing	Responsibility
	Finds Protocol at Appendix 7.		

## Monitoring and Reporting

Type of Monitoring / Reporting	Timing	Responsibility	Record
Contamination Assessment	Commencement	BM	Site contamination report / Acid Sulfate Soil Report
Management of Contaminated Material	Construction	BM	Environmental Site Inspection Water Quality Records Remediation Report

## 7.7 Waste Minimisation and Management Sub Plan

Waste can affect different aspects of the environment and may cause contamination, impacts on visual amenity and health effects. Waste materials that may be produced on the Project include:

- Building material waste – off cuts, overspill of concrete, packaging, steel, etc
- Litter including food and drink packaging
- Black and grey water – onsite portable toilets
- Office equipment (portable offices) – paper, cardboards, etc

## Objectives and Targets

Objective	Target	Key Performance Indicator
Solid and liquid waste to be disposed of as per Regulatory requirements.	All waste to be disposed of by a licensed waste contractor	Onsite waste disposal facilities confirmed and documented.
BM aim to maximise landfill diversion.	Recycle 80% of demolition and construction waste.	Waste reporting by waste contractors.
No waste to affect nearby premises.	No complaints related to construction waste affecting nearby premises during construction.	No. of complaints relating to waste.

## Management Strategies

Parameter	Action	Timing	Responsibility
Induction	During inductions all personnel shall be made aware of individual responsibilities in regards to waste management, including the understanding that all personal rubbish and construction rubbish generated is to be properly disposed of in designated disposal facilities.	Establishment	All subcontractors
Waste Management Plan	Demolition and excavation subcontractors will be required to develop a Waste Management Plan for their Scope of Work detailing the type of waste generated, waste avoidance / reduction / reuse / recycling strategies.	Establishment	Demolition and Excavation Subcontractors
Waste disposal Storage area	Appropriate waste disposal facilities (e.g. bins) shall be provided in strategic locations onsite. Waste bins shall be located such that they do not affect the community and not close to surrounding premises. Separation of waste for recycling will be enforced and monitored.	Establishment / Construction	BM
	Waste disposal facilities shall be regularly collected or emptied by a licensed waste collector in accordance with Local Council Health Laws.	Construction	BM
	Where possible a storage area allocated for the separation, collection and recycling of wastes will be established.	Establishment	BM
Waste contractors	Licensed contractors shall be engaged to remove construction waste. A minimum target of 80% landfill waste diversion will be achieved.	Establishment	BM



# Environmental Management Sub-Plans

Parameter	Action	Timing	Responsibility
Putrescibles waste (Organic waste)	All putrescibles waste to be placed in a lidded bin and removed separately.	Establishment	BM
Recycling / waste reduction	Recycling initiatives will be investigated and where practicable implemented onsite. This may include dedicated bins for different waste streams and use of alternative products.	Establishment / Construction	BM / All subcontractors
Site office	The site office shall implement the following office waste minimisation techniques: <ul style="list-style-type: none"> <li>Organising recycling paper bins in the office for waste paper</li> <li>Recycle toner cartridges pick-ups</li> <li>Using electronic storage to reduce use of paper</li> <li>Purchasing products in bulk to reduce packaging</li> </ul>	Establishment	BM
Hazardous waste	Hazardous waste will be managed and disposed of as per the Material Safety Data Sheet requirements and Environmental Protection (Controlled Waste) Regulations 2004.	Construction	BM / All subcontractors
Servicing	Where practicable plant will be serviced offsite to reduce the generation of hydrocarbon waste onsite and potential for spills.	Construction	All Subcontractors

## Monitoring and Reporting

Type of Monitoring / Reporting	Timing	Responsibility	Record
Percentage of diversion from landfill	Monthly	BM	Monthly Waste Report
Segregated waste and appropriate waste placement	Weekly	BM	Environmental Site Inspection

## Demolition and Excavation Phase Waste Management Plan

MATERIALS ON SITE	DESTINATION		
	Reuse and Recycling	Disposal	
Type of Materials	ON-SITE	OFF-SITE	
	Specify methods	Specify contractor and recycling outlet	Specify contractor and landfill site
Demolition			
Masonry, brick & tile	General blue waste bin	Transfer for reprocess or recycle - Demolition subcontractor	Divert from Landfill
Timber	General blue waste bin	Transfer for reprocess or recycle - Demolition subcontractor	Divert from Landfill
Metal	General blue waste bin / dedicated steel scrap bin	Transfer for reprocess or recycle - Demolition subcontractor	Divert from Landfill
Mixed waste	General blue waste bin	Transfer for reprocess or recycle - Demolition subcontractor	80% Recycling
Asbestos	As per standards	Transfer & disposal at hazardous landfill - Demolition subcontractor	Hazardous Landfill
Bitumen	General blue waste bin	Transfer for reprocess or recycle - Demolition subcontractor	Divert from Landfill
The demolition contractor prior to commencement shall develop a Waste Management Plan for the Project. Material shall be separated on site and removed in separate trucks for recycling, re-use and landfill.			
Excavation			

Clean Fill	Assess, excavate & stockpile	Transport & fill	Nil
Any hazardous waste shall be isolated and managed as per the legislation for hazardous waste. 100% of the clean excavation material shall be diverted from landfill.			

## Construction Phase Waste Management Plan

MATERIALS ON SITE	DESTINATION		
	Reuse and Recycling		Disposal
	ON-SITE	OFF-SITE	
Type of Materials	Specify methods	Specify contractor and recycling outlet	Specify contractor and landfill site
Concrete	General blue waste bin.	Transfer for reprocess or recycle - Waste contractor	Divert from Landfill
Masonry, Brick & Tile	General blue waste bin	Transfer for reprocess or recycle - Waste contractor	Divert from Landfill
Timber	General blue waste bin	Transfer for reprocess or recycle - Waste contractor	Divert from Landfill
Metal	General blue waste bin	Transfer for reprocess or recycle - Waste contractor	Divert from Landfill
Plasterboard	Separate in designated white bin	Transfer for reprocess or recycle - Waste contractor & plasterboard recycler	Divert from Landfill
Cardboard	Separate in designated green bin with lid	Transfer for reprocess or recycle - Contractor to be confirmed	Divert from Landfill
Mixed waste	General blue waste bin	Transfer for reprocess or recycle - Waste contractor	80% Recycling
Waste shall be minimized through reduction of waste generated, reuse of products and recycling. The waste stream shall be separated where possible to maximise landfill diversion. Subcontractors will be responsible for recycling and reuse of their waste material.			

## Office Waste Management Plan

Type of waste to be generated	Expected vol. Per week	Proposed on-site storage and treatment facilities	Destination
Paper	Per week	Separate and recycle	Recycle
Packaging	Per week	Separate and recycle	Recycle

## 7.8 Heritage Management Sub-Plan

### Objectives and Targets

Objective	Target	Key Performance Indicator
Comply with the requirements of the Aboriginal Heritage Act 1972.	Protection of all sites of Aboriginal Heritage significance, both known and as yet unknown.	Immediate reporting of archaeological remains if discovered. Level of disturbance to significance sites recorded.
Minimise impacts on unknown Cultural and Aboriginal Heritage sites.	As above.	As above.

### Management Strategies

Parameter	Action	Timing	Responsibility
Induction	Aboriginal Heritage protection related material shall be included in workforce inductions.	Establishment	BM / All subcontractors
General	Operations generating vibration and dust shall be managed as per the relevant sections of this Plan.	Construction	BM
Earthworks	Excavations are to be monitored as required by the ethnographic consultant.	Construction	The Client
Object discovery	Objects found during construction works shall be salvaged and managed according to advice from archaeologists and the OEH.	Construction	The Client
Skeletal remains	If suspected skeletal remains found – works shall cease immediately until all clear is given by Police, OEH and archaeologists.	Construction	BM
	Suspected skeletal remains shall be immediately reported to Local Police Service, Local OEH office. If remains are found to be of an Aboriginal Heritage matter and not a police matter, they shall be left in situ until a decision is made about how to proceed in respect to the remains at an on-site meeting.	Construction	The Client

### Monitoring and Reporting

Type of Monitoring / Reporting	Timing	Responsibility	Record
Report findings to Client and OEH (as required)	As required	BM	Environmental Incident Report
Presence of Aboriginal or Archaeological Monitors during earth works (as required)	As required	BM	Environmental Incident Report Attendance Records

## 7.9 Flora and Fauna Management Sub-Plan

### Objectives and Targets

Objective	Target	Key Performance Indicator
To reduce the impact of construction on native flora and fauna.	No damage / injury to preserved flora and fauna.	Weekly Environmental Inspection

### Management Strategies

Parameter	Action	Timing	Responsibility
Induction	Undertake a site induction addressing the management of flora and fauna including: <ul style="list-style-type: none"> <li>No employee on the Project will intentionally injure native fauna including reptiles.</li> <li>Construction personnel are not to handle fauna.</li> <li>All rubbish and food scraps must be placed in lidded bins that will be serviced regularly.</li> <li>Native fauna are not to be fed by project employees.</li> </ul>	Establishment	BM/ All subcontractors
Fencing and bunting	Fencing/bunting and signage is to be installed to protect vegetation identified for retention within the works area. Refer to AS4970 for installation specifics. All trees on site that are within 15 metres of the work zone and are not approved for removal are to be suitably protected by way of tree guards, barriers or other measures as necessary to protect root system, trunk and branches during construction.	Establishment	BM / civil works subcontractor
Vegetation Clearing	A Clearing Permit must be obtained and approved from the Environmental Coordinator prior to any clearing works undertaken. Vegetation removal shall be minimised wherever possible by clearly defining designated work areas. Designated exclusion zones (i.e. retained vegetation) will be made secure with fencing/bunting and signage.	Construction	BM / Clearing subcontractor
Arborist	All works carried out on either foliage or root systems will be carried out as per the Australian Standard 4970-2009 <i>Protection of trees on Development Sites</i> and will be undertaken in consultation with a qualified Arborist.	Construction	BM / Clearing subcontractor
Excavation	All trenches / excavations are to be inspected each morning by the excavation subcontractor. Where flora and fauna are discovered, personnel are to cease work in the subject area and notify the Environmental Coordinator / BM Supervisor / or appointed Catcher.	Construction	BM / Excavation subcontractor
Unidentified Flora or Fauna	If any previously unidentified flora or fauna is discovered on-site, personnel shall be required to notify the Site Manager.	Construction	All subcontractors
Active Nests of Native Birds/Bats/mammals	Any trees or shrubs to be removed from the site shall be checked for the presence of active nests of native birds (i.e. those containing fertile eggs or nestlings) and arboreal mammals (e.g. possums) prior to removal or relocation by a Qualified Wildlife Spotter / Catcher.	Construction	All subcontractors
Rehabilitation	Monitor disturbed areas for weed invasion, and undertake control measures as necessary. Regularly water, weed and fertilise rehabilitated areas to ensure their success.	Construction	BM / Landscape subcontractor
Weed Management	All declared weeds within the site will be removed in accordance with the below procedures: <ul style="list-style-type: none"> <li>The use of pesticides and herbicides shall be restricted, have specific application, storage and clean up procedures, and shall meet requirements of relevant agencies.</li> <li>Herbicides shall be administered by contractors licensed in accordance with the provisions of State Legislation.</li> <li>Chemical products should always be used as per Material Safety Data Sheets.</li> </ul>	Construction	BM / Landscape subcontractor

Parameter	Action	Timing	Responsibility
	<ul style="list-style-type: none"> <li>Only qualified personnel should undertake chemical control of weeds.</li> <li>Correct disposal of weeds shall be undertaken ensuring accidental spread of weeds through incorrect disposal shall not occur. Weeds or material containing weed matter will be transported to a landfill under covered load. The cover must seal the top and sides of the load to prevent any weed material being transported by wind.</li> </ul>		

## Monitoring and Reporting

Type of Monitoring / Reporting	Timing	Responsibility	Record
Environmental Controls Map	Monthly	BM	Environmental Site Inspection
Clearing Monitoring	Daily during clearing works	BM / Clearing subcontractor	Environmental Site Inspection Clearing Permit
Spotter Catcher / Arborist Records	Daily during works	BM / Clearing subcontractor	Environmental Site Inspection
Rehabilitation Areas	Weekly	BM	Environmental Site Inspection

## 7.10 Site Office Environmental Management Sub-Plan

### Objectives and Targets

Objective	Target	Key Performance Indicator
Maximise the efficient use of resources within the office environment.	Recycle 100% office paper	Monthly Recycling Reports
	Recycle 100% of materials where available	Monthly Recycling Reports

### Management Strategies

Parameter	Action	Timing	Responsibility
Use of Resources	Recycle office paper and cardboard cans, bottles and printer cartridges.	Commencement to completion	BM
Use of Energy	Turn off electrical equipment where practicable and use energy efficient products.	Establishment to completion	BM
Use of Resources	Use office paper with recycled content.	Commencement to completion	BM
Double Sided Printing	Use double sided printing on photocopiers where possible.	Commencement to completion	BM

### Monitoring and Reporting

Type of Monitoring / Reporting	Timing	Responsibility	Record
Percentage of diversion from landfill	Monthly	Waste Contractor	Monthly Recycling Report.

## 8.0 Appendices

### Appendix 1 – Environmental Policy



## ENVIRONMENTAL POLICY

### SCOPE

This Policy applies to all employees, contractors, and other people at workplaces under the management and control of Brookfield Multiplex.

### COMMITMENT

Brookfield Multiplex is committed to creating positive sustainable outcomes for our clients, the people we work with and the communities we operate in. We will provide a working environment and culture where the environmental protection and sustainability is a driver of our core values and is a primary consideration in everything we do.

### OBJECTIVES

- Comply with all applicable environmental legislation, codes and guidelines;
- Establish, review and document environmental objectives and targets to facilitate continual improvement, pollution prevention and not impact on the environment we operate in;
- Consult and communicate regularly with the local community and key stakeholders and adopt appropriate and practical steps to address their concerns;
- Develop and promote a culture where management and staff both personally and collectively are committed to environmental sustainability;
- Undertake activities in a manner consistent with the principles of ecologically sustainable development;
- Promote the efficient use of energy, reduction of waste and recycling of materials in all our business activities;
- Influence our suppliers and contractors to act consistently with our approach towards responsible environmental practices;
- Focus priority on a collaborative working approach to identify and eliminate or otherwise control critical environmental impacts; and
- Encourage the reporting of incidents so we can learn and use this learning to improve our controls to better manage our critical risks.

John Flecker  
CEO – Brookfield Multiplex Australasia  
March 2013

## Appendix 2 - NSW Environmental Legislation Regulations Guidelines and Standards

### State Regulatory Authority – [Environmental Protection Authority NSW](#)

#### Contact:

To report any of the types of pollution for which the Environment Protection Authority (EPA) or Office of Environment and Heritage (OEH) has regulatory responsibility, phone **131 555** (local call cost throughout NSW except from mobile phones), or **(02) 9995 5555** (if calling from outside NSW).

A complete list of environmental legislation is located at <http://www.legislation.nsw.gov.au/>. Pertinent Acts, Regulations and Guidelines that apply to the majority of Brookfield Multiplex Construction Projects in NSW are listed below and summarised in the following tables.

#### Acts:

- [Catchment Management Authorities Act 2003](#)
- [Contaminated Land Management Act 1979](#)
- [Environmentally Hazardous Chemicals Act 1985](#)
- [Environmental Planning and Assessment Act 1979](#)
- [Heritage Act 1977](#)
- [Land and Environment Court Act 1979](#)
- [Local Government Act 1993](#)
- [National Parks and Wildlife Act 1974](#)
- [Noxious Weeds Act 1993](#)
- [Ozone Protection Act 1989](#)
- [Pesticides Act 1999](#)
- [Protection of the Environment Operations Act 1997](#)
- [Soil Conservation Act 1938](#)
- [Threatened Species Conservation Act 1995](#)
- [Waste Avoidance and Resource Recovery Act 2001](#)
- [Water Act 1912](#)

#### Regulations:

- [Contaminated Land Management Regulation 2013](#)
- 
-



- [Heritage Regulation 2012 – various amendments and Regulations](#)
- [Environmentally Hazardous Chemicals Regulation 2008](#)
- [Environmental Planning and Assessment Regulation 2000](#)
- [Land and Environment Court Regulation 2005](#)
- [Local Government \(General\) Regulation 2005](#)
- [National Parks and Wildlife Regulation 2009](#)
- [Noxious Weeds Regulation 2008](#)
- [Pesticides Regulation 2009](#)
- [Protection of the Environment Operations \(Clean Air\) Regulation 2010](#)
- [Protection of the Environment Operations \(General\) Regulation 2009](#)
- [Protection of the Environment Operations \(Noise Control\) Regulation 2008](#)
- [Protection of the Environment Operations \(Waste\) Regulation 2005](#)
- [Threatened Species Conservation Regulation 2010](#)

## **Commonwealth (National) Environmental Legislation:**

- [Aboriginal and Torres Strait Islander Heritage Protection Act 1984](#)
- [Environmental Protection and Biodiversity Conservation Act 1999](#)
- [National Environment Protection Council Act 1994](#)
- [National Greenhouse and Energy Reporting Act 2007](#)
- [Ozone Protection and Synthetic Greenhouse Gas Management Act 1989](#)
- [Product Stewardship Act 2011](#)
- [Water Efficiency Labelling and Standards Act 2005](#)

## **Commonwealth National Environmental Protection Measures**

- [National Environment Protection \(National Pollutant Inventory\) Measures 1998](#)
- [National Environment Protection \(Ambient Air Quality\) Measure 1998](#)
- [National Environment Protection \(Assessment of Site Contamination\) Measure 2013](#)
- [National Environment Protection \(Diesel Vehicle Emissions\) Measure 2001](#)
- [National Environment Protection \(Used Packaging Materials\) Measure 2011](#)
- [National Environment Protection \(Air Toxics\) Measure 2011](#)

## **NSW Environmental Planning Policies**

---

- [State Environmental Planning Policy \(State and Regional Development\) 2011](#)
- [State Environmental Planning Policy \(Exempt and Complying Development Codes\) \(2008\)](#)
- [State Environmental Planning Policy \(Infrastructure\) 2007](#)
- [State Environmental Planning Policy \(Major Development\) 2005](#)
- [State Environmental Planning Policy \(Building Sustainability Index: BASIX\) 2004](#)
- [State Environmental Planning Policy No 71 \(Coastal Protection\)](#)
- [State Environmental Planning Policy No 55 \(Remediation of Land\)](#)

## Local Environmental Planning Documents

- [Draft Blacktown Local Environmental Plan 2013](#)
- [Local Environmental Plan 1998](#)
- [Blacktown Biodiversity Strategy 2010-2020](#)
- 

## Guidelines:

- [Air Quality Guidance Notes for Construction Sites](#)
- [Assessing Significance for Historical Archaeological Sites and Relics](#)
- [Assessing Vibration – Technical Guidelines \(2006\) – DEC \(EPA\) AS1055](#)
- [Australian and New Zealand Guidelines for Fresh and Marine Water Quality \(2000\)](#)
- [City of Sydney Code of Practice for the Construction Hours/Noise 1992](#)
- [City of Sydney Council's Policy for Waste Minimisation in New Developments 2005](#)
- [Technical Guidelines to Minimise Blasting Overpressure and Ground Vibration](#)
- [Environmental Management Systems Guidelines for the Construction Industry](#)
- [Interim Construction Noise Guideline](#)
- [Know Your Responsibilities – Managing Waste From Construction Sites](#)
- [Managing Urban Stormwater – Soils and Construction](#)
- [National Australian Built Environment Rating System \(NABERS Energy\)](#)
- [NSW Heritage Office Guidelines- Photographic Recording of Heritage Items using Film or Digital Capture.](#)

## Australian Standards: accessible via BOS applications at

<http://intranet.mpx.biz/sites/CIMS/cts/Cims%20AMT%20Standards%20Online.aspx>

- AS 1055.1-1997 Acoustics – Description and Measurement of Environmental Noise – General Procedures
- AS 1668.1-1998 and AS1668.2-1991 Building Code of Australia and relevant Australian Standard

- AS2601-1991 Demolition of Structures, Occupational Health and Safety Act 2000 and Regulation
- AS 4969-2008 Series Analysis of Acid Sulphate Soils Australia
- AS 2436-1981 Guide to Noise Control on Construction Maintenance and Demolition Sites
- AS 2659-1988 Guide to Use of Sound Measuring Equipment
- AS 4452-2004 Storage and Handling of Flammable and Combustible Liquids (5.8)
- AS 4452-1997 Storage and Handling of Toxic Substances (5.7)
- AS 4970-2009 Protection of Trees on Development Sites
- AS 3580.14-2011: Methods for sampling and analysis of ambient air – Meteorological monitoring for ambient air quality monitoring applications
- AS/NZS 5667.1:1998 : Water quality - Sampling - Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples
- AS/NZS 14001:2004: Environmental Management Systems

State Legislation - Key Requirements	Relevance to Project
<b>Catchment Management Authorities Act 2003</b>	
The purpose of the Act is to establish Catchment Management Authorities (CMAs) as the key regional government bodies to manage the State's natural resources at the catchment level. The CMAs are responsible for developing Catchment Action Plans (CAPs) and facilitating natural resource management investment in their regions.	Each CMA (13 in NSW) provides on the ground natural resource management information and guidance and allows for community input, particularly on development applications and decisions.  As a source of information about your area, the Catchment Action Plan is likely to be very useful and can be referred to in development applications and submissions.
<b>Contaminated Land Management Act 1997</b>	
The main objective of this Act is to establish a process for investigating and remediating land areas where contamination presents a significant risk of harm to human health or some other aspect of the environment.  Under this act DECCW has the power to: <ul style="list-style-type: none"> <li>• declare an investigation site and order an investigation;</li> <li>• declare a remediation site and order remediation to take place; and</li> <li>• agree to a voluntary proposal to investigate or remediate a site.</li> </ul>	Where contaminated material is found, storage and disposal procedures are to comply with the <i>Contaminated Land Management Act 1997</i> .  <b>Duty to notify</b> The Act requires land owners and persons who carry on contaminating activities to notify the EPA of the contamination of land in certain circumstances. <b>Information</b> The EPA is required to keep a record of current and former contamination on the site. This information can then be used by councils when making planning decisions.
<b>Environmentally Hazardous Chemicals Act 1985</b>	
The Environmentally Hazardous Chemicals Act 1985 (EHC Act) provides for the assessment	Offences under the EHC Act can result in fines of individuals or corporations. Declared

State Legislation - Key Requirements	Relevance to Project
and control of chemicals and chemical wastes. The Act also includes special provisions controlling the movement, storage and disposal of 'chemical wastes'.	Chemical Wastes include (but are not limited to) polychlorinated biphenyls, that is, PCBs (existing chemicals and waste), dioxin contaminated wastes, organotin wastes, asbestos wastes, pesticide wastes (including used pesticide containers), copper/chrome/arsenic wastes, lead sludges from leaded fuel tanks and hexabenzochlorine wastes. This can be found in site contamination.
<b>Environmental Planning and Assessment Act 1979</b>	
<p>The main objective of the EP&amp;A Act is to ensure that proper management and development of land is undertaken incorporating the ecologically sustainable development principles. To achieve this, the EP&amp;A Act:</p> <p>ensures that development consent is obtained prior to construction consent.</p> <p>In assessing a development application, the consent authority must take into consideration a number of factors under section 79C of the EP&amp;A Act, including the <i>'likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality'</i>.</p>	<p>All builders are required to meet the conditions of the Environmental Planning Assessment Act, 1979 before commencing on site.</p> <ul style="list-style-type: none"> <li>this ensures compliance with planning consents and conditions associated with the consent; and</li> <li>ensures environmental assessment is undertaken prior to development.</li> </ul> <p>The Development approval will stipulate conditions on environmental issues such as tree protection, noise, air quality, heritage, contamination and public amenity.</p>
<b>Heritage Act 1977</b>	
<p>Items listed on the State Heritage Register are subject to the provisions of the <i>Heritage Act 1977</i>, which protects items of State heritage significance. Items 50 years or older are also considered heritage items and need to be managed as such.</p> <p>The Act prohibits the demolition, damage or development of or around any heritage item without approval from the Heritage Office.</p>	<ul style="list-style-type: none"> <li>all sites with existing buildings will require an assessment of Heritage value before commencing onsite; and</li> <li>heritage values may be required in the induction.</li> </ul>
<b>Land and Environment Court Act 1979</b>	
Establishes the authority of the Land and Environment Court and details the jurisdiction under 1 of 7 classes of action.	<p>All sites.</p> <p>The Land and Environment Court has the right to give directions or prosecute under other legislation.</p> <p>Power is vested in the Court to determine a wide range of environmental, development, building and planning disputes.</p>

State Legislation - Key Requirements	Relevance to Project
<b>Local Government Act 1993</b>	
<p>Works in conjunction with Environmental Planning &amp; Assessment Act 1979 (associated with planning approvals).</p> <ul style="list-style-type: none"> <li>to provide the legal framework for an effective, efficient, environmentally responsible and open system of local government in New South Wales,</li> <li>to regulate the relationships between the people and bodies comprising the system of local government in New South Wales,</li> <li>to encourage and assist the effective participation of local communities in the affairs of local government,</li> </ul>	<p>Development consent comes under the Local Government Act Approval and environmental controls are required to be submitted as part of the Development Applications.</p>
<b>National Parks and Wildlife Act 1974</b>	
<p>The object of this Act is the conservation of nature, objects, places or features of cultural value.</p>	<p>It is an offence to harm protected fauna, flora or heritage items listed in this Act. This includes harm by using a substance (e.g. poison), an animal (e.g. a hunting dog), or a gun, net or trap.</p> <p>The maximum penalty is \$11,000 or 6 months imprisonment, or both.</p> <p>It is an offence to buy, sell or possess protected fauna, although there are some exceptions to this, such as having a licence to do so.</p> <p>Animals such as snakes and possums are natives and therefore protected in Australia. Contact 131 555 to report fauna that needs to be removed from site.</p>
<b>Noxious Weeds Act 1993</b>	
<p>The objects of this Act are as follows:</p> <ul style="list-style-type: none"> <li>to reduce the negative impact of weeds on the economy, community and environment by establishing control mechanisms to: <ul style="list-style-type: none"> <li>prevent the establishment of significant new weeds, restrict the spread of existing significant weeds, and</li> <li>reduce the area of existing significant weeds, and</li> <li>provide for the monitoring of and reporting on the effectiveness of the management of weeds in NSW.</li> </ul> </li> </ul>	<p>Projects where noxious weeds have been identified as a significant problem in the area of the project, comply with council directions.</p>
<b>Ozone Protection Act 1989</b>	

State Legislation - Key Requirements	Relevance to Project
<p>This Act provides a broad power to make regulations to control or prohibit the production and use of:</p> <ul style="list-style-type: none"> <li>substances that deplete stratospheric ozone when emitted into the atmosphere and</li> <li>articles that contain or use those substances in their operation.</li> </ul>	<p>Ozone depleting substances (ODSs) are those substances which deplete the ozone layer and are widely used in refrigerators, air-conditioners, fire extinguishers, in dry cleaning, as solvents for cleaning, electronic equipment and as agricultural fumigants.</p> <p><u>Ozone depleting substances</u> include:</p> <ul style="list-style-type: none"> <li>Chlorofluorocarbons (CFCs)</li> <li><u>Halon</u></li> <li>Carbon tetrachloride (CCl<sub>4</sub>),</li> <li>Methyl chloroform (CH<sub>3</sub>CCl<sub>3</sub>)</li> <li>Hydrobromofluorocarbons (HBFCs)</li> <li>Hydrochlorofluorocarbons (HCFCs)</li> <li><u>Methyl bromide (CH<sub>3</sub>Br)</u></li> <li>Bromochloromethane (CH<sub>2</sub>BrCl)</li> </ul>
<b>Pesticides Act 1999</b>	
<p>This Act controls and regulates the use of pesticides in New South Wales. Under section 111, it is an offence to cause or permit another person to commit an offence under the Act or Regulations.</p>	<p>On Projects where use of pesticides occurs.</p> <p>The EPA may make pesticide control orders under the Act which prohibit or control the use of pesticides, or which permit the use or possession of restricted pesticides.</p>
<b>Protection of the Environment Operations Act 1997 (POEO)</b>	
<p>The Protection of the Environment Operations Act 1997 (POEO Act) is the key legislation relating to pollution in NSW. The POEO Act is regulated by both the Department of Environment Climate Change and Water NSW (DECC NSW) and local government authorities.</p> <p>The POEO Act has three main objectives:</p> <ul style="list-style-type: none"> <li>'protect, restore and enhance the quality of the environment;</li> <li>to ensure increased opportunities for public involvement and access to information; and</li> <li>to reduce risks to human health and prevent degradation of the environment.</li> </ul>	<p>The POEO Act continues the three Tier System of environmental offences established under the Environmental Offences and Penalties Act.</p> <p>Environmental protection offences and penalties, and a duty to notify of environmental harm apply to all personnel working on the project.</p> <p>Specifically:</p> <ul style="list-style-type: none"> <li><b>Water pollution</b> is identified in Section 120</li> <li><b>Air pollution</b> is identified in Section 124-126</li> <li><b>Land pollution</b> is identified in Section 116 and Section 142</li> <li><b>Noise pollution</b> is identified in Section 139 and 140.</li> </ul> <p>Tier 1 offences are the most serious offences. These include the willful or negligent disposal of waste causing or likely to cause harm to the environment; wilfully or</p>

State Legislation - Key Requirements	Relevance to Project												
<p>The mechanisms used to prevent environmental degradation include pollution prevention, cleaner production, reduction to harmless levels of discharge of substances likely to cause harm to the environment, recycling and progressive environmental improvement.</p> <p>The POEO Act also provides the framework for environmental offences.</p>	<p>negligently causing a substance to leak, spill or otherwise escape. Willful or negligent offences can attract penalties up to \$1 million and / or 7 years in jail.</p> <p>Tier 2 offences are set out according to the medium involved. The cost can be from \$250,000 in the case of a corporation and \$120,000 in the case of an individual. Further daily penalties apply to continuing offences.</p> <p>Tier 3 offences are dealt with by penalty infringement notices. These notices impose a \$1,500 fine to corporations and / or individuals.</p>												
Protection of the Environment Operations Act 1997 (POEO) Part 5.3 Water pollution													
<p>Any liquids, waste materials, etc. must be stored in a manner which minimises the potential for them to pollute stormwater or any waterway.</p> <p>This includes:</p> <ul style="list-style-type: none"> <li>storing all liquids (waste or unused) in an area where the potential for spills to enter waterways or stormwater are minimised (for example, in a controlled drainage area, on a spill control pallet or within a suitably bunded area);</li> <li>providing waste receptacles (for liquid or solid wastes) with appropriate secondary containment and lids to prevent both windblown litter and the accumulation of rain water; and</li> <li>implementing immediate spill response in the event of a leak or spill (for example, provide temporary bunding using soil, oil booms, absorbent mats, etc.) and adequate clean-up.</li> </ul>	<p>All sites.</p> <p>Stormwater Discharges</p> <p>Any water discharged to stormwater drains, must be clean and free from any contaminants including litter, chemicals, oil and grease.</p> <p>Table 4 – Clean Criteria Limits</p> <table> <tr> <th>Criteria</th><th>Acceptable Maximum Concentration</th></tr> <tr> <td>PCBs</td><td>0 mg/Kg</td></tr> <tr> <td>pH</td><td>6.5–8.5 pH units</td></tr> <tr> <td>Total Suspended Solids</td><td>30 mg/L</td></tr> <tr> <td>Oil and Grease</td><td>10 mg/L</td></tr> <tr> <td>Biochemical Oxygen Demand</td><td>20 mg/L</td></tr> </table> <p>Take all practicable steps to make sure that unforeseen events, such as spills or leaks, do not result in polluted water entering the stormwater system or groundwater. This means keeping chemicals in a properly maintain and operated bunded and covered storage area, having adequately stocked spill kits on hand and making sure staff know how to use them. Under no circumstances should personnel hose a chemical spill down the drain.</p>	Criteria	Acceptable Maximum Concentration	PCBs	0 mg/Kg	pH	6.5–8.5 pH units	Total Suspended Solids	30 mg/L	Oil and Grease	10 mg/L	Biochemical Oxygen Demand	20 mg/L
Criteria	Acceptable Maximum Concentration												
PCBs	0 mg/Kg												
pH	6.5–8.5 pH units												
Total Suspended Solids	30 mg/L												
Oil and Grease	10 mg/L												
Biochemical Oxygen Demand	20 mg/L												



State Legislation - Key Requirements	Relevance to Project
<b>Protection of the Environment Operations Act 1997 (POEO) Part 5.4 Air pollution</b>	
<p>Visual dust emitted from the project and potential air pollutants are contained so that activities do not impact on the natural environment.</p> <p>Particle dust must not exceed the appropriate criteria and do not cause an environmental or health problem. Operations are not to generate odour and cause an environmental nuisance.</p>	<p>All sites.</p> <p>Under the <i>POEO Act</i> (Sections 124-126), businesses must maintain and operate equipment and deal with materials in a proper and efficient manner to prevent air pollution at all times. Ongoing management includes:</p> <ul style="list-style-type: none"> <li>dust control on site to ensure no visual dust is emitted from the site ,.</li> <li>undertaking regular monitoring of the exhaust gases to ensure that gases meet clean criteria;</li> <li>emissions to air must also be free from particulate matter;</li> <li>ongoing management of these emissions requires fitting filters to mufflers and exhaust ducts; and</li> <li>filters must be cleaned/ changed on a regular basis.</li> </ul>
<b>Soil Conservation Act 1938</b>	
This Act provides for the conservation of soil resources and for the mitigation of erosion.	Projects involved with excavation of soil and work areas with potential for erosion.
<b>Threatened Species Conservation Act 1995</b>	
This Act provides for the conservation of threatened species, populations and ecological communities of animals and plants relating to biological diversity and the promotion of ecologically sustainable development.	<p>Where projects are working within areas with identified threatened ecological communities, preparation of recovery plans for listed threatened species, populations and ecological communities and threat abatement plans to manage key threatening processes may be required.</p> <p>This may also involve the facilitation of appropriate assessment, management and regulation of actions that may damage critical or other habitat.</p>
<b>Waste Avoidance and Resource Recovery Act 2001</b>	
<p>This Act promotes waste avoidance and resource recovery under a new framework which:</p> <ul style="list-style-type: none"> <li>promotes waste avoidance and resource recovery;</li> <li>repeals and replaces the <i>Waste Minimisation and Management Act 1995</i>;</li> <li>establishes a scheme to promote extended producer responsibility in place of industry waste reduction plans;</li> <li>fewer and simpler licensing categories for waste;</li> <li>a streamlined waste classification system;</li> </ul>	<p>All sites.</p> <p>Waste must be disposed of in accordance with the requirements of the Waste Avoidance and Resource Recovery Act 2001.</p> <p>Waste from sites is the responsibility of the builder even when it has been removed from the premises.</p>

State Legislation - Key Requirements	Relevance to Project
<ul style="list-style-type: none"> <li>new resource recovery licensing categories and resource recovery exemptions;</li> <li>clearer requirements for managing asbestos and clinical waste;</li> <li>waste is distinguished from secondary resource material; and</li> <li>waste is any material that value cannot be re used or reprocessed.</li> </ul>	Any hazardous materials (for example, oily waste, asbestos waste, contaminated materials) should be disposed of to a licensed liquid waste or hazardous waste site.
<b>Water Act 1912</b>	
This Act provides the conditions for the application of water licences or permits	Where a Project is required to obtain a water licence. This will be advised in the conditions of consent of the Development Application for a Project.

## 2. Commonwealth Legislation

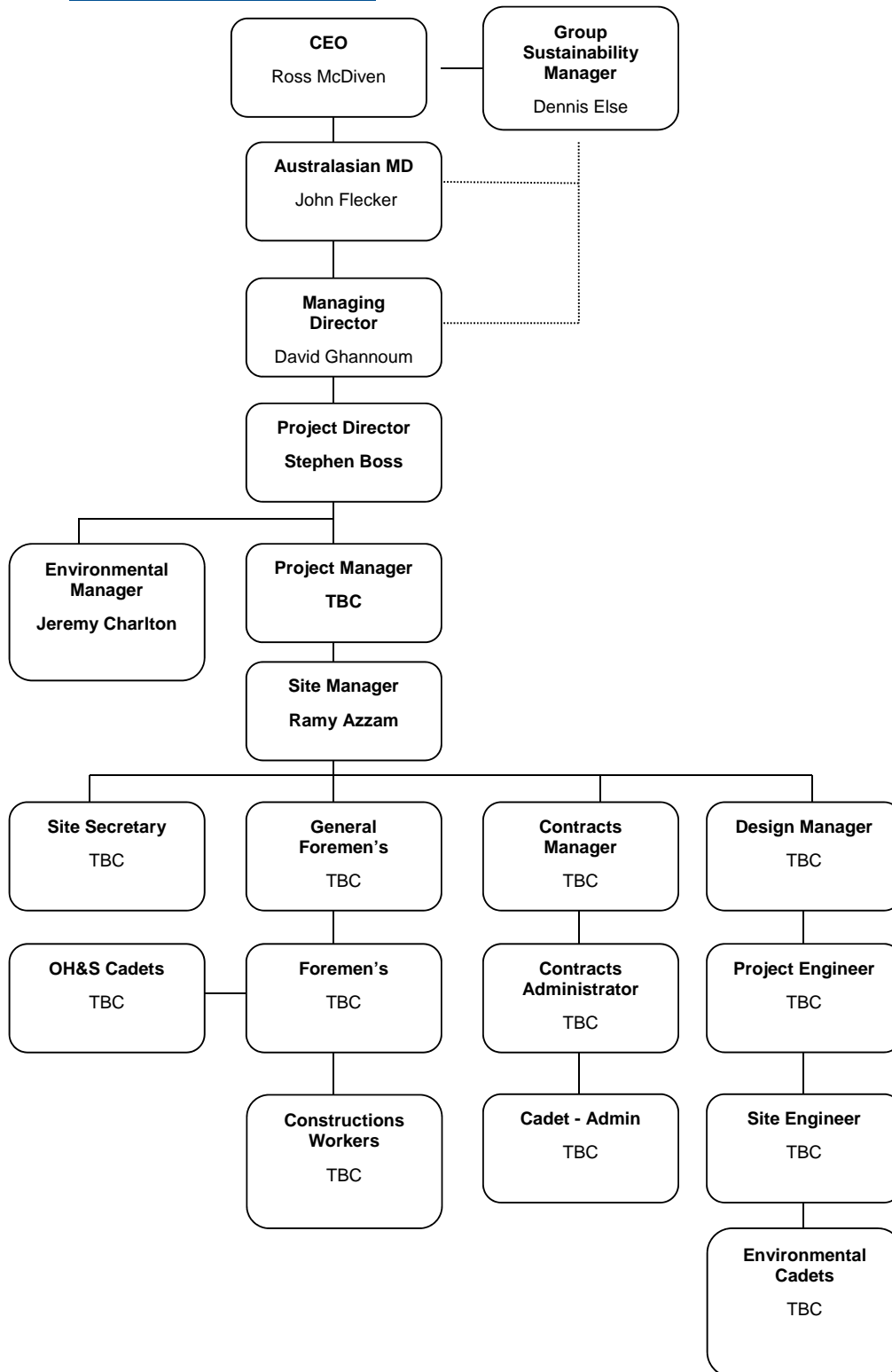
National Key Requirements	Relevance to Project
<b>Aboriginal and Torres Strait Islander Heritage Protection Act 1984</b>	
The purposes of this Act are the preservation and protection from injury or desecration of areas and objects in Australia and in Australian waters, being areas and objects that are of particular significance to Aboriginals in accordance with Aboriginal tradition.	Any projects identified in the preliminary studies and subsequent development conditions as having objects of Indigenous significance or being an area of significance.
<b>Environment Protection and biodiversity Conservation Act (EPBC Act) 1999</b>	
<p>This Act aims to protect the environment, particularly matters of National Environmental Significance where the project is located in or near:</p> <ul style="list-style-type: none"> <li>a listed World Heritage Area (e.g. Great Barrier Reef);</li> <li>a listed National Heritage Area (e.g. Kakadu or Uluru);</li> <li>Wetlands of International importance (e.g. declared Ramsar Wetland);</li> <li>Listed threatened species and communities;</li> <li>Listed migratory species;</li> <li>Protection of the environment from nuclear actions;</li> <li>Protected marine environments;</li> </ul>	<p>Any projects where the EPBC Act is triggered. This will usually be advised in the preliminary investigations.</p> <p>All items of national significance need to be reported to the Commonwealth.</p> <p>Approval permits are required to work in these areas usually after extensive environmental impact studies and recommended mitigation measures are in place.</p> <p>The Act contains compliance and enforcement mechanisms such as court injunctions, required environmental audits, strict civil and criminal penalties, remediation of environmental damage, liability of executive officers, and publicising contraventions.</p>

National Key Requirements	Relevance to Project
<ul style="list-style-type: none"> <li>Protection of the environment from coal seam gas and mining developments;</li> <li>Projects that may significantly impact on water resources;</li> </ul>	
<b>National Environment Protection Council Act 1994</b>	
<p>This Act provides for the establishment and operation of the council and provides for the adoption or implementation of major environmental protection measures.</p>	<p>Project where environmental contamination is evident and monitoring is required. The National Environmental Protection Measures provide technical guidelines on environmental monitoring, trigger values and investigation levels of potential environmental pollutants.</p>
<b>National Greenhouse Energy Reporting Act (NGERs) 2007</b>	
<p>The National Greenhouse Energy Reporting Act</p> <p>The objectives of the NGER Act are to:</p> <ul style="list-style-type: none"> <li>Provide for the reporting and dissemination of information related to greenhouse gas emissions, greenhouse gas projects, energy production and energy consumption;</li> <li>inform government policy formulation and the Australian public ;</li> <li>help meet Australia's international reporting obligations;</li> <li>assist Australian, state and territory government programs and activities;</li> <li>avoid the duplication of similar reporting requirements in the states and territories.</li> </ul>	<p>All Projects are legally required to report on their energy use. This includes subcontractors who utilize energy on BMPX sites with an annual energy usage of less than 25000kt.</p> <p>BM has developed a reporting form and guidelines available on the BM Intranet. Subcontractors are required to submit their energy use forms each month with the progress claim.</p>
<b>National Environment Protection Measures</b>	
<p>National Environment Protection Measures (NEPM) set down a series of goals or guidelines for various environmental issues. They are established at a Commonwealth level by the Australia and New Zealand Environment Conservation Council (ANZECC). However, the requirements of a NEPM may be made legislation through state requirements.</p>	<p>National Pollutant Inventory (NPI) which requires industries which use certain toxic substances to report their annual emissions and transfers to air, land and water to a national database or inventory.</p> <p>Ambient Air Quality (AAQ): sets uniform standards and monitoring and reporting protocols for certain air pollutants.</p> <p>Movement of Controlled Waste Between States and Territories (MCW):</p> <ul style="list-style-type: none"> <li>aims to minimise the impact on the environment from the movement of hazardous or controlled wastes across state and territory borders by establishing an agreed set of objectives and benchmarks for managing hazardous wastes..</li> </ul> <p>Used Packaging Materials (UPM):</p> <ul style="list-style-type: none"> <li>Instrument for managing packaging waste in Australia. Includes a self-regulatory</li> </ul>

National Key Requirements	Relevance to Project
	<p>agreement between industries in the packaging chain and the government.</p> <p>NEPM (Assessment of Site Contamination).</p>
<b>Ozone Protection and Synthetic Greenhouse Gas Management Acts</b>	
The object of the Act is to ensure that a system of controls on the manufacture, import and export of substances that deplete ozone in the atmosphere are in existence.	Sites using refrigerants and controlled substances need to ensure the subcontractor has a licence and report their usage as requested.
<b>Product Stewardship Act 2011</b>	
The object of this Act to reduce the impact that products have on the environment, and on the health and safety of human beings, throughout the lives of those products.	
<b>Water Efficiency Labelling and Standards Act 2005</b>	
<p>The objects of this Act are as follows:</p> <ul style="list-style-type: none"> <li>• to conserve water supplies by reducing water consumption;</li> <li>• to provide information for purchasers of water-use and water-saving products;</li> <li>• to promote the adoption of efficient and effective water-use and water-saving technologies.</li> </ul>	All project sites. Water efficient taps and fittings are to be WELS rated. Subcontractors are to ensure that products supplied comply with this requirement.

## Appendix 3 – Organizational Chart and Environmental Roles and Responsibilities Matrix

## Organizational Chart



Role and Responsibility	CEO	Group Sustainability Manager	Australasian/Regional Managing Director	Project Director	Environmental Manager	Project Manager	Site Manager	Design Manager	Contracts Manager/Admin	Engineer	Supervisor/foreman	Environmental Cadet	Construction Workers
Provide <b>resources</b> including personnel, time and finances to ensure compliance with Environmental legislation and the Environmental Management System.	✓	✓	✓	✓									
Ensure BM operations identifies, <b>monitors and complies with the current legislation</b> for Environmental Management	✓	✓	✓	✓	✓								
Ensure that the <b>BM Management System</b> , risk assessment and procedures reflect the requirements of current environmental, legislation, guidelines and standards		✓		✓	✓								
Identify by way of subscription, all <b>environmental legislation</b> , standards, codes of practices and guidelines pertinent to our works.					✓								
Promote a positive workplace <b>environmental culture</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Engage in <b>risk workshops</b> to identify, assess and determine appropriate controls for all potential risk and opportunity where required.				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Establish realistic project specific measurable <b>targets</b> . Monitor and report.					✓	✓	✓						
Have a working <b>knowledge</b> of the BM Environmental Management System	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Complete project specific <b>environmental documents</b> utilising templates.					✓	✓	✓					✓	
Establish the environmental requirements for the projects <b>site establishment and planning</b> requirements					✓	✓	✓					✓	
Establish a schedule of <b>environmental legislation</b> , Communicate and monitor for change.					✓								
Establish records filing system and maintain <b>environmental records</b>												✓	
Establish and maintain <b>environmental registers including legislation, training and quantifiable targets</b>					✓							✓	
Establish and organise the environmental component of the <b>induction programme</b>					✓		✓					✓	
Identify and assess <b>competency</b> of employee's incl. any unforeseen workforce requirements. Undertake training needs analysis and facilitate any <b>training</b> requirements				✓	✓	✓	✓						
Determine and assess requirements for <b>environmental monitoring</b> (i.e. noise, air and dust) and implement. Review results to determine compliance.					✓		✓					✓	
<b>Assess subcontractor's</b> ability to comply with the project environmental requirements and environmental contract requirements.					✓	✓	✓		✓			✓	
Provide SC's with relevant <b>environmental documents</b> templates, EMPS,EWMS relevant parts of the site specific BM CEMP												✓	
Obtain <b>Environmental documentation</b> from each SC prior to commencing. Register and review adequacy and request changes prior to accessing the site					✓		✓					✓	
<b>Monitor subcontractors activities</b> and report on performance against EWMS's and EMP					✓		✓				✓	✓	
Conduct <b>inductions</b> for all persons attending site and maintain records												✓	✓
Complete an <b>Environmental Aspects, Impacts and Risk Assessment</b> at commencement of the project and update as required to reflect current site conditions					✓	✓	✓					✓	



Role and Responsibility	CEO	Group Sustainability Manager	Australasian/Regional Managing Director	Project Director	Environmental Manager	Project Manager	Site Manager	Design Manager	Contracts Manager/Admin	Engineer	Supervisor/foreman	Environmental Cadet	Construction Workers
Identify and maintain a register of all onsite <b>hazardous materials and dangerous goods</b>												✓	
Obtain <b>MSDS's</b> no greater than 5 yrs old and provide adequate hazardous substances and dangerous goods <b>storage facilities</b> onsite							✓				✓	✓	✓
Conduct <b>Environmental inspections</b> distribute for action, obtain sign-offs from SC and close out				✓								✓	
Attend projects to <b>monitor and discuss Environmental issues</b> with project management, supervisors and workers		✓	✓	✓	✓								
Monitor, resolve and prevent significant <b>Environmental issues</b> and share lessons learnt	✓	✓	✓	✓	✓								
Schedule and conduct environmental <b>audits</b> of Subcontractors. Distribute report and monitor status.					✓							✓	
Conduct Environmental <b>consultation and communication</b> on environmental matters where required	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Implement <b>emergency response procedures and outlined in the site Emergency Response Plan,</b>					✓	✓					✓	✓	✓
Record, report and investigate environmental <b>incidents</b> . Monitor corrective actions and distribute any lessons learnt				✓	✓	✓	✓					✓	
Report and distribute <b>non-conformances</b> and implement corrective and preventative actions. Review effectiveness of corrective actions.				✓	✓	✓				✓	✓	✓	✓
Implement <b>environmental sub-plans</b> and procedures				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Prepare <b>monthly report</b> on the status of the environmental management system						✓	✓					✓	
Review <b>Environmental performance</b> including adequacy of resources	✓	✓	✓	✓	✓	✓	✓					✓	
Obtain feedback for both internal/external training conducted and evaluate the effectiveness of the <b>training programs</b>		✓			✓								
<b>Review</b> environmental objectives and targets annually and provide clear direction of the Environmental management system for the next 12 months.		✓	✓	✓	✓								
Acquire and disseminate <b>Environmental and related information</b> incl. alerts and lessons learnt		✓			✓								
<b>Review procedures and forms</b> resulting from any changes in legislation, regulation, standards, codes of practices and incidents.					✓								
Attend <b>collaborative post project review</b> meeting to assess environmental performance, identify and document lessons learnt					✓	✓	✓	✓			✓	✓	✓

Project: – Energy from Waste Project		New <input checked="" type="checkbox"/> Revised <input type="checkbox"/>		Company Name: Brookfield Multiplex Constructions Pty Ltd	
<b>Update the ERR as a way of analysing and evaluating further risk</b> New Date: TBA    Revised Date: to occur quarterly    Person responsible for revision: <b>Jeremy Charlton</b>					
<b>Scope of Works</b> <p>The proposed development, involves the construction and operation of an ‘Energy from Waste’ electricity generation plant, which will allow for unsalvageable and uneconomic residue waste from the Genesis Material Processing Centre (MPC) and Waste Transfer Station (WTS) to be used for generation of electrical power. The EFW Plant is proposed to be located on Lots 2 and 3, DP 1145808.</p> <p>This is a State Significant Project (SSD) under Schedule 1 of the State Environmental Planning Policy (State and Regional Development) 2011 Clause 20 <i>Electricity generating works and heat or co-generation</i>.</p> <p>This Project seeks to construct an Environmentally Sustainable Business Precinct centered on a green electricity generating facility using fuel that is currently being disposed to landfill. This will consist of 8 structures occupying 6 hectares.</p>					
<b>Work Activity or Task Covered by this ERA: Site establishment, excavation and service relocations</b>					
Expected Start Date: Mid 2015		Expected Completion: 2018		Person Responsible: Ramy Azzam (Site Manager)	Prepared by: Jeremy Charlton (Environmental Coordinator NSW)
				Date: Jan 2015 Review Date: TBA	
Specify Regulations and include updated legislation and permits <ul style="list-style-type: none"> <li>Protection of the Environment Operations Act and Regulations 1997</li> <li>Environmentally Hazardous Chemicals Act 1985</li> <li>Protection of the Environment Administration Act and Regulations 1997</li> <li>Waste Avoidance and Resource and Recovery Act 2001</li> <li>Contaminated Land Management Act 1997</li> <li>Environmental Planning and Assessment Act 1979</li> <li>State Environmental Planning Policy (SEPP) 55 ‘Remediation of Land’</li> <li>National Environment Protection (Assessment of Site Contamination) Measure 1999</li> <li>Heritage Act 1997</li> <li>Local Government Act 1993</li> <li>Occupational Health and Safety Act 1983</li> <li>Soil Conservation Act 1983</li> </ul>				ERA Reviewed by: Site Manager and or Project Manager	Review Date: TBA

Must Complete All Sections

# Appendices

Risk Assessment Matrix							Risk Class		
Consequence		Likelihood					High / 1-6	Those risks with a relatively high likelihood and large impact	
		A. Almost certain	B. Likely	C. Possible	D. Unlikely	E. Rare			
		5. Extraordinary	1	2	4	7			11
		4. Major	3	5	8	12			16
		3. Moderate	6	9	13	17			20
		2. Minor	10	14	18	21			23
		1. Insignificant	15	19	22	24	25	Low / 16-25	Those risks with a relatively low likelihood and impact.
Consequence		Description					Likelihood	Description	
Extraordinary		Catastrophic impact on key performance indicators. Major environmental disaster that is severe and likely to spread beyond the immediate site and will remain a serious problem over a prolonged period (greater than 1 year)					Almost Certain	The event/impact is common and expected to occur in most circumstances <i>(will occur regularly / 10 times for year)</i>	
Major		Major negative impact on key performance indicators. An environmental impact that is severe and likely to impact beyond the immediate site and remain a problem in the medium term (less than one year).					Likely	The event/impact has happened before and will probably occur again <i>(will occur often / 5-10 times per year)</i>	
Moderate		Significant negative impact on key performance Indicators. Off-site releases with no detrimental effects. Environmental impact that localised and has short term effects (less than one month).					Possible	This event/impact could occur at some time <i>(is likely to occur few / 2-3 times per year)</i>	
Minor		Minor negative impact on key performance indicators. On-site release immediately contained, a minor and transient environmental impact.					Unlikely	This event/impact is not likely to occur <i>(is unlikely to occur more than once per year)</i>	
Insignificant		Insignificant negative impact on key performance indicators. No environmental impact occurring					Rare	This event/impact may occur in exceptional circumstances only <i>(is unlikely to occur during a year)</i>	

# Appendices

Indirect Impacts for consideration:

Water Quality	Pollution / contamination of atmospheric, ground or surface water bodies through degradation of water quality.
Erosion & Sediment Control	Soil loss to environment causing loading and potentially affecting water quality subsequently impacting ecological values.
Site Contamination	Mobilisation of chemicals above the level which they are normally found in nature potentially having an adverse affect on the surrounding environment.
Air Quality	Pollution/ contamination of atmosphere from dust, exhaust emissions, odour and air-born chemicals.
Noise & Vibration	Disturbance/ Nuisance caused from 'unreasonable' or excessive levels of noise to public/ environment.
Hazardous Chemicals	An acute event where hazardous chemicals have the potential to be spilt and released to the environment causing adverse effects.
Cultural Heritage	Damage or disturbance to archaeological/cultural artefacts including skeletal remains, shell middens or other artefacts.
Flora and Fauna	Direct / Indirect impact (stress- death) on an individual or species of flora/ fauna.
Waste Management	Degradation of aesthetic values due to ineffective waste management. Build up of chemical and organic waste.

# Appendices

	Activity	Hazard/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Responsibility	Close Out Date
<b>1.0</b>	<b>Early Works / Site Establishment</b>								
	<b>YETO TO COMMENCE</b>								
1.1	Installation of site shed; On site traffic	Generation of Dust	Air pollution	A	2	10	<p>Refer to the Air Quality Sub-plan in CEMP</p> <p>Detail includes:</p> <ul style="list-style-type: none"> <li>Wet down exposed areas.</li> <li>Visual dust monitoring.</li> <li>Induct all construction staff in dust control measures.</li> <li>Dampen exposed areas and access tracks as necessary.</li> <li>Use hand-held water sprays as necessary.</li> <li>All vehicles leaving the site shall enter and exit the site via cattle grid and or temporary sealed roads.</li> <li>Place shade cloth/hoarding around the site perimeter.</li> <li>Where a complaint is received (re dust) visual monitoring will be undertaken and activities will be reviewed.</li> </ul>	Excavation Subcontract or Services Subcontract or All vehicles on site BMPX	Yet to commence
1.2	Installation of site sheds; On site traffic.	Generation of Noise	Noise pollution	A	3	9	<p>Refer to the Noise Sub-Plan in CEMP.</p> <p>Detail includes:</p> <ul style="list-style-type: none"> <li>Conduct noise monitoring if required by Council and notify Site Manager when noise peaks.</li> <li>Complete a dilapidation report to adjoining property.</li> <li>Limit hours of work to permit hours.</li> <li>Maintain machinery and use standard noise mufflers.</li> <li>Monitor equipment if there is excessive vibration.</li> <li>Erect signs stating permit hours.</li> <li>Identify plant and equipment generating excessive noise.</li> <li>Communicate and notify nearby residents and owners if peaks in noise will occur.</li> <li>Respond to community complaints as per the Communication Management Plan.</li> </ul>	Excavation Subcontract or Services Subcontract or All vehicles on site BMPX	Yet to commence

# Appendices

	Activity	Hazard/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Responsibility	Close Out Date
1.3	Operation of Machinery	Fumes	Air Pollution	A	2	10	<p>Refer to the Air Quality Sub-Plan in CEMP.</p> <p>Detail includes:</p> <ul style="list-style-type: none"> <li>All construction plant and equipment with access to the site will be properly maintained.</li> <li>Equipment emitting visible smoke for longer than ten seconds will be taken out of service.</li> <li>All vehicle wheels shall be cleaned before leaving the site.</li> </ul>	Excavation Subcontract or Services Subcontract or BMPX	Yet to commence
1.4	Mobile plant refuelling	Accidental discharge of hydrocarbons	Contamination of soils, groundwater, water courses	C	3	13	<p>Refer to the Contaminated Land Management Sub Plan and the Water Quality Management Sub Plan.</p> <p>Detail includes:</p> <ul style="list-style-type: none"> <li>All chemicals and dangerous goods used on site will require a safety data sheet.</li> <li>Register of Safety Data Sheets and include information on cleaning up spills.</li> <li>Store chemicals in bunds capable of storing 110% of the container volume.</li> <li>Construct bund walls and floors with impervious materials and in accordance with legislation.</li> <li>Establish spill kits on site and make readily available.</li> <li>Conduct tool box talks in how to use spill kits.</li> <li>Cover bunded containers to reduce the water entering bund.</li> <li>Carry out fuelling of vehicles or construction plant in areas from which fuel or oil will not be discharged to waters/street gutters or stormwater drainage systems.</li> <li>Clean up any chemical or fuel spills as quickly as possible and place in suitable receptacles for reclamation or disposal, in a manner that does not cause pollution. Use spill kits on site.</li> <li>Trucks that leak any sort of mechanical fluid will not be permitted on or adjacent to the site.</li> </ul>	Excavation Subcontract or Servicing Subcontract or BMPX	Yet to commence

# Appendices

	Activity	Hazard/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Responsibility	Close Out Date
							<ul style="list-style-type: none"> <li>Oil contaminated stormwater will be disposed of to a licensed disposal site.</li> <li>Keep minimal volumes of fuel on site.</li> </ul>		
1.5	Removal of /protection of flora and fauna due to site establishment activities.	Damage to flora and fauna	Loss of Biodiversity	C	4	8	<p>Refer to the Flora and Fauna Management Sub-Plan. Detail includes:</p> <ul style="list-style-type: none"> <li>There are protected bats and trees on this project. These areas are clearly defined protected areas with exclusion zones and secure fencing around areas of significant vegetation that is to be retained. This is marked on Environmental Control Plan.</li> <li>Details to be included in the project induction.</li> <li>In the event that further threatened species or endangered ecological communities are discovered, stop work and report to the Site Manager.</li> <li>Personnel are not to handle fauna. Report to Site Manager for further instructions.</li> <li>Do not store material, machinery, fuel or waste near protected trees.</li> <li>Any works required to trees will need to be completed by a tree surgeon/Arborist/Fauna specialist as required.</li> </ul>	Excavation Subcontractor or Services Subcontractor or BMPX All other subcontractors	Yet to commence
1.6	Site establishment activities - deliveries	Packaging generating excess waste	Waste to landfill	B	3	9	<p>Refer to the Waste Management Sub-Plan in CEMP</p> <p>Detail includes:</p> <ul style="list-style-type: none"> <li>Ensure correct quantities are delivered</li> <li>Avoid, Reduce, Reuse and Recycle waste.</li> <li>Suppliers to take back packaging before leaving site</li> <li>If not possible, dispose as construction waste for recycling off site.</li> </ul>	All	Yet to commence



# Appendices

	Activity	Hazard/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Responsibility	Close Out Date
<b>2.0</b>	<b>Excavation – service relocations</b>								
	<b>YET TO COMMENCE</b>								
2.1	Excavation of soil and exposure of soil	Generation of Dust and fumes	Nuisance to nearby property owners; Aesthetic impact; Reduce Visibility Air quality.	B	3	9	<p>Refer to the Air Quality Sub-plan in CEMP</p> <p>Detail includes:</p> <ul style="list-style-type: none"> <li>Wet down exposed areas.</li> <li>Visual dust monitoring.</li> <li>Induct all construction staff in dust control measures.</li> <li>Dampen exposed areas and access tracks as necessary.</li> <li>Use hand-held water sprays as necessary.</li> <li>All vehicles leaving the site shall enter and exit the site via cattle grid and or temporary sealed roads.</li> <li>Place shade cloth/hoarding around the site perimeter.</li> <li>Where a complaint is received (re dust) visual monitoring will be undertaken and activities will be reviewed.</li> </ul>	Civil Works Subcontract or Services Subcontract or BMPX	Yet to commence
2.2	Excavating of soil and rock	Generation of noise	Annoyance to local community	C	3	13	<p>Refer to the Noise Sub-Plan in CEMP.</p> <p>Detail includes:</p> <ul style="list-style-type: none"> <li>Conduct noise monitoring if required by Council and notify Site Manager when noise peaks.</li> <li>Complete a dilapidation report to adjoining property prior to works commencing.</li> <li>Limit hours of work to permit hours.</li> <li>Maintain machinery and use standard noise mufflers.</li> <li>Monitor equipment if there is excessive vibration.</li> <li>Erect signs stating permit hours.</li> <li>Identify plant and equipment generating excessive noise.</li> <li>Communicate and notify nearby residents and owners if peaks in noise will occur.</li> <li>Obtain approval if required to work outside specified hours through Council.</li> <li>Respond to community complaints as per the</li> </ul>	Civil Works Subcontract or Services Subcontract or BMPX	Yet to commence

# Appendices

	Activity	Hazard/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Responsibility	Close Out Date
							Communication Management Plan.		
2.3	Stockpiling soil	Erosion and Sediment run-off	Storm water pollution	C	3	13	<p>Refer to the Erosion and Sediment Control Sub-Plan in CEMP.</p> <p>Detail includes:</p> <ul style="list-style-type: none"> <li>• Display Environmental Controls Plan on notice board.</li> <li>• Minimise disturbance to drainage lines.</li> <li>• Install sediment control barriers/filtration on local drains.</li> <li>• Monitor and clean barriers and traps weekly.</li> <li>• Install sediment control fencing around site boundary lines where run-off may occur.</li> </ul>	Excavation Subcontract or Services Subcontract or BMPX	Yet to commence
2.4	Stockpiling of soil	Asbestos in soils (cement pipes, pits, conduits, insulation coating on pipelines and underground tanks, or as fragments in the soil.	Potentially long term health effects if airborne fibres are breathed into lungs	C	4	8	<p>Refer to the Contaminated Land Management Sub-plan:</p> <p>Detail includes:</p> <ul style="list-style-type: none"> <li>• If asbestos is suspected or identified on a site, inform the site supervisor immediately.</li> <li>• A qualified hygienist must carry out an assessment of the material is unknown or classified as friable.</li> <li>• If material is classified as friable it must be removed by a Work Cover licensed asbestos removalist.</li> <li>• Known locations are to be marked on the Environmental Controls Plan.</li> <li>• The Asbestos management plan is to be followed.</li> </ul>	Excavation Subcontract or Services Subcontract or BMPX	Yet to commence
2.5	Earthworks/service relocations	Contaminated soils discovered i.e. Acid Sulphate Soils, Hydrocarbons or hazardous materials	Health effects to ecosystem and human environment Potential fines and prosecution if not appropriately	C	4	8	<p>Refer to Contaminated Land Management Sub-Plan:</p> <p>Detail includes:</p> <ul style="list-style-type: none"> <li>• If contaminated soils are suspected (i.e. hydrocarbons or ASS/PASS inform the site supervisor immediately. An unexpected finds protocol is in place.</li> <li>• A qualified environmental scientist must carry out an assessment of the material including taking samples for testing.</li> <li>• Material must be classified according to the results and</li> </ul>	Excavation Subcontract or Services Subcontract or BMPX Environment	Yet to commence

# Appendices

	Activity	Hazard/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Responsibility	Close Out Date
			dealt with				<p>recommendations of the consultant. Must be treated and or removed by qualified and or licensed professionals.</p> <ul style="list-style-type: none"> <li>Subcontractors to be informed if working in the area.</li> <li>Appropriate PPE must be worn.</li> <li>Waste classification to be provided to the waste removal transporter and waste facility.</li> <li>Once contaminated material is removed it must be checked again by consultant who will take further samples and deem the area cleared.</li> </ul>	al Consultant	
2.6	Excavation below water table – unlikely to occur	Discharge of polluted stormwater from site	Contamination of turbid water to storm water	C	3	13	<p>Prepare a Dewatering Plan. In the event that groundwater is encountered:</p> <ul style="list-style-type: none"> <li>Obtain permission from authorities before pumping water out.</li> <li>Set up tank/pond to allow settlement of turbid water;</li> <li>In the first instance, test water through a certified laboratory before pump out (potential for zinc and arsenic, in ground water);</li> <li>Monitor water for turbidity and PH before pumping out;</li> <li>Record in site inspection report;</li> <li>Visually check pump out area for turbidity;</li> </ul>	Civil Works Subcontract or Piling Subcontractor BMPX	Yet to commence
2.7	Plant refuelling	Discharge of hydrocarbons	Contamination of soils, groundwater, water courses	C	3	13	<p>Refer to the Contaminated Land Management Sub Plan and the Water Quality Management Sub Plan.</p> <p>Detail includes:</p> <ul style="list-style-type: none"> <li>All chemicals and dangerous goods used on site will require a material safety data sheet.</li> <li>Register of Material Safety Data Sheets and include information on cleaning up spills.</li> <li>Store chemicals in bunds capable of storing 110% of the container volume</li> <li>Construct bund walls and floors with impervious materials and in accordance with legislation.</li> </ul>	Civil Works Subcontract or Services Subcontract or BMPX	Yet to commence

# Appendices

	Activity	Hazard/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Responsibility	Close Out Date
							<ul style="list-style-type: none"> <li>Establish spill kits on site and make readily available</li> <li>Conduct tool box talks in how to use spill kits.</li> <li>Cover bunded containers to reduce the water entering bund.</li> <li>Carry out fuelling of vehicles or construction plant in areas from which fuel or oil will not be discharged to waters/street gutters or stormwater drainage systems.</li> <li>Clean up any chemical or fuel spills as quickly as possible and place in suitable receptacles for reclamation or disposal, in a manner that does not cause pollution.</li> <li>Trucks that leak any sort of mechanical fluid will not be permitted on or adjacent to the site.</li> <li>Oil contaminated stormwater will be disposed of to a licensed disposal site.</li> <li>Keep minimal volumes of fuel on site.</li> </ul>		
2.8	Dewatering the site; Pumping turbid water into stormwater. Pumping water to dispersion pit	Discharge of polluted stormwater from site	Water pollution	C	3	13	<p>Refer to the Water Quality Management Sub-plan.</p> <p>Detail includes:</p> <ul style="list-style-type: none"> <li>Divert all clean water away from site into stormwater;</li> <li>Divert all site runoff into sedimentation pond</li> <li>Monitor water for turbidity and PH;</li> <li>Test and adjust as required;</li> <li>Record in site inspection report;</li> <li>In the rare instance that there is so much water on site that dewatering to the stormwater system is required, obtain permission from authorities prior to dewatering.</li> </ul>	Civil Works Subcontract or Services Subcontract or BMPX	Yet to commence

# Appendices

	Activity	Hazard/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Responsibility	Close Out Date
<b>3.0</b>	<b>Construction – Structure – formwork /concrete/services/ YET TO COMMENCE</b>								
3.1	Installation of formwork	Offcuts/formwork not recycled	Waste to landfill	C	3	13	Refer to the Waste Management Sub-Plan in CEMP Detail includes: <ul style="list-style-type: none"> <li>Chain of custody forms where 'As Built' design</li> <li>Avoid, Reduce, Reuse and Recycle waste.</li> <li>Allocate storage areas for the onsite recycling,</li> <li>Use sustainably sourced supply formwork.</li> </ul>	Concreting Subcontract or BMPX	Yet to commence
3.2	Concreting activities	Excess concrete wastage	Waste to landfill	C	3	13	Refer to the Waste Management Sub-Plan in CEMP Detail includes: <ul style="list-style-type: none"> <li>Ensure correct quantities are delivered</li> <li>Avoid, Reduce, Reuse and Recycle waste.</li> <li>Ensure trays and storage areas for the onsite recycling,</li> <li>Recrush concrete if possible and use as road base in loading docks and entry exit points</li> <li>If not possible, dispose as construction waste for recycling off site.</li> </ul>	Concreting Subcontract or BMPX	Yet to commence
3.3	Use of concrete static line	Discharge of contaminated water due to blow out of static line. Or overflowing slurry.	Pollution to local gutters/drains and stormwater system.	C	4	8	Refer to the Water Quality Management and Erosion and Sediment Control Sub-Plans: Detail includes: <ul style="list-style-type: none"> <li>Check certification of static line monthly, before pour complete pre checklist of pipeline and clips.</li> <li>Ensure concrete trays are in place prior to pours</li> <li>Ensure collection tray/plastic placed under the hopper to reduce pollution (oils, slurry)</li> <li>Preferably locate machinery away from drains.</li> <li>Protect all drains in vicinity with appropriate spill controls.</li> </ul>	Concreting Subcontract or BMPX	Yet to commence

# Appendices

	Activity	Hazard/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Responsibility	Close Out Date
							<ul style="list-style-type: none"> <li>Have spill kit located nearby and fully stocked</li> </ul>		
3.4	Rio and steel fixing	Offcuts wastage -	Waste to landfill	C	3	13	<p>Refer to the Waste Management Sub-Plan in CEMP</p> <p>Detail includes:</p> <ul style="list-style-type: none"> <li>Ensure correct quantities are delivered</li> <li>Avoid, Reduce, Reuse and Recycle waste.</li> <li>Ensure storage areas are allocated for the onsite recycling (SC bins),</li> <li>If recycling not possible, dispose as construction waste for recycling off site.</li> </ul>	Steelfixing Subcontract or BMPX	Yet to commence
3.5	Operation of Machinery/construction activities	Fumes concrete dust/ dirt /	Air pollution	C	3	13	<p>Refer to the Air Quality Sub-Plan in CEMP.</p> <p>Detail includes:</p> <ul style="list-style-type: none"> <li>All construction plant and equipment with access to the site will be properly maintained.</li> <li>Equipment emitting visible smoke for longer than ten seconds will be taken out of service.</li> <li>Keep floor areas clean from dust and mud;</li> <li>Keep site entrance and exit free of mud and dirt;</li> <li>Wet down areas before cleaning the site.</li> <li>All vehicle wheels shall be cleaned before leaving the site where they have been polluted by site activities.</li> <li>Speed limits set for onsite plant and equipment movements to reduce dust generation.</li> </ul>	All Subcontractors BMPX	Yet to commence

# Appendices

	Activity	Hazard/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Responsibility	Close Out Date
3.6	Operation of plant and equipment	Discharge of hydrocarbons due to the operation / failure	Contamination of soils, groundwater & water courses	C	4	8	<p>Refer to the Environmental Emergency Plan and implement in an event of a chemical spill.</p> <p>Detail includes:</p> <ul style="list-style-type: none"> <li>All chemicals and dangerous goods used on site will require a material safety data sheet.</li> <li>Register of Material Safety Data Sheets and include information on cleaning up spills.</li> <li>Store chemicals in bunds capable of storing 110% of the container volume</li> <li>Construct bund walls and floors with impervious materials and in accordance with legislation.</li> <li>Establish spill kits on site and make readily available</li> <li>Conduct tool box talks in how to use spill kits.</li> <li>Cover bunded containers to reduce the water entering bund.</li> <li>Carry out fuelling of vehicles or construction plant in areas from which fuel or oil will not be discharged to waters/street gutters or stormwater drainage systems.</li> <li>Clean up any chemical or fuel spills as quickly as possible and place in suitable receptacles for reclamation or disposal, in a manner that does not cause pollution.</li> <li>Trucks that leak any sort of mechanical fluid will not be permitted on or adjacent to the site.</li> <li>Oil contaminated stormwater will be disposed of to a licensed disposal site.</li> <li>Keep minimal volumes of fuel on site</li> </ul>	All Subcontractors  BMPX	Yet to commence

# Appendices

	Activity	Hazard/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Responsibility	Close Out Date
3.7	Operation of plant and equipment	Noise and Vibration Generation	Noise pollution	C	3	13	<p>Refer to Noise Management Sub Plan: Detail includes:</p> <ul style="list-style-type: none"> <li>All construction work to take place as determined by local council conditions.</li> <li>Noise monitoring will be undertaken if required by council conditions or if complaints are received due to unreasonable levels of noise in a noise sensitive area.</li> <li>Identify plant and equipment exceeding 75-db (A) and implement strategies to minimise noise levels.</li> <li>Assess items or adjoining properties that may be affected by construction activity and manage risk via monitoring.</li> <li>Prepare a communication plan/strategy when work is outside normal operating hours or vibration is a likely for extended periods</li> </ul>	All Subcontractors BMPX	Yet to commence
3.8	All construction activities on-site	Sediment into stormwater from construction activities	Contamination of storm water.	C	3	13	<p>Refer to the Erosion and Sediment Control Plan Detail includes:</p> <ul style="list-style-type: none"> <li>Place geo tech fabric over drains, Geo Tech sock on the large stormwater drains.</li> <li>Check and maintain silt socks and protective fabric around the site.</li> <li>Regularly maintain controls and dispose of waste appropriately</li> </ul>	All Subcontractors BMPX	Yet to commence



# Appendices

	Activity	Hazard/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Responsibility	Close Out Date
3.9	All Construction activities on site	Waste Generation	Waste landfill;	C	3	13	<p>Refer to the Waste Management Sub-Plan</p> <p>Detail includes:</p> <ul style="list-style-type: none"> <li>• Avoid, Reuse and Recycle waste .</li> <li>• Allocate storage areas for the on site recycling,</li> <li>• Return pallets and reels to the suppliers.</li> <li>• Provide bins for office recycling including paper, cardboard, glass, toner cartridges</li> <li>• Use licensed contractors to remove construction waste</li> <li>• Waste disposal documentation eg disposal receipts, greenstar reports.</li> </ul>	All Subcontractors BMPX	Yet to commence
3.10	Use of trade waste washout	Liquid waste generation if washouts not maintained properly	Water pollution	C	3	13	<p>Refer to the Water Quality Management and Erosion and Sediment Control Sub-Plans:</p> <p>Detail includes:</p> <ul style="list-style-type: none"> <li>• Regular maintenance of trade washout system (to be included in plumbers scope of works)</li> <li>• Ensure trade waste washout is properly installed in accordance with the trade waste procedure.</li> <li>• Testing water quality at regular intervals to ensure that they meet water quality parameters.</li> <li>• Ensuring that trades using washout don't dump excess product into the washout creating blockages.</li> </ul>	All Subcontractors BMPX Plumbers	Yet to commence
4.0	<b>Finishing Works</b> <b>YET TO COMMENCE</b>								

# Appendices

	Activity	Hazard/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Responsibility	Close Out Date
4.1	Painting	Generation of contaminated water	Pollution to sewer system; Pollution to stormwater system.	C	3	13	<p>Refer to the Water Quality Management Sub-Plan and the Contaminated Land Management Plan.</p> <p>Detail includes:</p> <ul style="list-style-type: none"> <li>Paint contractor to provide a Environmental Work Method Statement.</li> <li>Apply for a Trade Waste Permit before discharge to sewer.</li> <li>Paint Contractor to remove all paint washout by a liquid waste removalist company if a Trade Waste Permit is not in place.</li> <li>Store paints and chemicals in a bunded area where they can be contained if spills occur</li> <li>For solvent based paints, return solvent to a solvent recycling depot</li> <li>Store paints and chemicals in a bunded area where they can be contained if spills occur</li> <li>Keep Material Safety Data Sheets (MSDSs) on site at all times</li> <li>Keep clearly marked booms and/or absorbent material on site to contain spills if they occur</li> <li>If a spill occurs, stop the source, contain it, clean up in accordance with the MSDSs and notify relevant authorities</li> <li>Do not undertake paint spraying activities in adverse weather conditions.</li> </ul>	<p>Painting Sub-Contractor</p> <p>BMPX</p>	Yet to commence
4.2	Plaster boarding, block laying, rendering, waterproofing, concreting	Generation of contaminated water	Water pollution	C	3	13	<ul style="list-style-type: none"> <li>Wet trades to use the triple rinse system, to be installed and maintained by plumbing sub-contractor.</li> <li>Excess waste e.g. rendering cement is not to be dumped into the trade waste washout. It is to be dried and placed in the co-mingled waste bin as solid waste.</li> </ul>	<p>Finishing works Subcontractors</p> <p>BMPX</p>	Yet to commence

# Appendices

	Activity	Hazard/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Responsibility	Close Out Date
4.3	Use of crane, fork lift, mobile scissor lifts, concrete pump, trucks.	Generation of Dust and fumes	Air pollution	C	3	13	<p>Refer to the Air Quality Management Sub-Plan.</p> <p>Detail includes:</p> <ul style="list-style-type: none"> <li>Keep floor areas clean from dust and mud;</li> <li>Keep site entrance and exit free of mud and dirt;</li> <li>Wet down areas before cleaning the site.</li> </ul>	<p>All Subcontractors</p> <p>BMPX</p>	Yet to commence
4.4	All construction activities on-site	Erosion and Sediment into stormwater	Contamination of turbid water to storm water; Contamination of storm water.	C	3	13	<p>Refer to the Erosion and Sediment Control Plan.</p> <p>Detail includes:</p> <ul style="list-style-type: none"> <li>Install sediment fences around upper parts of the site and other areas where sediment has the potential to move before commencing landscaping;</li> <li>Install sediment fences around the toe of stockpiles where material from the stockpile has the potential to move;</li> <li>If cutting pavement ensure all necessary environmental controls are in place to prevent contaminated water run off into stormwater drains;</li> <li>Organise street sweeping.</li> <li>Place geo tech fabric over drains, Geo Tech sock on the large stormwater drains .</li> <li>Check and maintain geotec socks and fabric around the site.</li> </ul>	<p>All Subcontractors</p> <p>BMPX</p>	Yet to commence
4.5	All construction activities on-site	Sediment into stormwater from construction activities	Contamination of storm water.	C	3	13	<ul style="list-style-type: none"> <li>Place geo tech fabric over drains, Geo Tech sock on the large stormwater drains .</li> <li>Check and maintain geotec socks and fabric around the site.</li> </ul>	<p>All Subcontractors</p> <p>BMPX</p>	Yet to commence
4.6	All Construction activities on site	Waste Generation	Waste to landfill;	C	3	13	<ul style="list-style-type: none"> <li>Prepare a Waste Management Plan for the site. Avoid, Reuse and Recycle waste .</li> <li>Allocate storage areas for the on site recycling,</li> <li>Return pallets and reels to the suppliers.</li> </ul>	<p>All Subcontractors</p>	Yet to commence

# Appendices

	Activity	Hazard/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Responsibility	Close Out Date
							<ul style="list-style-type: none"> <li>Provide bins for office recycling including paper, cardboard, glass, toner cartridges</li> <li>Use licensed contractors to remove construction waste.</li> </ul>	BMPX	
4.7	Landscaping	Sediment into stormwater from landscaping activities	Water pollution	C	3	13	<ul style="list-style-type: none"> <li>Ensure sediment control measures are in place until all vegetation is established</li> <li>Regularly check all sediment control structures to ensure they are working effectively</li> <li>Do not disturb the nature strip between the site and the roadway</li> <li>Do not locate stockpiles within 2 metres of hazard areas such as spoon drains or areas of high flow</li> <li>Damp down stockpiles – hand spraying as required</li> <li>Cover stockpiles as needed to minimise dust</li> <li>Use landscaping materials that are free from weeds and weed seeds</li> <li>Retain top soil and reuse in project landscaping.</li> <li>Separate toolbox talk conducted concerning history of soil classification as GSW (S – asbestos). Control measures and work methodology has been established for this area.</li> </ul>	Landscaping Subcontractors BMPX	Yet to commence

## Appendix 5 – Environmental Competency Matrix

Element of Competency	Competency	Group Sustainability Manager	Managing Director	Project Director	Environmental Manager	Project Manager	Site Manager	Design Manager	Contracts Manager	Engineer	Supervisor/Foreman	Environmental Cadet	Construction Workers	Evidence of Competence Required
Environmental impact	Has knowledge of the project activities and the potential aspects and impacts on the environment resulting from those activities.				✓	✓	✓				✓	✓		1 or 3 or 4 or 7 or 8
Environmental risk	Ability to understand the environmental risks onsite to ensure the environmental impacts are prioritised and appropriately managed				✓	✓	✓				✓			1 or 3 or 4 or 7 or 8
Understanding CEMP	Understands the procedures outlined in the CEMP and the ability to implement and maintain the environmental controls outlined in the plan.				✓	✓	✓			✓	✓	✓	✓	1 or 3 or 7 or 8
Understanding documentation	Ability to understand and cross reference to other environmental management documents (eg landscape plans, soil and water management plans, statements of heritage significance and incident management.)				✓	✓	✓			✓	✓	✓		1 or 3 or 7 or 8
Legislative - codes, procedures, guidelines	Understanding of relevant legislation and ability to plan and manage compliance with the legislation	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		1 or 3 or 7 or 8
Legislation & Regulations	Understanding of when approvals are required under the relevant legislation.	✓	✓	✓	✓	✓	✓			✓				1 or 3 or 7 or 8
Reporting of inspections	Ability to conduct and record inspections at appropriate stages to determine compliance with the CEMP. Distribute for action and obtain sign-offs from subcontractors				✓		✓				✓	✓		1 or 3 or 7 or 8
Environmental monitoring	Understands the environmental monitoring processes outlined in the CEMP that need to be implemented on the project.				✓	✓	✓			✓	✓	✓		1 or 3 or 7 or 8
Waste management	Ability to implement a waste management plan.				✓	✓	✓				✓	✓	✓	3 or 8
Investigative skills	Demonstrates investigative abilities in order to gather information needed for records and reports relating to				✓	✓	✓				✓			1 or 3 or 6 or 7

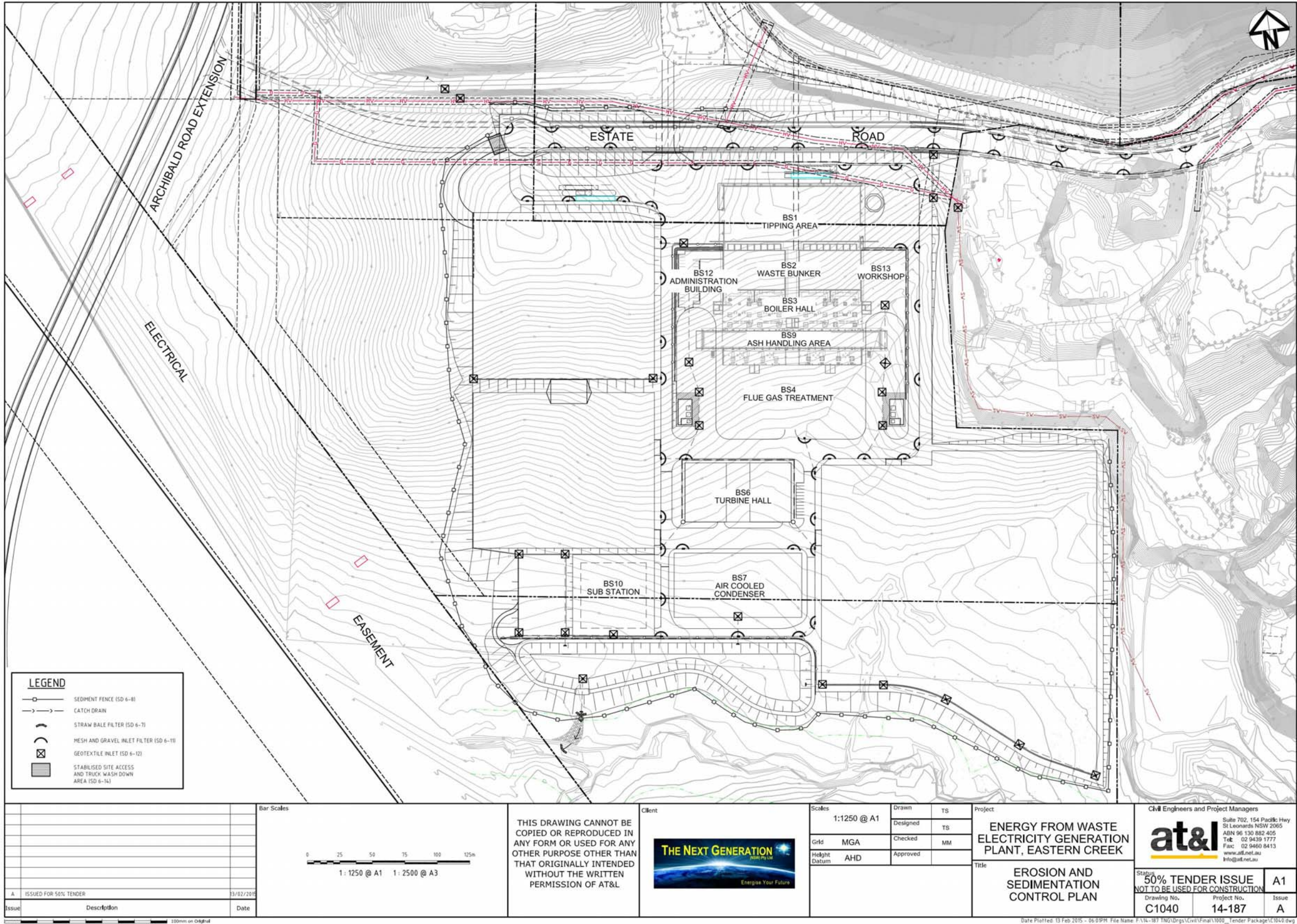
# Appendices

Element of Competency	Competency	Group Sustainability Manager	Managing Director	Project Director	Environmental Manager	Project Manager	Site Manager	Design Manager	Contracts Manager	Engineer	Supervisor/Foreman	Environmental Cadet	Construction Workers	Evidence of Competence Required
	environmental incidents													
Stakeholders	Ability to ensure appropriate systems is in place for ongoing communication with all stakeholders.	✓	✓	✓	✓	✓	✓							1 or 3 or 6 or 7
Objectives and targets	Has an understanding on the targets of a project and how they are to be reported to ensure the targets are being achieved			✓	✓	✓	✓					✓		1 or 3
Sustainable Material Selection	Ability to interpret manufacturer's data sheets to determine if the correct materials are being used on a site.									✓	✓	✓		3 or 8

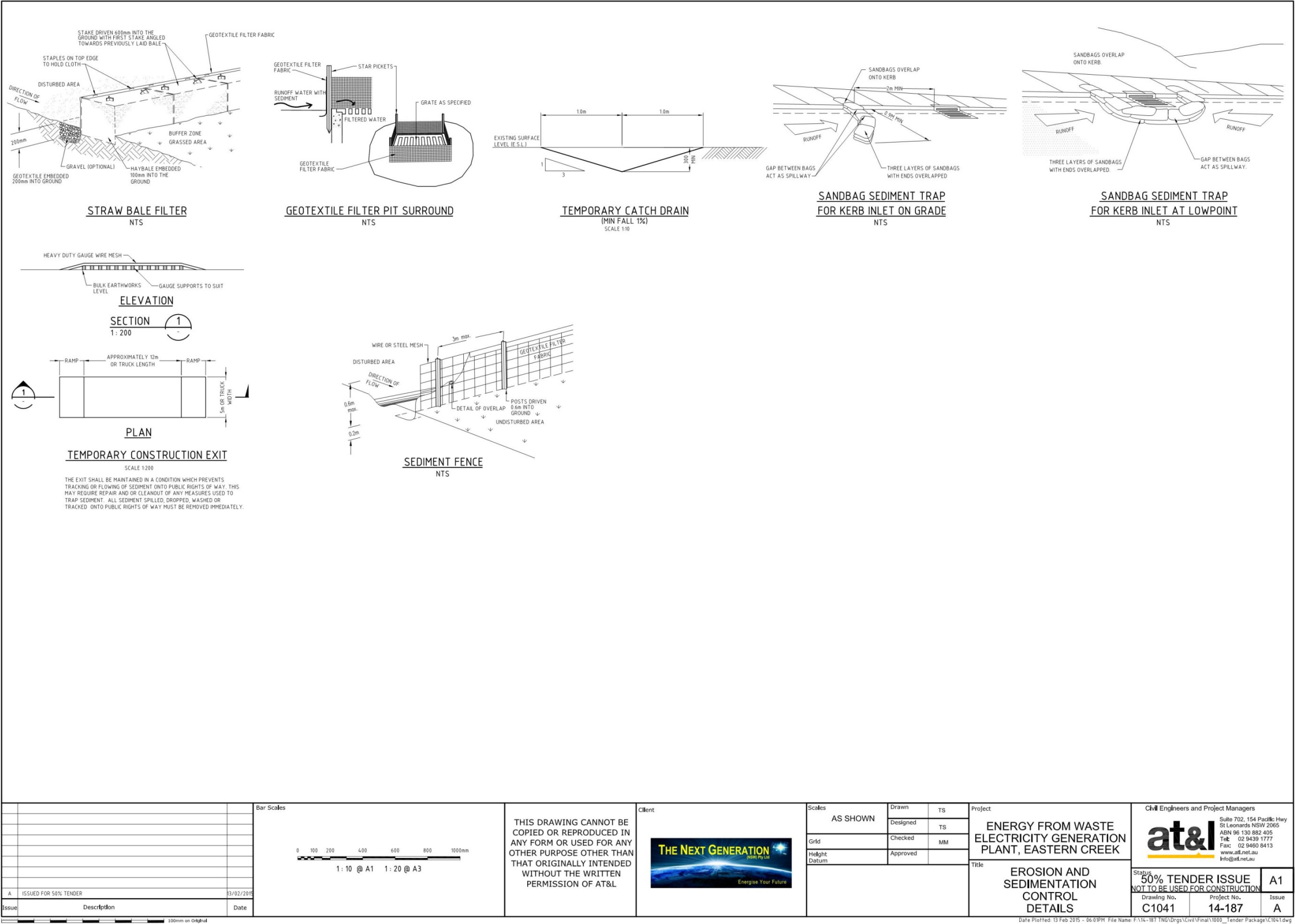
Ref#	Evidence of Competence Required	Training Source	Ref#	Evidence of Competence Required	Training Source
1	Certificate IV in Occupational Health and Safety	External	4	Auditor course	External
2	Internal training in the BM Environmental Management System	Internal	5	10 years experience in the construction industry	External/Internal
3	Internal training in the BM Risk Management System (BOS)	Internal	6	Degree or Diploma with Environmental as an element.	External

## Appendix 6 – Integrated Erosion and Sediment Control Plan + Environmental Controls Plan









## Appendix 7 – Unexpected Finds Protocol

## Site contamination notification form



<b>Contaminated Land Notification Form</b> <b>Section 60 of the <i>Contaminated Land Management Act 1997</i></b>	
<p>This form should be completed by:</p> <p>(a) a person who becomes aware that the person(s) activities in, on or under land have contaminated the land, or</p> <p>(b) an owner of land who becomes aware that the land has been contaminated (whether before or during the owner's ownership of the land).</p>	
<b>1. Where to send completed forms</b>  Contaminated Sites Department of Environment, Climate Change & Water PO Box A290 SYDNEY SOUTH NSW 1232	<b>IMPORTANT</b> TYPE OR PRINT
<b>2. Reporter details</b>	
Name:	Telephone Number (business hours):  Fax Number (business hours):
Address:	I am: <input type="checkbox"/> the owner of the site <input type="checkbox"/> the person whose activities have contaminated the land
<b>3. Site details</b>	
Site or establishment name (if appropriate):	Street address:
Lot and DP number:	Local Government Area:
Owner(s):	Occupier(s):
<b>4. Cause of contamination</b>	
Previous/present activities that caused or could have caused the contamination (where known):	
<b>5. Contamination</b>	
Contaminants of concern:	Source of information on contamination:
<b>6. What aspects of the environment are affected?</b>	<b>7. Who/what is potentially at risk?</b>

<p>Tick all that apply:</p> <table style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Air  <input type="checkbox"/> Groundwater  <input type="checkbox"/> Surface water  <input type="checkbox"/> Sediments  <input type="checkbox"/> Soil </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Stormwater  <input type="checkbox"/> Drinking water catchment  <input type="checkbox"/> Wetlands  <input type="checkbox"/> Other: (Please specify) </td> </tr> </table>	<input type="checkbox"/> Air <input type="checkbox"/> Groundwater <input type="checkbox"/> Surface water <input type="checkbox"/> Sediments <input type="checkbox"/> Soil	<input type="checkbox"/> Stormwater <input type="checkbox"/> Drinking water catchment <input type="checkbox"/> Wetlands <input type="checkbox"/> Other: (Please specify)	<p>Tick all that apply:</p> <table style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Residents  <input type="checkbox"/> Workers on commercial / industrial sites  <input type="checkbox"/> School / kindergarten children  <input type="checkbox"/> Threatened species </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Aquatic life  <input type="checkbox"/> Plants  <input type="checkbox"/> Animals  <input type="checkbox"/> Other: (Please specify) </td> </tr> </table>	<input type="checkbox"/> Residents <input type="checkbox"/> Workers on commercial / industrial sites <input type="checkbox"/> School / kindergarten children <input type="checkbox"/> Threatened species	<input type="checkbox"/> Aquatic life <input type="checkbox"/> Plants <input type="checkbox"/> Animals <input type="checkbox"/> Other: (Please specify)
<input type="checkbox"/> Air <input type="checkbox"/> Groundwater <input type="checkbox"/> Surface water <input type="checkbox"/> Sediments <input type="checkbox"/> Soil	<input type="checkbox"/> Stormwater <input type="checkbox"/> Drinking water catchment <input type="checkbox"/> Wetlands <input type="checkbox"/> Other: (Please specify)				
<input type="checkbox"/> Residents <input type="checkbox"/> Workers on commercial / industrial sites <input type="checkbox"/> School / kindergarten children <input type="checkbox"/> Threatened species	<input type="checkbox"/> Aquatic life <input type="checkbox"/> Plants <input type="checkbox"/> Animals <input type="checkbox"/> Other: (Please specify)				

<b>8. Are any other sites affected or at risk?</b>		
<p>Tick appropriate box:</p> <p><input type="checkbox"/> No  <input type="checkbox"/> Yes</p> <p>If 'yes' is ticked, indicate which of the matters listed in items 6 and 7 apply to other sites and where those sites are located:</p>		
<b>9. Additional pages attached</b>		
<p>If you have attached additional pages to this notification, indicate the number of pages below.</p> <p>When the notification is certified, the person/s who certify the notification must initial the attached pages relating to the notification.</p> <p style="text-align: right;">Number of pages attached:</p>		
<b>10. Certification (In the case of a notice lodged by a corporation or a body corporate)</b>		
<p>I/We declare that the information in this form and any accompanying documents is not false or misleading in any material particular.</p>		
Name:	Name:	COMMON SEAL AFFIXED IN ACCORDANCE WITH ANY RELEVANT LAWS
Position:	Position:	
Signature:	Signature:	
Date:	Date:	
<b>11. Signature (In the case of a notice lodged by one or more individuals)</b>		
<p>I/We declare that the information in this form and any accompanying documents is not false or misleading in any material particular.</p>		
Name:	Name:	
Signature:	Signature:	
Date:	Date:	
<p>If the notification is made by one or more individuals, the form must be signed by each individual concerned.</p> <p>If the notification is made by a company, the form must be signed:</p> <ul style="list-style-type: none"> <li>by affixing the common seal of the company in accordance with the <i>Corporations Act 2001</i>, or</li> <li>by two directors, or</li> <li>by a director and a company secretary, or</li> <li>if a proprietary company that has a sole director who is also the sole company secretary – by that director.</li> </ul> <p>If the notification is made by a body corporate, the form must be signed in accordance with any applicable laws.</p> <p>If the notification is made by a local council, the form must be signed:</p> <ul style="list-style-type: none"> <li>by the general manager in accordance with s. 377 of the <i>Local Government Act 1993</i> ('LG Act'), or</li> <li>by affixing the seal of the council in a manner authorised under the LG Act.</li> </ul> <p>If the notification is made by a public authority other than a local council, the form must be signed:</p> <ul style="list-style-type: none"> <li>by the chief executive officer of the public authority, or</li> <li>by a person delegated to sign on the public authority's behalf in accordance with its legislation. (Please note: a copy of the relevant instrument of delegation must be attached to this form.)</li> </ul>		