



Construction Waste
Management Plan
Eco Tourism Mixed Use Proposal
Broken Head
PLANNERS NORTH, January, 2021

COMPLIANCE AND USAGE STATEMENT

This Construction Waste Management Plan has been prepared and submitted in support of a Byron Shire Council Development Application made under Part 4 of the *Environmental Planning and Assessment Act 1979* by:

Preparation

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Application

Proponent: Linnaeus Property Trust
Address: C/ - PLANNERS NORTH
P.O. Box 538, Lennox Head NSW 2478
Land to be developed: Lot 1 DP 1031848
Proposed development: Eco Tourism Mixed Use proposal

Certificate

I certify that I have prepared the content of this Construction Waste Management Plan and to the best of my knowledge:

- it is in accordance with the Act and Regulations, and
- it is true in all material particulars and does not, by its presentation or omission of information, materially mislead.

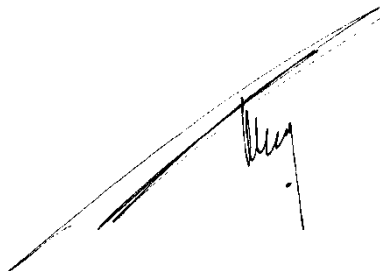
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Date: January 2021

GLOSSARY / ABBREVIATIONS

CMP	Construction Management Plan
CoA	Conditions of Approval
CT	Contaminant Threshold
CWMP	Construction Waste Management Plan
EEC	Endangered Ecological Community
ENM	Excavated Natural Material, as defined in <i>the excavated natural material exemption</i>
EPA	Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPL	Environmental Protection License
EWMS	Environmental Work Method Statement
FM Act	<i>Fisheries Management Act 1994</i>
GHG	Greenhouse gas emissions
NOW	NSW Office of Water
PESCP	Progressive Erosion and Sediment Control Plan
RMS	Roads and Maritime Services
SCC	Specific Contaminant Concentrations
TCLP	Toxicity Characteristics Leaching Procedure
The Project	Linnaeus Eco Tourism, Linnaeus Estate, Broken Head
VENM	Virgin Excavated Natural Material, as defined in Schedule 1 of the Protection of the Environment Operations Act 1997
WARR Act	<i>Waste Avoidance and Resource Recovery Act 2001</i>

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1. INTRODUCTION

1.1 PURPOSE

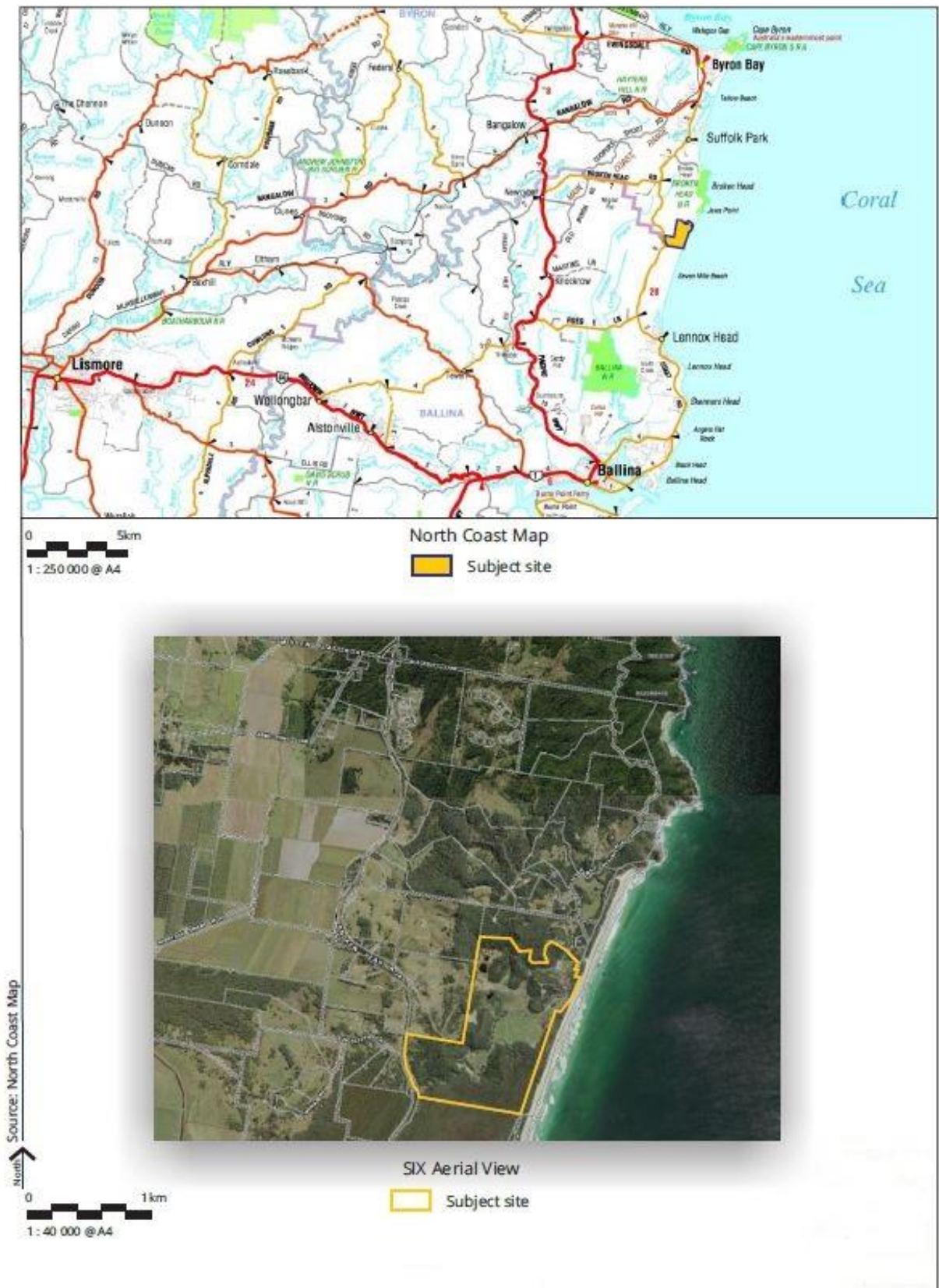
This Construction Waste Management Plan (CWMP) describes how the Linnaeus Property Trust will minimise the amount of waste for disposal and manage waste during the construction of the Eco Tourism Mixed Use proposal at the Linnaeus Estate, Broken Head. **Plan 1.1** shows the site and locality.

This CWMP has been prepared to address the requirements of the Council's Development Control Plan 2014.

1.2 CONSULTATION FOR PREPARATION OF THE CWMP

There are no consultation requirements related to this Plan.

Plan 1.1 Site and Locality



2. LEGAL AND OTHER REQUIREMENTS

2.1 LEGISLATION

Legislation relevant to waste and energy management includes:

- *Protection of the Environment Operations Act 1997;*
- *Protection of the Environment Operations (General) Regulation 2009;*
- *Protection of the Environment Operations (Waste) Regulation 2005;*
- *Waste Avoidance and Resource Recovery Act 2001 (WARR Act);*
- *Contaminated Land Management Act 1997;*
- *National Greenhouse and Energy Reporting Act 2007;*
- *Noxious Weeds Act 1993;*
- *Environmentally Hazardous Chemicals Act 1985;*
- *Energy Efficiency Opportunities Act 2006 (EEO Act); and*
- *Clean Energy Act 2011.*

2.2 GUIDELINES AND STANDARDS

The main guidelines, specifications and policy documents relevant to this CWMP include:

- Waste Classification Guidelines 2009 (DECCW) (EPA Publication); and
- Best Practice Waste Reduction Guidelines for the Construction and Demolition Industry (tools for Practice), Natural Heritage Trust, 2000.

3. ENVIRONMENTAL IMPACTS

A risk management approach was used to determine the severity and likelihood of the construction activities' impact on the environment and to prioritise its significance. This process considered potential regulatory and legal risks as well the concerns of the community and other key stakeholders.

The objectives of the risk assessment were to:

- Identify activities, events or outcomes that have the potential to adversely affect the local environment and/or human health/property;
- Qualitatively evaluate and categorise each risk item;
- Assess whether risk issues can be managed by environmental protection measures; and
- Qualitatively evaluate residual risk with the implementation of measures.

4. WASTE MANAGEMENT

4.1 WASTE MANAGEMENT HIERARCHY

The *Waste Avoidance and Resource Recovery Act 2001* ensures that resource management options are considered against a hierarchy of:

- avoidance of unnecessary resource consumption;
- resource recovery (including reuse, recycling, reprocessing, and energy recovery), and
- disposal.

Refer to **Figure 4-1** for the most recent waste hierarchy provided by the EPA in the *NSW Waste Avoidance and Resource Recovery Strategy 2013-21*.

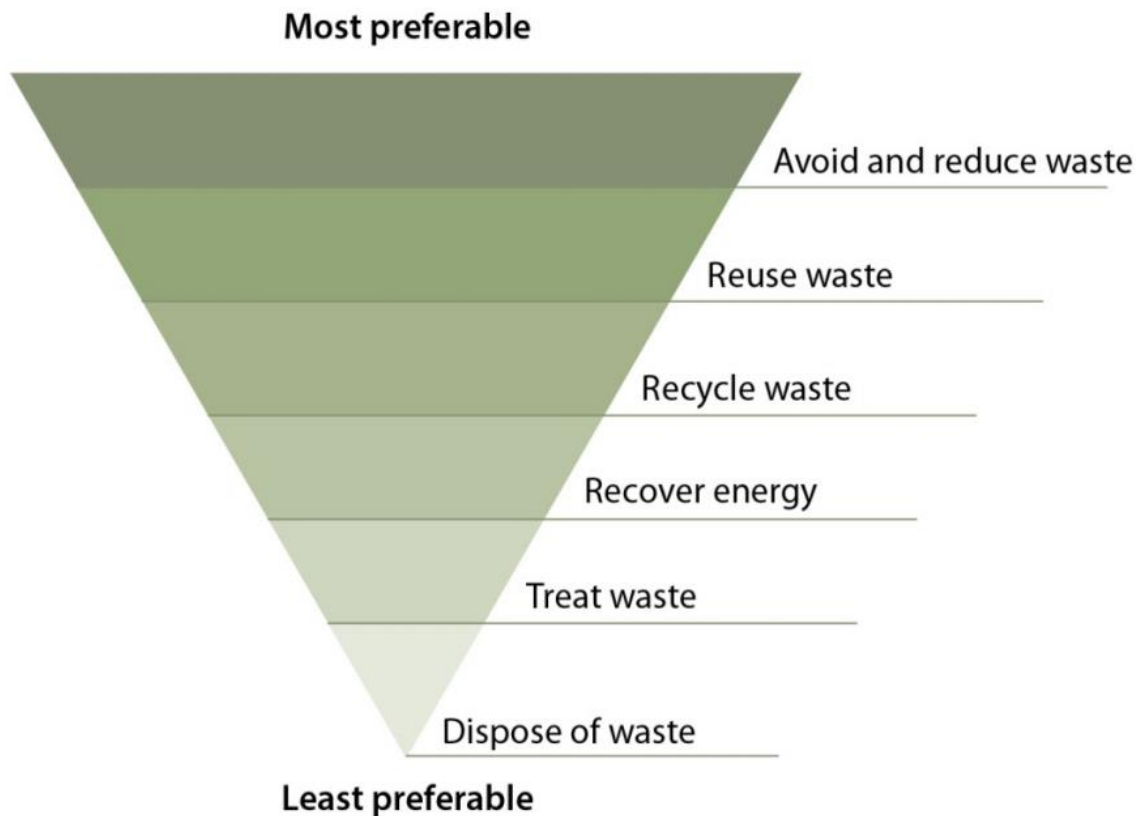


Figure 4-1 The Waste Hierarchy

The approach to the steps in the waste hierarchy most relevant to the Linnaeus Property Trust, Linnaeus Estate, Broken Head project is briefly described below.

4.2 REDUCE OR AVOID

Reducing or avoiding the generation of waste is of primary importance to the project. The following approach will be adopted:

- Consider construction options that have a higher waste reduction capacity than alternatives.
- Order material/ goods with minimal packaging or request suppliers to remove packaging from site.

- Accurately estimate materials required to minimise wastage of product¹.

4.3 REUSE AND RECYCLING

Waste separation and segregation will be promoted on site to facilitate reuse and recycling as a priority of the waste management program as follows:

- Segregate waste on site – waste materials, including spoil and demolition waste, will be separated on site into dedicated bins / areas for either reuse on site or collection by a waste contractor and transported to offsite facilities;
- Separate waste off site – wastes will be deposited into one bin where space is not available for placement of multiple bins, and the waste will be sorted off site by a waste contractor;
- Where feasible and reasonable, secondary waste material would be used in construction - refer to **Table 4-1** for details on waste types that may be reused on site; and
- Implement measures for reducing demand on water resources as described in Section 5 of the CSWMP.

4.4 WASTE HANDLING AND STORAGE

Where waste is required to be handled and stored on site prior to on site reuse or offsite recycling / disposal, the following measures will apply:

- spoil, topsoil and mulch will be stockpiled on site in allocated areas, where appropriate, and mitigation measures for dust control and surface water management will be implemented. Areas allocated for stockpiling as well as the volumes and types of material to be stored will be defined by Linnaeus Estate, Broken Head Construction Management Plan for the relevant stage;
- liquid wastes will be stored in appropriate containers in bunded areas until transported off site. Bunded areas will have the capacity to hold 110% of the liquid waste volume for bulk storage or 120% of the volume of the largest container for smaller packaged storage;
- hazardous waste will be managed by the appropriately qualified and licensed contractors, in accordance with the requirements of the *Environmentally Hazardous Chemicals Act 1985* and the EPA waste disposal guidelines; and
- all other recyclable or non-recyclable wastes will be stored in appropriate covered receptacles (e.g. bins or skips) in appropriate locations on site and subcontractors commissioned to regularly remove / empty the bins to approved disposal or recycling facilities.

4.5 WASTE DISPOSAL

Waste disposal will be in accordance with the *Protection of the Environment Operations Act 1997* and the *Waste Avoidance and Resource Recovery Act 2001*. Wastes that are unable to be reused or recycled will be disposed of offsite to an appropriately licensed waste facility following classification (refer to Section 4.2).

4.6 WASTE CLASSIFICATION

Where waste cannot be avoided, reused or recycled it will be classified and appropriately disposed of. The classification of waste will be undertaken in accordance with the *DECCW Waste Classification Guidelines Part 1: Classifying Waste* (2009). This document identifies six classes of waste: Special, Liquid, Hazardous, Restricted Solid, General Solid (putrescible) and General Solid (non-putrescible) and describes a six step process to classifying waste.

¹ **NOTE:** Throughout design there has been significant consideration of material sizing to reduce offcuts.

The general classification principles are as follows:

- If a special waste is mixed with another waste, the waste must be managed to meet the requirements of both the special wastes and the other class of waste.
- If asbestos waste is mixed with any other class of waste, all of the waste must be classified as asbestos waste.
- If liquid waste is mixed with hazardous or solid waste and retains the defined characteristics of liquid waste, it remains liquid waste.
- Two or more classes of waste must not be mixed in order to reduce the concentration of chemical contaminants. Dilution is not an acceptable waste management option.
- Where practicable, it is desirable to separate a mixture of wastes before classifying them.

4.7 CLASSIFICATION OF POTENTIAL WASTE STREAMS FROM THE PROJECT

The construction activities and types of wastes that may be generated during construction are outlined in **Table 4-1**. This table also identifies preferred reuse, recycling and disposal methods for each waste stream. Waste classification was determined based on the six step process provided in the DECCW Waste Classification Guidelines Part 1: Classifying Waste (2009).

TABLE 4-1 CLASSIFICATION OF POTENTIAL WASTE STREAMS

Construction Activity	Waste Type	Waste Classification	Proposed Reuse / Recycle / Disposal Methods
Geotechnical investigations and surveys	Drilling mud (that has been dewatered)	Subject to chemical assessment	Reuse off site - apply treated drilling mud to land where there is full compliance with The Treated Drilling Mud Exemption.
General demolition ²	Concrete, bricks, ceramics	General solid waste (non putrescible) (pre classified by the EPA)	Resource recovery off site - reuse, recycling, reprocessing or energy recovery at an appropriately licensed waste facility in accordance with the DECCW Waste Classification Guidelines (2009). Reuse off site - apply concrete to land where there is full compliance with The Recovered Aggregate Exemption.
	Asphalt	General solid waste (non-putrescible) (pre classified by the EPA)	Resource recovery off site - reuse, recycling, reprocessing or energy recovery at an appropriately licensed waste facility in accordance with the DECCW Waste Classification Guidelines (2009). Reuse off site - apply concrete to land where there is full compliance with reclaimed asphalt pavement exemption.
	Glass	(pre classified by the EPA)	Resource recovery off site - reuse, recycling, reprocessing or energy recovery at an appropriately licensed waste facility in accordance with the DECCW Waste Classification Guidelines (2009).

² **NOTE:** Minimal demolition is envisaged. All existing buildings are to remain. The only Demolition relates to the existing bin store.

Construction Activity	Waste Type	Waste Classification	Proposed Reuse / Recycle / Disposal Methods
		General solid waste (non-putrescible)	
	Asbestos	Special waste (Asbestos)	Disposal off site - disposal at an appropriately licensed waste facility in accordance with the premises' Environment Protection License.
Clearing and grubbing	Native vegetation (branches loppings, tree trunks, tree stumps)	General solid waste (non-putrescible) (pre classified by the EPA)	Branches loppings, tree trunks, tree stumps and the like will be mulched on site and retained.
	Topsoil (containing weeds)	Subject to chemical assessment	Disposal off site - disposal at an appropriately licensed waste facility in accordance with the premises' Environment Protection License.
Excavation	Excess spoil (unsuitable material)	General solid waste (non-putrescible) (pre classified by the EPA)	Reuse off site - where there is full compliance with The excavated natural material exemption 2014. Disposal off site - disposal at an appropriately licensed waste facility in accordance with the premises' Environment Protection License.
Building / Construction Waste ³	Steel reinforcing	General solid waste (non-putrescible)	Resource recovery off site - reuse, recycling, reprocessing or energy recovery at an appropriately licensed waste facility in accordance with the DECCW Waste Classification Guidelines (2009). Consistent with the Sustainability Management Plan, a target will be set for this component in the builders contract (recommended benchmark is 90% by volume).
	Conduits and pipes	General solid waste (non-putrescible)	Resource recovery off site - reuse, recycling, reprocessing or energy recovery at an appropriately licensed waste facility in accordance with the DECCW Waste Classification Guidelines (2009).
	Timber formwork	General solid waste (non-putrescible) (pre classified by the EPA)	Where possible the proponent will seek to reuse timber formwork in design, i.e fences, ceilings etc. where that is not possible, disposal will be off site - disposal at an appropriately licensed waste facility in accordance with the premises' Environment Protection License and the DECCW Waste Classification Guidelines (2009).
	Packaging materials, including wood, plastics,	General solid waste (non-putrescible)	Resource recovery off site - reuse, recycling, reprocessing or energy recovery at an appropriately licensed waste facility in accordance with the DECCW Waste Classification Guidelines (2009).

³ **NOTE:** The modular cabin design this is a major advantage as there is a significant reduction in waste do to standard sizing and factory production.

Construction Activity	Waste Type	Waste Classification	Proposed Reuse / Recycle / Disposal Methods
	cardboard and metal		
Erosion and sediment control maintenance	Geotextile	General solid waste (non-putrescible)	Disposal off site - disposal at an appropriately licensed waste facility in accordance with the premises' Environment Protection License and the DECCW Waste Classification Guidelines (2009).
	Sediment removed from sediment basins once they reach capacity	General solid waste (non-putrescible)	Incorporate into the earthworks. Disposal off site - disposal at an appropriately licensed waste facility in accordance with the premises' Environment Protection License and the DECCW Waste Classification Guidelines (2009).
	Sediment fence and sandbags	General solid waste (non-putrescible)	Disposal off site - disposal at an appropriately licensed waste facility in accordance with the premises' Environment Protection License and the DECCW Waste Classification Guidelines (2009).
Site compound and office uses	Drained oil filters, rags and oil absorbent materials that only contain non-volatile petroleum hydrocarbons and do not contain free liquids	General solid waste (non-putrescible) (pre classified by the EPA)	Disposal off site - disposal at an appropriately licensed waste facility in accordance with the premises' Environment Protection License and the DECCW Waste Classification Guidelines (2009).
	Containers, previously containing dangerous goods, from which residues have been removed by washing or vacuuming	General solid waste (non-putrescible) (pre classified by the EPA)	Disposal off site - disposal at an appropriately licensed waste facility in accordance with the premises' Environment Protection License and the DECCW Waste Classification Guidelines (2009).
	Food waste	General solid waste (putrescible) (pre classified by the EPA)	Builders food waste will be dealt with onsite. The landscaping plans depict compost and worm farm sections of the garden that will be applicable.

Construction Activity	Waste Type	Waste Classification	Proposed Reuse / Recycle / Disposal Methods
	Sewage from amenities	(pre classified by the EPA)	Disposal off site - disposal at an appropriately licensed waste facility in accordance with the premises' Environment Protection License and the DECCW Waste Classification Guidelines (2009).
	Paper, cardboard and plastic glass, aluminium cans	General solid waste (non-putrescible)	Disposal off site - disposal at an appropriately licensed recycling facility in accordance with the premises' Environment Protection License and the DECCW Waste Classification Guidelines (2009).
	Unwanted liquid chemicals	Liquid waste	Disposal off site - disposal at an appropriately licensed waste facility in accordance with the premises' Environment Protection License and the DECCW Waste Classification Guidelines (2009).

5. ENVIRONMENTAL MITIGATION MEASURES

General environmental management in terms of acoustics, hours of operation, construction practice and the like are set out in the approved Construction Management Plan.

Specific mitigation measures to address waste impacts are outlined in **Table 5-1**.

TABLE 5-1 WASTE MITIGATION MEASURES

GENERAL	RESPONSIBLE
Site induction of all building personnel will be undertaken to ensure that this plan has been read and understood and the workers (who are going to be onsite for extended periods) and to provide personnel with an appreciation of the environmental sensitivity of the project.	Foreman
Adopt and promote the waste hierarchy (reduce or avoid waste, reuse waste, recycle waste, recover energy, treat waste, dispose of waste).	Environmental Manager ⁴ Procurement Manager
Keep site free of litter and maintain good housekeeping.	Foreman
Do not cause, permit or allow waste generated outside the site to be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a License under the Protection of the Environment Operations Act 1997, if such a License is required in relation to that waste (CoA 810).	Foreman
REDUCE OR AVOID	
Calculate precise estimates prior to placing orders.	Project Engineers
Implement, where possible, agreements with suppliers to return excess construction materials or packaging for future reuse.	Contracts Manager

⁴ **NOTE:** The Sustainability Management Plan outlines a commitment for Head contractor to have ISO 14001 accreditation and dedicated role to manage environmental impacts of the construction phase.

RESOURCE RECOVERY (REUSE, RECYCLE)	
Establish a list of preferred suppliers for waste management services (e.g. - waste oil recyclers. metal recyclers, etc).	Contracts Manager Environmental Manager
Include in waste contractor subcontract agreements requirements to comply with statutory requirements, report quantities, types, dates and destination of material removed from site.	Contracts Manager
Classify all wastes generated on the site during construction in accordance with the 2009 Waste Classification Guidelines prior to transporting waste off site.	Site/ Project Engineers
Obtain and provide receipts/dockets for waste removed from site to the EO.	Foreman
Record all waste removed from site in the Waste Register.	Environmental Officer
Provide appropriate facilities to ensure that materials for recycling are separated from materials that are to be disposed of as wastes. Facilities are to be labelled for the various waste streams to ensure easy recognition.	Project Manager
Collect and store waste oil in suitable containers and store in a bunded area until collected for recycling. All permanent bunded storage areas must be covered.	Superintendent
Reuse excavated spoil generated on site where possible.	Foreman
Reuse waste material generated on site where possible, including topsoil and mulch.	Foreman
When transporting waste to the premises other than EPA-Licensed waste management facilities, ensure these premises can LAWFULLY ACCEPT THIS WASTE; OBTAIN A COPY OF THE COMPLETED AND SIGNED 'Notice under Section 143' form from the landholder to confirm this prior to transporting material to the premises.	Foreman Environmental Officer
Provide paper recycling bins/boxes in all site offices. All paper waste to be sent to recycling facility. Encourage all staff to separate paper waste.	Receptionist Environmental Officer
Use recycled products in construction to reduce demand on resources, where the use of the material is cost and performance competitive and RMS' specifications allow it. This may include the use of fly ash and slag within concrete mixes.	Site Engineer
Set printers at the site office to default to double sided and black and white printing. Encourage all staff to minimise paper use through use of electronic media, re-use of paper etc. Refill or return printer cartridges for recycling.	Receptionist
DISPOSAL	
Store construction wastes which cannot be recycled in separate skips. The skips will be collected by a licensed waste contractor on a regular basis and transported to a licensed landfill.	Superintendent
Empty portable toilets regularly by subcontractors. Dispose wastes in accordance with the 2009 Waste Classification Guidelines. Connect toilets at the site compound to the sewerage network.	Superintendent
Establish a list of preferred suppliers for waste management services (e.g. - waste oil recyclers. metal recyclers, etc.).	Superintendent



ENERGY CONSUMPTION (FUEL AND POWER)	
Select energy efficient plant, equipment and vehicles where feasible and reasonable to reduce greenhouse gas emissions, through consultation with subcontractors and suppliers.	Procurement Manager
Maintain all vehicles, including trucks entering and leaving the site, and construction equipment in accordance with the manufacturer's specification to comply with all relevant legislation.	Procurement Manager Foreman
Procure locally produced goods and services where feasible and cost effective to reduce transport fuel emissions.	Procurement Manager
Consider the procurement of renewable energy technologies (e.g. solar photovoltaic, wind power) for power generation on site.	Procurement Manager Project Manager

6. COMPLIANCE MANAGEMENT

6.1 ROLES AND RESPONSIBILITIES

The Linnaeus Property Trust, Linnaeus Estate, Broken Head project team organisational structure defining relevant roles and responsibilities will be prepared and published prior to the issue of a Construction Certificate for the building work.

6.2 TRAINING

All employees, subcontractors and utility staff working on site will undergo site induction training relating to waste and energy management issues, including:

- existence and requirements of this CWMP;
- relevant legislation;
- waste reporting requirements;
- requirements of the waste hierarchy;
- waste I recycle storage requirements;
- energy efficient best practices;
- waste handling requirements and details of the types of wastes that are intended for on- site reuse;
- other specific responsibilities for waste and reuse management; and
- other specific responsibilities for energy management.

6.3 MONITORING AND INSPECTIONS

Regular monitoring and inspections will be undertaken during construction in accordance with **Table 6-1**.

TABLE 6-1 MONITORING & INSPECTIONS TABULATION

Monitoring Details	Record	Responsibility	Frequency
Track waste taken off site	Waste Register	Environmental Officer	When waste taken off site. Waste Register to be updated regularly
	Waste receipts/dockets	Foreman	When waste taken off site to a waste facility
	Transportation dockets	Foreman	When EPA trackable waste taken off site
Inspections for litter, unauthorised disposal of construction waste, contamination of waste streams and adequacy of capacity of waste receptacles (as part of weekly environmental inspection).	Environmental Inspection Checklist	Environmental Officer	Weekly

6.4 NON-CONFORMANCES

Non-conformances will be dealt with and documented in accordance with the Linnaeus Estate, Broken Head CMP.

6.5 COMPLAINTS

Complaints will be recorded and addressed in accordance with the Linnaeus Property Trust, Linnaeus Estate, Broken Head CMP.

7. REVIEW AND IMPROVEMENT OF CWMP

The CWMP will be reviewed regularly to ensure compliance with legislative requirements and its suitability and effectiveness for the project.

The review may be in the form of:

- a formal management review;
- a second party audit; and/or
- an inclusion as a separate item at a site meeting.

The Environmental Manager can review and update the CWMP more regularly where:

- significant changes in construction activities occur;
- where targets are not being achieved; or
- in response to audits and nonconformity reports.

Minor changes to the CWMP will be approved by the Environmental Representative in accordance with the Linnaeus Property Trust, Linnaeus Estate, Broken Head CMP. All major changes to CHMP will be approved by the Council.