28 McPherson St Banksmeadow

Construction Waste Management Plan

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This report contains confidential information. It has been compiled by Waste Audit and Consultancy Services (Aust) Pty Ltd on behalf of Orica Australia Pty Ltd for the warehouse development at 28 McPherson St, Banksmeadow.

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1 Introduction

This Construction Waste Management Plan has been prepared on behalf of Orica Australia Pty Ltd for the warehouse development at 28 McPherson St, Banksmeadow. It responds to the SEARs (for SSD 9691), issued for the project by the NSW Department of Planning and Environment, specifically to address the following waste management requirements (extract from the SEARs report related to waste management):

> *Waste:*
>
> - *details of the quantities and classification of all waste streams to be generated on site during the development;*
> - *details of waste storage, handling and disposal during the development;*
> - *details of the measures that would be implemented to ensure that the development is consistent with the aims, objectives and guidance in the NSW Waste Avoidance and Resource Recovery Strategy 2014- 2021*

The proposed development involves the construction of two warehouses and associated infrastructure.

The Plan has been developed with consideration of Bayside Council's *Botany Bay Development Control Plan (2013)* and other Authority's requirements.

The Construction Waste Management Plan has been developed to ensure that all waste resulting from demolition activities is managed in an effective, safe and environmentally aware manner. Specifically,

- To minimise the generation of waste to landfill
- To maximise waste material avoidance and reuse on site
- To ensure that where practicable, an efficient recycling procedure is applied to waste materials
- To raise awareness among employees and subcontractors of their waste management responsibilities

Management strategies reflect current best-practice requirements, and relevant Sections of the *Protection of the Environment Operations Act 1997* and the NSW Environment Protection Authority *Waste Classification Guidelines, Part 1: Classifying Waste*, as well as consideration of industry best practice for this type of development.

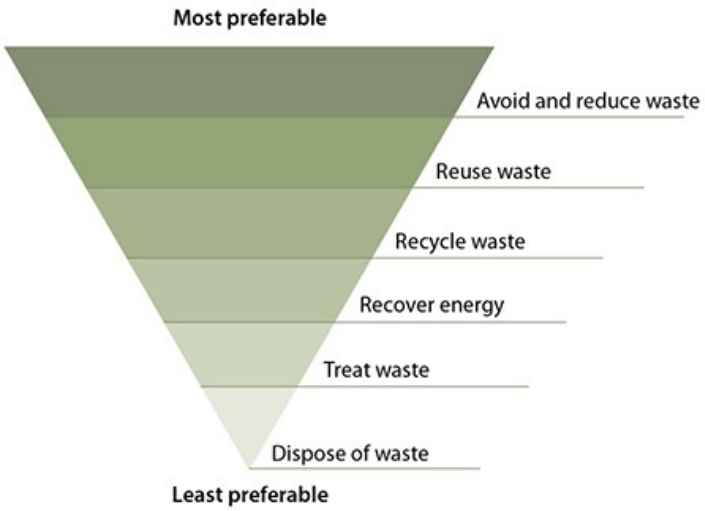
2 SEARs Checklist

Requirement	How it has been met
Details of the quantities and classification of all waste streams to be generated on site during the development	Section 4 of this Plan summarises the types, quantities and management systems for construction materials that may be generated during the civil works activities.
Details of waste storage, handling and disposal during the development	Sections 3-5 of this Plan detail the management of construction waste onsite, with clear instructions for its storing, potential reuse and removal offsite.
Details of the measures that would be implemented to ensure that the development is consistent with the aims, objectives and guidance in the NSW Waste Avoidance and Resource Recovery Strategy 2014- 2021	In identifying construction waste streams and generation rates, strategies to minimise the generation of waste to landfill and to increase the recycling of materials, as well as defining the roles and responsibilities of site managers and contractors, this Plan directly engages with the NSW Waste Avoidance and Resource Recovery Strategy

3 Construction Waste Management Principles

3.1 Waste Management Hierarchy

The following waste hierarchy will be used as a guiding principle:



Avoid and Reduce

Minimise the production of waste materials in the construction process by:

- Assessing and taking into consideration the resultant waste from different design and construction options
- Purchasing materials that will result in less waste, which have minimal packaging, are pre-cut or fabricated.
- Not over ordering products and materials

Reuse

Ensure that wherever possible, materials are reused either on site or offsite.

- Identify all waste products that can be reused
- Put systems in place to separate and store reusable items
- Identify the potential applications for reuse both onsite and offsite and facilitate reuse

Recycling

Identify all recyclable waste products to be produced on site.

- Provide systems for separating and stockpiling of recyclables
- Provide clear signage to ensure recyclable materials are separated

- Process the material for recycling either onsite or offsite

Note: In some cases, it may be more economical to send the unsorted waste to specialised waste contractors who will separate and recycle materials at an offsite location.

Disposal

Waste products which cannot be reused or recycled will be removed and disposed of. The following will need to be considered:

- Ensure the chosen waste disposal contractor complies with regulatory requirements
- Implement regular collection of bins

3.2 Waste Management Principles

The principles outlines above are applied to the expected waste sources for the development as follows:

Liquid Waste

Liquid waste may be produced on site for environmental control measures such as:

- Site and vehicle cleaning
- Dust control waste

The following measures will be taken to minimise the impact of liquid waste:

- Ensure water is used in moderation and no taps are left continuously running
- Only discharge clean water into storm water

3.2.1 Stormwater Pollution Prevention

All actions will be undertaken to avoid pollution entering stormwater drains and for litter generation. The following will be initiated:

i. Prior to commencement of any works a Safe Work Method Statement will be completed and reviewed to determine potential for stormwater pollution and/or litter generation

ii. The proponent (contractor), will need to develop a management strategy to manage the potential for these issues to be realised

iii. Site inspections will be conducted during the working day to monitor potential for stormwater pollution generation and where identified, works will cease until appropriate controls are implemented

iv. Wastewater and storm water will be managed and disposed of in accordance with Water Authority requirements.

3.2.2 Litter Management

i. Daily site inspections will be conducted to identify litter, remedy the situation and investigate the cause so as to reduce the potential for the issue to occur in the future.

ii. Sufficient quantities of bins (and/or bin space), will be made available so as to avoid dumping of materials outside bins

iii. All waste/recycling bins will have covers so as to ensure that wastes cannot be blown out during windy conditions. This will also apply to relevant stocks of materials to be used in construction.

iv. Personnel will be allocated the role of litter management in that they will periodically inspect the site and surrounds for litter and if identified collect and dispose of it.

3.3 Records

Records will be kept of all wastes and recyclables generated and either used on site, or transported offsite.

It will be a condition of appointment, that all waste/recycling contractors provide these records and that they also contain details of the types of materials weights/volumes and the facilities that the materials are transported to.

These records will be made available to Council or any relevant government agency on request.

3.4 Waste/recyclables storage (on-site)

All waste and recycling materials will be stored in bins provided by the appointed contractor(s). These bins will be appropriately coloured and signed to indicate what materials are to be deposited into them and located so as to maximise the recovery of reusable/recyclable materials. Appendix A provides an indication of the bin placement location.

As construction activities progress, the designated bins may be re-located so as to maximise the collection of materials that will be diverted from landfill. This will also involve relocating signage advising as to correct waste management.

All locations where waste/recycling bins are located will be designed so as to avoid contaminating surface/stormwaters and have active litter control measures.

3.5 Waste/recyclables treatment (on-site)

There will be no treatment of wastes or recyclables on-site except for possible removal of contaminants prior to forwarding to off-site recyclers.

4 Construction Materials

The following summarises the types, quantities and management systems for construction materials that may be generated during the construction phase of the development.

The quantity of waste materials to be generated onsite are estimates and therefore the systems that will be put in place need to incorporate flexibility to allow for variation in the total quantities generated. Active site management during the construction phase will ensure all waste/recyclable materials are disposed of appropriately and that all waste receptacles are of sufficient capacity to manage onsite activities.

The table below details the estimated composition by m^3 of construction waste to be generated for the total site.

Finalisation of the system(s) that will be implemented for the recovery of materials and for disposal of others to landfill will occur following appointment of contractor(s). A component of the appointment will be that contactors will be required to provide data as to the disposal pathway (eg., materials, volumes and final disposal site), as well as a validation process for this information.

The appointed contractor(s) will also be responsible for sourcing speciality recycling facilities for the materials that cannot be reused on site.

Waste management systems – construction

Materials on site		Destination		
Type of material	Estimated volume (m^3)	On-site (Reuse or recycle)	Off-site (Detail contractor and recycling contractor)	Disposal (Detail contractor and landfill site)
Concrete	$5m^3$	Separated on site and crushed for use in pavement construction where possible	Collected by contractor and disposed at concrete recycling facility	Facility TBA upon appointment of contractor
Timber (formwork)	$35m^3$	Separated and where feasible, reused for further formwork	Unused material separate and stockpiled onsite. Collected by specialist timber subcontractor for recycling	Facility TBA upon appointment of contractor

Materials on site		Destination		
Type of material	Estimated volume (m^3)	On-site (Reuse or recycle)	Off-site (Detail contractor and recycling contractor)	Disposal (Detail contractor and landfill site)
Metals	$10m^3$	No on-site reuse	Collected by specialist metal subcontractor for recycling	Facility TBA upon appointment of contractor
Plasterboard	$5m^3$	No on-site reuse	Collected by the contractor for recycling.	Facility TBA upon appointment of contractor
Carpet	$2m^3$	No on-site reuse	This will be disposed of into a designated bin and collected regularly as required for recycling if of the required quality or disposal to landfill	Facility TBA upon appointment of contractor
Mixed hard plastics	$10m^3$	No on-site reuse	Collected by contractor for recycling. Facility TBA upon appointment of contractor.	No disposal to landfill
Glazing	$2m^3$	No on-site reuse	Recyclers consulted as to potential for recycling and if suitable separated for recycling.	Facility TBA upon appointment of contractor

Materials on site		Destination		
Type of material	Estimated volume (m^3)	On-site (Reuse or recycle)	Off-site (Detail contractor and recycling contractor)	Disposal (Detail contractor and landfill site)
Soil/Sand/Gravel	$10m^3$	Will be stockpiled for reuse.	Excavation materials will be collected and used as clean fill by the waste contractor with appropriate notification as to location	All remaining material will be disposed at landfill – facility (or other sites as fill), TBA upon appointment of contractor
Mixed Recyclables	$15m^3$	No on-site reuse	Contractor appointed to collect and recycle	No disposal to landfill
General waste	$30m^3$	No on-site reuse	No recycling or reuse	Facility TBA upon appointment of contractor

5 Contracts and purchasing

Each subcontractor working on the site will be required to adhere to this Waste Management Plan.

The Head Contractor will ensure each subcontractor:

- Takes practical measures to prevent waste being generated from their work
- Implements procedures to ensure waste resulting from their work will be actively managed and where possible recycled, as part of the overall site recycling strategy or separately as appropriate
- Ensures that the right quantities of materials are ordered, minimally packaged and where practical pre-fabricated. Any oversupplied materials are returned to the supplier
- Implements source separation of off cuts to facilitate reuse, resale or recycling.

The Site Manager will be responsible for:

- Ensuring there is a secure location for on-site storage of materials to be reused on site, and for separated materials for recycling off site.
- Engaging appropriate waste and recycling contractors to remove waste and recycling materials from the site
- Co-coordinating between subcontractors, to maximise on site reuse of materials
- Monitoring of bins on a regular basis by site supervisors to detect any contamination or leakage
- Ensuring the site has clear signs directing staff to the appropriate location for recycling and stockpiling station/s. And that each bin/skip/stockpile is clearly sign posted
- Proving training to all site employees and subcontractors in regards to the WMP as detailed in section 6 below.

Should a subcontractor cause a bin to be significantly contaminated, the Site Manager will be advised by a non-conformance report procedure. The offending subcontractor will then be required to take corrective action, at their own cost. The non-conformance process would be managed by the Head Contractors' Quality Management Systems

6 Training and Education

All site employees and sub-contractors will be required to attend a site specific induction that will outline the components of the WMP and explain the site specific practicalities of the waste reduction and recycling strategies outlined in the WMP.

All employees are to have a clear understanding of which products are being reused/recycled on site and where they are stockpiled. They are also to be made aware of waste reduction efforts in regards to packaging.

The site manager will post educational signage in relation the recycling activities on site in breakout areas, lunch rooms etc.

Appendix A – Indicative Waste/Recycling Bin Placement