OAKDALE SOUTH ESTATE

Waste Management Plan
Kemps Creek, NSW

Prepared for:

Goodman Limited
Level 17
60 Castlereagh Street
Sydney NSW 2000

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BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Goodman Limited (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
630.11166-R02-v7.0	7 October 2020	Celine El-Khouri	Andrew Quinn	Andrew Quinn
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1 Introduction

1.1 Overview

SLR Consulting Australia Pty Ltd (SLR) has been commissioned by Goodman Limited (the Client) to prepare a Waste and Recycling Management Plan (WMP) in support of a Development Application (DA) to Penrith City Council (Council) for the proposed development of the Oakdale South Estate (OSE) development in Kemps Creek, NSW.

This WMP applies to the waste generated from the site preparation, construction and operational stages of the OSE and has been prepared using email correspondence and the architectural drawings supplied by the Client which is attached in **Appendix A**.

1.2 Objectives

The principal objective of this WMP is to identify all potential wastes likely to be generated at OSE during construction and operational phases, including a description of how waste would be handled, processed and disposed of, or re-used or recycled, in accordance with Council's requirements.

The specific objectives of this WMP are as follows:

- To encourage the minimisation of waste production and maximisation of resource recovery.
- To ensure the appropriate management of contaminated and hazardous waste.
- To identify procedures and chain of custody records for waste management.
- To assist in ensuring that any environmental impacts during the operational life of OSE comply with Council's development consent conditions and other relevant regulatory authorities.

1.3 Review of WMP

This WMP is not a static document. It is a working document that requires review and updating to ensure ongoing suitability for the proposed on-going operations at the site.

This WMP will be reviewed and updated:

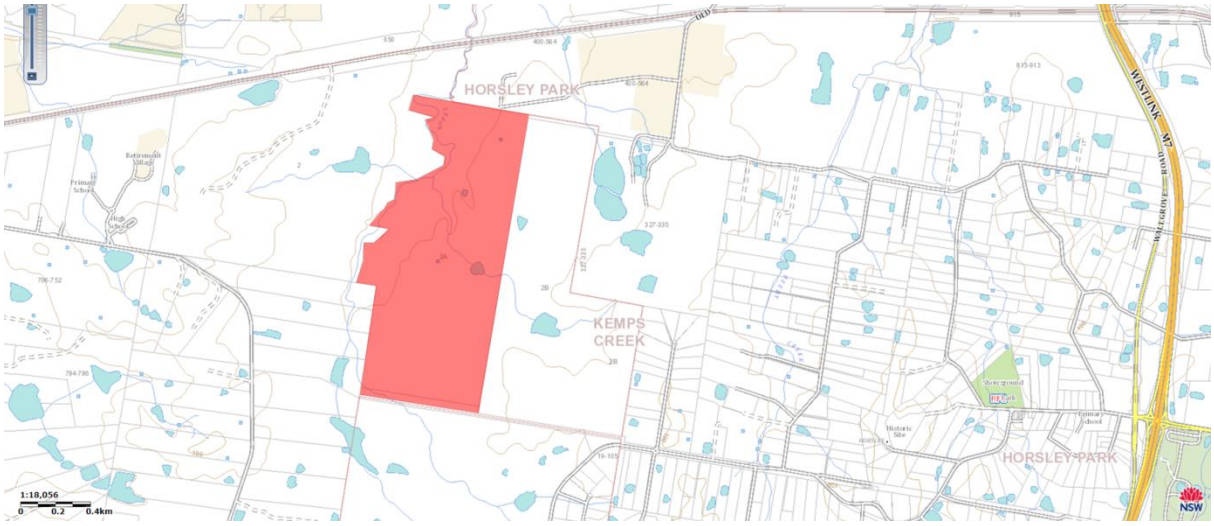
- To remain consistent with waste and landfill regulations and guidelines
- If changes are made to site waste and recycling management, or
- To take advantage of new technologies, innovations and methodologies for waste or recycling management.

Copies of the original WMP and its future versions should be retained by the building manager. Changes made to the WMP, as well as the reasons for the changes made, should be documented by the building manager as part of the review process.

2 Project Description

2.1 Overview of Proposed Development

Oakdale South Estate is located in Kemps Creek, in Penrith City Council (Council) area and formally comprises Lot 12 on DP 1178389 and Lot 87 on DP 752041. The location of OSE is shown in **Figure 1**.



Adapted from SIX Maps: https://maps.six.nsw.gov.au/

Figure 1 Location of Oakdale South Estate development

Part of the larger Oakdale Industrial Estate, OSE has a total area of approximately 117 hectares, is divided into six precincts and will comprise predominantly of:

- Combined warehouse and office buildings;
- Amenities;
- Estate and regional roads; and
- External, on-level car parking areas and driveways.

A copy of the current architectural plans used to inform this WMP are provided in **Appendix A**.

2.2 Overview of Proposed Construction Work

The proposed MOD 12 modification to the OSE Concept Proposal entails the below modifications:

- Update to the masterplan and concept plan to update total building gross floor areas (GFA) and building footprints for Lots 1C, 1D, 2A, 2B.
- Decreased GFA of Lot 1C.
- Fit-out and use of Lot 1D Warehouse 1 for pallet maintenance and storage. Lot 1C will retain existing warehouse and distribution use approval.
- 5,000 m^2 hardstand extension of Lot 1D Warehouse 1 into Lot 1C for pallet storage.

2.3 Overview of Proposed Operation

Based on communication with the Client, SLR understands OSE will retain its function as an industrial and commercial estate geared primarily towards warehousing and distribution businesses.

3 Better Practice Waste Management and Recycling

3.1 Waste Management Hierarchy

This WMP has been prepared in line with the waste management hierarchy shown in **Figure 2**, which summarises the objectives of the *Waste Avoidance and Resource Recovery Act 2001.*

The waste management hierarchy comprises the following principles, from most to least preferable:

- Waste **avoidance**, prevention or reduction of waste generation. Achievable through better design and purchasing choices.
- Waste **reuse**, reuse without substantially changing the form of the waste.
- Waste **recycling**, treatment of waste that is no longer usable in its current form to produce new products.
- Energy **recovery**, processing of residual waste materials to recover energy.
- Waste **treatment**, reduce potential environmental, health and safety risks.
- Waste **disposal**, in a manner that causes the least harm to the natural environment.

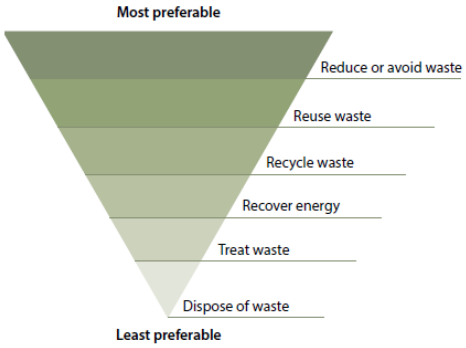


Image from NSW EPA (2014) NSW Waste Avoidance and Resource Recovery Strategy 2014-21.

Figure 2 Waste management hierarchy

3.2 Benefits of Adopting Better Practice

Adopting better practice principles in waste minimisation offers significant benefits for organisations, stakeholders and the wider community. Benefits from better practice waste minimisation include:

- Improved reputation of an organisation due to social and environmental responsibility.
- Lowered consumption of non-renewable resources.
- Reduced environmental impact, for example, pollution, from materials manufacturing and waste treatment.
- Reduced expenses from lower waste disposal.
- Providing opportunities for additional revenue streams through beneficial reuse.

4 Waste Legislation and Guidance

The legislation and guidance outlined in **Table 1** below should be referred to during the site preparation, construction and operational phases of OSE.

Table 1 Legislation and guidance

Legislation and Guidance	Objectives
Council legislation and guidelines	
Penrith Local Environmental Plan (LEP) 2010[1]	The Penrith LEP came into force for the entire Penrith local government area on 25 February 2015 and provides the legal framework of the Penrith Development Control Plan, including land use and development permitted in a set zone. The LEP also contains provisions to conserve local heritage and protect sensitive land.
Penrith Development Control Plan (DCP) 2014[2]	The Penrith DCP came into effect on 17 April 2015 and supports provision of the LEP planning controls by providing detailed planning and design guidelines. The DCP has been prepared in accordance with the *Waste Avoidance and Resource Recovery Act 2001*. One of the objectives of the DCP is to assist in reducing Penrith's ecological footprint by encouraging the diversion of waste from landfill. This WMP specifically addresses Part C5 – Waste Management of the DCP and the Waste Management Guidelines for Industrial, Commercial and Mixed Use.
Waste Strategy 2017-2026, Penrith City Council	Council's waste strategy sets out the waste management targets for the Penrith local government area including working towards reduced waste generation and increased landfill diversion. The strategy was prepared in consultation with the community and informed by waste audit results. The strategy defines the actions required to reach the targets, including actions for waste diversion from landfill, resource recovery, technology innovation, community education and resource recovery facilities.
State and National legislation and guidelines	
Building Code of Australia (BCA) and relevant Australian Standards	The BCA has the aim of achieving nationally consistent, minimum necessary standards of relevant health and safety, amenity and sustainability objectives efficiently.
Council of Australian Governments National Construction Code 2016	The National Construction Code 2016 sets the minimum requirements for the design, construction and performance of buildings throughout Australia.
NSW EPA's Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities 2012	These better practice guidelines present information on waste minimisation and resource recovery as well as information on commonly used waste management provisions. The guidelines also provide benchmarks for assessing waste production rates in Australia.

[1] https://legislation.nsw.gov.au/#/view/EPI/2010/540

[2] https://www.penrithcity.nsw.gov.au/building-development/planning-zoning/planning-controls/development-control-plans

Legislation and Guidance	Objectives
NSW EPA (2014) NSW Waste Avoidance and Resource Recovery Strategy 2014-21	The *NSW Waste Avoidance and Resource Recovery Strategy 2014-21* is aimed at ultimately 'improving environment and community well-being by reducing the environmental impact of waste and using resources more efficiently' by presenting a framework intended to avoid and reduce waste generation, increase recycling, divert more waste from landfill, manage problem wastes better, reduce litter and reduce illegal dumping.
NSW EPA Resource Recovery Orders and Resource Recovery Exemptions	The NSW EPA has issued a number of resource recovery orders and resource recovery exemptions under the POEO (Waste) Regulation 2014 for a range of wastes that may be recovered for beneficial re-use. These wastes typically include those from demolition and construction works, as well as operational wastes such as food waste. • Resource recovery orders present conditions which generators and processors of waste must meet to supply the waste material for beneficial re-use. • Resource recovery exemptions contain the conditions which consumers must meet to use waste for beneficial re-use.
NSW EPA's Waste Classification Guidelines 2014	The NSW EPA *Waste Classification Guidelines* assists waste generators to effectively manage, treat and dispose of waste to ensure the environmental and human health risks associated with waste are managed appropriately and in accordance with the *POEO Act 1997* and is associated regulations.
Protection of the Environment Operations Act (POEO) 1997 and Amendment Act 2011	The *POEO Act 1997* and *POEO Amendment Act 2011* are administered by the NSW Environment Protection Authority (NSW EPA) to enable the NSW Government to establish instruments for setting environmental standards, goals, protocols and guidelines. They outline the regulatory requirements for lawful disposal of wastes generated during the demolition, construction and operational phases of a development, as well as the system for licencing waste transport and disposal.
The Work Health and Safety Regulation 2011	The Work Health and Safety Regulation 2011 provide detailed actions and guidance associated with the topics discussed in *The Work Health and Safety Act 2011*. The primary aim of the regulation is to protect the health and safety of workers and ensure that risks are minimised in work environments. Workplaces are to ensure that they are compliant with the requirements specified in the regulations. The regulations discuss items such as actions that are prohibited or obligated in work environments, the requirements for obtaining licences and registrations, and the roles and responsibilities of staff in workplaces.

Legislation and Guidance	Objectives
Waste Avoidance and Resource Recovery Act 2001	The *Waste Avoidance and Resource Recovery Act 2001* aims to promote waste avoidance and resource recovery and repeals the *Waste Minimisation and Management Act 1995*. Specific objectives of the *Waste Avoidance and Resource Recovery Act 2001* include: • encouraging efficient use of resources • minimising the consumption of natural resources and the final disposal of waste by encouraging the avoidance of waste and the reuse and recycling of waste • ensuring industry and the community share responsibility in reducing/dealing with waste, and • efficiently funding of waste/resource management planning, programs and service delivery. As of 2016, the addition to the Act of Part 5 defines the legislative framework for the 'Return and Earn Container Deposit Scheme' whereby selected beverage containers can be returned to State Government authorities for a monetary refund.

5 Site Preparation and Construction Waste and Recycling Management

5.1 Targets for Resource Recovery

The performance of each new development should contribute to the following target from the NSW EPA (2014) *NSW Waste Avoidance and Resource Recovery Strategy 2014-21*:

- 75 % of total construction and demolition waste recycled, increasing to 80 % by 2021.

Additionally, in the interests of Council's additional commitments to waste management controls, the construction and excavation procedures should endeavour to reach the following outlined target from the DCP:

- Reduce the volume of demolition, construction and fit out waste, including excavation, going to landfill by 76 %.

It is anticipated that the waste minimisation measures in the following sections will assist OSE in meeting these targets. Waste reporting and audits can be used to determine the actual percentage of wastes that have been recycled during the construction and site preparation stage of OSE's development.

5.2 Waste Streams and Classifications

The site preparation and construction stages are anticipated to generate the following broad waste streams:

- Site clearance wastes,
- Construction waste
- Plant maintenance waste
- Packaging waste, and
- Work compound waste from on-site employees.

A summary of likely waste types arising from site preparation construction activities, along with their waste classifications and proposed management methods, is provided in **Table 2**.

For further information on how to determine a waste's classification refer to the NSW EPA (2014) *Waste Classification Guidelines*[3]. Further information on managing site preparation and construction wastes is available from the NSW EPA website[4].

[3] Available online from http://www.epa.nsw.gov.au/wasteregulation/classify-guidelines.htm

[4] http://www.epa.nsw.gov.au/your-environment/waste/industrial-waste/construction-demolition

Table 2 Potential waste types and their management methods

Waste Types	NSW EPA Waste Classification	Proposed Management Method
Site Clearance		
Green waste including timber, pine and particle board	General solid waste (non-putrescible)	Separated, some chipped and stored on-site for landscaping, remainder to landscape supplies or off-site recycling. Stumps and large trees to landfill.
Clean fill	General solid waste (non-putrescible)	On-site re-use
Contaminated fill	To be classified subject to the results of testing	Off-site treatment or disposal to landfill
Excavated natural material (ENM) or virgin excavated natural material (VENM)	General solid waste (non-putrescible)	On-site re-use of topsoil for landscaping of the site, off-site beneficial re-use or send to landfill site.
Construction		
Sediment fencing, geotextile materials	General solid waste (non-putrescible)	Reuse at other sites where possible or disposal to landfill
Concrete	General solid waste (non-putrescible)	Off-site recycling for filling, levelling or road base
Bricks and pavers	General solid waste (non-putrescible)	Cleaned for reuse as footings, broken bricks for internal walls, crushed for landscaping or driveway use, off-site recycling
Gyprock or plasterboard	General solid waste (non-putrescible)	Off-site recycling or returned to supplier
Sand or soil	General solid waste (non-putrescible)	Off-site recycling
Metals such as fittings, appliances and bulk electrical cabling, including copper and aluminium	General solid waste (non-putrescible)	Off-site recycling at metal recycling compounds and remainder to landfill
Conduits and pipes	General solid waste (non-putrescible)	Off-site recycling
Timber	General solid waste (non-putrescible)	Off-site recycling, Chip for landscaping, Sell for firewood *Treated*: reused for formwork, bridging, blocking, propping or second-hand supplier *Untreated*: reused for floorboards, fencing, furniture, mulched second hand supplier Remainder to landscape supplies.
Doors, Windows, Fittings	General solid waste (non-putrescible)	Off-site recycling at second hand building supplier
Insulation material	General solid waste (non-putrescible)	Off-site disposal
Glass	General solid waste (non-putrescible)	Off-site recycling, glazing or aggregate for concrete production

Waste Types	NSW EPA Waste Classification	Proposed Management Method
Asbestos	Hazardous waste	Off-site disposal at a licenced landfill facility.
Fluorescent light fittings and bulbs	Hazardous waste	Off-site recycling or disposal; contact *FluoroCycle* for more information[5]
Paint	Hazardous waste	Off-site recycling, Paintback collection[6] or disposal
Synthetic Rubber or carpet underlay	General solid waste (non-putrescible)	Off-site recycling; reprocessed and used in safety devices and speed humps
Ceramics including tiles	General solid waste (non-putrescible)	Off-site recycling at a crushing and recycling company
Carpet	General solid waste (non-putrescible)	Off-site recycling or disposal; reused for landscaping, insulation or equestrian uses
Plant Maintenance		
Empty oil and other drums or containers, such as fuel, chemicals, paints, spill clean ups	Hazardous waste: Containers were previously used to store Dangerous Goods (Class 1, 3, 4, 5 or 8) and residues have not been removed by washing or vacuuming. General solid waste (non-putrescible): Containers have been cleaned by washing or vacuuming.	Transport to comply with the transport of Dangerous Goods Code applies in preparation for off-site recycling or disposal at licensed facility Note: Discharge to sewer subject to Trade Waste Agreement with local Council
Air filters and rags	General solid waste (non-putrescible)	Off-site disposal
Oil filters	Hazardous waste	Off-site recycling
Batteries	Hazardous waste	Off-site recycling, Contact the Australian Battery Recycling Initiative[7] for more information
Packaging		
Packaging materials, including wood, plastic, including stretch wrap or LLPE, cardboard and metals	General solid waste (non-putrescible)	Off-site recycling
Wooden or plastic crates and pallets	General solid waste (non-putrescible)	Reused for similar projects, returned to suppliers, or off-site recycling. Contact *Business Recycling* for more information[8]
Work Compound and Associated Offices		
Food Waste	General solid (putrescible) waste	Dispose to landfill with general garbage

[5] Available online from http://www.fluorocycle.org.au/ or http://www.environment.gov.au/settlements/waste/lamp-mercury.html

[6] Available online from https://www.paintback.com.au/

[7] http://www.batteryrecycling.org.au/home

[8] Available online from http://businessrecycling.com.au/search/

Waste Types	NSW EPA Waste Classification	Proposed Management Method
Recyclable beverage containers including glass and plastic bottles, aluminium cans and steel cans	General solid waste (non-putrescible)	Co-mingled recycling at off-site licensed facility or deliver to local NSW container deposit scheme 'Return and Earn' facility[9]
Clean paper and cardboard	General solid waste (non-putrescible)	Paper and cardboard recycling at off-site licensed facility
General domestic waste generated by workers such as soiled paper and cardboard and polystyrene	General solid waste (non-putrescible) mixed with putrescible waste	Disposal at landfill

5.3 Site Preparation Waste Types and Quantities

Site preparation waste would be primarily green waste and excavation spoil. In the absence of Council published sources, the estimated quantities of site preparation waste (**Table 3**) are based on:

- A total development area of approximately 46.2 ha, obtained from the architectural plans attached in **Appendix A**
- An assumed, average excavation depth of 500 mm across the extent of the total development area, and
- Vegetation, for example plant roots, to an assumed average depth of 50 mm across the extent of the total development area.

Table 3 Estimated quantities of site preparation waste

Proposed Land Use	Area (m^2)	Green Waste (tonnes)[10]	ENM or VENM (tonnes)[11]
Total footprint (warehouse and office buildings)	331,636	3,814	283,549
Roads (Estate and Regional)	79,600	916	68,058
Easements	45,800	527	39,159
Amenity Lot	5,800	67	4,959
Total	**462,836**	**5,324**	**395,725**

Quantities are rounded to the nearest whole number.

5.4 Construction Waste Types and Quantities

Construction of the OSE is anticipated to produce waste primarily from excess quantities of building materials (e.g. concrete, bricks, timber and plasterboard/gyprock). In the absence of Council published sources, the estimated quantities of construction waste (**Table 4**) are based on quantities presented for a 'Factory' and 'Office' in Appendix A of *The Hills Development Control Plan (DCP) 2012*. The total areas for the warehouse and offices areas area are as indicated in the architectural plans provided in **Appendix A**.

[9] Available online from http://returnandearn.org.au/

[10] Medium density of 0.23 t/m^3 for 'Vegetation – Garden' (converted from EPA Victoria *Waste Materials – Density Data*)

[11] Low range bulk density of 1.9 t/m3 for 'medium-dense sands and gravels' Table 6-1-1 from Tomlinson M.J. (1986) *Foundation design and construction.* John Wiley & Sons

Table 4 Estimated quantities of construction waste

Project Component	Area (m^2)	Quantities of construction waste (m^3)							Totals
		Timber	Concrete	Bricks	Gyprock	Sand/Soil	Metal	Other	
Warehouse	315,661	79	663	521	143	1,516	190	158	3,270
Offices	15,975	82	301	136	138	141	44	80	922
Totals	**331,636**	**161**	**964**	**657**	**281**	**1,657**	**234**	**238**	**4,192**

Quantities are rounded to the nearest whole number.

5.5 Waste Avoidance

In accordance with Council's DCP and better practice waste management, the Building Contractor, Building Designer and/or equivalent roles should:

- Develop a purchasing policy based on the approximate volumes of materials to be used so that the correct quantities are purchased.
- Arrange for delivery of materials on an 'as needed' basis to avoid material degradation through weathering and moisture damage.
- Communicate strategies to handle and store waste to minimise environmental, health and amenity impacts.
- Select materials with a low environmental impact over the lifecycle of the building.
- Choose timber from certified plantations and avoid unsustainable timber imports including western red cedar, oregon, meranti, luan or merbau.
- Use leased equipment rather than purchase and disposal.
- Minimise site disturbance and unnecessary excavation.
- Incorporate existing trees and shrubs into the landscape plan.
- Grouping wet areas together to minimise the amount of pipe work required.
- Design OSE to require standard material sizes or make arrangements with manufacturing groups for the supply of non-standard material sizes.
- Design works for de-construction.
- Reduce packaging waste by:
  - Returning packaging to suppliers where practicable to reduce waste further along the supply chain
  - Purchasing in bulk
  - Requesting cardboard or metal drums rather than plastics
  - Requesting metal straps rather than shrink wrap, and
  - Using returnable packaging such as pallets and reels.
- Use prefabricated materials.

- Select materials for construction works with low embodied energy properties or materials that have been salvaged or recycled for the construction of OSE, including concrete that utilises slag and fly ash content, structural and reinforced steel that uses recycled steel content or bulk insulation products that contain recycled content, such as recycled glass in glass-wool.
- Preferentially use paints, floor coverings and adhesives with low VOC (volatile organic compound) content.
- Reduce the use of polyvinyl chloride products.
- Implement measures to prevent the occurrence of windblown litter, dust and stormwater pollution.
- Ensure subcontractors are informed of and implement site waste minimisation and management procedures.

5.6 Reuse, Recycling and Disposal

Effective management of construction materials and construction and demolition waste, including options for reuse and recycling where applicable and practicable, will be conducted. Only wastes that cannot be cost effectively reused or recycled are to be sent to landfill or appropriate disposal facilities.

Refer to **Table 2** for an outline of the proposed reuse, recycling and disposal methods for potential site preparation and construction waste streams generated at OSE.

In accordance with Council's DCP and best practice waste management, the following specific procedures should be implemented:

- Ensure the site's project management of the site includes minimising waste generation, requiring the appropriate storage and timely collection of waste materials, and maximising re-use or recycling of materials.
- Store wastes on site appropriately to prevent cross-contamination and guarantee the highest possible re-use value.
- Consider the potential of any new materials to be re-used and recycled at the end of the OSE's life.
- Determine opportunities for the use of prefabricated components and recycled materials.
- Strip topsoil from areas designated for excavation and store it on site for reuse.
- Reuse excavation material will be on-site where possible.
- Re-use formwork where appropriate.
- Retain roofing material cut-offs for re-use or recycling.
- Retain used crates for storage purposes unless damaged.
- Recycle cardboard, glass and metal wastes.
- Recycle or dispose of solid waste timber, brick, concrete, asphalt and rock, where such waste cannot be re-used on site, to an appropriately licenced construction and demolition waste recycling facility or an appropriately licenced landfill.
- Dispose of all asbestos and/or hazardous wastes in accordance with SafeWork NSW and NSW EPA requirements.

- Deliver batteries and florescent lights to drop off-site recycling facility.
- Return excess materials and packaging to the supplier or manufacturer.
- Dispose of all garbage via a council approved system.

5.7 Waste Storage and Servicing

5.7.1 Waste Segregation and Storage

As outlined in the Penrith DCP, waste materials produced from site preparation and construction activities are to be separated at the source and stored separately on-site. It is anticipated that OSE will provide enough space on-site for separate storage, for example, separate skip bins or appropriately managed stockpiles, of the following waste types:

- Bricks, concrete and scrap metal
- Metal and steel, in a condition suitable for recycling at metal recycling facilities
- Timber
- Glass
- Hardstand rubble
- Uncontaminated excavation spoil, if present
- Contaminated excavation spoil, if present
- Hazardous waste, if present
- Paper and cardboard
- General co-mingled recycling waste, and
- Non-recyclable general waste.

If there is insufficient space on-site for full segregation of waste types, the Site Manager, or equivalent role, should consult with the waste and recycling collection contractor to confirm which waste types may be co-mingled prior to removal from the site.

5.7.2 Waste Storage Areas

Waste storage areas will be accessible and allow enough space for storage and servicing requirements. The storage areas will also be flexible in order to cater for change of use throughout the project. Where space is restricted, dedicated stockpile areas are to be delineated on the site, with regular transfers to dedicated skip bins for sorting.

All waste placed in skips or bins for disposal or recycling will be adequately contained to ensure that the waste does not fall, blow, wash or otherwise escape from the site. Waste containers and storage areas are to be kept clean and in a good state of repair.

As per Council's DCP, areas designated for waste storage should:

- Allow unimpeded access by site personnel and waste disposal contractors

- Consider environmental factors which could potentially cause an impact to the waste storage, such as slope, drainage and the location of watercourses and native vegetation
- Allow enough space for the storage of garden waste and other waste materials on-site
- Employ adequate environmental management controls to prevent off-site migration of waste materials and contamination from the waste. For example, consideration of slope, drainage, proximity relative to waterways, stormwater outlets and vegetation
- Consider visual amenity, safety, accessibility and convenience in their selection, and
- Not present hazards to human health or the environment.

5.7.3 Waste Servicing and Record Keeping

The Site Manager or equivalent role is to:

- Arrange for suitable waste collection contractors to remove any construction waste from site
- Ensure waste bins are not filled beyond recommended filling levels
- Ensure that all bins and loads of waste materials leaving site are covered
- Maintain waste disposal documentation detailing, at a minimum:
- Descriptions and estimated amounts of all waste materials removed from site
- Details of the waste and recycling collection contractors and facilities receiving the waste and recyclables
- Records of waste and recycling collection vehicle movements, for example, date and time of loads removed, licence plate of collection vehicles, tip dockets from receiving facility, and
- Waste classification documentation for materials disposed to off-site recycling or landfill facilities.
- Ensure lawful waste disposal records are readily accessible for inspection by regulatory authorities such as Council, SafeWork NSW or NSW EPA, and
- Remove waste during hours approved by Council.

If skips and bins are reaching capacity, removal and replacement should be organised as soon as possible. All site generated building waste collected in the skips and bins will leave the site and be deposited in the approved site lawfully able to accept them.

5.7.4 Contaminated or Hazardous Waste Management

During the site preparation and construction phases, SLR recommends that a qualified and certified contractor is engaged to remove all contaminated or hazardous materials, for example, asbestos, and dispose of all contaminated or hazardous waste at an appropriately licenced facility.

All asbestos and other hazardous waste must be handled according to appropriate legislation and regulation including the Work Health and Safety Regulation 2011.

In accordance with Council's DCP, hazardous waste management at the site may require a licence from the EPA and approval from Council. If hazardous waste is identified for removal, Council and NSW EPA are to be consulted prior to undertaking any hazardous waste removal.

5.8 Site Inductions

All staff, including sub-contractors and labourers, employed during the site preparation and construction phases of OSE must undergo induction training regarding waste management for the Site.

Induction training is to cover, as a minimum, an outline of the WMP including:

- Legal obligations and targets
- Emergency response procedures on-site
- Waste priorities and opportunities for reduction, reuse and recycling
- Waste storage locations and separation of waste
- Procedures for suspected contaminated and hazardous wastes
- Waste related signage
- The implications of poor waste management practices, and
- Responsibilities and reporting, including identification of personnel responsible for waste management and individual responsibilities.

It is the responsibility of the Site Manager or Building Contractor to notify Council of the appointment of waste removal, transport or disposal contractors.

5.9 Signage

Standard signage is to be posted in all waste storage and collection areas. All waste containers should be labelled correctly and clearly to identify stored materials.

Signs approved by the NSW EPA for labelling of waste materials are available online[12] and should be used where applicable. A selection of signs prepared by NSW EPA is provided in **Figure 3**.

[12] NSW EPA approved waste materials signage https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/business-government-recycling/standard-recycling-signs

Figure 3 Examples of NSW EPA labels for waste skips and bins

5.10 Monitoring and Reporting

The following monitoring practices are to be undertaken to improve site preparation and construction waste management and to obtain accurate waste generation figures:

- Conduct waste audits of current projects where feasible.
- Note waste generated and disposal methods.
- Look at past waste disposal receipts.
- Record this information to track waste avoidance, reuse and recycling performance and to help in waste estimations for future waste management plans.

As per Council's DCP, records of waste volumes recycled, reused or contractor removed are to be maintained. This can include dockets or receipts verifying recycling and disposal in accordance with this WMP. This evidence should also be presented to regulatory bodies when required.

Daily visual inspections of waste storage areas will be undertaken by site personnel and inspection checklists and logs recorded for reporting to the Site Manager on a weekly basis or as required. These inspections will be used to identify and rectify any resource and waste management issues.

Waste audits are to be carried out by the Building Contractor to gauge the effectiveness and efficiency of waste segregation procedures and recycling and reuse initiatives. Where audits show that the above procedures are not carried out effectively, additional staff training will be undertaken and signage re-examined.

5.11 Roles and Responsibilities

All personnel have a responsibility for their own environmental performance and compliance with all legislation. It will be the responsibility of the Building Contractor to implement the WMP, and an employee and subcontractor responsibility to ensure that they always comply with the WMP.

Where possible, an Environmental Management Representative should be appointed to OSE. Suggested roles and responsibilities are provided in **Table 5**.

Table 5 Suggested roles and responsibilities for site preparation and construction waste management

Responsible Person	General Tasks
Construction Site Manager	Ensuring plant and equipment are well maintained.
	Ordering only the required amount of materials.
	Keeping materials segregated to maximise reuse and recycling.
	Ultimately responsible for routinely checking waste sorting and storage areas for cleanliness, hygiene and safety issues, contaminated waste materials, and also ensuring that all monitoring and audit results are well documented and carried out as specified in the WMP.
Construction Environmental Manager or equivalent	Approaching and establishing the local commercial reuse of materials where reuse on-site is not practical.
	Establishing separate skips and recycling bins for effective waste segregation and recycling purposes.
	Ensuring staff and contractors are aware of site requirements.
	Provision of training of the requirements of the WMP and specific waste management strategies adopted for OSE.
	Contaminated waste management and approval of off-site waste transport, disposal locations and checking licensing requirements.
	Approval of off-site waste disposal locations and checking licensing requirements.
	Assessment of suspicious potentially contaminated materials, hazardous materials and liquid wastes.
	Monitoring, inspection and reporting requirements.

Daily visual inspections of waste storage areas may be delegated to other on-site staff. All subcontractors will be responsible for ensuring that their work complies with the WMP through the project induction and contract engagement process.

6 Operational Waste and Recycling Management

6.1 Targets for Resource Recovery

The waste management performance of each new development should contribute to the overall NSW State targets for recycling outlined in the *NSW Waste Avoidance and Resource Recovery Strategy 2014-21*. The targets include increasing waste diverted from landfill to 75% and recycling 70% of commercial, industrial and municipal solid waste[13]. Each commercial and industrial development can contribute to this NSW State target through an effective waste management plan.

It is anticipated that the waste minimisation measures in the following sections will assist OSE to meet the state's targets. Waste reporting and audits can be used to determine the actual percentage of waste that are being, or have been, recycled during operation.

6.2 Waste Streams and Classifications

The operation of OSE is anticipated to generate the following broad waste streams:

- General waste and commingled recycling
- Office wastes
- Bulk packaging wastes, including polystyrene and cardboard boxes
- Bulky waste items, such as furniture and e-waste, and
- Stores, plant and general maintenance wastes

Potential ongoing waste types, their associated waste classifications, and management methods are provided in **Table 6**. For further information on how to determine a waste's classification, refer to the NSW EPA (2014) Waste Classification Guidelines. Suggestions for recycling drop off locations and contacts can be found on https://businessrecycling.com.au/ for each waste type.

[13] https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/wastestrategy/140876-warr-strategy-14-21.pdf?la=en&hash=EC6685E6624995242B0538B18C2E80C0CA2E51B3

Table 6 Potential waste types, classifications and management methods for operational waste

Waste Types	NSW EPA Classification	Proposed Management Method
General Operations		
Clean office paper	General solid (non-putrescible) waste	Paper recycling at off-site licensed facility
Cardboard including bulky cardboard boxes	General solid (non-putrescible) waste	Cardboard recycling at off-site licensed facility
Recyclable beverage containers, glass and plastic bottles, aluminium cans, steel cans	General solid (non-putrescible) waste	NSW container deposit scheme 'Return and Earn', container recycling at off-site licensed facility
Food waste	General solid (putrescible) waste	Compost on or off-site or dispose to landfill with general garbage
Batteries	Hazardous waste	Off-site recycling, alternatively contact the Australian Battery Recycling Initiative for more information
Mobile Phones	Hazardous waste	Off-site recycling; can be taken to the Mobile Muster program. Contact Mobile Muster for more information
Bulky polystyrene	General solid (non-putrescible) waste	Off-site recycling or disposal at landfill
Furniture	General solid (non-putrescible) waste	Off-site reuse or disposal to landfill
E-waste	Hazardous waste	Off-site recycling
Printer toners and ink cartridges	Hazardous waste	Off-site recycling, free disposal box or bags and pickup service exists for printer toners and ink cartridges
General garbage, including non-recyclable plastics	General solid (putrescible and non-putrescible) waste	Disposal at landfill
Maintenance		
Spent smoke detectors[14]	General solid (non-putrescible) waste, or Hazardous waste (some commercial varieties)	Disposal to landfill, or off-site disposal at licensed facility
Glass, other than containers	General solid (non-putrescible) waste	Off-site recycling
Light bulbs and fluorescent tubes	Hazardous waste	Off-site recycling or disposal, contact FluoroCycle[15] or Lamp Recyclers[16] for more information

[14] The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) require that when more than 10 smoke alarms (particularly americium-241 sources) are collected for bulk disposal they must be treated as radioactive waste and the requirements of the National Health and Medical Research Council's Code of practice for the near-surface disposal of radioactive waste in Australia (1992) must be met.

[15] https://www.fluorocycle.org.au/

[16] https://www.lamprecyclers.com.au/

Waste Types	NSW EPA Classification	Proposed Management Method
Cleaning chemicals, solvents, area wash downs, empty oil or paint drums, chemical containers	Hazardous waste if containers used to store Dangerous Goods (Class 1, 3, 4, 5 or 8) and residues have not been removed by washing or vacuuming. General solid (non-putrescible) waste if containers cleaned by washing or vacuuming.	Transport to comply with the transport of Dangerous Goods Code applies in preparation for off-site recycling or disposal at licensed facility.
Garden organics - lawn mowing, tree branches, hedge cuttings, leaves	General solid (non-putrescible) waste	Reuse on-site or contractor removal for recycling at licenced facility

6.3 Operational Waste Types and Quantities

SLR has adopted the 'Offices' and 'Warehouse' waste generation rates from Council's DCP Industrial, Commercial and Mixed-Use Waste Management Guidelines for estimating the type and quantities of waste generated from the operational activities of OSE. The operational waste generation rates used are shown below in **Table 7**.

Table 7 Waste generation rates applied to the operations of OSE

Type of Premises	General Waste Generation (L/100 m^2/day)	Recycling Generation (L/100 m^2/day)
Warehouse	10	10
Offices	10	10

Using the waste generation rates in **Table 7** above, the approximate weekly waste quantities for each OSE precinct have been calculated and are presented in **Table 8**. The operational waste quantities were additionally calculated based on the below assumptions:

- The floor areas as presented in the architectural drawings attached in **Appendix A**, and
- A week comprising seven days of operation.

Table 8 Estimated quantities of operational general waste and recycling at OSE

Precinct	Total Warehouse (m^2)	Total office (m^2)	Waste (L/week)	Recycling (L/week)
Precinct 1	83,729	4,661	61,875	61,875
Precinct 2	37,950	2,550	28,350	28,350
Precinct 3	100,667	4,954	73,935	73,935
Precinct 4	33,588	1,761	24,745	24,745
Precinct 5	31,927	2,049	23,785	23,785
Precinct 6	27,800	0	19,460	19,460
Total	**315,661**	**15,975**	**232,150**	**232,150**

Waste and recycling quantities are rounded to the nearest 5 L.

SLR recommends that waste audits be undertaken approximately one month into the operational phase of OSE to quantify actual waste generation rates. The assessment of generated waste quantities will be influenced by management, employee and tenant attitudes to recycling and disposal, and the adequacy of signage and education provided for occupants.

Based on the anticipated activities at OSE, SLR understands that large quantities of the recycling stream will include pallets and plastic and cardboard packaging waste. To minimise packaging waste generated in the recyclables stream, it is recommended that packing waste be returned to the suppliers where possible, standard pallets be returned to their owners and non-standard and broken pallets be stockpiled and collected as required by a waste contractor.

Additionally, it is anticipated that part of the general waste stream will consist of food waste. As per Council's DCP, food scraps should be placed in dedicated food waste bins and collected regularly. To minimise food waste in the general waste stream, it is recommended that any excess food is donated, composted on site or sent off-site to a composting facility.

If additional collection services are required, such as secured document destruction, these can be organised with a waste contractor which can provide additional bins and take collected waste to an off-site licenced facility.

6.4 Waste Storage Area

Each precinct of OSE will have its own waste and recycling storage area where the recycling bins, garbage bins, and cardboard and plastic bales will be stored prior to collection. For each precinct, the waste storage area must be large enough to adequately store all quantities of operational waste and recycling between collections. An appropriate waste storage areas will be identified by the operator of each building.

To allow for ready movement of bins into and out of the bin storage area, the bin storage area is to provide a floor area of at least 150% of the total minimum bin GFA. This can also act as a contingency in the event of spikes in waste generation. Additionally, in accordance with Council's DCP, an additional 0.2 m is to be permitted between the bins to allow for manoeuvrability. All waste storage areas should additionally comply with the following general requirements:

- Comply with relevant BCA requirements, Australian Standards and Penrith City Council's DCP
- Be of adequate size to accommodate all waste bins and recycling bales associated with the development
- Have doors or gates with double-swing designs, if any. Doorways should be wide enough to allow for easy passage of waste and recycling containers
- Provide sufficient space for the segregation and storage of varying waste types including provision for the collection of fluorescent lights, smoke detectors, e-waste and other recyclable resources, and
- Provide sufficient space for reuse items such as crates and pallets for occupational safety purposes.

Interim storage units are to be provided for general waste and recyclables on each floor in buildings three storeys or greater. All waste material will be transported from these units to the central waste storage area at the end of each day by the site cleaners.

6.5 Waste Storage Room Location

In accordance with better practice waste management and Council's DCP, the waste storage area should be located so that:

- It is located away from primary street frontages
- It is near any on-site loading bays
- It is convenient, safe, functional and directly accessible to users in each tenancy and servicing collection staff, but inaccessible to the public
- It avoids pedestrian or vehicular traffic hazards likely to be caused by waste collection and storage,
- It has 1.8 m zone of unobstructed clearance between the waste storage area and the entrance.

As per Council's DCP, the nominated collection areas for each warehouse tenancy is to be clearly nominated on site plans accompanying development applications.

6.6 Waste Storage Area Features

In accordance with better practice waste management and Council's DCP, waste storage areas at OSE should have the following features:

- Blend in with the design of the wider development and the surrounding streetscape
- Be well lit and well-ventilated
- Fully enclosed and walled
- Adequate vermin prevention measures
- Reduce potential noise and odour impacts
- Enhance safety for the public
- Be connected to a water outlet for washing purposes
- Equipped with a hot and cold tap-based water supply centralised mixing valve
- Floor graded to a central drainage point which is connected to the sewer
- Have water discharge from washing flow to a sewer approved by the relevant authority
- Waterproofed and sealed non-slip floor constructed in accordance with the Building Code of Australia.
- Waste equipment is protected from theft and vandalism
- Be fully enclosed, walled and not permit through access to other on-site waste infrastructure
- Have a minimum 2.7 m unobstructed internal room height in accordance with the Building Code of Australia
- Adequate lighting and natural or mechanical ventilation in accordance with the Building Code of Australia
- Provide suitable dual door access with a minimum width of 1.8 m and a minimum 1.8 m unobstructed access corridor for the service of bins
- Provide administrative management, including signage to ensure appropriate use

- Be screened from public areas to reduce the impacts of noise, odour and visual amenity, and
- Flexible in design to allow for future changes in operation, tenancies and uses.

6.7 Waste Servicing

In accordance with Council's DCP, for buildings three storeys or greater, interim waste and recyclables storage units are required on each level. The units are to be collected at the end of each day and transferred by cleaners to the central waste storage room.

Based on communication with the Client, SLR understands that waste collections will be undertaken through a private contractor[17]. The following general waste servicing access requirements should be implemented:

- Waste will be removed regularly.
- Arrangements should be in place so that the waste and recycling storage rooms are not accessible to the general public.

In accordance with Council's DCP, the following is required for the access provisions for of waste collection vehicles:

- Collection vehicles must be able to enter and exit the collection area in a forward direction
- Drawings must show the site's entry point, vehicle's route of travel and manoeuvring
- Swept path models must illustrate how a standard waste collection vehicle will enter, service and exit the site
- A 0.5 m unobstructed clearance is required from all obstructions for the vehicle's ingress and egress manoeuvres
- For rear loaded vehicles, an additional 2 m unobstructed loading zone is required behind the vehicle for the loading of 1,100 L bins. Additionally, a 0.5 m side clearance is required on either side of the vehicle for driver movements and accessibility
- Unobstructed access, adequate driveways and ramps of sufficient strength to support waste collection
- A structural engineer's report is to accompany the DA and confirm that all infrastructure used for vehicle ingress and egress movements can support the waste collection vehicle's weight. Council's DCP consists of dimensions for waste collection vehicles.

SLR recommends that the design of OSE is reviewed by a traffic specialist and that the drawings are updated to be in accordance with Council's servicing requirements listed above. This WMP should be updated to reflect those updates.

Hazardous waste produced at the site will be collected by appropriately licensed specialised service providers.

Once a waste contractor is engaged, a valid waste and recycling collection contract is recommended to demonstrate disposal at a waste facility lawfully able to accept it. Written evidence of the valid contract should be kept on-site.

[17] Email from Stephanie Partridge – Goodman, 'RE: MOD 3 & Stage 2 DA co-ordination meeting - Oakdale West', dated 1 November 2019.

6.8 Bulky and Hazardous Waste Management

As outlined in the Penrith DCP, additional storage space for the bulky waste stream must be provided. This stream includes broken pallets, broken storage units, e-waste and other materials that cannot be disposed of in the general or recyclable waste stream. SLR recommends the following provisions for managing bulky waste.

- All contaminated and hazardous wastes, including fluorescent tubing, batteries and e-wastes should be recycled at an appropriately licensed facility.
- E-waste, printer toners, ink cartridges and batteries contain heavy metal contaminants and should be recycled at an appropriately licensed recycling facility.
- It is a condition of the supplier's licence to sell commercial-use smoke detectors that they be returned to the supplier for disposal. They must not be disposed of with general landfill waste as they contain small amounts of radioactive material. Contact the supplier or the EPA for information on how to return used smoke detectors.

Management may consider organising a skip as required to remove bulky waste items or engage a contractor to collect and transport these items for reuse, recycling or disposal at an EPA licensed facility.

6.9 Waste Avoidance, Reuse and Recycling Measures

6.9.1 Waste Avoidance

Waste avoidance measures include:

- Participating in take-back services to suppliers to reduce waste further along the supply chain
- Avoiding printing where possible
- Review of packaging design to reduce waste but maintain 'fit for purpose'
- Providing ceramic cups, mugs, crockery and cutlery rather than disposable items
- Purchasing consumables in bulk to avoid unnecessary packaging
- Presenting all waste reduction initiatives to staff as part of their induction program, and
- Investigating leased office equipment and machinery rather than purchase and disposal.

6.9.2 Re-use

Possible re-use opportunities include establishing systems with in-house and supply chain stakeholders to transport products in re-useable packaging where possible.

6.9.3 Recycling

Recycling opportunities include:

- Collecting and recycling e-wastes
- Flatten or bale cardboard to reduce number of bins required
- Paper recycling trays provided in office areas for scrap paper collection and recycling
- Collecting printer toners and ink cartridges in allocated bins for appropriate contractor recycling, and

- Development of 'buy recycled' purchasing policy.

6.10 Communication Strategies

Waste management initiatives and management measures should be clearly communicated to building managers, owners, employees, customers and cleaners. Benefits of providing this communication include:

- Improved satisfaction with services
- Increased ability and willingness to participate in recycling
- Improved amenity and safety
- Improved knowledge and awareness through standardisation of services
- Increased awareness or achievement of environmental goals and targets
- Reduced contamination of recyclables stream
- Increased recovery of recyclables and organics material, if implemented, and
- Greater contribution to targets for waste reduction and resource recovery, the environment and heritage conservation.

To realise the above benefits, the following communication strategies should be considered:

- Use consistent signage and colour coding throughout OSE precincts
- Ensure all staff are trained in correct waste separation and management procedures
- Provide directional signage to show location of and routes to waste storage area
- General waste and co-mingled recycling bins should be clearly labelled and colour-coded to ensure no cross contamination, where applicable
- Employees and cleaners should adhere to the WMP for compliance, in consultation with management, and
- Repair signs and labels promptly to avoid breakdown of communications.

6.11 Signage

As outlined in the Penrith DCP, the waste storage and collection areas should be provided with appropriate signage. These signs should clearly identify waste management procedures and provisions to contractors, tenants and visitors should be distributed around OSE.

Signs which clearly identify waste management procedures and provisions to staff and visitors should be distributed around OSE precincts. Key signage considerations are:

- Clear and correct labelling on all waste and recycling bins at all times, indicating the correct type or types of waste that can be placed into a given bin, as shown in **Figure 4**
- Signposts and directions to location of waste storage areas
- Clear signage in all waste storage areas to instruct users, including cleaners and tenants how to correctly separate waste and recycling

- Clear identification of all hazards or potential dangers associated with the waste facilities, especially those linked to compaction or other waste handling equipment
- Maintaining a consistent style colour scheme and system for signs throughout the OSE precincts, and
- Emergency contact information for reporting issues associated with waste or recycling management.

Colour-coded and labelled bin lids are necessary for identifying bins. All signage should conform to the relevant Australian Standard and use labels approved by the NSW EPA[18]. The design and use of safety signs for waste rooms and enclosures should comply with Australian Standard AS 1319 Safety Signs for the Occupational Environment and clearly describes the types of materials designated for each bin.

Figure 4 Example of bin labels for operational waste

6.12 Monitoring and Reporting

Monitoring is recommended to ensure waste and recycling management arrangements and provisions throughout OSE are functional, practical and are maintained to the standard outlined in this plan, at a minimum.

Visual assessments of bins and bin storage areas should be conducted by the building manager, at minimum:

- Weekly, in the first two months of operation to ensure the waste management system is sufficient for the operation, and
- Every six months, to ensure waste is being managed to the standards outlined in this document.

In addition, audits are to be conducted on a half-yearly basis to ensure WMP provisions are maintained.

Quantities of waste and recycling associated with disposal of waste and recycling, including dockets, receipts and other physical records should be recorded by the Building Manager. This is to allow reviews of the waste management arrangements and provisions at the site over time. Records of waste disposal should also be available to regulatory authorities such as the NSW Environmental Protection Authority and SafeWork NSW, upon request.

[18] NSW EPA waste signage and label designs http://www.epa.nsw.gov.au/wastetools/signs-posters-symbols.htm

Any deficiencies identified in the waste management system, including, but not limited to, unexpected waste quantities, is to be rectified by the Building Manager as soon as it is practical. Where audits show that recycling is not carried out effectively, management should carry out additional staff training, signage re-examination and reviews of the waste management system where the audit or other reviewing body has deemed necessary. If this waste management plan no longer sufficiently meets the needs of OSE, review and updates to maintain suitability must be undertaken.

6.13 Roles and Responsibilities

It is the responsibility of the Building Manager, or equivalent role, to implement this WMP and a responsibility of all warehouse tenants and staff to follow the waste management procedures set out by the WMP. SLR recommends that all subcontractors enlisted by the Client are to have roles and responsibilities identified and the OSE's waste management system clearly explained. A summary of recommended roles and responsibilities are provided in **Table 9**.

Table 9 Operational waste management responsibility allocation

Responsible Person	General Tasks
Management	Implement reasonable and feasible measures to minimise waste generated by the development in accordance with the EPA's *NSW Waste Avoidance and Resource Recovery Strategy 2014-2021.*
	Identify appropriate waste storage areas for each precinct and installed to be of adequate size and accommodate all waste bins and recycling bales associated with the development.
	Ensure the WMP is implemented throughout the life of the operation.
	Update the WMP on a regular basis (e.g. annually) to ensure the Plan remains applicable.
	Organise internal waste audits on a regular basis.
	Manage any complaints and non-compliances reported through waste audits etc.
	Ensure effective signage, communication and education is provided to alert visitors, employees and cleaners about the provisions of this WMP and waste management equipment use requirements.
	Monitor and maintain signage to ensure it remains clean, clear and applicable.
Tenants	Monitor the amount of waste generated through the life of the development
	Ensure all waste is classified in accordance with the EPA's *Waste Classification Guidelines: Part 1 Classifying Waste* and disposed of to a facility that may lawfully accept the waste.
	Organise investigations to minimise waste generated by the development.
	Implement reasonable and feasible measures to minimise waste generated by the development in accordance with the EPA's *NSW Waste Avoidance and Resource Recovery Strategy 2014-2021.*
	Identify appropriate waste storage areas for each precinct and installed to be of adequate size and accommodate all waste bins and recycling bales associated with the development.
	Provide and maintain sufficient space for the segregation and storage of varying waste types including provision for the collection of fluorescent tubes, smoke detectors, e-wastes and other recyclable resources.
	Provide and maintain sufficient space for reuse items such as crates and pallets for occupational safety purposes
	Provide sufficient clearance to enable collection vehicles to access the bin storage area.
	Ensure appropriate disposal of contaminated, hazardous and bulky wastes.
	Ensure the WMP is implemented throughout the life of the operation.
	Update the WMP on a regular basis (e.g. annually) to ensure the Plan remains applicable.
	Organise internal waste audits on a regular basis.
	Undertake liaison and management of contracted waste collections.
	Manage any complaints and non-compliances reported through waste audits etc.
	Perform inspections of all waste storage areas and waste management equipment on a regular basis.
	Ensure waste and recycling storage rooms are kept tidy.
	Organise cleaning and maintenance requirements for waste management equipment.
	Monitor bins to ensure no overfilling occurs.

Responsible Person	General Tasks
	Ensure effective signage, communication and education is provided to alert visitors, employees and cleaners about the provisions of this WMP and waste management equipment use requirements.
	Monitor and maintain signage to ensure it remains clean, clear and applicable.
Facility Managers	Perform inspections of all waste storage areas and waste management equipment on a regular basis.
	Ensure waste and recycling storage rooms are kept tidy.
	Organise cleaning and maintenance requirements for waste management equipment.
	Monitor bins to ensure no overfilling occurs.
	Ensure effective signage, communication and education is provided to alert visitors, employees and cleaners about the provisions of this WMP and waste management equipment use requirements.
	Monitor and maintain signage to ensure it remains clean, clear and applicable.
Asset Managers	Ensure effective signage, communication and education is provided to alert visitors, employees and cleaners about the provisions of this WMP and waste management equipment use requirements.
	Monitor and maintain signage to ensure it remains clean, clear and applicable.
Contractors	Identify appropriate waste storage areas for each precinct and installed to be of adequate size and accommodate all waste bins and recycling bales associated with the development.
	Provide and maintain sufficient space for the segregation and storage of varying waste types including provision for the collection of fluorescent tubes, smoke detectors, e-wastes and other recyclable resources.
	Provide and maintain sufficient space for reuse items such as crates and pallets for occupational safety purposes
	Provide sufficient clearance to enable collection vehicles to access the bin storage area.
	Ensure appropriate disposal of contaminated, hazardous and bulky wastes.
	Ensure effective signage, communication and education is provided to alert visitors, employees and cleaners about the provisions of this WMP and waste management equipment use requirements.
	Monitor and maintain signage to ensure it remains clean, clear and applicable.
Employees	The WMP will be implemented throughout the life of the operation.
	Sufficient space will be provided and maintained for the segregation and storage of varying waste types including provision for the collection of fluorescent tubes, smoke detectors, e-wastes and other recyclable resources.
	Sufficient space will be provided and maintained for reuse items such as crates and pallets for occupational safety purposes
	Ensure appropriate disposal of contaminated, hazardous and bulky wastes.
	Cleaning and maintenance requirements for waste equipment will be undertaken.
	Bins will be monitored to ensure no overfilling occurs.
	Garbage holding areas and storage rooms will be kept tidy.

Responsible Person	General Tasks
Cleaners and Staff	Removal of general waste, recyclables, cardboard waste and hazardous waste from floor areas for transfer to centralised waste and recycling collection rooms daily or as required.
	Cleaning of all bins and waste and recycling rooms on a weekly basis or as required.
	Compliance with the provisions of this WMP.
Gardening Contractor, as applicable	Removal of all garden organics waste generated during gardening maintenance activities for recycling at an off-site location or reuse as organic mulch on landscaped areas.

APPENDIX A

Architectural Drawings

Site Area Schedule

Total Site Area	**117.117 ha**
Less:	
Non Developable Land	33.67 ha
Easements	4.58 ha
Regional Roads	1.74 ha
Estate Roads	6.22 ha
	46.22 ha

Development Areas

Precinct 1	16.34 ha
Precinct 2	7.46 ha
Precinct 3	18.92 ha
Precinct 4	14.27 ha
Precinct 5	6.46 ha
Precinct 6	6.86 ha
Amenity Lot	0.58 ha
Total Developable	**70.89 ha**
Total Warehouse	319,567 sqm
Total Office	16,498 sqm
Total Facility	336,065 sqm

Warehouse 1A	
Site	25,230sqm
Warehouse	11,595sqm
Office	705sqm
Dock Office	95sqm
Total Area	12,395sqm
Total Carparking	42
Provisional Parking	19

Warehouse 1B	
Site	34,491sqm
Warehouse	17,900sqm
Office	535sqm
Dock Office	100sqm
Drive Thru	1,000sqm
Total Area	19,535sqm
Total Carparking	91

Warehouse 1C	
Site	49,776sqm
Warehouse 1	14,180sqm
Warehouse 2	13,460sqm
Office 1	698sqm
Office 2	698sqm
Dock Office 1	190sqm
Dock Office 2	190sqm
Total Area	29,416sqm
Total Carparking	185

Warehouse 1D	
Site	53,960sqm
Warehouse 1	14,108sqm
Warehouse 2	15,392sqm
Office 1	862sqm
Office 2	707sqm
Dock Office 1	202sqm
Dock Office 2	202sqm
Total Area	31,473sqm
Total Carparking	169

Warehouse 2A	
Site	25,685sqm
Warehouse 2A-1	4,320sqm
Warehouse 2A-2	3,840sqm
Warehouse 2A-3	3,845sqm
Office 2A-1	300sqm
Office 2A-2	300sqm
Office 2A-3	300sqm
Dock Office	N/A
Total Area	12,905sqm
Total Carparking	69

Warehouse 2B	
Site	48,824sqm
Warehouse 2B-1	13,435sqm
Warehouse 2B-2	12,510 sqm
Office 2B-1	750sqm
Office 2B-2	750sqm
Dock Office 2B-1	75sqm
Dock Office 2B-2	75sqm
Total Area	27,595sqm
Total Carparking	214

Warehouse 3A	
Site	70,383sqm
Warehouse	40,090sqm
Office	1,015sqm
Dock Office	175sqm
Total Area	41,280sqm
Total Carparking	200

Warehouse 3B	
Site	64,290sqm
Warehouse	36,100sqm
Office	1,478sqm
Dock Office	176sqm
Fork ReCharge	702sqm
Total Area	38,456sqm
Total Carparking	159
Provisional Parking	32

Warehouse 3C	
Site	23,094sqm
Warehouse	10,324sqm
Office	516sqm
Dock Office	N/A
Total Area	10,840sqm
Total Carparking	62

Warehouse 3D	
Site	31,424sqm
Warehouse	13,451sqm
Office	1500sqm
Dock Office	94sqm
Total Area	15,045sqm
Total Carparking	110

Warehouse 4A	
Site	142,768sqm
Warehouse	33,588sqm
Office	1,761sqm
Dock Office	N/A
Total Area	35,349sqm
Total Carparking	325

Warehouse 5A	
Site	64,613sqm
Warehouse	31,457sqm
Plant Rooms	470sqm
Office 1	1,302sqm
Office 2	317sqm
Dock Office	430sqm
Total Area	33,976sqm
Total Carparking	250

Warehouse 6A	
Site	68,662sqm
(Includes developable, part of landscape drainage setback and APZ setback areas)	
Warehouse	26,720sqm
Workshop	707sqm
Gatehouse	108sqm
Drivers Quarters	265sqm
Dock Office	N/A
Total Area	27,800sqm
Total Carparking	193

SBA ARCHITECTS

Oakdale South Estate **Precinct 2 DA**

Horsley Park

Development Application

Estate Masterplan

1:2500 @ A1
1:5000 @ A3

0 50 250

25 Sept 2020

OAK MP 02 (C)
Project No: 19146

Goodman

BRICKWORKS LIMITED

Ottelia Road

Car Entry / Exit

RL 64.50 +

RL 65.50

Boundary

FNC-2

Carparking (58)

Ramp 1:20

Security Gate

RW

RL 68.50

Office 1C-1 (2 Levels) 600sqm

Waste Storage Area

RSD

20m Awning Over

On Grade Docks (6)

45m Hardstand

Proposed Industrial Facility

Warehouse 1C-1
12,070sqm
FFL 67.40 (+/- 500mm)

Proposed Industrial Facility

Warehouse 1C-2
11,670sqm
FFL 67.40 (+/- 500mm)

On Grade Docks (5)

Waste Storage Area

20m Awning Over

45m Hardstand

RL 65.00 +

111971 Warehouse 1C-1

Boundary

FNC-2

Dock Office 100sqm

Recessed Docks (4)

3m Awning Over

Recessed Docks (3)

Dock Office 100sqm

3m Awning Over

Fire Brigade Truck Parking (20 x 6m)

Fire Sprinkler Booster

7500

3750

Truck Entry / Exit

Security Gate

Fire Brigade Access

FNC-1

RL 65.81 +

Proposed Lot 1D Additional Hardstand
Refer to Drawing DA200

Office 1C-2 (2 Levels) 600sqm

Sprinkler Tank

Sprinkler Tank

Pump Room

Carparking (57)

Security Gate

Car Entry / Exit

RL 65.70

RL 65.91

Boundary

FNC-1

128125 Warehouse 1C-2

Aristida Close

Entolasia Close

45000 Hardstand

108985 Warehouse 1C-1

91081 Warehouse 1C-2

45000 Hardstand

Lot 1D
Refer to Drawing DA200

Legend

- Site Boundary
- Lot Boundary
- Building 7.5m Setback
- Landscape 3.75m Setback
- (FNC-1) Chainwire Fencing
- (FNC-2) Palisade Fencing
- Retaining Wall

Lot 1A
Existing Warehouse Facility

Development Area Schedule

Site Area (inclusive of 1D additional Hardstand 5,113sqm)	49,777	sqm
Warehouse 1C-1	12,070	sqm
Office 1C-1 (2 levels)	600	sqm
Dock Office 1C-1	100	sqm
Warehouse 1C-2	11,670	sqm
Office 1C-2 (2 levels)	600	sqm
Dock Office 1C-2	100	sqm
Total Building Area	25,140	sqm
Awning	3,080	sqm
Site Cover (exc. awning)	51	%
Floor Space Ratio	0.51	: 1
Hardstand Area	8,925	sqm
Light Duty Area	5,030	sqm
Carparking (inclusive of 2 disable car spaces)	115	

SBA ARCHITECTS

Oakdale South Estate **Mod 12**

Horsley Park

Proposed Industrial Facility 1C

Development Application

Site Plan / Floor Plan

0 10 50

1:500 @ A1
1:1000 @ A3

6 Oct 2020

OAK 1C DA 100 (A)

Project No: 20207

Goodman

BRICKWORKS LIMITED

Lot 1C
Proposed Industrial Facility
(Refer to Drawing DA100)

Lot 1A
Existing Warehouse Facility

Lot 1B
Existing Warehouse Facility

Entolasia Close

Aristida Close

New Truck Entry Only

Proposed Additional Hardstand for Lot 1D
Site Area - 5,113 sqm
Hardstand - 5,102 sqm

New 4.3 KL LPG Gas Tank

EXISTING FENCE

FNC-1

Existing36m Hardstand

Existing Truck Entry / Exit

RL 66.25 +

Existing Sliding Gate

Existing 36m Hardstand

Existing Truck Entry / Exit

Existing Car Entry / Exit
RL 66.50 +

Existing 20m Awning Over

Existing 20m Awning Over

Existing Car Entry / Exit
RL 66.50 +

Ramp

Existing Office 1D-1
(2 Levels) 754 sqm

Provisional Parking (5)

Existing 3m Awning Over

Ex. Sprinkler Tank

Ex. Pump Room

RW

EXISTING HARDSTAND

EX RSD EX RSD EX RSD EX RSD EX RSD

Existing On Grade Docks (5)

Existing Dock Office (2 Levels) 206 sqm

Existing Recessed Docks (6)

Existing Recessed Docks (6)

Existing Dock Office (2 Levels) 206 sqm

EX RSD EX RSD EX RSD EX RSD

Existing On Grade Docks (4)

Existing Office 1D-2
(2 Levels) 660 sqm

New Electrical Substations

Existing Warehouse Facility with New Fitout
Warehouse 1D-1
14,105 sqm
FFL 67.00 (+/- 500mm)

Existing Linfox Warehouse Facility
Warehouse 1D-2
15,389 sqm
FFL 67.00 (+/- 500mm)

Existing Carparking (74)

Boundary FNC-1

Existing Carparking (90)

Boundary FNC-1

114532 EXISTING WAREHOUSE

Layout Sydney_17.09 V6b

New 7.5KL LPG Gas Tank

Existing Fire Brigade Access

RW

Boundary
FNC-1

123925 EXISTING WAREHOUSE 1D-1

135125 EXISTING WAREHOUSE 1D-2

Legend

- Site Boundary
- Lot Boundary
- Building 7.5m Setback
- Landscape 3.75m Setback
- (FNC-1) Chainwire Fencing
- (FNC-2) Palisade Fencing
- Retaining Wall

Development Area Schedule

Site Area (Excluding Additional Hardstand 5,113sqm)	53,770	sqm
Ex. Warehouse 1D-1	14,105	sqm
Ex. Office 1D-1 (2 level)	754	sqm
Ex. Dock Office 1D-1 (2 levels)	206	sqm
Ex. Warehouse 1D-2	15,389	sqm
Ex. Office 1D-2 (2 level)	660	sqm
Ex. Dock Office 1D-2 (2 levels)	206	sqm
Ex. Total Building Area	31,320	sqm
Ex. Awning	3,009	sqm
Site Cover (exc. awning)	58	%
Floor Space Ratio	0.58	: 1
Hardstand Area	8,793	sqm
Additional Hardstand	5,102	sqm
Light Duty Area	6,491	sqm
Carparking (Inclusive of 4 x Disabled Spaces and 5 x Provisional Spaces)	169	

SBA ARCHITECTS

Oakdale South Estate **Mod 12**

Horsley Park

Existing Industrial Facility 1D

Development Application

Site Plan / Floor Plan

0 10 50

1:500 @ A1
1:1000 @ A3

06 Oct 2020

OAK 1D DA 200 (A)

Project No: 20207

APPENDIX B

Waste Management Plan Template

APPENDIX B

Waste Management Plan Template

Materials On-Site		**Destination**			**Contractor**	
Waste Type	**Estimated Volume (m^3) or Weight (t)**	**Reuse** (on-site or off-site)	**Recycle** (specify recycling outlet)	**Disposal** (specify landfill site)	**Waste Contractor / Transporter**	**Licence Viewed** (Y / N)

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