



ALDI Sydney Automated Distribution Centre

Waste Management Plan

ALDI Foods Pty Ltd

Level 9, 20 Bond Street
Sydney NSW 2000

Prepared by:

SLR Consulting Australia

SLR Project No.: 610.032148.00001

9 December 2024

Revision: 2.0

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
2.0	9 December 2024	Andrew Quinn	Chris Hambling	Andrew Quinn

Basis of Report

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1.0 Introduction

RP Infrastructure is managing the proposed development of ALDI Foods Pty Ltd's (ALDI) Sydney Automated Distribution Centre (ADC) located at 475 Badgerys Creek Road, Bradfield, NSW. The development is in Liverpool City Council area, although the application is to be submitted to the Department of Planning, Housing and Infrastructure (DPHI) for approval as state significant development (SSD) 76913969.

The Planning Secretary's Environmental Assessment Requirements (SEARs) for this application have been issued. In this waste management plan the relevant requirements of the SEARs have been addressed using the Western Sydney Aerotropolis Development Control Plan 2022 and the Liverpool Development Control Plan 2008 (LDCP)¹ as guides.

The SEARs requirements for waste management are shown in Table 1 below.

Table 1 SEARs

Description of requirement	Section reference (this report)
Waste – a waste management report that provides details of: the quantities and classification of all waste streams to be generated on site during the development	For construction and site preparation waste please refer to: <ul style="list-style-type: none"> Section 7.3 Site Preparation Waste Section 7.4 Construction Waste Quantities Table 3 Potential site preparation and construction waste types, classifications and their management methods Table 5 Estimated types and quantities of construction waste For operational waste please refer to: <ul style="list-style-type: none"> Section 8.2 Waste Streams and Classifications Section 8.3 Waste Quantities Table 7 Potential operational waste types, classifications and management methods Table 9 Estimated operational waste and recycling quantities
waste storage, handling and disposal during the development	For construction and site preparation waste please refer to: <ul style="list-style-type: none"> Section 7.5 Waste Avoidance Section 7.6 Reuse, Recycling and Disposal Section 7.7 Waste Storage and Servicing For operational waste please refer to: <ul style="list-style-type: none"> Section 8.4 Waste Storage Area Size Section 8.5 Waste Vehicle Access
the measures that would be implemented to ensure the development is consistent with the aims, objectives and guidance in the NSW Waste and Sustainable Materials Strategy 2041.	For construction and site preparation waste please refer to: <ul style="list-style-type: none"> Section 7.1 Targets for Resource Recovery Section 8.1 Targets for Resource Recovery

¹ https://www.bayside.nsw.gov.au/sites/default/files/2023-04/bayside_development_control_plan_2022.PDF



2.0 Project Description

ALDI intends to construct and operate a new ADC on the site to supply ALDI stores in NSW with daily goods and have capacity to service future expansion of the store network. Although the broader site covers about 184 ha, the site proposed to accommodate the ADC is about 220,827 m².

The proposed ADC will include a combination of temperature zones, including ambient, chilled and freezer zones, for the safe storage and distribution of goods. The facility will be highly automated with about 80% of the internal processes undertaken unstaffed. The facility will have a footprint of about 90,827 m² and at the highest point will have a height of about 42 m.

Figure 1 below shows the proposed site plan

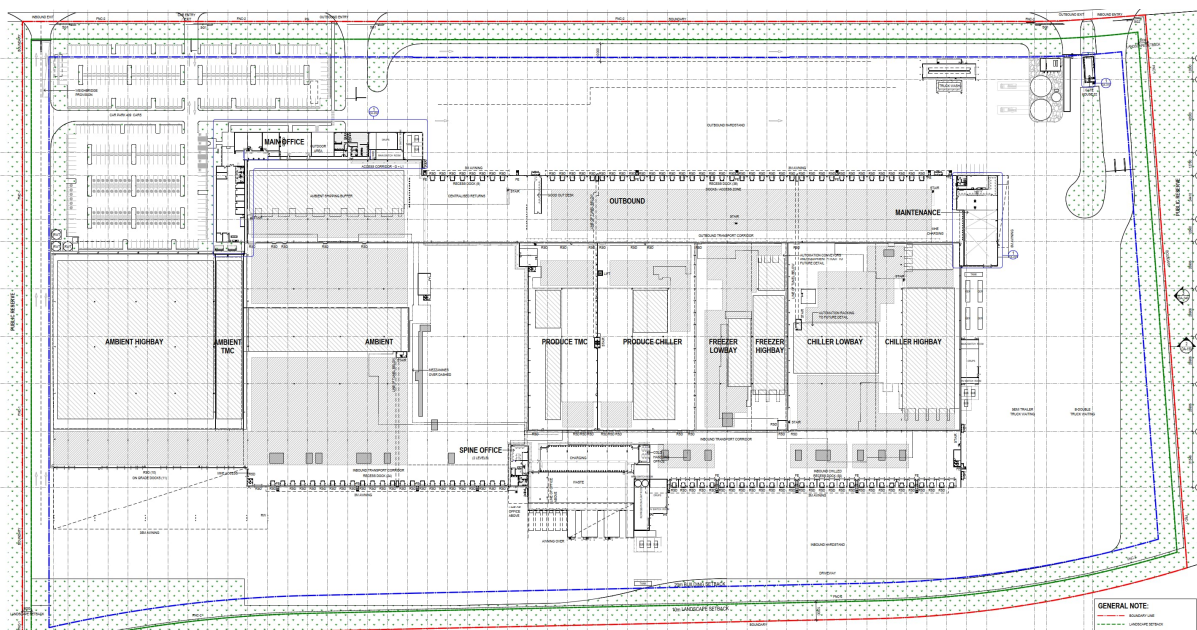


Figure 1 Proposed site plan

3.0 Objectives

The principal objective of this WMP is to identify all potential wastes likely to be generated at the Development during operation, including a description of how waste would be handled, processed and disposed of, or re-used or recycled.

The specific objectives of this WMP are:

- To encourage the minimisation of waste production and maximisation of resource recovery.
- To assist in ensuring that any environmental impacts during the operational life of the Development comply with development consent conditions and other relevant regulatory authorities.



4.0 Review of WMP

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.

5.0 Better Practice for Waste Management and Recycling

5.1 Waste Management Hierarchy

This WMP has been prepared in line with the waste management hierarchy shown in Figure 2. The hierarchy 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.



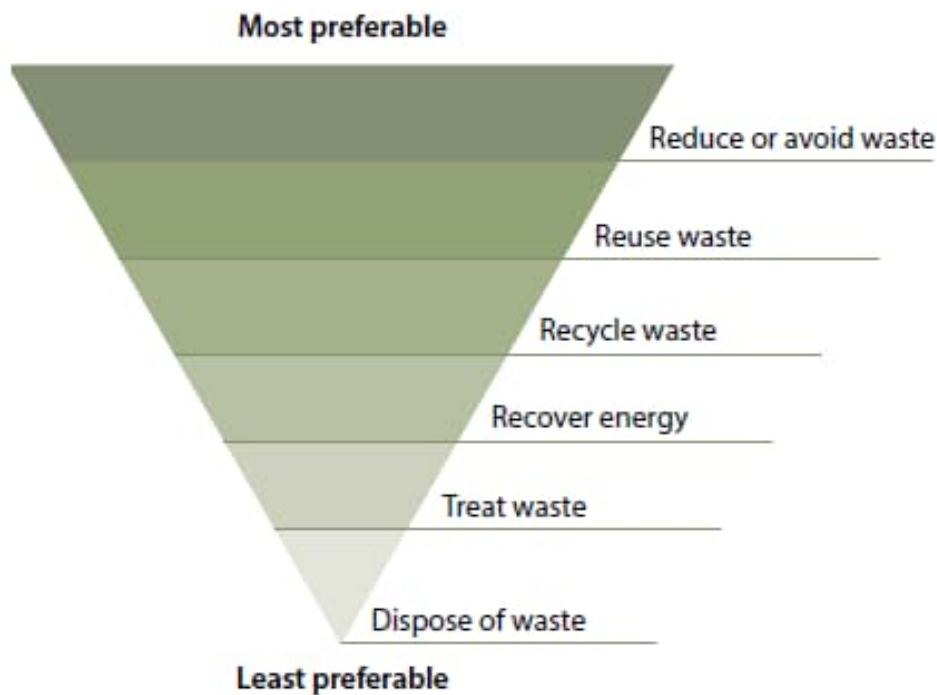


Figure 2 Waste Management Hierarchy

5.2 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.

6.0 Waste Legislation and Guidance

While the WMP will directly address the SEARs, the *Western Sydney Aerotropolis DCP 2022* (including *Aerotropolis DCP 2022 – Appendices*, November 2022), *Aviation Safeguarding Guidelines – Western Sydney Aerotropolis and surrounding areas*, November 2022 and *Liverpool Development Control Plan 2008* are all used as guides for the proposed waste management system. The *Western Sydney Aerotropolis Precinct Plan* has also been referenced although this provides little practical assistance to guide waste management facilities at the development.



6.1 Western Sydney Aerotropolis DCP 2022

Western Sydney Aerotropolis DCP makes a number of references to waste management. Only those most relevant are detailed below, for example, references to residential developments are omitted. Where necessary, commentary is also provided on their application in this development.

2.7 Parking design and access

PO7 Vehicle access arrangements and queuing areas on a site shall minimise any adverse impact on infrastructure, road networks, safety, adjoining properties, amenity, and street trees.

- 5. Where the entry to a parking space is also the entry to a waste collection area, access should be possible via a PIN pad and code, to avoid the need for waste truck drivers to carry keys or access cards/fobs with them.*

2.9 Service and loading design

PO1 Provide on-site loading and servicing that meets the demand generated by the development.

- 2. All servicing, including waste and recycling collection, to be carried out wholly within the site with collection points at convenient locations.*

This is the case for this development.

2.10.3 Wildlife Hazards

PO1 Development does not attract wildlife which would create a safety hazard to the operations of the Airport.

- 1. All waste bins are designed and installed with fixed lids.*
- 2. Any bulk waste receptacle or communal waste storage area is contained within enclosures that cannot be accessed by birds or flying foxes.*

The bins proposed have fixed lids and suitable enclosures are proposed for waste storage.

2.11 Services and Utilities

PO5 Infrastructure allows for co-location of compatible similar uses.

- 1. Allow for the installation of the following within the utility corridor:*
 - b. Vacuum waste collection system.*

This is not relevant in this particular development.

2.16 Waste Management and Circular Economy

Objectives



O1. Incorporate well-designed and innovative waste and recycling facilities in the building design stage.

O3. Minimise the amount of waste generated and going to landfill.

O4. Maximise waste separation and resource recovery.

O5. Provide innovative and best practice waste management collection systems and technologies for reuse, recycling, organics collection and product stewardship.

O6. Provide waste and recycling facilities that do not impact on amenity for residents, neighbours and the public, such as visually unpleasant areas, noise, traffic and odours from waste collection services, while also ensuring facilities are accessible, integrated wholly within the built form and easy to use.

The aim of the waste system at this development is to achieve these requirements.

PO1 Waste management measures are implemented at lot and neighbourhood scale to support circular economy activities.

1. Submit a waste management plan to support circular economy activities that also details the quantity and type of waste generated and how this will be managed, reused and recycled. Where possible, incorporate technologies such as vacuum extraction or on-site food processing.

A vacuum waste system is not proposed for this development. On-site food processing, whether composting, worm farms, dehydrators or small-scale anaerobic digestion, is not proposed for the development at this stage as the quantities of food are not known. The viability of an on-site food processing unit will depend on available quantities and types of food and the particular use for the development. Space is available should tenants wish to install an on-site food processing system in the future.

2. Co-locate and integrate waste infrastructure on sites with multiple uses by providing a single collection point for waste and recycling.

This is the case for this development.

3. Demonstrate that organic waste can be managed in the building through measures such as:

a. Multiple options for on-site organic waste to maximise recovery (e.g. communal composting, worm farms, individual composting, dehydrators);

c. Energy generation from organic waste (anaerobic digestion) at lot and precinct scale.

Please refer to the previous comment about on-site food processing

PO2 Waste and recycling facilities promote waste separation and reduce contamination. Materials are separated at source to achieve higher value recovery.

Source separation is proposed according to Penrith Council's documentation.



1. Collection points (including but not limited to reverse vending machines and e-waste drop-off) must be located with adequate space for servicing, ease of use and to encourage the separation of waste material. Collection points are documented in the waste management plan and are easily accessible.

This is the case for this development.

2. Provide separate and enclosed storage for liquid, chemicals, and hazardous waste.

Space has been allowed for these waste streams should they be generated during the operational stage.

4. Consolidated organic waste drop off points are designed to minimise any potential odour and vermin risks. This includes the provision of rooms that are temperature controlled and suitably ventilated.

Specialised storage for organics waste is not proposed and its future installation will depend on the tenant and the particular operations at the development.

PO3 The location of waste management is clearly indicated for each site and neighbourhood.

1. Provide uniform waste management design and colour coding in accordance with AS 4123 across residential and commercial developments.

This is the case for this development.

2. Waste management systems and rooms are located inside buildings to support a heightened amenity and urban design outcome. Waste must not be left outside (excluding during collection) to avoid attracting animals.

Screened waste areas are proposed to be adjacent to buildings.

PO4 Waste bins are provided to a level commensurate with waste produced for each development as outlined in Council's waste and recycling service.

1. Waste storage areas are designed to:

- a. Accommodate the required number and size of waste bins;*
- b. Provide space for the bins to be accessed, rotated and manoeuvred for emptying;*
- c. Allow for future waste separation practices; and*
- d. Account for different uses in mixed use development through the provision of separate and enclosed collection rooms for both residential and commercial uses.*

This is the case for this development.

PO5 Implement innovative waste management storage systems that are safe, healthy, and efficient.

1. Waste storage areas are to:



- a. *Be well-lit and ventilated;*
 - b. *Include water and drainage facilities for cleaning the bins and bin storage area;*
 - c. *Be easily and conveniently accessible for all users and collection contractors;*
 - e. *Comply with Local Council Policy and contractual service provisions.*
2. *Collection and loading points are to be:*
- a. *Level;*
 - b. *Free of obstructions;*
 - c. *Easily accessible from the nominated waste and recycling storage area;*
 - d. *Be integrated wholly within the built form to support a heightened amenity outcome;*
 - e. *Be accessible by heavy rigid collection vehicles to permit entry and exit of the site in a forward direction;*
 - f. *Comply with the Building Code of Australia and Relevant Australian Standards; and*
 - g. *Comply with Local Council Policy and contractual service provisions.*
3. *Provide safe and easy access to waste and resource recovery areas for residents, building managers and collection contractors.*
4. *Ensure waste and recycling areas flexibly adapt to other types of waste and materials storage over time.*
5. *Design waste and recycling facilities to prevent litter and contamination of the stormwater drainage system.*

This is the case for this development.

PO6 Waste management storage systems minimise negative impacts on the streetscape, public domain, building presentation or amenity of pedestrians, occupants, and neighbouring sites.

1. *Waste storage and collection areas are to:*
 - a. *Where possible, be integrated wholly within the developments built form;*
 - b. *Not be visible from the street or public domain;*
 - c. *Not adjoin private open space, windows, habitable rooms, or clothes drying areas;*
 - d. *Not be located within front setbacks; and*
 - e. *Comply with Local Council Policy and contractual service provisions.*
2. *Collection points and systems are designed to minimise noise for occupants and neighbours during operation and collection.*



This is the case for this development.

PO7 Recognise waste types, generation rates and separation needs may change during the useful life of a building.

1. Waste and resource recovery facilities are sited to enable possible future expanded floor area.

2. Design waste and resource recovery facilities to enable installation of new, potentially larger equipment

This is the case for this development.

3.2 Parking and travel management

PO2 To promote efficient and safe vehicle circulation, manoeuvring and parking (including service vehicles and bicycles).

6. All loading and unloading areas are to be:

b. Separated from car parking and waste storage and collection areas.

This is the case for this development.

6.2 Aerotropolis DCP 2022 – Appendices. November 2022

This document makes a number of references to waste management. The most relevant are detailed below.

D.7 Aviation Safeguarding Assessment

Wildlife Hazards (Wildlife Hazard Assessment and Wildlife Management Plan)

A waste management plan for the operation of the use must be submitted for the following uses within the 3km, 8km and 13km buffer:

- a. Agriculture;*
- b. Agricultural produce industry;*
- c. Aquaculture;*
- d. Camping Grounds;*
- e. Eco-tourist facility;*
- f. Food and Drink Premises;*
- g. Garden Centre;*
- h. Hotel;*
- i. Intensive plant agriculture;*
- j. Intensive livestock agriculture;*
- k. Kiosk;*
- l. Livestock processing industry*;*



- m. Plant Nursery;*
- n. Recreation facility (outdoor); and*
- o. Recreation facility (major).*

'Warehouse' is not among the listed uses.

D.46 Waste Management Plan

A Waste Management Plan details the volumes and types of waste that will be generated by the development. It also details where waste containers will be stored, size of bin rooms, location of any planned equipment for treating waste, or systems for transferring waste (such as chutes), location of collection points and the ongoing management of collection of waste and recycling during operation. A waste management plan is also required for demolition and construction stage of the development.

All new commercial, mixed use and residential flat buildings or additions to these development types are to prepare a waste management plan.

Refer to the Better practice guide for resource recovery in residential developments for more information on how to prepare a waste management plan and for calculating commercial and industrial waste and residential waste and recycling generation rates.

The waste management plan will comply with these requirements.

6.3 Aviation Safeguarding Guidelines – Western Sydney Aerotropolis and surrounding areas. November 2022

This documents states that:

Under the Western Parkland City SEPP and the Aerotropolis DCP:

- 3. development applications for specified uses on land within the 13 km buffer zone must be accompanied by a waste management plan for the operation of the use of the land.²*

6.4 Western Sydney Aerotropolis Precinct Plan

The Western Sydney Aerotropolis Precinct Plan September 2024 has been prepared by DPHI. *It provides the place-based objectives and requirements to guide development in the Aerotropolis in a consistent and sustainable manner over time. This Plan sets out the finer grain detail to support the land use zoning and other provisions of the Aerotropolis SEPP.³*

The Plan makes a number of references to waste, which are detailed below, although these are general in nature and do not assist with the design of waste facilities at the development.

2.1 Precinct Plan objectives

The following objectives apply to all land to which this Precinct Plan applies.

² Page 17

³ Page 5



015 Facilitate the establishment of circular economy industries to reduce waste, leverage synergies between industries and circulate resources within and beyond the industrial supply and materials chains of the Aerotropolis.

4.7 Sustainability and Resilience

Objectives

SR01 Development is to support the transitioning to a net zero or net positive outcome over the medium to long term. This will be measured around performance regarding waste management, water management and carbon consumption benchmarks that are provided in the DCP or other relevant legislation.

SR05 Facilitate the design, construction and operation of environmentally sustainable buildings and precincts, including energy efficiency, renewable energy, efficient resource and energy use and reduced emissions and waste.

SR06 Effectively uses waste as a resource through its collection, transport and recycling in a manner that is safe, efficient, cost effective and does provide a positive impact on liveability and the environment.

Requirements

SR1 Energy, water and waste systems are to use a circular economy approach to improve efficiency and result in low-carbon developments.

SR3 Plan for, and achieve, leading industry targets by 2025 and from 2026 beyond to achieve sustainable regenerative targets:

Description	Leading industry practice	Sustainable regenerative
	Target 2020 and 2025	Target 2026 and beyond
Non-residential uses (subject to final modelling)	Green Star Communities – 5+ stars Green Star – 5+ stars	Green Star Communities – 6+ stars Green Star – 6+ stars
Circular economy targets	10% reduction of waste generation 85% reduction in construction waste	100% recovery and re-use of organic waste 90% reduction in construction waste

SR4 Circular economy activities must be located with consideration of:

e. proximity to major transportation routes, considering safe transportation of extractive and waste materials.

6.5 Liverpool Development Control Plan 2008

Part 1 General Controls for all Development

14. Demolition of Existing Developments

Section 14 of Part 1 of the DCP relates to demolition of existing developments. The relevant sections state that:

Demolition



6. *Asbestos, if identified in the building, must be removed and disposed of in accordance with the requirements of Work Cover. Where the amount or type of asbestos materials to be removed requires a licensed asbestos contractor to undertake the removal and disposal, both Council and the Principle Certifying Authority must be advised in writing of the name, address and asbestos license details of the contractor undertaking that work and the name and address of the facility to which the materials will be taken.*

11. *A Waste Management Plan (WMP) is to be submitted with the Development Application. The WMP must include realistic estimates of the volume or area of all types of waste material to be generated from the demolition and excavation activities. Details of how each of those materials will be re-used, recycled or disposed of is to be provided, including the locations to which the materials will be taken.*

12. *The waste management plan together with proof of lawful disposal for all waste that is disposed of, or otherwise recycled from the site must be retained on site. Proof is to include a log book with associated receipt/invoices, waste classification, and site validation certificate. All entries must include:*

- *Time and Date*
- *Description and size of waste*
- *Waste facility used*
- *Vehicle registration and company name*

Both the log book and the associated receipts must be made available for inspection by authorised Council Officer at any time during site works.

16. *All construction and demolition waste must be inspected, graded and sorted in accordance with current EPA standards. Once sorted, it must be either recycled or disposed of according to its classification.*

25. Waste Disposal and Re-use Facilities

Section 25 covers waste storage facilities in new developments. The relevant sections state:

This section applies to all applications that propose:

2. *Demolition of an existing building.*
3. *Construction of any development including alterations and additions.*
4. *Any development that requires a waste bay or the like.*

Non-residential development

Note: Council does not provide waste services to non-residential premises. Owners and operators of non-residential premises must engage a private commercial waste contractor to remove and legally dispose of the waste their premises generates.

1. *Development applications for all non-residential development must be accompanied by a waste management plan that addresses:*

- *best practice recycling and reuse of construction and demolition materials,*



- *use of sustainable building materials that can be reused or recycled at the end of their life,*
- *handling methods and location of waste storage areas, such that handling and storage has no negative impact on the streetscape, building presentation or amenity of occupants and pedestrians, and*
- *procedures for the on-going sustainable management of green and putrescible waste, garbage, glass, containers and paper, including estimated volumes, required bin capacity and on-site storage requirements.*

Waste Management Facilities

1. Waste management facilities shall be provided for in all new buildings (except dwelling houses, Attached dwellings, Semi-Detached Dwellings and Dual Occupancy). These shall be designed to ensure that the storage and collection of waste and recyclables is user friendly for both the occupant and the waste collection contractor.

- The area must be suitably located on premises in terms of accessibility for both the occupants and the waste and recycling contractor.

3. Provision of ongoing waste management facilities shall include:

- Bin bays are to be well ventilated and screened to a minimum height of 1.5m by a structure and landscaping. Construction materials are to be compatible with the proposed development and adjoining development.

- Bin bays or waste service rooms are to be sufficiently open and well lit to allow safe use after dark

- A hose cock for hosing the garbage bin bay and a sewer drainage point are to be provided in or adjacent to the bin storage area. The drainage point should have a fine grade drain cover sufficient to prevent coarse pollutants from entering the sewer. If the hose cock is located inside the bin storage bay it is not to protrude into the space indicated for the placement of bins. Responsibility for cleaning of all waste storage areas should be determined when designing the system and clearly stated in the waste management plan.

Access to waste and recycling storage

4. Waste service rooms or compartments where provided, shall be enclosed and of design compatible with the proposed development. Adequate ventilation shall be provided for the room or compartment. Suitable arrangements for transfer of any interim storage to the main bin bay are to be indicated in the WMP.

5. Waste and recycling collection vehicles should be able to service the development efficiently and effectively and with no need to reverse.

Other Waste Considerations

4. Signage should be in English, and consideration given to other languages reflective of the most recent demographics of Liverpool LGA. Illustrative graphics will form a minimum 50% of the area of the signage. Council can provide appropriate bin bay usage signs if required. Signage is to be prominently posted in each bin bay, or waste service room indicating that:



- Garbage is to be placed wholly within the garbage bins provided.

- The area is to be kept tidy.

Part 7 Development in Industrial Areas

6. Building Design, Streetscape and Layout

Service Areas

Service areas including waste, recycling areas and external storage areas are to be located away from principal street frontages and screened from view.

10. Site Services

Waste management

Owners are to provide their own waste management services. These facilities will vary depending on the needs of the site. Any waste management equipment must not be visible from the street. Waste bins must be provided in a designated area that is easily and safely accessible for workers.

6.6 Other Legislation and Guidance

The waste legislation and guidance outlined in Table 2 below should be referred to during the operation of the Development.

Table 2 Waste legislation and guidance relevant to this report

Legislation and Guidance	Objectives
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 2019	The National Construction Code 2019 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.
NSW Waste and Sustainable Materials Strategy 2041: Stage 1 – 2021-2027	Replacing the <i>NSW Waste Avoidance and Resource Recovery Strategy (2014-21)</i> , the NSW Waste and Sustainable Materials Strategy 2041 focuses on the transition of NSW to a circular economy. The strategy focuses on minimising what is thrown away, and to use and reuse resources more efficiently, making them as productive as possible. The strategy identifies the need to identify infrastructure needs, the mandating of separation of some organic waste streams, and incentivising biogas generation from waste materials.
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 ongoing wastes such as food waste. <ul style="list-style-type: none"> Resource recovery orders present conditions which generators and processors of waste must meet to supply the waste material for beneficial re-use.



Legislation and Guidance	Objectives
	<ul style="list-style-type: none"> 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 <i>POEO Act 1997</i> and its associated regulations.
<i>Protection of the Environment Operations Act (POEO) 1997 and Amendment Act 2011</i>	The POEO Act 1997 and POEO Amendment Act 2011 are administered by the 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 2017	The Work Health and Safety Regulation 2017 provides 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.
<i>Waste Avoidance and Resource Recovery Act 2001</i>	<p>The <i>Waste Avoidance and Resource Recovery Act 2001</i> aims to promote waste avoidance and resource recovery and repeals the <i>Waste Minimisation and Management Act 1995</i>. Specific objectives of the <i>Waste Avoidance and Resource Recovery Act 2001</i> include:</p> <ul style="list-style-type: none"> 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 and resource management planning, programs and service delivery. <p>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.</p>

7.0 Site preparation and Construction Waste and Recycling Management

7.1 Targets for Resource Recovery

Targets for new development are expected to contribute to state-specific targets. The NSW Waste and Sustainable Materials Strategy 2041 (DPIE, 2021) sets a target of 80% average recovery rate from all waste streams by 2030. Analysis by DPIE (2023-2024) indicates that construction and demolition waste recovery rates in 2023-2024 were 78%.

It is anticipated that the waste minimisation measures in the following sections will assist the Development to meet these targets. Waste reporting and audits can be used to determine the actual percentage of wastes that are being, or have been, recycled during the site preparation and construction stages of The Development.



7.2 Waste Streams and Classifications

The site preparation and construction of the Development is likely to generate the following broad waste streams:

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

A summary of likely waste types generated from site preparation and construction activities, along with their waste classifications and proposed management methods, is provided in Table 3.

For further information on how to classify a waste type refer to the NSW EPA (2014) *Waste Classification Guidelines*⁴. Further information on managing site preparation and construction waste is available from the NSW EPA website⁵.

Table 3 Potential site preparation and construction waste types, classifications and their management methods

Waste Types	NSW EPA Waste Classification	Proposed Management Method
Site preparation and 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 – treated	General solid waste (non-putrescible)	Reused for formwork, bridging, blocking, propping or second-hand supplier
Timber - untreated		Off-site recycling, chip for landscaping, sell for firewood, reused for floorboards, fencing, furniture, mulched secondhand supplier and remainder to landscape supplies.

⁴ Available online from <https://www.epa.nsw.gov.au/your-environment/waste/classifying-waste/waste-classification-guidelines>

⁵ <http://www.epa.nsw.gov.au/your-environment/waste/industrial-waste/construction-demolition>



Waste Types	NSW EPA Waste Classification	Proposed Management Method
Doors, windows, fittings	General solid waste (non-putrescible)	Off-site recycling at secondhand 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
Asbestos	Special waste	Off-site disposal to a licensed landfill facility.
Fluorescent light fittings and bulbs	General solid waste (non-putrescible)	Off-site recycling or disposal, contact <i>FluoroCycle</i> for more information ⁶
Paint	Liquid waste	Off-site recycling, Paintback collection ⁷ or disposal
Synthetic rubber or carpet underlay	General solid waste (non-putrescible)	Off-site recycling, reprocessed for other uses
Ceramics including tiles	General solid waste (non-putrescible)	Off-site recycling
Carpet	General solid waste (non-putrescible)	Off-site recycling, disposal or reuse
Packaging		
Packaging materials, including wood, plastic, including stretch wrap or LDPE, 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 <i>Business Recycling</i> for more information ⁸
Work Compound and Associated Offices		
Food Waste	General solid (putrescible) waste	Dispose to landfill with general garbage
Recyclable beverage containers, such as glass and plastic bottles, aluminium cans and steel cans	General solid waste (non-putrescible)	Recycling at off-site licensed facility or at 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, food and polystyrene	General solid waste (non-putrescible) mixed with putrescible waste	Disposal at landfill

7.3 Site Preparation Waste Quantities

Images from Google Earth and Six Maps show that the site is currently substantially cleared. One small shed is the only structure on the site. The site is grassed and features some trees and several dirt tracks. These are shown in Figure 3 below.

⁶ Available online from <http://www.fluorocycle.org.au/> or <http://www.environment.gov.au/settlements/waste/lamp-mercury.html>

⁷ Available online from <https://www.paintback.com.au/>

⁸ Available online from <https://businessrecycling.com.au/>

⁹ Available online from <http://returnandearn.org.au/>





Figure 3 Approximate site location and site features

Site clearance will have already been undertaken and ALDI will be provided with a benched and serviced site. ALDI will only undertake detailed excavation. All soil excavated will be reused on site.

7.4 Construction Waste Quantities

The LDCP does not provide waste generation rates for construction activities. In the absence of readily available construction waste generation rates from Council, SLR has adopted the 'Office' waste generation rates from The Hills Development Control Plan (Hills DCP) 2012 for estimating the type and quantities of waste generated from construction of the Development.

The waste generation rates are shown in Table 4.

Table 4 Construction waste generation rates

Rate Type	Floor Area (m ²)	Waste types and quantities (m ³)						
		Timber	Concrete	Bricks	Gyprock	Sand or Soil	Metal	Other
Office	1,000	5.1	18.8	8.5	8.6	8.8	2.75	5
Factory		0.25	2.1	1.65	0.45	4.8	0.6	0.5

These waste generation rates are used to estimate the waste generated from the construction of the Development. The anticipated construction waste quantities for the Development are shown in Table 5 below and are based on the areas shown in drawing *SYD-SBA-DRW-DA-100-P15-SITE PLAN.pdf*.

The construction waste quantities anticipated are shown in Table 5 below.



Table 5 Estimated types and quantities of construction waste

Level	GFA (m ²)	Waste types and quantities (m ³)								
		Timber	Asphalt	Concrete	Granular Base	Bricks	Gyprock	Sand or Soil	Metal	Other
Warehouse	103,241	25.8	-	216.8	-	170.3	46.5	495.6	61.9	51.6
Office	2,888	14.7	-	54.3	-	24.6	24.8	25.4	7.9	14.4
Hardstand	83,083	-	-	174	-	-	-	399	50	42
Carparks	11,925	-	0.3	0.3	1.2	-	-	-	-	-
Total	201,138	41	0.3	446	1.2	195	71	920	120	108

7.5 Waste Avoidance

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

- Develop a purchasing policy based on the approximate quantities 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 the Development 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 Development works with low embodied energy properties or materials that have been salvaged or recycled for the construction of the Development 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.

7.6 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 3 for an outline of the proposed reuse, recycling and disposal methods for potential site preparation and construction waste streams generated by the Development.

In accordance with best practice waste management, the following specific procedures should be implemented:

- Ensure 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 Development'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.

7.7 Waste Storage and Servicing

7.7.1 Waste Segregation and Storage

Waste materials produced from site preparation and construction activities should be separated at the source and stored separately on-site. It is anticipated that the Development 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.

7.7.2 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 Development. 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.

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.

7.7.3 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.

7.8 Site Inductions

All staff, including sub-contractors and labourers, employed during the site preparation and construction phases of the Development 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.

7.9 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 online¹⁰ and should be used where applicable. A selection of signs prepared by NSW EPA is provided in Figure 4.



Figure 4 Examples of NSW EPA labels for waste skips and bins

7.10 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.

¹⁰ NSW EPA approved waste materials signage <https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/business-government-recycling/standard-recycling-signs>



- Record this information to track waste avoidance, reuse and recycling performance and to help in waste estimations for future Resource Recovery Management Plans.

Records of waste quantities recycled, reused or contractor removed should 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.

7.11 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 for the Development. Suggested roles and responsibilities are provided in Table 6.

Table 6 Suggested site preparation and construction waste management roles and responsibilities

Responsible Person	General Tasks
Construction Site Manager	Ensuring plant and equipment are well maintained.
	Ordering only the required amounts 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 the Development.
	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.



Responsible Person	General Tasks
	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.

8.0 Operational Waste

8.1 Targets for Resource Recovery

Targets for new development are expected to contribute to state-specific targets. The NSW Waste and Sustainable Materials Strategy 2041 (DPIE, 2021) sets a target of 80% average recovery rate from all waste streams by 2030. Analysis by DPIE (2023) indicates that the commercial and industrial waste recovery rate in 2022-2023 was 51%.¹¹

It is anticipated that the waste minimisation measures in the following sections will assist the Development to achieve this recycling rate. Waste reporting and audits can be used to determine the actual percentage of wastes that are being or have been recycled during operation.

8.2 Waste Streams and Classifications

The operation of the Development generates, and is likely to generate in the future, the following broad waste streams:

- Domestic type waste generated by tenants, staff and visitors
- Office waste
- Bulky waste such as cardboard, plastic film and polystyrene
- Garden organic waste from landscaped areas
- Other waste items such as furniture and e-waste.

Potential waste types, their associated waste classifications, and management methods are provided in Table 7 below.

Table 7 Potential operational waste types, classifications and management methods

Waste Types	NSW EPA Waste 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

¹¹ <https://www.epa.nsw.gov.au/your-environment/waste/waste-overview/waste-performance-data>



Waste Types	NSW EPA Waste Classification	Proposed Management Method
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
Fork lift batteries	Hazardous waste	Managed by fork lift suppliers
Lead-acid or nickel-cadmium batteries		Off-site recycling, Contact the Australian Battery Recycling Initiative ¹² for more information
Other batteries	General solid waste (non-putrescible)	
Mobile Phones	General solid waste (non-putrescible)	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	General solid waste (non-putrescible)	Off-site recycling
Printer toners and ink cartridges	General solid waste (non-putrescible)	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 ¹³ - some commercial varieties	Hazardous waste	Disposal to landfill, or off-site disposal at licensed facility
Spent smoke detectors - others	General solid (non-putrescible) waste,	
Glass, other than containers	General solid (non-putrescible) waste	Off-site recycling
Light bulbs and fluorescent tubes	General solid (non-putrescible) waste	Off-site recycling or disposal, contact FluoroCycle ¹⁴ or Lamp Recyclers ¹⁵ for more information
Empty oil and other drums or containers, such as fuel, chemicals, paints, spill clean ups that were previously used to store Dangerous Goods (Class 1, 3, 4, 5 or 8) and residues have not been removed by washing or vacuuming.	Hazardous waste	Transport to comply with the transport of Dangerous Goods Code applies in preparation for off-site recycling or disposal at licensed facility

¹² <http://www.batteryrecycling.org.au/home>

¹³ 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.

¹⁴ <https://www.fluorocycle.org.au/>

¹⁵ <https://www.lamprecyclers.com.au/>



Waste Types	NSW EPA Waste Classification	Proposed Management Method
Empty oil and other drums or containers, such as fuel, chemicals, paints, spill clean ups that have been cleaned by washing or vacuuming.	General solid waste (non-putrescible)	
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

For further information on how to determine a waste's classification refer to the NSW EPA (2014) Waste Classification Guidelines. Recycling drop-off locations and contacts can be found on <https://businessrecycling.com.au/> for each waste type.

8.3 Waste Quantities

In the absence of any waste generation rates in the LDCP, SLR has adopted the 'Offices' and 'Warehouse' waste generation rates from the EPA's C&I Guidelines and the Penrith Guidelines, for estimating the type and quantities of waste generated from the operational activities of the development. The operational waste generation rates used are shown below in Table 8 below.

Table 8 Operational waste generation rates

Development Use	Source	Source Category	Litres per 100 m ² per day	
			General Waste	Recycling
Office	NSW EPA C&I Guidelines	Offices	8	6
Warehouse	Penrith Guidelines	Warehouse (office)	10	10

Using the waste generation rates in Table 8 above, the approximate weekly waste quantities for the development have been calculated based on the assumptions below:

- The floor areas as detailed on the architectural drawings shown in *SYD-SBA-DRW-DA-100-P15-SITE PLAN.pdf*.
- A week comprising seven days of operation.

The estimated quantities of operational waste generated by the development are shown in Table 9.

Table 9 Estimated operational waste and recycling quantities

Type	Area m ²	Generation Rate Source	Total per Day (L)		Total per Week (L)	
			Garbage	Recycling	Garbage	Recycling
Warehouse	103,241	Penrith City Council	10,324	10,324	72,269	72,269
Office	2,888	NSW EPA C&I Guidelines	231	173	1,618	1,213
Total	106,130		10,555	10,497	73,886	73,482



8.4 Waste Storage Area Size

8.4.1 Garbage and Recycling Bins

The waste storage areas for the development must be large enough to adequately store all quantities of operational waste and recycling between collections. Given the nature of the development and its size and scope, compactors and a front lift waste collection service are the most likely to be used by a contractor.

The most common front lift bin capacity is 3 m³ and these have been assumed when calculating bin numbers and storage space for all four warehouses and offices. To allow for ready movement of 3 m³ bins into and out of the bin storage areas, at least 200% of the total minimum bin storage area has been allowed for. Compactors are also available in a range of capacities, so 30 m³, a typically common capacity, has been assumed.

The proposed bin dimensions are those Table 10 below. Bin dimensions may differ slightly between manufacturers.

Table 10 Bin dimensions

Bin Capacity	Height (mm)	Depth (mm)	Width (mm)	Footprint (m2)
3 m ³	1590	2040	1650	3.37
30 m ³	2500	6500	2400	15.60

To facilitate safe and easy movement of bins into and out of the bin storage areas, at least 200% of the total minimum bin storage area has been allowed for. This can also act as a contingency in the event of spikes in waste generation.

The recommended storage areas do not include the storage of bulky waste. The LDCP makes no particular specification for bulky waste storage for this kind of development and the capacity and nature of the proposed compactors and bins allows for the disposal of bulky waste.

8.4.2 Total Waste Storage Area

The estimated number of compactors and bins required for weekly storage of operational waste and recycling generated by the development are shown in Table 11 and are based on:

- The estimated quantities of operational waste and recycling shown in Table 9
- The bin dimensions shown in Table 10.

Table 11 Recommended number of bins and storage areas

Location	Capacity (m ³)	Compaction	Collection Frequency per Week	Number	Footprint (m ²)	Area Required (m ²)
Garbage Compactor	30	3:1	1	1	15.6	118.8
Cardboard Compactor	30	3:1	1	1	15.6	
Garbage bins	3	-	1	1	9.4	
Bins for other recyclables	3	-	1	1	9.4	



8.4.3 Space allowed for waste storage

The drawings show a large waste storage area of over 1800 m². This is more than enough according to the calculated area required and shown in Table 11 above.

This is shown in Figure 5 below.

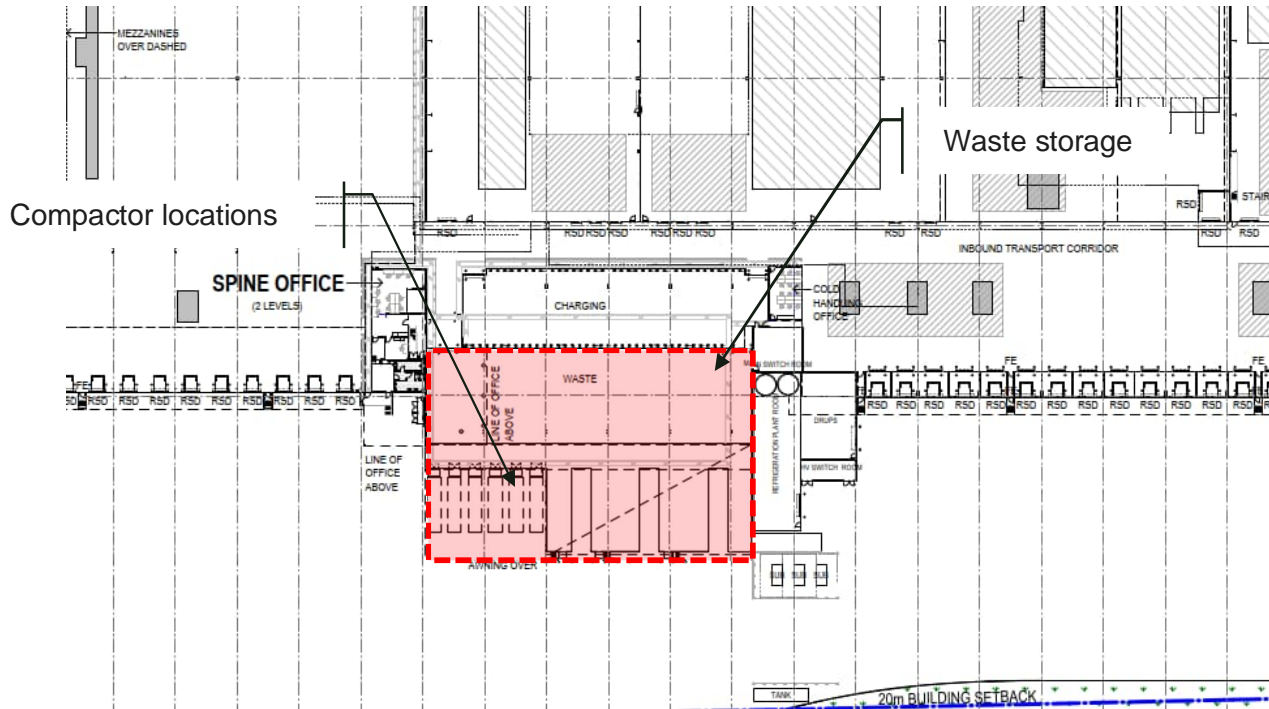


Figure 5 Waste storage area

8.5 Waste Vehicle Access

The following access provisions will apply for collections:

- Collection vehicles will be able to enter and exit the site in a forward direction
- Unobstructed access, adequate driveways and ramps of sufficient strength to support waste collection vehicle have been allowed for.

Waste collection contractors will collect bins and compactors from the Refuse Area where they will be emptied into, or hauled onto, the collection vehicle.

The collection frequency is that proposed in Table 9 but may be subject to change depending on negotiations between the facility operators and the waste contractor.

8.6 Waste Avoidance, Reuse and Recycling

8.6.1 Waste avoidance

Other waste avoidance measures that could be investigated include:

- Returning packaging materials like cardboard to the suppliers through the services of the supplier delivery trucks, allowing the reduction of waste further along the supply chain
- Providing ceramic cups, mugs, crockery and cutlery rather than disposable items



- Bulk purchasing and the purchasing of items that use minimal packaging
- Presenting all waste reduction initiatives to staff and tenants as part of their induction program, and
- Leasing equipment and machinery rather than outright purchase and disposal.

8.6.2 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.

8.6.3 Recycling

Recycling opportunities include:

- Collecting and recycling e-waste
- Printer toners and ink cartridges, if purchased, are collected in allocated bins for appropriate contractor recycling
- Paper recycling trays provided in communal and staff areas for scrap paper collection and recycling and
- Development of 'buy recycled' purchasing policy.

8.7 Communication Strategies

The following communications strategies should be implemented:

- Use consistent signage and colour coding throughout the Development
- Ensure all staff are informed of correct waste separation and management procedures
- Provide directional signage to show locations and routes to waste storage areas
- Repair signs and labels promptly to avoid a breakdown in communication
- Clearly label bins to ensure no cross contamination and to identify the types of waste that may be disposed of in each bin, and
- Educate all staff and contractors associated with the Development, ensuring they adhere to this WMP.

8.8 Signage

Signs which clearly identify waste management procedures and provisions to contractors, staff and visitors should be posted at the Development as appropriate.

Colour-coded and labelled bin lids are necessary for identifying bins and the Australian Standard *AS 4123.7-2006 (R2017) Mobile waste containers Part 7: Colours, markings, and designation requirements* provides recommendations for the designated colours for waste bins depending on the type of waste the bins are to receive. The colours that will apply to ongoing waste generated by the Development are:

- Blue: Paper and cardboard



- Yellow: Recyclables (other than paper and cardboard)
- Red: General waste.

All bin signage should also follow the NSW EPA's standard signage.¹⁶

Other key signage considerations include:

- Clear and correct labelling on all waste and recycling bins, indicating the correct type or types of waste that can be placed into a given bin, as shown in Figure 6.
- Signposts and directions to location of waste storage areas
- Clear signage in all waste storage areas to instruct users how to correctly separate waste and recycling
- Maintaining a consistent style colour scheme that complies with AS 4123, and a system for signs throughout the Development, and
- Emergency contact information for reporting issues associated with waste or recycling management.



Figure 6 Example NSW EPA labels for operational waste

8.9 Roles and Responsibilities

It is the responsibility of the Facilities Manager, or equivalent role, to implement this WMP and a responsibility of all tenants and staff to follow the waste management procedures set out by the WMP. SLR recommends that all subcontractors have the roles and responsibilities of all waste management personnel identified and The Development's waste management system clearly explained. A summary of recommended roles and responsibilities are provided in Table 12 below.

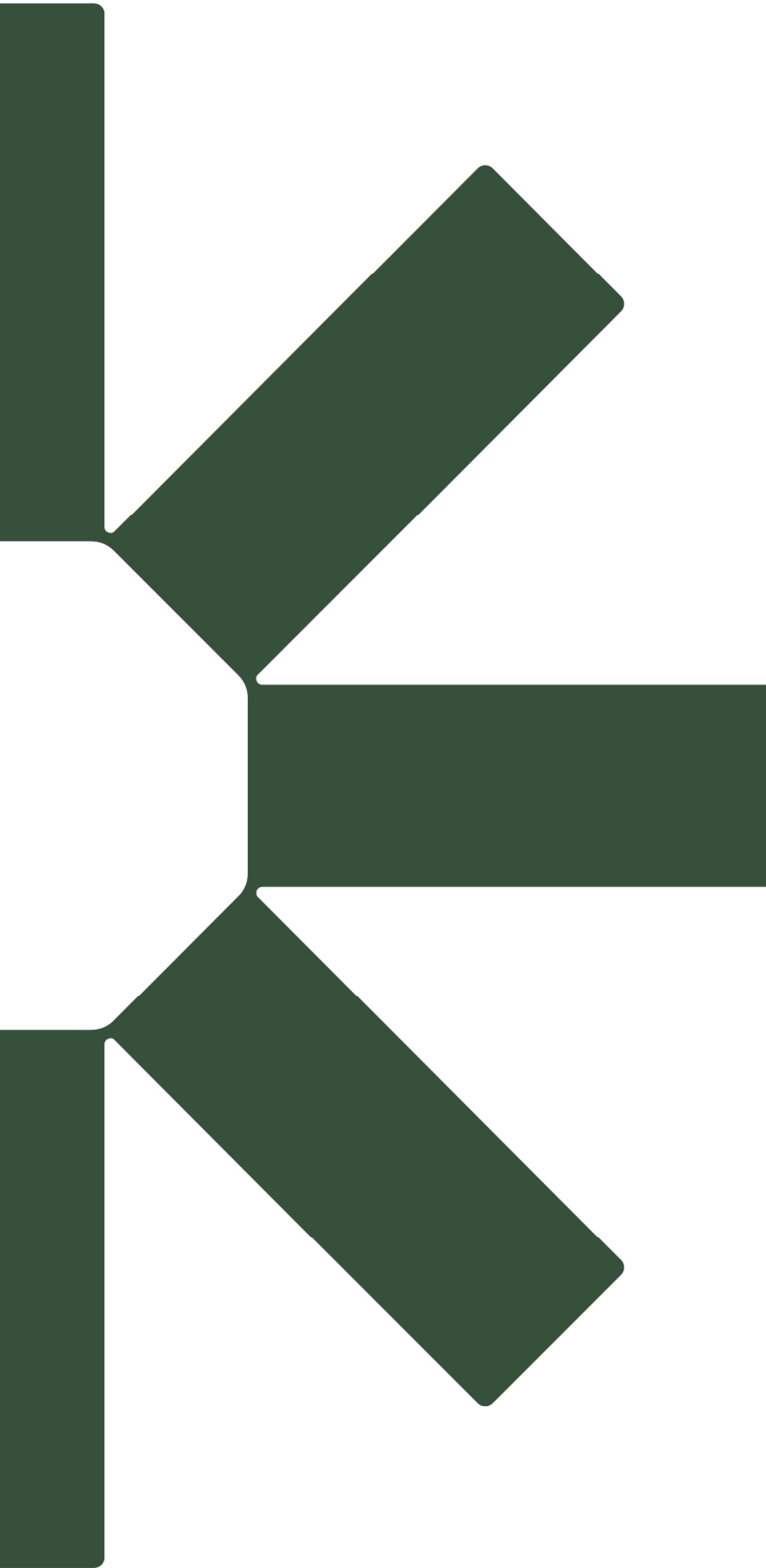
¹⁶ NSW EPA waste signs/posters <http://www.epa.nsw.gov.au/wastetools/signs-posters-symbols.htm>



Table 12 Suggested operational waste-related roles and responsibilities

Responsible Person	General Tasks
Facilities Manager or equivalent role	Ensure the WMP is implemented throughout the life of the operation.
	Update the WMP as needed to ensure the plan remains applicable to the site.
	Regularly conduct waste audits to review system performance and identify any additional materials that could be recovered.
	Manage any complaints and non-compliances reported through waste audits and other sources.
	Ensure all monitoring and audit results are well documented and conducted as specified in this WMP.
	Collect waste from landscaping and facilities such as fluorescent lights and garden organics
Cleaners and caretakers	Transfer general waste, recyclables, cardboard waste and hazardous waste from public spaces to the waste and recycling storage areas on a daily basis or as required.
	Maintain and operate compactors and balers, if obtained, and ensure no overfilling occurs.
	Cleaning of all bins and waste and recycling rooms as per the direction of the site manager, or equivalent role.
	Monitor bins to ensure no overfilling occurs.
	Ensure bins and waste storage areas are kept tidy and clean.
	Compliance with the provisions of this WMP.
Tenants	Transfer general waste, recyclables, cardboard waste and hazardous waste to allocated waste and recycling storage areas in the loading docks.
	Adhere to all waste management directions and comply with the Development's waste management provisions as outlined by the Facilities Manager.
	Ensure effective signage, communication and education is provided to alert visitors, employees, site management staff 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.
	Manage ongoing education on correct source separation and waste management at least every three months.
	Ensure that regular cleaning and daily transfer of bins is correctly being undertaken by the cleaners.
	Ensure all waste compactors and balers are maintained and operational.
	Ultimately responsible for the management of all waste management equipment, cleaning requirements, waste transfer and collection arrangements.





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