WASTE MANAGEMENT PLAN

Elizabeth Enterprise Precinct

Prepared for:

Mirvac Projects Pty Ltd
Level 28
200 George 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 Mirvac Projects Pty Ltd (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
610.30481-R02-v11.0	28 February 2025	Damian Balas	Chani Lokuge	Chani Lokuge
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1 Introduction

1.1 Overview

SLR Consulting Australia Pty Ltd (SLR) has been commissioned by Mirvac Projects Pty Ltd (the Client) to prepare a waste management plan (WMP) in support of a state significant development application (SSDA) for the Stage 1 Elizabeth Enterprise Precinct located at Elizabeth Drive, Badgerys Creek. The WMP is for the Stage 1 Concept Masterplan and associated infrastructure of the Elizabeth Enterprise Precinct, and the construction and operational activities of Stage 1A Development (the Development).

The Stage 1A Development Plan is shown in Figure 1 below.

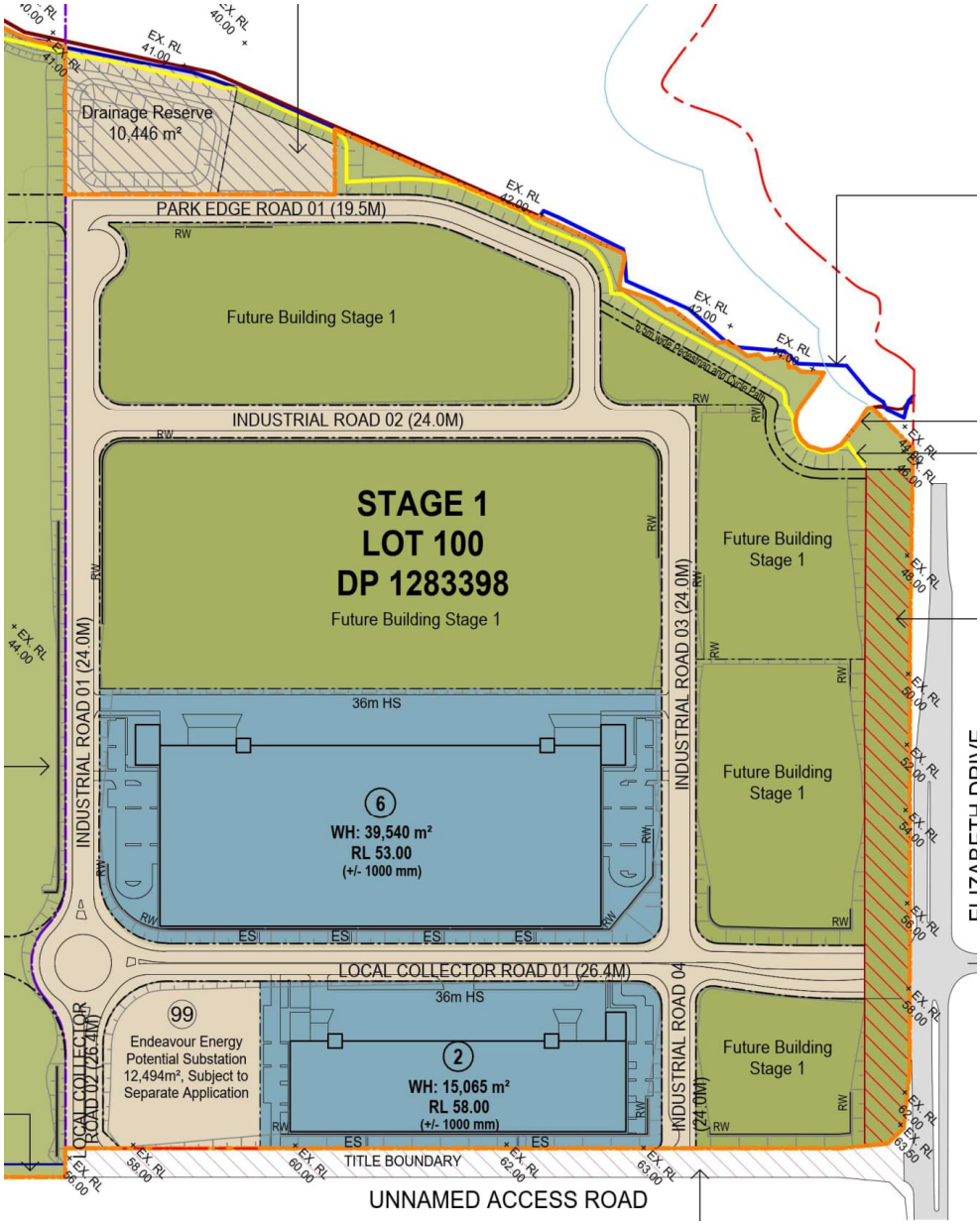

Figure 1 Stage 1A Development Plan

The Stage 1 Concept Plan is shown in Figure 2 below.

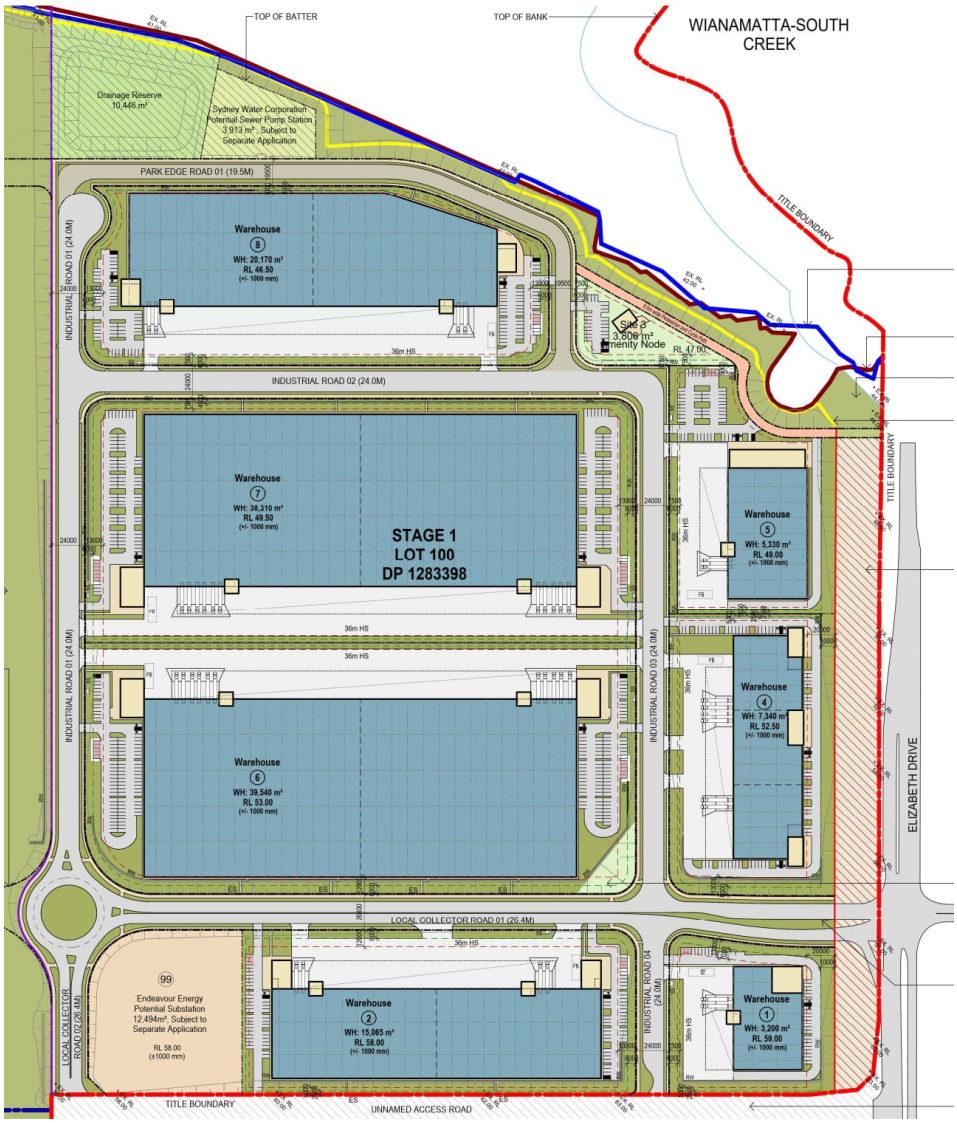

Figure 2 Stage 1 Concept Plan

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

This WMP complies with the requirements of Western Sydney Aerotropolis Development Control Plan 2022 (Aerotropolis DCP). SLR has also referred to the Penrith City Council Development Control Plan 2014 (Penrith DCP) requirements for waste management as a secondary guide for elements not covered by the Aerotropolis DCP. The WMP also complies with the Secretary's Environmental Assessment Requirements (SEARs) relevant to this project. The relevant requirements of the SEARs issued for SSD 19618251 are addressed in this report as shown in Table 1.

Table 1 SSD-19618251 Conditions for Waste Management

SSD-19618251 Conditions for Waste Management	Relevant Sections in this WMP
- Details of the quantities and classification of all waste streams to be generated on site during the development - Details of waste storage, handling and disposal during the development	Section 2 and Section 3

1.2 Objectives

The principal objective of this WMP is to identify all potential waste likely to be generated at the Development site during the site preparation, 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 assist in ensuring that any environmental impacts during the operational life of the Development comply with Council's development consent conditions and other relevant regulatory authorities.

1.3 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.

2 Development Description

2.1 Overview of Proposed Development

The site is located at 1669-1723 Elizabeth Drive, Kemps Creek, NSW, and is within the Penrith Local Government Area, approximately 21 km from the Penrith Central Business District and 41 km from the Sydney CBD.

The proposal includes the Stage 1 Concept Masterplan and associated infrastructure comprising seven industrial buildings, plus a potential sub-station, and the Stage1A Development including site preparation, bulk earthworks, road works, stormwater infrastructure and utilities and subdivision. The Stage 1A Development will involve construction and operational activities for a single warehouse and ancillary office space, associated car and truck parking, office facilities and loading bays for each lot.

2.2 Overview of Proposed Construction Work

Development works are expected to include site preparation and construction activities. See Appendix A for site plans of the Development.

The site preparation and construction activities for the Stage 1 Concept Masterplan and associated infrastructure stage of the Development include:

- The demolition of small farm outbuildings
- Bulk earthworks
- Construction of internal estate roads and connections to existing and future local roads
- Construction stormwater infrastructure and utilities.

The construction and operational stages of the Stage 1A Development include:

- Construction of a single warehouse building
- Ancillary office and dock office
- Heavy duty and light duty carpark areas.

2.3 Overview of Proposed Operations

Based on communication with the Client, SLR understands the Development will function as a standard warehouse with distribution operations.

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 3, 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.

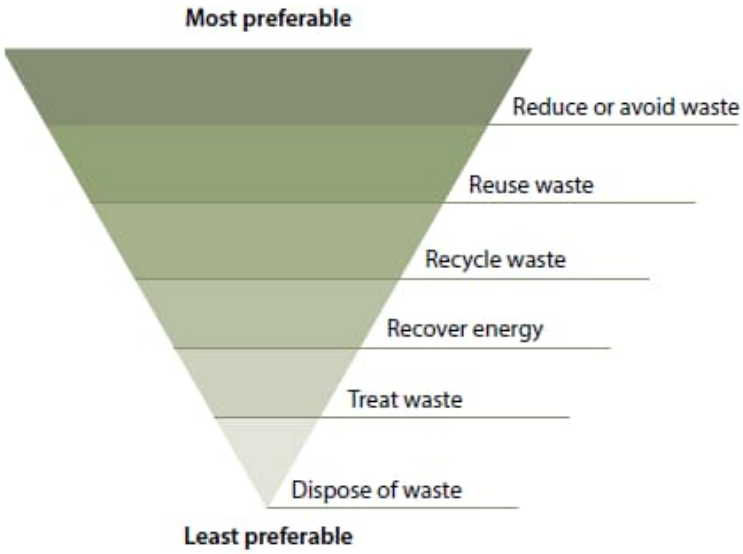

Image from NSW EPA (2014) NSW Waste Avoidance and Resource Recovery Strategy 2014-21.

Figure 3 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 2 below should be referred to during the site preparation, construction and operational phases of the Development.

Table 2 Legislation and guidance

Legislation and Guidance	Objectives
Council legislation and guidelines	
State Environmental Planning Policy (Western Parkland City) 2021	Policy that puts in place planning controls that will enable the Western Sydney Parklands Trust to Develop the Western Parklands into a multi-use urban parkland for the region of western Sydney. The Development site is zoned under Chapter 4 of the SEPP.
Western Sydney Aerotropolis Development Control Plan 2022 Phase 2	The Western Sydney Aerotropolis Development Control Plan – Phase 2, known as Phase 2 DCP was finalised on 10 November 2022. It supports the implementation of the Precinct Plan by providing controls to guide development across the initial precincts in the Aerotropolis. The Phase 2 DCP contains specific development controls to support healthy communities, high-quality building design, construction standards, stormwater management, vegetation and canopy cover, and heritage and environmental conservation. The WSA DCP makes a number of references to waste management, and provides performance outcomes and benchmark solutions under Section 2.16 (Waste Management and Circular Economy) of the DCP.
Western Sydney Aerotropolis Precinct Plan	This Precinct Plan has been prepared and is in force under the provisions of State Environmental Planning Policy (Precincts – Western Parkland City) 2020, Chapter 4 Western Sydney Aerotropolis (the Aerotropolis SEPP). The Precinct Plan 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. Section 4.7 (Sustainability and Resilience) of the Plan lists requirements related to the circular economy activities and measures, as well as lists objectives relevant to waste management and resource efficiency.
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 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 *NSW Waste Avoidance and Resource Recovery Strategy (2014-21)* (see below), 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.

Legislation and Guidance	Objectives
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 2017	The Work Health and Safety Regulation 2017 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.
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

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 (2021) indicates that construction and demolition waste recovery rates in 2018-19 were 77%.

The Western Sydney Aerotropolis Precinct Plan sets out the objectives and requirements for Sustainability and Resilience related to waste management and circular economy. The aim of those requirements relevant to circular economy is to achieve the following:

- achieve 10% reduction of waste generation and 85% reduction in construction waste by 2025, and
- achieve 100% recovery and re-use of organic waste and 90% reduction in construction waste from 2026 and beyond.

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 have been recycled during the construction and site preparation stage of the Development.

5.2 Waste Streams and Classifications

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

- Site clearance wastes
- Construction wastes
- Plant maintenance waste
- Packaging wastes, 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*[1]. Further information on managing site preparation and construction wastes is available from the NSW EPA website[2].

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

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

Table 3 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
Asbestos	Special 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[3]
Paint	Hazardous waste	Off-site recycling, Paintback collection[4] or disposal

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

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

Waste Types	NSW EPA Waste Classification	Proposed Management Method
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
Drained Oil filters	General solid waste (non-putrescible)	Off-site recycling
Commercial Lead acid or Nickel cadmium Batteries	Hazardous waste	Off-site recycling, Contact the Australian Battery Recycling Initiative[5] 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[6]
Work Compound and Associated Offices		
Food Waste	General solid (putrescible) waste	Dispose to landfill with general garbage
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[7]
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] http://www.batteryrecycling.org.au/home

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

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

5.3 Site preparation

The Development will be constructed on primarily greenfield land. Care should be taken to minimise site disturbance and limit unnecessary excavation. Site preparation will involve the demolition and removal of waste from a small number of farm outbuildings. The waste from these small buildings will be managed by the building contractor as shown in the waste management methods in Table 3 above.

The Aerotropolis DCP states that if excess material is transported offsite, it is to be informed of the quantity, quality, method of transport and where the material will be disposed. SLR recommends that excavated spoil be classified by a specialist contaminated land consultant and separated into contaminated materials, if any, uncontaminated fill or ENM.

Uncontaminated fill or ENM should be retained on site and managed appropriately for beneficial re-use for filling earthworks. As a last resort, remaining uncontaminated fill of ENM can be sent off-site to a licenced facility in accordance with the Protection of the Environment Operations (Waste) Regulation 2014.

For contaminated material management, refer to Section 5.7.4 of this WMP.

5.4 Construction Waste Types and Quantities

The Construction Site Manager will need to specify the types and quantities of wastes produced during construction and on this basis, the numbers and capacity of skip bins can be determined.

In the absence of readily available construction waste generation rates from the Aerotropolis DCP, Precinct Plan, Penrith City Council, SLR has adopted the waste generation rates from Appendix A of The Hills Development Control Plan (DCP) 2012 for estimating the type and quantities of waste generated from construction of the Development. SLR has adopted the 'Factory' and 'Office' rates to measure waste expected from the Development, as the construction of a factory and office is the most relevant in representing the construction of the industrial warehouse and office precinct. In the absence of readily available published information for 'Carpark' construction waste generation rates, SLR has developed 'Carpark' construction rates based on the 'Office' rates by:

- Removing timber, bricks and gyprock as these materials are unlikely to be present in significant quantities in a modern carpark structure, and
- Increasing the rates for concrete, sand or soil, metal and 'other', in proportion, to maintain the total assumed tonnage per 1000 m^2 of construction.

The waste generation rates are shown in Table 4.

Table 4 Waste generation rates for the construction of the Development

Rate Type	Floor Area (m^2)	Waste types and quantities (m^3)						
		Timber	Concrete	Bricks	Gyprock	Sand or Soil	Metal	Other
Factory	1,000	0.25	2.10	1.65	0.45	4.80	0.60	0.50
Office	1,000	5.1	18.8	8.5	8.6	8.8	2.75	5
Carpark	1,000	--	30.6	--	--	14.3	4.5	8.1

The waste generation rates for 'Factory' are applied to calculate the waste quantities generated from the construction of the warehouse. The 'Office' waste generation rates are applied to calculate the waste quantities from all office administration areas. The 'Carpark' waste generation rates are applied to calculate the waste quantities from the construction of all external hard surface areas including carparks, heavy and light duty surfaces, and paths and accessways. The areas are based on the areas provided in the architectural plans attached in Appendix A.

Actual waste quantities and composition will vary; however, this estimate is provided so that the Construction Site Manager can make provision for on-site or off-site re-use and recycling opportunities.

The construction wastes quantities anticipated from the construction of the Development are provided below.

5.4.1 Stage 1 Concept Masterplan construction waste quantities

The construction waste quantities anticipated for the Stage 1 Concept Masterplan and associated infrastructure are provided in Table 5.

Table 5 Estimated types and quantities of construction waste

Project Use	Area (m^2)	Waste types and approximate quantities (m^3)						
		Timber	Concrete	Bricks	Gyprock	Sand or Soil	Metal	Other
Total warehouse areas	128,955	32	271	213	58	619	77	64
Café	150	0.8	2.8	1.3	1.3	1.3	0.4	0.8
Office areas	10,750	55	202	91	92	95	30	54
Access Road Reserve Area	65,113	-	1,992	-	-	931	293	527
Paths and Accessways	1,590	-	49	-	-	23	7	13
Potential Road Widening	14,968	-	458	-	-	214	67	121
Total	221,526	88	2,975	305	152	1,883	475	781

5.4.2 Stage 1A Development construction waste quantities

The construction waste quantities anticipated for the Stage 1A Development are provided in Table 6.

Table 6 Estimated types and quantities of construction waste from the Stage 1A Development

Project area	Area (m^2)	Waste types and approximate quantities (m^3)						
		Timber	Concrete	Brick	Gyprock	Sand and Soil	Metal	Other
Warehouse Lot 2	15,065	4	32	25	7	72	9	8
Warehouse Lot 6	39,540	10	83	65	18	190	24	20
Office Lot 2	1,260	6	24	11	11	11	3	6
Office Lot 6	2,100	11	39	18	18	18	6	11
Lot 2 carparking and hardstand	10,658	-	326	-	-	152	48	86
Lot 6 carparking and hardstand	18,304	-	560	-	-	262	82	148
Total	86,927	31	1,064	119	53	706	172	279

5.5 Waste Avoidance

In accordance with the Aerotropolis 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 the Project 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.

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 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 the Aerotropolis 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 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.

5.7 Waste Storage and Servicing

5.7.1 Waste Segregation and Storage

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 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.

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 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. Bins containing putrescible waste will have close fitting lids and kept closed at all times. 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.

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
- Ensure that all bins containing putrescible waste have close fitting lids which are kept closed at all times
- 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 2017.

Hazardous waste management at the site may require a licence from the EPA and approval from Penrith City 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 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.

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[8] 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

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 specified in the Penrith 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.

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

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 for the Development. Suggested roles and responsibilities are provided in Table 7.

Table 7 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 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 Project.
	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 Management

This section of the report specifically addresses the operation waste management of the Stage 1A Development of the Elizabeth Enterprise Precinct.

6.1 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 (2021) indicates that commercial and industrial waste recovery rates in FY19 were 53%.

The Penrith City Council Waste and Resources Strategy (2017-2026) has not yet been updated to reflect the recently updated Waste and Sustainable Materials Strategy and is based on the Waste Avoidance and Resource Recovery Strategy 2014-2021. Specifically, the Council Waste and Resources Strategy identifies a target for the 2021-2022 financial year of:

- Increasing recycling rates to 70% for commercial and industrial waste
- Increasing waste diverted from landfill to 75%.

It is anticipated that the waste minimisation measures in the following sections will assist the Project to meet 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 the Project.

6.2 Waste Streams and Classifications

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

- Domestic wastes generated by employees, including food wastes
- Bulk packaging wastes, including polystyrene, plastic wrapping and cardboard boxes
- Office waste
- Garden organic waste from landscaped areas
- 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 8. 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.

Table 8 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	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[9]	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[10] or Lamp Recyclers[11] for more information
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

9 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.

10 https://www.fluorocycle.org.au/

11 https://www.lamprecyclers.com.au/

6.3 Estimated Quantities of Operational Waste

SLR has adopted the 'Offices' and 'Warehouse' waste generation rates from Council's Industrial, Commercial and Mixed-Use Waste Management 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 9.

Table 9 Waste generation rates applied to the operations of the Development

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 9 above, the approximate weekly waste quantities for the Development have been calculated. The operational waste quantities were also calculated based on the below assumptions:

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

The estimated quantities of operational waste generated by the Development are shown in Table 10.

Table 10 Estimated quantities of operational general waste and recycling for the Development

Lot	Use	Area (m^2)	General Waste (L/week)	Recycling (L/week)
Lot 2	Warehouse	15,065	10,546	10,546
	Office	1,260	882	882
	Total	16,325	11,428	11,428
Lot 6	Warehouse	39,540	27,678	27,678
	Office	2,100	1,470	1,470
	Total	41,640	29,148	29,148

To minimise packaging waste generated in the recyclables stream, it is recommended that packaging waste be returned to the suppliers where possible. Standard pallets should be returned to their owners and non-standard and broken pallets be stockpiled and collected as required by a private waste contractor.

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

The Development is anticipated to produce minimal quantities of garden organics. This waste will be taken by a landscaping contractor which will dispose of it at a licenced facility.

6.4 Waste Storage Area Size

The waste storage area must be large enough to adequately accommodate all quantities of operational waste and recycling between collections.

All waste storage room calculations have considered the bin dimensions listed in the Penrith DCP, as outlined in Table 11.

Table 11 Dimensions and approximate footprint of bins

Capacity	Height (mm)	Depth (mm)	Width (mm)	Footprint (m^2)
3 m^3	1,540	1,520	2,060	3.13

To allow for ready movement of bins into and out of the bin storage area, the bin storage area is to have a floor area of at least twice the total minimum bin footprint. This can also act as a contingency in the event of spikes in waste generation. In accordance with the Penrith DCP, an additional 0.2 m is to be provided between the bins to allow for manoeuvrability. This has been considered in the calculation of the waste storage area for each of the buildings in the Development.

The recommended storage areas do not include consideration for the storage of bulky and hazardous waste. For the additional storage space for bulky and hazardous waste, refer to Section 6.4.2.

6.4.1 Operational waste

The estimated number of bins required for weekly storage of operational waste and recycling generated by the Stage 1A Development are shown in Table 12 and are based on:

- The estimated quantities of operational waste and recycling as shown in Table 10
- Bin dimensions from the Penrith DCP as shown in Table 11.

Table 12 Minimum number of bins and waste storage area for operational waste of the Stage 1A Development

Warehouse	Bin Capacity	Number of Bins Required		Collection Frequency per Week		Recommended Bin Storage Area (m^2)
		Garbage	Comingled Recycling	Garbage	Comingled Recycling	
Lot 2	3 m^3	2	2	3	3	25.0
Lot 6	3 m^3	3	3	4	4	37.6

6.4.2 Bulky and Hazardous Waste Management

As specified 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.

Council's guidelines do not provide storage area dimensions for bulky waste. In the absence of dimensions provided by Council, SLR recommends 8 m^2 to be allocated for bulky waste storage. In addition to the recommended waste storage area noted in Table 12, the total waste storage area proposed for the Development is shown in Table 13.

Table 13 Total recommended storage area for operations at the Stage 1A Development

Warehouse	Recommended Storage Area (m^2)		
	Waste and Recycling	Bulky waste	Total Storage Area
Lot 2	25.0	8	33.0
Lot 6	37.6	8	45.6

The waste storage area for the Development is shown on the architectural drawing attached in Appendix A in line with Council's requirements.

In accordance with the Penrith DCP and best practice waste management, hazardous waste at the site must be placed in specialised containment bins, clearly signposted and labelled, securely locked and may require a licence and consultation from the EPA and approval from Council. Hazardous waste removal is to be undertaken as needed by appropriately licensed specialised contractors.

6.5 Waste Storage Room Location

In accordance with the Penrith DCP and the SEARs, the design for the waste storage areas of the Development is to take into consideration better practice waste management. The waste storage area should be located so that:

- It is 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
- There is a 1.8 m zone of unobstructed clearance between the waste storage area and the entrance.

As specified in the Penrith DCP, the collection areas and storage areas for each warehouse are to be clearly nominated on site plans accompanying development applications. The proposed locations for waste storage are shown in Figure 5 and Figure 6 below.

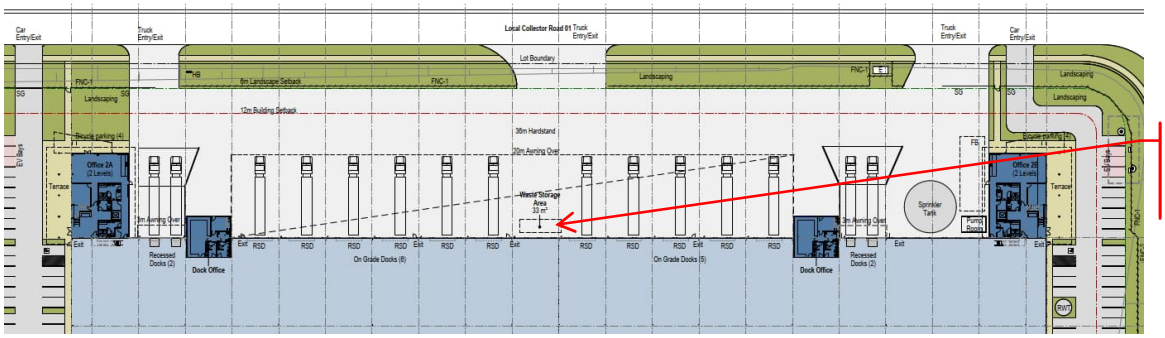

Figure 5 Lot 2 proposed waste storage area

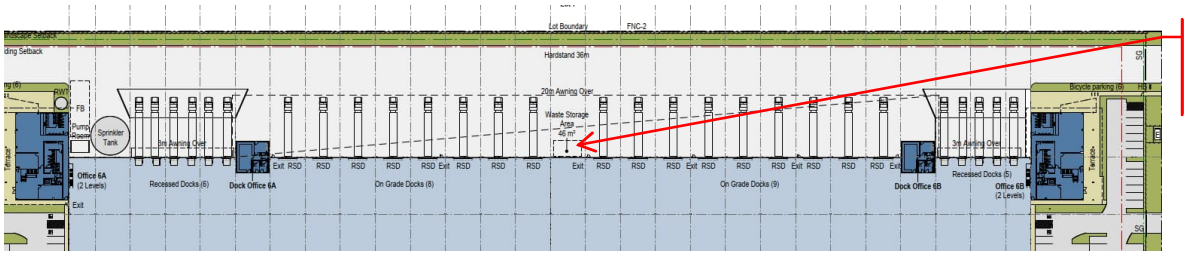

Figure 6 Lot 6 proposed waste storage area

6.6 Waste Storage Area Features

In accordance with better practice waste management and the Penrith DCP, the Development's waste storage areas 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

Waste collections will be undertaken through a private contractor. 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 the Penrith 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. The Penrith DCP shows dimensions for waste collection vehicles.

The collection vehicles required for 3 m^3 front lift bins require 6.2 m height clearance to empty the bins. Therefore, front-lift bins are commonly used in outdoor areas with no restrictions on overhead clearance. For this reason, the waste storage areas should be in an outdoor area with no restrictions on overhead clearance.

SLR recommends that the design of the Development be 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 provider.

All bins containing putrescible waste will have close fitting lids and kept closed at all times.

Once a private 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.

6.8 Waste Avoidance, Reuse and Recycling Measures

6.8.1 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.

6.8.2 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.

6.8.3 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.

6.9 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 the Development
- 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.

6.10 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 the Development.

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

- 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 7
- 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 and system for signs throughout the Development, and
- Emergency contact information for reporting issues associated with waste or recycling management.

Colour-coded and labelled lids are necessary for identifying bins. All signage should conform to the relevant Australian Standard and use labels approved by the NSW EPA[12]. 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.

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

Figure 7 Example of bin labels for operational waste

6.11 Monitoring and Reporting

Monitoring is recommended to ensure waste and recycling management arrangements and provisions for the Development 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.

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 the Development, review and updates to maintain suitability must be undertaken.

6.12 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 Development's waste management system clearly explained. A summary of recommended roles and responsibilities are provided in Table 14.

Table 14 Operational waste management responsibility allocation

Responsible Person	General Tasks
Management	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.
	Undertake liaison and management of contracted waste collections.
	Organise internal waste audits on a regular basis.
	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.
	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.
	Ensure waste and recycling storage rooms are kept tidy.
	Ensure that regular cleaning and daily transfer of bins is being undertaken by the cleaners
	Ultimately responsible for the management of all waste management equipment, cleaning requirements, waste transfer and collection arrangements.
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.

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