



49 Stephen Road, Banksmeadow

Waste Management Plan

ESR Developments

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Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with ESR Developments (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.

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



Executive Summary

This waste management plan has been prepared by SLR Consulting Australia Pty Ltd to accompany a detailed state significant development application (SSDA) for a three-storey warehouse and distribution centre development proposal at 49-61 Stephen Road, Banksmeadow. The site is legally described as Lot A in Deposited Plan 190526, Lot 1 Deposited Plan 1095110, and Lot 1 Deposited Plan 311767.

This report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued for the project (SSD-65924461).

This report concludes that the proposed three-storey warehouse and distribution centre is suitable and warrants approval subject to the implementation of the following mitigation measures.

- Separation of waste and recyclables

Following the implementation of the above mitigation measures, the remaining impacts are appropriate.



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1.0 Introduction

1.1 Overview

This waste management plan (WMP) has been prepared to accompany an SSDA seeking consent for the construction and operation of a three-storey warehouse and distribution centre development at 49-61 Stephen Road, Banksmeadow (SSD-65924461).

Specifically, the project comprises:

- Demolition of all existing built form.
 - o Site preparation works, bulk earthworks and infrastructure and service provisions and/or augmentation.
 - o Removal of 90 trees on site.
 - o Extensive remediation of the site.
- Construction and operation of two three-storey warehouse and distribution centre buildings including the following key components:
 - o Approximately 57,034 m² of total GFA comprising:
 - 51,195 m² of warehouse area.
 - 4,775 m² of office area.
 - 964 m² of lobby space.
 - 100 m² café.
 - o Two warehouse buildings of three storeys containing:
 - Twelve units in Warehouse A - 3 levels.
 - Twelve units in Warehouse B - 3 levels.
 - o 243 car spaces provided on the ground floor mezzanine carparking area.
 - o 50 ground floor carpark spaces off Coal Pier Road.
 - o 20 motorbike parking spaces.
 - o End of trip facilities.
 - o Site landscaping works totalling 5,327 m² (11.06% of the site), and
 - o Provision of building and business identification signage.

This report has been prepared in response to the requirements in the Secretary's Environmental Assessment Requirements (SEARs) dated 30 January 2023 and issued for the SSDA (SSD-65924461).

Specifically, this report has been prepared to respond to the SEARs requirement issued below in Table 1 below.



Table 1 SEARs

Description of requirement	Section reference (this report)
Waste - including details of the quantities and classification of all waste streams to be generated on site during the development	Please refer to: - Table 3 Potential waste types, classifications and management methods for demolition and construction for the identification and classification of demolition and construction waste - Table 5 Estimated types and quantities of demolition waste for the estimated quantities of demolition waste - Table 7 Estimated types and quantities of construction waste for the estimated quantities of construction waste - Table 9 Potential waste types, classifications and management methods for operational waste for the identification and classification of operational waste - Table 11 Estimated operational waste quantities for the estimated quantities of operational waste
details of waste storage, handling and disposal during the development	Please refer to: - Section 7.6 Re-use, Recycling and Disposal - Section 7.7 Waste Separation, Storage and Servicing - Section 8.4 Waste Storage Area Size - Section 8.5 Location of waste storage areas - Section 8.6 Waste System Description
details of the measures that would be implemented to ensure that the development is consistent with the aims, objectives and guidance in the NSW Waste and Sustainable Materials Strategy 2041.	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. It also aims to triple the plastics recycling rate by 2030. It is anticipated that the waste minimisation measures to be enacted at this Development will assist the NSW Government to meet these targets.

This report also addresses the following 'Government Authority Advice' contained in Attachment 2 of the SEARs.

Agency / Item	Description of requirement	Section reference (this report)
NSW EPA	The EIS must address the following specific matters: Waste Management, Hazardous Substances, and Chemical Waste	Waste management is addressed in this report. It is not known if specific types of hazardous waste will be generated by the tenants occupying this development, however, the general handling of hazardous waste is referenced in: Table 3 Potential waste types, classifications and management methods for demolition and construction and



Agency / Item	Description of requirement	Section reference (this report)
		Table 9 Potential waste types, classifications and management methods for operational waste
	B The proposal 1. Objectives of the proposal The objectives of the proposal should be clearly stated and refer to: a) the size and type of the operation, the nature of the processes and the products, by-products and wastes produced	The development is a warehouse. No waste processing is expected to take place. Objectives are shown in Section 1.2 Objectives. The types and quantities of waste produced are described in Table 11 Estimated operational waste quantities
	2. Description of the proposal General Outline cleaner production actions, including: a) measures to minimise waste (typically through addressing source reduction) b) proposals for use or recycling of by-products c) proposed disposal methods for solid and liquid waste	Please refer to: - Section 8.7 Waste Avoidance, Reuse and Recycling and - Table 9 Potential waste types, classifications and management methods for operational waste
	Waste and chemicals Provide details of the quantity and type of both liquid waste and non-liquid waste generated, handled, processed or disposed of at the premises. Waste must be classified according to the EPA's Waste Classification Guidelines 2014 (as amended from time to time) Provide details of liquid waste and non-liquid waste management at the facility, including: a) the transportation, assessment and handling of waste arriving at or generated at the site b) any stockpiling of wastes or recovered materials at the site c) any waste processing related to the facility, including reuse, recycling, reprocessing (including composting) or treatment both on- and off-site d) the method for disposing of all wastes or recovered materials at the facility e) the emissions arising from the handling, storage, processing and reprocessing of waste at the facility f) the proposed controls for managing the environmental impacts of these activities. Provide details of spoil disposal with particular attention to: a) the quantity of spoil material likely to be generated b) proposed strategies for the handling, stockpiling, reuse/recycling and disposal of spoil c) the need to maximise reuse of spoil material in the construction industry d) identification of the history of spoil material and whether there is any likelihood of contaminated material, and if so, measures for the management of any contaminated material e) designation of transportation routes for transport of spoil.	No waste will be received at the site. It is not known if specific types of hazardous waste will be generated by the tenants occupying this development. Warehousing activities are not expected to generate significant quantities of hazardous waste. Please refer to: - Table 3 Potential waste types, classifications and management methods for demolition and construction for the identification and classification of demolition and construction waste - Table 5 Estimated types and quantities of demolition waste for the estimated quantities of demolition waste - Table 7 Estimated types and quantities of construction waste for the estimated quantities of construction waste - Table 9 Potential waste types, classifications and management methods for operational waste for the identification and classification of operational waste - Table 11 Estimated operational waste quantities for the estimated quantities of operational waste Handling of contaminated spoil is covered in a separate report. The EPA's Waste Classification Guidelines 2014 are referenced in these tables



Agency / Item	Description of requirement	Section reference (this report)
	Provide details of procedures for the assessment, handling, storage, transport and disposal of all hazardous and dangerous materials used, stored, processed or disposed of at the site, in addition to the requirements for liquid and non-liquid wastes. Provide details of the type and quantity of any chemical substances to be used or stored and describe arrangements for their safe use and storage. Reference should be made to the guidelines: EPA's Waste Classification Guidelines 2014 (as amended from time to time)	
	4. Consideration of alternatives and justification for the proposal Consider the environmental consequences of adopting alternatives, including alternative: - sites and site layouts - access modes and routes - materials handling and production processes - waste and water management	Not applicable
	7. Waste and chemicals Describe baseline conditions Describe any existing waste or chemicals operations related to the proposal. Assess impacts - Assess the adequacy of proposed measures to minimise natural resource consumption and minimise impacts from the handling, transporting, storage, processing and reprocessing of waste and/or chemicals. - Reference should be made to: the EPA's Waste Classification Guidelines 2014 (as in force from time to time)	It is not known if specific types of chemical operations will be undertaken at the site. Warehousing activities are not expected to generate significant quantities of chemicals. Chemicals are covered in general in: - Table 3 Potential waste types, classifications and management methods for demolition and construction - Table 9 Potential waste types, classifications and management methods for operational waste The EPA's Waste Classification Guidelines 2014 are referenced in these tables
	Describe management and mitigation measures - Outline measures to minimise the consumption of natural resources. - Outline measures to avoid the generation of waste and promote the re-use and recycling and reprocessing of any waste. - Outline measures to support any approved regional or industry waste plans	Please refer to: - Section 8.7 Waste Avoidance, Reuse and Recycling and - Table 9 Potential waste types, classifications and management methods for operational waste No waste processing is proposed at the site. The development does not specifically support any regional or industry waste plans

The WMP has been prepared to calculate waste quantities to ensure enough space is allowed for waste storage and that waste is properly handled during the demolition, construction and operational phases of the project.

This development is in Bayside Council (Council) area the Bayside Development Control Plan 2022 (Bayside DCP) and Council's *Waste Management Technical Specification 2022* (Technical Specification) have been referred to as guides to the proposed waste management system.



1.2 Objectives

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

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 Council's development consent conditions and other relevant regulatory authorities.

2.0 Waste Plan Author

This waste management plan was prepared by Andrew Quinn, an environmental consultant with more than 30 years' experience in waste management. He has worked for the NSW EPA, waste management contractors and consultants. He has a Bachelor of Applied Science, University of Technology Sydney (2000), Master of Environmental Studies, Macquarie University (2009) and has lectured in waste management at the University of NSW.

His experience includes waste management plans for new developments, transfer station and resource recovery facility concept design and master planning, operational systems assessments, expert witness and due diligence for waste projects, waste chapters for EISs, contract and tender preparation, tender assessment and evaluation, resource recovery technology research, resource recovery management strategy and policy development, data analysis, managing and conducting waste audits of residential, commercial, industrial, landfill and MRF streams and in remote locations.

Andrew prepared the *Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities*, the NSW EPA's official guide to waste management in commercial and industrial developments. He has also prepared hundreds of waste management plans for new developments. This most relevant to this project include the following warehouses and logistics developments:

- For ESR Australia
 - o 50 Airds Rd, Minto, NSW
 - o 49 Stephen Road, Banksmeadow, NSW
 - o 27 Frank St, Wetherill Park, NSW
 - o Westlink Kemps Creek Logistics, NSW
 - o Lidcombe Business Park, NSW
 - o Logistics Park, Horsley Park, NSW
 - o Leppington Industrial Estate, Leppington, NSW
 - o Bringelly Road Business Hub, Leppington, NSW
- For Goodman Property
 - o Oakdale Development, Kemps Creek, NSW
 - o M7 Business Park



- o 115 Dunning Ave, Rosebery, NSW
- o 20 Holbeche Road, Arndell Park, NSW
- o Southern Distribution Centre, NSW
- o 202 Euston Rd, Alexandria, NSW
- o Coal Pier Industrial Estate, Banksmeadow, NSW
- o 58 Euston Rd, Alexandria, NSW
- o 1-3 Burrows Rd, Alexandria, NSW
- o 45 Burrows Rd, Alexandria, NSW.

3.0 The Site

The subject site is located at 49-61 Stephen Road, Banksmeadow, in Bayside Council area. The site is legally described as Lot A in Deposited Plan 190526, Lot 1 Deposited Plan 1095110, and Lot 1 Deposited Plan 311767.

The site is in the Banksmeadow Industrial Precinct, approximately 10 km from Sydney CBD, 1.5 km from Port Botany and 3 km from Sydney Airport. The site is surrounded by a mix of predominantly industrial and warehouse and distribution uses to the north, east and south, and residential land uses to the west. The site is located in close proximity to existing employment and industrial areas including the Botany Port and Sydney domestic and international airports.

The site has been developed and currently accommodates the Allnex Resins manufacturing facility. The site presents a two-storey office building towards the Stephen Road frontage, with 20 warehouse and ancillary use buildings as well as numerous chemical storage tanks.

Due to the existing and current use of the site and the handling and manufacturing of chemical products, the site is considered contaminated and is subject to NSW Environment Protection Authority notification. As part of site contamination management, a stormwater retention and remediation treatment pond is located along the Coal Pier Road frontage along the eastern boundary.

Existing planted vegetation is located along the site's boundaries predominately along the western and northern setback areas assisting in screening the development from Stephen Road and the Southgate Industrial Estate development to the north. A cleared grassed area is located to the rear of the site beside a stormwater retention and treatment pond.

The location of the site is shown in Figure 1 below.





Source: Urbis

Figure 1 - Site location

SLR assumes that the warehouse Development will be operated seven days per week.

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 will be retained by the building manager. Changes made to the WMP, as well as the reasons for the changes made, will 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.

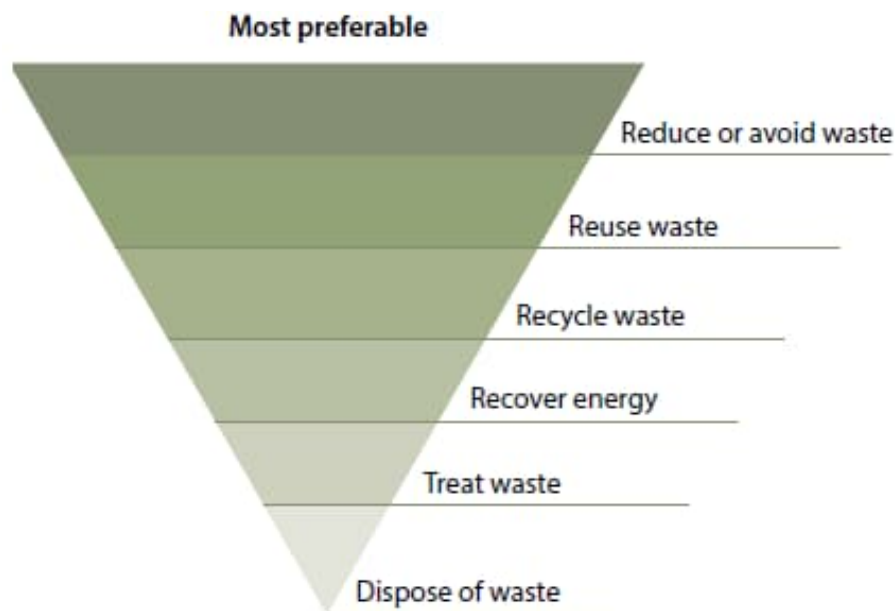


Figure 2 - Waste management hierarchy

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

6.1 Bayside Development Control Plan 2022

Relevant sections of the Bayside DCP are detailed below.

3 General Development Provisions

3.5.6 Loading Facilities

Control

C8. Loading and waste collection points shall be:

- a. located separately from public parking areas where possible*
- b. designed and operated so that the vehicles can manoeuvre on site without interfering with buildings, parked vehicles, and landscaping*

3.5.7 Waste collection

Objective		Control	
O1.	<i>Improve amenity by minimising the impact of waste collection activities/bin storage on the public domain.</i>	C2.	<i>The waste collection point is to be designed to:</i>
O2.	<i>To ensure waste collection points:</i> <i>a. allocate sufficient areas for the efficient access, storage and collection of waste and recycling</i> <i>b. allow collection vehicles to be able to access buildings to remove waste safely and efficiently</i> <i>c. minimise the impacts of noise and odour from waste and recycling handling on building occupants, near neighbours and the local area</i> <i>d. do not dominate or detract from the appearance of the development and the local streetscape</i>		<i>a. allow waste loading operations to occur on a level surface away from parking areas, turning areas, aisles, internal roadways and ramps</i> <i>b. provide sufficient side, rear and vertical clearance to allow for the waste collection activity to be undertaken (e.g. the lifting arc for automated bin lifters requires clearance to remain clear of any walls or ceilings and all service ducts, pipes and the like).</i> <i>c. comply with Bayside Technical Specification - Traffic, Parking and Access.</i>



3.12 Waste Minimisation and Site Facilities

This Part applies to all works requiring a development application and is to be read in conjunction with Council's relevant policies and guidelines.

This Part should also be read in conjunction with the provisions outlined in Sub-section 3.5.7 (Waste Collection) and comply with these provisions.

Waste Collection and comply with these provisions.			
Objective		Control	
General			
O1.	Waste is managed effectively to: a. maximise the reuse and recycling of construction materials and minimise demolition waste by promoting reuse of existing structures, adaptable building design and adaptable design for end-of-life deconstruction b. encourage building design, demolition and construction techniques that help to avoid waste being generated c. maximise waste avoidance, and reuse and recycling of household and commercial waste d. ensure there are appropriate on-site waste separation systems to assist council and private sector waste management staff to collect and recover waste materials e. ensure the amenity of the building and local area is maintained or enhanced	C1.	Development is to be consistent with Council's Waste Management DCP Technical Specification 2022 and all development applications are required to submit a Waste Management Plan consistent with this Technical Specification.
		C2.	New development must also comply with the provisions related to Waste Collection in accordance with Sub-section 3.5.7 of this DCP.



3.12.2 On-going management

Objective		Control	
General			
O1.	<i>To ensure new developments and changes to existing developments are designed to minimise waste generation and maximise resource recovery.</i>	C2.	<i>Development for the purposes of any of the following:</i> <i>• Commercial development; and</i> <i>• Any other development not listed in C1 [residential development].</i> <i>Must comply with Sub-section 3.5.7</i>
O2.	<i>To encourage waste storage facilities that are designed to enable source separation for recovery.</i>		
O3.	<i>To ensure waste and recycling systems are easy to use and complement Council's waste and recycling services.</i>		
O4.	<i>To promote safe practices for storage, handling and collection of waste and recycling.</i>		
O5.	<i>To prevent stormwater pollution that may result from poor waste and recycling storage and management practices.</i>		
O6.	<i>To minimise amenity impacts during the storage, use and collection of waste and recyclables.</i>		
O7.	<i>To prevent impacts to the environment that may result from litter, excess waste and illegal dumping.</i>		
O8.	<i>To minimise interference of waste collection on pedestrian access, safety and amenity.</i>		
O9.	<i>To minimise interference of waste collection on local traffic.</i>		

3.12.5 All other development

Objective		Control	
General			
O1.	Development is to be in accordance with the Objectives outlined in Sub-section 3.5.7.	C1.	Sufficient space must be provided to accommodate the storage of waste and recycling likely to be generated on the premises between collections and any associated equipment.
		C3.	Waste and recycling receptacles must be stored at all times within the boundary of the site and concealed from the public and commercial domains unless otherwise approved by Council under Section 68 of the Local Government Act 1993.
		C4.	All waste and recycling must be inside Council approved bins or skips, with lids closed to reduce littering, stormwater pollution, odour and vermin. Waste and recycling not presented in the correct manner will not be collected.
		C5.	Waste and recycling storage rooms must be: a. Enclosed to prevent noise, odour and visual impacts; b. Designed to store the entire fleet of bins plus 0.2 m between bins to allow adequate manoeuvrability room; c. Designed with a 1.8 m unobstructed clearance zone between the stored bins and the entrance for access and



Objective		Control	
			manoeuvrability; d. Designed with suitable door and corridor access to enable bin movement; e. Constructed of concrete or other approved materials at least 75 mm thick; f. Finished with a smooth even surface to be easily cleaned; g. Coved at the intersection with walls and plinths with a ramp to the doorway where necessary; h. Graded and drained to the sewerage system and approved by Sydney Water; i. Fitted with a close fitting and self-closing door that can be opened from within the room; j. Designed with adequate lighting and naturally/mechanical ventilation to meet Building Code of Australia requirements; k. Fitted with smoke detectors in accordance with the relevant Australian Standards; l. Equipped taps supplying hot and cold water, mixed through a centralised mixing valve with a hose cock and fitted with an aerator to increase water efficiency; m. Designed to include a clear and easy-to-read "NO STOPPING" sign and "DANGER" sign on the external face of waste storage rooms where appropriate; n. Designed to ensure waste-water from the cleaning of the waste storage area and bins, is not to drain into the stormwater system; and o. Fitted with childproof compacters or mechanical devices where used in the storage of waste. C6. All new developments are to provide adequate storage for waste to accommodate future change of use, including increased waste generation rates and grease traps. C7. Kitchens, office tea rooms, and the like are to be designed with sufficient space for the interim storage of recyclable, organic and regular waste in separate receptacles. C9. Sufficient space must be allocated within the building for the storage of reusable items such as crates and pallets. C10. Separate space must be allocated for the storage of liquid wastes and oils etc. The liquid waste storage areas must be undercover, bunded and drained to a grease trap. The area is preferably to be within the building, however if circumstances do not permit, an area that is screened from the public and commercial domains may be negotiated with Council.



6.4 Industrial premises

Objective		Control	
Amenity and Operation			
O8.	<i>To ameliorate any potential adverse amenity, noise, privacy, air quality, odour, or overshadowing impacts upon any adjoining or neighbouring residential development from any proposed non-residential development.</i>	C48.	<i>A Plan of Management (POM) will be provided to ensure all relevant operations of the premises are understood and their impacts appropriately managed having regard to the context of the premises and its surrounds.</i> <i>The POM must provide all details relevant to the operation of the premises. As a minimum the following must be included:</i> <i>i. Waste management</i> <i>Note: The POM allows Council to exercise control over the ongoing operation of a premises by requiring, as a condition of consent, that the premises operate in accordance with the POM. A condition of consent may require that a POM be regularly revised and submitted to Council.</i>
		C49.	<i>Waste management and recycling processes of commercial and industrial facilities should be guided by the Waste Management and Recycling in Commercial and Industrial Facilities (EPA, 2012).</i>
Storage within industrial buildings			
O11.	<i>To ensure storage areas within industrial developments are adequately sited, screened and designed to reduce amenity and environmental impacts, including noise, air quality and odour impacts on sensitive receivers.</i>	C57.	<i>Details of proposed ancillary buildings, open storage, service areas, solid liquid waste storage and collection areas are to be provided with any development application.</i>

6.2 Waste Management Technical Specification 2022

1.5 Applicability

The provisions of this Waste Management DCP apply when:

- Applying for a DA under Section 79C of the Environmental Planning and Assessment Act 1979 (EP&A Act).
- A development consent or a complying development certificate is required for all types of development, including for demolition, construction (including earthworks), alterations or additions or change of use of buildings.
- Complying with the minimum provisions in this document does not, however, mean that an application will be approved as each application will be considered on its merits.
- Optimum waste avoidance and resource recovery will need site-specific and sometimes innovative solutions. As a result, Council or a private certifier may approve on its merits an application that proposes to vary the controls, provided it can be demonstrated that all the design objectives in this section (1.5) and the relevant sections of this document will be met.

The provisions of this Waste Management DCP should also be used as a guide for activities that do not require consent, including for complying or exempt development, or development that falls under Part 5: 'Environmental Assessment' of the Environmental Planning and Assessment Act 1979.



1.7 Waste Management Plan(s) (WMP)

1.7.1 Purpose of a WMP

A WMP describes the ways in which waste will be stored, moved, avoided, reused, recycled and diverted from landfill during each activity or stage of development. It allows Council or the certifying authority to assess the volumes and types of waste likely to be generated by the development and ensure appropriate actions are taken to manage its generation, storage, recycling and disposal.

At a minimum, each type of WMP must:

- Calculate the volumes and types of waste and recycling that will be generated;
- State how waste and recycling will be handled, stored, and treated on-site;
- State how and where waste will be reused, recycled, or disposed of;
- Describe the roles and responsibilities in ensuring the WMP is correctly implemented.

WMPs are required when:

- Demolishing or constructing buildings.

1.7.2 Types of WMPs

Most development applications will be required to be accompanied by a WMP.

The WMPs will:

- Minimise the amount of waste generated as part of the project;
- Maximise the amount of waste material which is sent for reuse, recycling or reprocessing;
- Minimise the amount of material sent to landfill.

There are three types of WMPs for different activities and different stages of the development. Table 1 identifies the different WMPs and the activity/development stage that it would be triggered:

Table 1. Different types of WMPs

WMP	Activity/development stage	Section Reference
Demolition Waste Management Plan (DWMP)	Where any demolition works are proposed.	Section 2 of this DWMP.
Construction Waste Management Plan (CWMP)	Where any construction works are proposed.	Section 3 of this CWMP.
Operational Waste Management Plan (OWMP)	For operational use of a site or premises for all building types outlined in this chapter.	Section 4 of this OWMP, and any other relevant section of the document.

It is important that the WMPs be standalone documents to ensure all essential information regarding waste management during demolition/construction and the operational stage of the development is submitted with the development application.

Appendix B provides a template for each WMP.

The WMP should be accompanied by scaled architectural plans that illustrate the proposed on-site waste management infrastructure and how design elements support the proposed



internal operations e.g. location of bin storage area, location of bin collection point, travel path for collection vehicles where on-site collection is proposed.

1.7.3 Submitting a Waste Management Plan (WMP)

The larger and more complex a development is, the more details are required in a WMP. The amount of supporting information may also increase. It is highly recommended that an appropriate waste subject matter expert assists with the preparation of a detailed OWMP to ensure effective waste management optimal outcomes are achieved that are integrated with Council's guidelines and waste services.

4. Operational Waste Management Plan (OWMP) - Waste Management Systems

4.1 Applicability

This Section (Section 4) applies to all buildings and structures within the Bayside LGA.

4.3 General Controls and Requirements

The following general controls and requirements apply:

- *Completed OWMPs must accompany the DA;*
- *Waste management systems should be designed and operated to meet the objectives in this Section (Section 4) of this Waste Management DCP and other relevant sections relating to the specific development type in Sections 5-12 of this document.*

The OWMP will integrate waste management facilities holistically with the overall development and ensure it can be serviced efficiently and effectively by Council (or waste contractors).

The OWMP should describe:

- *Estimated waste and recycling generation rates and Council bin allocation and bulky waste storage allocation (see Sections 5-12 as relevant);*
- *Bin storage area/s;*
- *Collection Point/s;*
- *Bulky Waste storage area(s);*
- *Bin and/or chute systems;*
- *Ongoing maintenance, including bin cleanliness pre and post Food Organics Garden Organics (FOGO) implementation.*

4.4 Bin Storage

Where required, a bin storage area (or room) must be located:

- *So that vandalism, nuisance and adverse amenity are avoided or minimised;*
- *To be easily accessible, have unobstructed access for residents, and allow residents or building managers to easily move bins on foot to and from the Collection Point(s);*
- *So collection vehicles can access the Collection Point(s) by entering and leaving the property in a forward direction, and requires minimal to no reversing (for on-site Collection Point(s)).*



11 Commercial Development

11.1 Applicability

This Section, Section 11, covers commercial and other non-residential premises such as shops, offices, business premises, food retailers and wholesalers, hotels, motels, licensed clubs, educational institutions and entertainment facilities.

11.2 Waste Generation and Service Requirements

Type Premises	Waste Generation	Recycling Generation
Offices	10L/100 m ² floor area/day	10L/100 m ² floor area/day

By 2025, food waste from targeted businesses and other entities that generate the highest volumes, including large supermarkets, and hospitality businesses will require a separate collection. At the point of transitioning the above detailed waste generation per 100 m² of floor area/day will need to be adjusted to accommodate the new service.

11.3 Bin Dimensions

The bin dimension for the abovementioned buildings are:

Bin Type	Height (mm)	Depth (mm)	Width (mm)
60-litre	640	497	444
240-litre	1080	735	580
660-litre	1250	850	1370
1100-litre	1485	1280	1370

Where possible the 240L waste bins may be converted to 660L or 1100L bin types and calculated at the rate mentioned in each relevant section of this document. Please consult Council prior to submitting DA and Waste Management Plan to see if this request is possible.

These dimensions are only a guide and differ slightly according to manufacturer, whether bins have flat or dome lids and what devices bins are lifted with.

Collections from the commercial component of the building may also be provided by a licensed private waste, recycling and/or organics collection contractor. The details of private collection to be conducted onsite must be included in the WMP to be submitted for Council to review and approve prior to a development application approval.

Bins of this type are not proposed for this development.

11.4 Design Control

The following controls and requirements are in addition to those detailed in Section 4 of this Waste Management DCP.

The following controls and requirements apply to all commercial developments and change of use.

A Waste Management Plan must accompany the application. Plans submitted with the OWMP must show:

- the location of the designated waste and recycling storage room(s) or areas, sized to meet the waste and recycling needs of all tenants.*
- the collection point for emptying waste, recycling and organics bins.*



- the path of travel for moving bins from the storage area to the identified collection point (if collection is to occur away from the storage area).
- The on-site path of travel for collection vehicles (if collection is to occur on-site).

The waste and recycling storage area or rooms, must be designed and constructed in accordance with the requirements of the Building Code of Australia.

The waste and recycling storage room must be able to accommodate bins that are of sufficient volume to contain the quantity of waste generated at the rate described in Section 11.

There must be convenient access from each tenancy to the waste and recycling storage areas. Waste storage and collection areas must be:

- step free;
- located away from primary street frontages;
- suitably screened from public areas to reduce the impacts of noise, odour and lack of visual amenity;
- designed and located to consider possible traffic hazards.

The development must be designed to allow access by collection vehicles used by the nominated waste contractor. Wherever possible, the site must be configured to allow collection vehicles to enter and exit in a forward direction, so the collection vehicles do not impede general access to, from and within the site.

Between collection periods, all waste and recycling generated on-site must be kept in enclosed bins with securely fitting lids so the contents cannot leak or overflow.

Bins must be stored in the designated waste and recycling storage areas.

Waste management facilities must be suitably enclosed, covered and maintained so as to prevent polluted wastewater runoff from entering the stormwater system.

Arrangements must be in all parts of the development for:

- waste to be separated into the following streams: paper and cardboard, recyclables, general waste and where applicable industrial process type waste;
- the movement of bins for recycling and general waste to the main waste and recycling storage room or area.

Standard and consistent signage that complies with the Council's or NSW EPA's standard signage on how to use waste management facilities should be clearly displayed (visit www.epa.nsw.gov.au/wastetools/signs-posters-symbols.htm and see Appendix D).

Waste and recycling bins should be collected on-site....then enter and exit the site in a forward direction.

Should a collection vehicle be required to enter the property, the driveway and manoeuvring area must be suitable for a collection vehicle in terms of strength, gradient, design and manoeuvrability.

The size and layout of the waste and recycling storage room or area must be able to accommodate reasonable future changes in use of the development.

A waste and recycling cupboard must be provided for each and every kitchen area in a development, including....staff food preparation areas.

Clinical or hazardous and liquid waste should be placed in specialised containment bins and collected by specialised service providers.



Waste management facilities must be regularly maintained and cleaned.

11.4.1 Bin Storage and Collection Point(s)

A bin storage areas are to be:

- *located to minimise adverse visual impact on the public domain;*
- *located to avoid nuisances such as odour and noise to adjoining residential properties;*
- *designed so that it capable of accommodating all required allocated bins;*
- *designed and located so that there is unobstructed and convenient access to the collection point.*

The design and location of bin storage areas must be integrated into the design of the overall development and compliment the surrounding streetscape. Materials and finishes visible from the outside should be similar in style and quality to the external materials used in the rest of the development.

The location of the waste, recycling and organics room(s) or area(s) must:

- *provide direct and convenient access for the occupants of the development;*
- *not impact on the amenity of occupants in and adjoining the development in relation to visual amenity, noise and odour;*
- *not obstruct on- or off-street car parking, driveways, footpaths, landscaping and trees*
- *comply with Australian Standards;*
- *comply with the Building Code of Australia;*
- *be designed to look acceptable from the street;*
- *be a minimum door width of 1.5 metres;*
- *have a minimum unobstructed clearance height of 4 metres, which includes all attachments such as vents, signage, and piping.*

On-site Collection Points:

- *be located where the bins are usually stored or on-site at a temporary holding area;*
- *be located so the collection vehicle, while servicing bins, does not obstruct the use of a driveway;*
- *be at street level or in a basement.*

The bin carting routes should be designed to be:

- *direct and short as possible;*
- *without kerbs and steps;*
- *a minimum of 2 m wide with a hard, non-slip surface.*

11.4.2 Collection Vehicle Access

It is preferred that these types of developments are to be serviced through onsite collection. This means...an authorised collections contractor will enter the property and service the development within the property boundary from a designated loading area.

Collections to the commercial component of the development can...be carried out by a licensed private waste, recycling and/or collection contractor. The details of private collection to be conducted onsite must be included in the WMP to be submitted for Council to review and approve prior to a development application approval.



Irrespective of whether Council services the entire development, all collections shall take place as described in this Section 11 of the document.

The collection point and method of waste collection for the development must be nominated on the WMP and architectural drawings.

The development must provide safe vehicle access and enable the waste collection vehicle to maneuver (sic) and load all allocated bins.

The on-site collection point(s) must be located so it:

- *Ensures all allocated bins are collected on-site, not impeding access to any vehicles or pedestrians;*
- *Has a height clearance of 4.5 metres, allowing for all ceiling or roof attachments such as vents, signage, and piping, for Collection Vehicles to access and service the site;*
- *Have a minimum unobstructed 3.5 metres carriageway width to the Collection Point(s), which includes all attachments such as vents, signage, and piping.*
- *Ensures vehicle can enter and exit the site in a forward driving direction; and,*
- *Ensures a swept path of 21 metres and a turning circle of 25 metres to accommodate the length of a Collection Vehicle to safely manoeuvre within the development.*

12 Industrial Development

12.1 Applicability

This section, section 12, includes light and general industry as defined in the Standard Instrument - Principal Local Environmental Plan and includes uses such as industrial retail outlet, industrial training facility, vehicle body repair workshop, warehouse of distribution centre and storage premises.

12.2 Controls and Requirements

The following controls and requirements apply to all industrial developments. The controls and requirements outlined in section 11 of this document, pertaining to commercial developments [See above] also comply to industrial developments. A waste Management Plan shall accompany the application. Plans submitted must show:

- *The location of designated waste and recycling storage room(s) or areas sized to meet the waste and recycling needs of all tenants. Waste should be separated into at least 4 streams, paper/cardboard, recyclables, general waste, industrial process type wastes; and,*
- *The on-site path of travel for collection vehicles.*

WMPs submitted with the DA must show evidence of compliance with any specific industrial waste laws and protocols, for example, those related to production, storage and disposal of industrial and hazardous wastes as defined by the POEO Act.

Appropriate laws, standards, guidelines and protocols associated with the production, storage and disposal of hazardous wastes must be complied with.

13 Appendices

13.5 Collection Vehicle Dimensions

The typical dimensions of a Collection Vehicle should be based on the table below when considering your development design and waste management planning.



Specific dimensions are subject to chassis, wheelbase, and option selection with the most appropriate available Collection Vehicle to be used for each respective waste stream.

Services will not be provided where there are undue risks.

Description	Typical Allowance Required
Length Overall	11 metres
Vehicle Height	3.9 metres
Operational Clearance Height	4.5 metres
Width Overall	2.5 metres
On-Site Width Path (Carriageway)	3.5 metres
Turning Circle (wall to wall)	25 metres
Swept Path	21 metres
Gross Vehicle Mass	24 tonnes

6.3 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 A list of 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. - 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.



Legislation and Guidance	Objectives
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>	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: • 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. 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.

7.0 Demolition 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 the NSW EPA (2022-2023) indicates that construction and demolition waste recovery rates in 2022-2023 were 73%.¹

¹ <https://www.epa.nsw.gov.au/your-environment/waste/waste-overview/waste-performance-data>



Council has also set the targets of 80% diversion of waste from landfill by 2036 and 200 kg waste generation per person per year.

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, demolition and construction stages of The Development.

Waste generated during demolition and construction will be reused on site wherever possible, especially in the case of soil and fill. Waste and recyclables taken off site will be recycled, or disposed of, at facilities lawfully able to accept them.

7.2 Waste Streams and Classifications

The demolition and construction activities are anticipated to generate the following broad waste streams:

- Demolition waste as outlined in Section 7.3
- Construction waste as outlined in Section 7.4
- Packaging waste, and
- Work compound waste from on-site employees.

A summary of likely waste types generated from demolition and construction activities, along with their waste classifications and proposed management methods are provided in Table 3 below. For further information on how to determine a waste's classification refer to the NSW EPA (2014) *Waste Classification Guidelines*.² Further information on managing site preparation, demolition and construction wastes is also available on the NSW EPA website.³

Table 3 Potential waste types, classifications and management methods for demolition and construction

Waste Types	NSW EPA Waste Classification	Proposed Management Method
Demolition 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

² Available online from <https://www.epa.nsw.gov.au/your-environment/waste/classifying-waste/waste-classification-guidelines>

³ Available online from <http://www.epa.nsw.gov.au/your-environment/waste/industrial-waste/construction-demolition>



Waste Types	NSW EPA Waste Classification	Proposed Management Method
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.
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 ⁴
Paint	Liquid waste	Off-site recycling, Paintback collection ⁵ 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 ⁶
Work Compound and Associated Offices		
Food Waste	General solid (putrescible) waste	Dispose to landfill with general garbage

⁴ Available online from <http://www.fluorocycle.org.au/> or <http://www.environment.gov.au/settlements/waste/lamp-mercury.html>

⁵ Available online from <https://www.paintback.com.au/>

⁶ Available online from <https://businessrecycling.com.au/>



Waste Types	NSW EPA Waste Classification	Proposed Management Method
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 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, food and polystyrene	General solid waste (non-putrescible) mixed with putrescible waste	Disposal at landfill

7.3 Demolition Waste Types and Quantities

7.3.1 Demolition Waste Generation Rates

The Bayside DCP provides no demolition waste generation rates. As an alternative, SLR has adopted the 'factory' waste generation rates from Appendix A of *The Hills' Development Control Plan* for estimating the type and quantities of waste generated from demolition of the proposed buildings. We have also referred to *Light Duty Asphalt Pavements - Design, Specification and Construction 2002* published by the Australian Asphalt Pavement Association in calculating car park waste demolition quantities.

The demolition waste generation rates used are shown in Table 4 below.

Table 4 Demolition waste generation rates

Rate Type	Per Area (m ²)	Waste types and quantities (m ³)								
		Timber/Gyprock	Concrete	Bricks	Metal	Other	Asphalt	Granular Base	Soil	Vegetation
Factory	1,000	4	448	205	23	18				
Carpark	1,000		22.5 ⁸				30 ⁹	125 ¹⁰		
Hardstand ¹¹	1,000		300		60	50				
Grassed area	1,000								300	100

7.3.2 Buildings for Demolition

Buildings, numbered, and areas for demolition are shown in Figure 3 below. The site boundary is also shown.

⁷ Available online from <http://returnandearn.org.au/>

⁸ Estimate of kerb profile

⁹ 30 mm depth for passenger car parking areas of this size.

¹⁰ 125 mm depth for passenger car parking areas of this size.

¹¹ Assumed depths



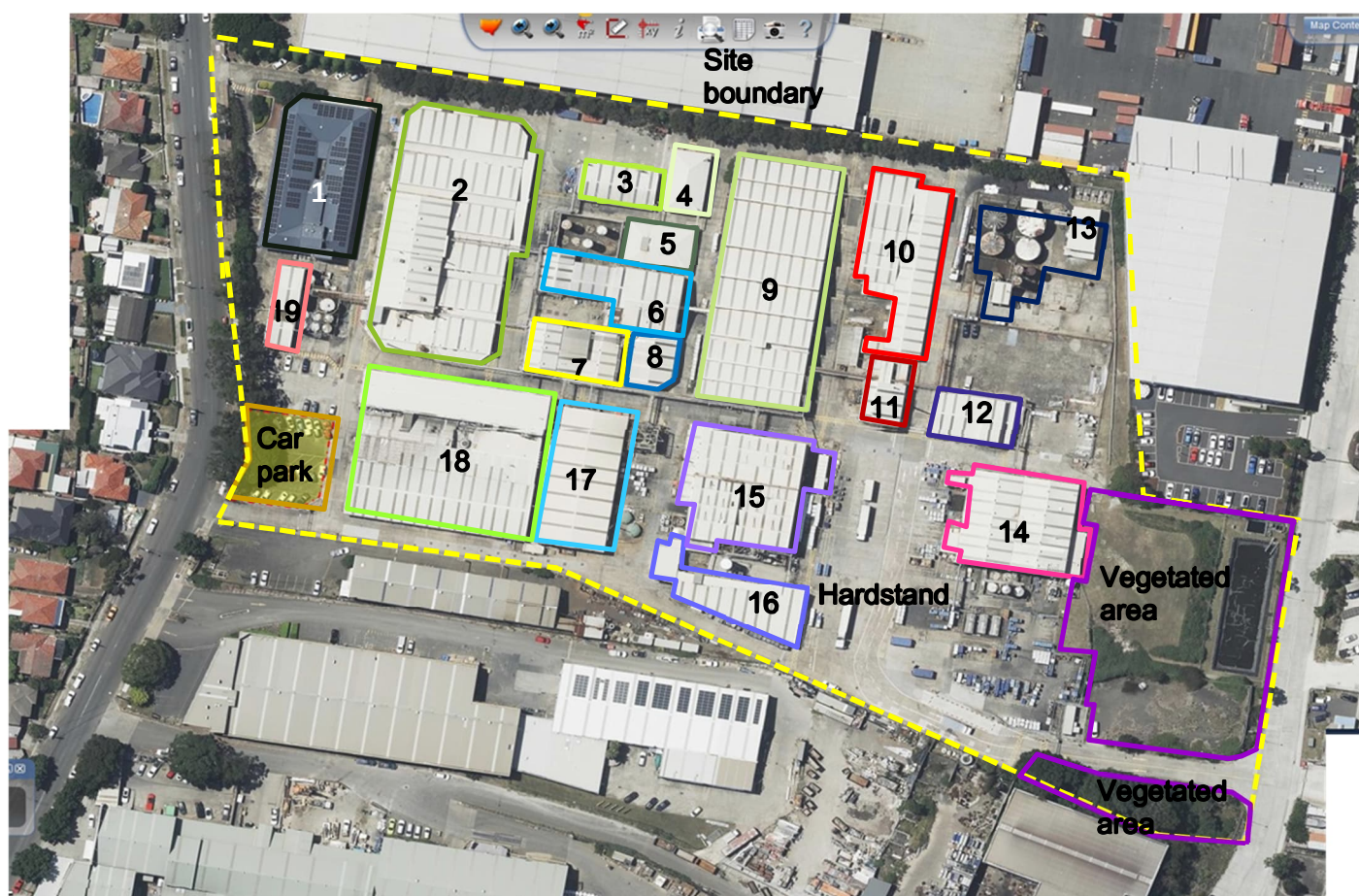


Figure 3 - Demolition Plan

Images from Six Maps and Google Earth, show that some buildings are brick with sheet metal roofs or are sheet metal clad warehouses with sheet metal roofs. There is also an asphalt car park, concrete driveways and hardstands, a vegetated areas with grass and trees and a retention pond. The image from SixMaps (Figure 3 above) has been used to calculate the areas of each building, car parking, grassed and hardstand areas.

These areas are shown in Table 5 along with estimates of the quantities of demolition waste that may be generated.

Table 5 Estimated types and quantities of demolition waste

Area	Area (m ²)	Waste types and quantities (m ³)								
		Timber/ Gyprock	Concrete	Bricks	Metal	Other	Soil	Vegetation	Asphalt	Granular Base
Building 1	1,286	5	576	264	30	23	-	-	-	-
Building 2	3,028	12	1,357	621	70	55	-	-	-	-
Building 3	285	1	128	58	7	5	-	-	-	-
Building 4	238	30	1,764	353	7	37	-	-	-	-
Building 5	302	37	2,238	448	9	47	-	-	-	-
Building 6	675	84	5,002	1,002	20	105	-	-	-	-
Building 7	488	61	3,616	725	14	76	-	-	-	-
Building 8	219	27	1,623	325	6	34	-	-	-	-



Area	Area (m ²)	Waste types and quantities (m ³)								
		Timber/ Gyprock	Concrete	Bricks	Metal	Other	Soil	Vegetation	Asphalt	Granular Base
Building 9	2,400	298	17,784	3,564	70	372	-	-	-	-
Building 10	1,109	138	8,218	1,647	32	172	-	-	-	-
Building 11	248	31	1,838	368	7	38	-	-	-	-
Building 12	307	38	2,275	456	9	48	-	-	-	-
Building 13	436	54	3,231	647	13	68	-	-	-	-
Building 14	1,136	141	8,418	1,687	33	176	-	-	-	-
Building 15	1,397	173	10,352	2,075	41	217	-	-	-	-
Building 16	628	78	4,653	933	18	97	-	-	-	-
Building 17	950	118	7,040	1,411	28	147	-	-	-	-
Building 18	2,500	310	18,525	3,713	73	388	-	-	-	-
Building 19	218	27	1,615	324	6	34	-	-	-	-
Vegetated areas	5,368	-	-	-	-	-	1,610	537	-	-
Car Park	722	-	-	-	-	-	-	-	18	72
Concrete Hardstand	24,120	-	7,236	-	1,447	1,206	-	-	-	-
Totals	48,060	1,662	107,486	20,621	1,937	3,343	1,610	537	18	72

7.4 Construction Waste Types and Quantities

The Bayside DCP provides no construction waste generation rates. We have adopted the 'Factory' waste generation rates from Appendix A of *The Hills' Development Control Plan* for estimating the type and quantities of waste generated from the warehouse and office elements of the proposed buildings.

We have also referred to *Light Duty Asphalt Pavements - Design, Specification and Construction 2002* published by the Australian Asphalt Pavement Association in calculating car park waste demolition quantities and have assumed 10% waste. The construction waste generation rates used are shown in Table 6 below.

Table 6 Construction waste generation rates

Rate Type	Area (m ²)	Waste types and quantities (m ³)						
		Timber	Concrete	Bricks	Plasterboard	Sand or Soil	Metal	Other
Factory	1,000	0.25	2.1	1.65	0.45	4.8	0.6	0.5
Hardstand and driveways	1,000		2.1			4.8	0.6	0.5

The areas shown in Table 7 are based on the areas for the Development shown in the drawing *20240911 Progress Set_49 Stephen RD Banksmeadow.pdf*.

Estimates of the quantities of construction waste generated from the Development are shown in Table 7 below.



Table 7 Estimated types and quantities of construction waste

Use	Area(m ²)	Waste types and quantities (m ³)								
		Timber	Concrete	Bricks	Plasterboard	Sand or Soil	Metal	Other	Asphalt	Granular Base
Warehouses	70,925	18	149	117	32	340	43	35	-	-
Offices	3,993	20	75	34	34	35	11	20	-	-
Café	100	0.5	1.9	0.9	0.9	0.9	0.3	0.5	-	-
Car Parking	19,241	-	4.3	-	-	-	-	-	4.8	19.2
Hardstand	68,388	-	143.6	-	-	328.3	41.0	34.2	-	-
Total	162,647	39	374	152	67	705	95	90	4.8	19

7.5 Waste Avoidance Strategies

The Building Contractor, Building Designer and/or those in equivalent roles should follow better practice waste management and the principles of Ecologically Sustainable Development.

Recommendations for the Building Designer include:

- Using prefabricated components
- Using low formaldehyde wood products, post-consumer reused timber and/or Forest Stewardship Council certified timber
- Using fittings and furnishings that have been recycled, are made from or incorporate recycled materials and have been certified as sustainable or environmentally friendly by a recognised third-party certification scheme
- Preferentially using building materials, fittings and furnishings, including structural framing, roofing and façade cladding, that have longer life and better re-use and recycling potential
- Reducing the use of polyvinyl chloride products
- Preferentially using paints, floor coverings and adhesives with low VOC (volatile organic compound) content
- Avoiding unsustainable timber imports including western red cedar, oregon, meranti, luan or merbau
- Selecting materials based on low embodied energy properties that suit the Development, such as recycled materials including recycled steel and glass-wool insulation, or concrete with slag and fly ash content
- Centralising wet areas together to minimise piping, and
- Designing for deconstruction rather than demolition.

Recommendations for the Building Contractor include:

- Applying practical building designs and construction techniques



- Minimising excavation works
- Investigating leased equipment and machinery rather than purchase and disposal
- Sorting and segregating site preparation and construction wastes to ensure efficient recycling of wastes
- Preferentially selecting building materials, fittings and furnishings, including structural framing, roofing and façade cladding, that have longer life and better re-use and recycling potential
- Store wastes on-site appropriately to prevent cross-contamination and/or mixing of different waste types
- Reducing packaging waste by:
 - o Returning packaging to suppliers where practicable to reduce waste further along the supply chain
 - o Purchasing in bulk
 - o Requesting cardboard or metal drums rather than plastics
 - o Requesting metal straps rather than shrink wrap, and
 - o Using returnable packaging such as pallets and reels.
- Arranging deliveries 'as needed' to mitigate degradation, weathering or moisture damage, and
- Ensure subcontractors are informed of and implement site waste minimisation and management procedures.

7.6 Re-use, Recycling and Disposal

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

Refer Table 3 for an outline of the proposed reuse, recycling and disposal methods for potential waste streams generated by the development.

The following specific procedures will be implemented:

- concrete, tiles and bricks will be reused or recycled off-site. Recycling will include crushing and separating different materials for use as products such as road base and drainage medium among others
- steel will be recycled off-site, and all other metals will be recycled where economically viable
- framing timber will be reused on-site or recycled off-site
- windows, doors and joinery will be recycled off-site, where possible
- all used crates will be stored for reuse unless damaged
- all glass that can be economically recycled will be recycled
- all solid waste timber, brick, concrete, rock that cannot be reused or recycled will be taken to an appropriate facility for treatment to recover further resources or for disposal to landfill in an approved manner



- all asbestos, hazardous and/or intractable wastes will be disposed of in accordance with SafeWork NSW and NSW EPA requirements
- provision for the collection of batteries, fluorescent tubes, smoke detectors and other recyclable resources will be provided on site, and
- all waste and recycling will be disposed of through a council approved system.

7.7 Waste Separation, Storage and Servicing

7.7.1 Waste Separation and Storage

Waste materials produced from demolition and construction activities will be separated at the source and stored separately on-site.

It is anticipated that there will be enough space on-site for separate storage in, 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 separation of waste types, the site manager, or equivalent role, will consult with the waste and recycling collection contractor to confirm which waste types may be co-mingled before removal from the site.

7.7.2 Waste Storage Areas

Waste storage areas will be accessible and allow sufficient 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 will 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 waste does not fall, blow, wash or otherwise escape from the site. Waste containers and storage areas will be kept clean and in a good state of repair.

Applicable weather protection measures will be considered for storage spaces.

In accordance with good practice waste management, areas designated for waste storage will:

- Allow unimpeded access by site personnel and waste disposal contractors



- Take into account 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 sufficient 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 and accessibility 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 will:

- 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:
 - o Descriptions and estimated amounts of all waste materials removed from site
 - o Details of the waste and recycling collection contractors and facilities receiving the waste and recyclables
 - o 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
 - o 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 approved hours.

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

7.7.4 Waste Servicing and Transport

The frequency of the waste removal will, in most cases, be dictated by the quantities of material being deposited into each of the dedicated skip bins. All skips leaving the site will be covered with a suitable tarpaulin to ensure that the spillage of waste while in transit is eliminated.

7.8 Signage

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



Signs approved by the NSW EPA for labelling of waste materials are available online¹² and will be used where applicable. A selection of the EPA's signs is shown in Figure 4.



Figure 4 - Examples of NSW EPA labels for waste and skip bins

7.9 Site Inductions

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

Induction training will 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.

7.10 Monitoring and Reporting

During the demolition and construction phases, the following monitoring practices will be undertaken to improve demolition 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.

¹² 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 waste management plans.

Records will be maintained for all waste quantities that are recycled, reused or removed by a contractor. All demolition and construction waste dockets will be kept which show which facility received the material for recycling or disposal.

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 or equivalent role on a weekly basis or as required. These inspections will be used to identify and rectify any resource and waste management issues.

Waste audits should be carried out by the building contractor or equivalent role 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 will be 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 site manager, or equivalent role, to implement the WMP, and the responsibility of employees and subcontractors to ensure that they comply with the WMP at all times.

Suggested roles and responsibilities for waste management at the site are provided in Table 8. Where possible, a construction environmental manager, or equivalent role, will be appointed for the site preparation and construction work. An equivalent construction environmental manager role is defined to be a person dedicated to overseeing the environmental compliance and performance of a development. Where a construction environmental manager is not appointed, responsibilities in Table 8 for the construction environmental manager will become those of the site manager.

Table 8 Suggested roles and responsibilities for site preparation, demolition and construction waste management

Role	Responsibilities
Site Manager	- Ensuring plant and equipment are well maintained - Ordering only the required amount of materials - Keeping materials segregated to maximise reuse and recycling - Ensuring that waste sorting and storage areas are maintained in a tidy and functional state and do not present hazards to human health or the environment - Ensure hazardous or contaminated materials are appropriately managed and disposed - Ensure site records and documentation is kept and is complete - Ensure this WMP are implemented, and - Liaise with Council and regulatory authorities as required.
Construction Environmental Manager or equivalent	- Ensuring staff and contractors are aware of site requirements for waste management - Establishing separate skips and stockpiles and recycling bins for effective waste segregation and recycling purposes - Developing or identifying, and using, local commercial opportunities for re-use of materials where re-use on-site is impractical - Facilitate correct waste collection - Engage suitable waste collection and disposal contractors - Approval of off-site waste disposal locations and checking licensing requirements



Role	Responsibilities
	• Arranging for the assessment of potentially hazardous or contaminated materials • Arranging for appropriate contaminated waste management and approval of off-site waste transport, disposal locations and checking licensing requirements • Monitor and maintain site environmental controls and • Monitoring, inspection and reporting requirements.

8.0 Operational Waste and Recycling Management

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 the NSW EPA (2022-2023) indicates that the commercial and industrial waste recovery rate in 2022-2023 was 51%.¹³

Council has also set the targets of 80% diversion of waste from landfill by 2036 and 200 kg waste generation per person per year.

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 is likely to generate the following broad waste streams:

- Domestic type waste generated by employees, including food waste
- Bulk packaging waste, including polystyrene, plastic wrapping and cardboard boxes
- Office waste
- Garden organic waste from landscaped areas
- Bulky waste items such as furniture and e-waste.

Potential waste types, their associated waste classifications, and management methods are provided in Table 9 below. For further information on how to determine a waste's classification, refer to the NSW EPA (2014) *Waste Classification Guidelines*¹⁴. Recycling drop-off locations and contacts can be found on <https://businessrecycling.com.au/> for each waste type.

¹³ <https://www.epa.nsw.gov.au/your-environment/waste/waste-overview/waste-performance-data>

¹⁴ Available online from <https://www.epa.nsw.gov.au/your-environment/waste/classifying-waste/waste-classification-guidelines>



Table 9 Potential waste types, classifications and management methods for operational waste

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
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
Lead-acid or nickel-cadmium batteries	Hazardous waste	Off-site recycling, Contact the Australian Battery Recycling Initiative ¹⁵ 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
Clinical waste	Special waste	Stored, handled, collected and disposed of according to AS 3816 and the <i>Protection of the Environment Operations Act 1997</i>
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 ¹⁶ - 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

¹⁵ <http://www.batteryrecycling.org.au/home>

¹⁶ 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.



Waste Types	NSW EPA Waste Classification	Proposed Management Method
Light bulbs and fluorescent tubes	General solid (non-putrescible) waste	Off-site recycling or disposal, contact FluoroCycle ¹⁷ or Lamp Recyclers ¹⁸ 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
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

8.3 Estimated Quantities of Operational Waste

Council's documentation provides waste generation rates for offices but not for warehouses or industrial developments. For estimating the type and quantities of waste generated from the operational activities of the Development, SLR has used Council's rates for offices and the rate for 'Warehouse' from Penrith Council's *Industrial, Commercial and Mixed-Use Waste Management Guidelines* for the warehouse areas. The operational waste generation rates used are shown below in Table 10.

Table 10 Operational waste generation rates

Type of Premises	Source	General Waste Generation (L/100 m ² /day)	Recycling Generation (L/100 m ² /day)
Warehouse	Penrith Guidelines	10	10
Offices	Bayside Technical Specifications	10	10

Using the waste generation rates in Table 10 above, the approximate weekly waste quantities for the development have been calculated and taking into account the following assumptions:

- The floor areas shown in *20240911 Progress Set_49 Stephen RD Banksmeadow.pdf*,
- A week comprising seven days of operation.

The estimated quantities of operational waste generated by the development are shown in Table 11.

Table 11 Estimated operational waste quantities

Use Type	Area (m ²)	(L/day)		(L/week)	
		General Waste	Recycling	General Waste	Recyclables
A01	3,979	398	398	2,785	2,785

¹⁷ <https://www.fluorocycle.org.au/>

¹⁸ <https://www.lamprecyclers.com.au/>



Use Type	Area (m ²)	(L/day)		(L/week)	
		General Waste	Recycling	General Waste	Recyclables
A02	3,258	326	326	2,281	2,281
A03	3,256	326	326	2,279	2,279
A04	3,288	329	329	2,302	2,302
A05	3,235	324	324	2,265	2,265
A06	3,278	328	328	2,295	2,295
A07	3,256	326	326	2,279	2,279
A08	3,325	333	333	2,328	2,328
A09	3,235	324	324	2,265	2,265
A10	3,278	328	328	2,295	2,295
A11	3,256	326	326	2,279	2,279
A12	3,325	333	333	2,328	2,328
B01	2,161	216	216	1,513	1,513
B02	2,700	270	270	1,890	1,890
B03	3,281	328	328	2,297	2,297
B04	3,199	320	320	2,239	2,239
B05	1,947	195	195	1,363	1,363
B06	2,127	213	213	1,489	1,489
B07	2,835	284	284	1,985	1,985
B08	2,877	288	288	2,014	2,014
B09	1,947	195	195	1,363	1,363
B10	2,172	217	217	1,520	1,520
B11	2,833	283	283	1,983	1,983
B12	2,877	288	288	2,014	2,014
Offices	3,993	399	399	2,795	2,795
Café	100	80	40	560	280

8.4 Waste Storage Area Size

8.4.1 Garbage and Recycling Bins

The waste storage areas must be large enough to adequately store all quantities of operational waste and recycling between collections. Given the sizes of the warehouses in the development, a rear lift waste collection service using 1100 L bins is the most likely. The café is assumed to used 240 L bins.

Typical bin dimensions are shown in Table 12, although these can vary between manufacturer and supplier.

Table 12 Dimensions and approximate footprint of bins

Bin Capacity	Height (mm)	Depth (mm)	Width (mm)	Footprint (m ²)
240 L	1080	735	580	0.43
1100 L	1330	1240	1090	1.35



To allow for ready access to bins, an area of at least 200% of the total minimum bin footprint has been allowed in the bin storage areas. 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. For additional storage space for bulky waste, refer to Section 8.4.2.

The estimated number of bins required for weekly storage of operational waste and recycling are based on:

- The estimated quantities of operational waste and recycling generated are shown in Table 11
- Bin dimensions shown in Table 12.

The number of bins and waste storage space required are shown in Table 13.

Table 13 Recommended number of bins and storage areas

Warehouse	Bin Capacity (L)		Collection Frequency per Week		Number of Bins		Total Number of Bins	Recommended Storage Area (m ²)
	Garbage	Recyclables	Garbage	Recyclables	Garbage	Recyclables		
A01	1100	1100	2	2	2	2	4	10.8
A02			2	2	1	1	2	5.4
A03			2	2	1	1	2	5.4
A04			2	2	1	1	2	5.4
A05			2	2	1	1	2	5.4
A06			2	2	1	1	2	5.4
A07			2	2	1	1	2	5.4
A08			2	2	1	1	2	5.4
A09			2	2	1	1	2	5.4
A10			2	2	1	1	2	5.4
A11			2	2	1	1	2	5.4
A12			2	2	1	1	2	5.4
B01			2	2	1	1	2	5.4
B02			2	2	1	1	2	5.4
B03			2	2	1	1	2	5.4
B04			2	2	1	1	2	5.4
B05			2	2	1	1	2	5.4
B06			2	2	1	1	2	5.4
B07			2	2	1	1	2	5.4
B08			2	2	1	1	2	5.4
B09			2	2	1	1	2	5.4
B10			2	2	1	1	2	5.4
B11			2	2	1	1	2	5.4
B12			2	2	1	1	2	5.4
Offices			2	2	2	2	4	10.8
Café	240	240	3	2	1	1	2	1.7



8.4.2 Bulky Waste

This stream includes broken pallets, broken furniture, e-waste and other materials that cannot be disposed of in the general or recyclable waste stream. While Council's Technical Specification requires space be allowed for bulky waste, no dimensions are provided. SLR recommends 2 m² be allocated for bulky waste storage for each warehouse.

Therefore, in addition to the recommended waste storage area noted in Table 13, the total waste storage areas recommended for the Development are shown in Table 14.

Table 14 Total recommended storage areas

Warehouse	Recommended Storage Area (m ²)		
	Waste and Recycling Bins	Bulky waste	Total Storage Area
A01	10.8	2	12.8
A02	5.4	2	7.4
A03	5.4	2	7.4
A04	5.4	2	7.4
A05	5.4	2	7.4
A06	5.4	2	7.4
A07	5.4	2	7.4
A08	5.4	2	7.4
A09	5.4	2	7.4
A10	5.4	2	7.4
A11	5.4	2	7.4
A12	5.4	2	7.4
B01	5.4	2	7.4
B02	5.4	2	7.4
B03	5.4	2	7.4
B04	5.4	2	7.4
B05	5.4	2	7.4
B06	5.4	2	7.4
B07	5.4	2	7.4
B08	5.4	2	7.4
B09	5.4	2	7.4
B10	5.4	2	7.4
B11	5.4	2	7.4
B12	5.4	2	7.4
Offices	10.8	2	12.8
Café	1.7	2	3.7

This additional space can also act as a contingency in the event of spikes in waste generation and allow for additional bins if required.



8.5 Location of waste storage areas

A waste storage area is shown on the Ground Floor. See Figure 5 below.

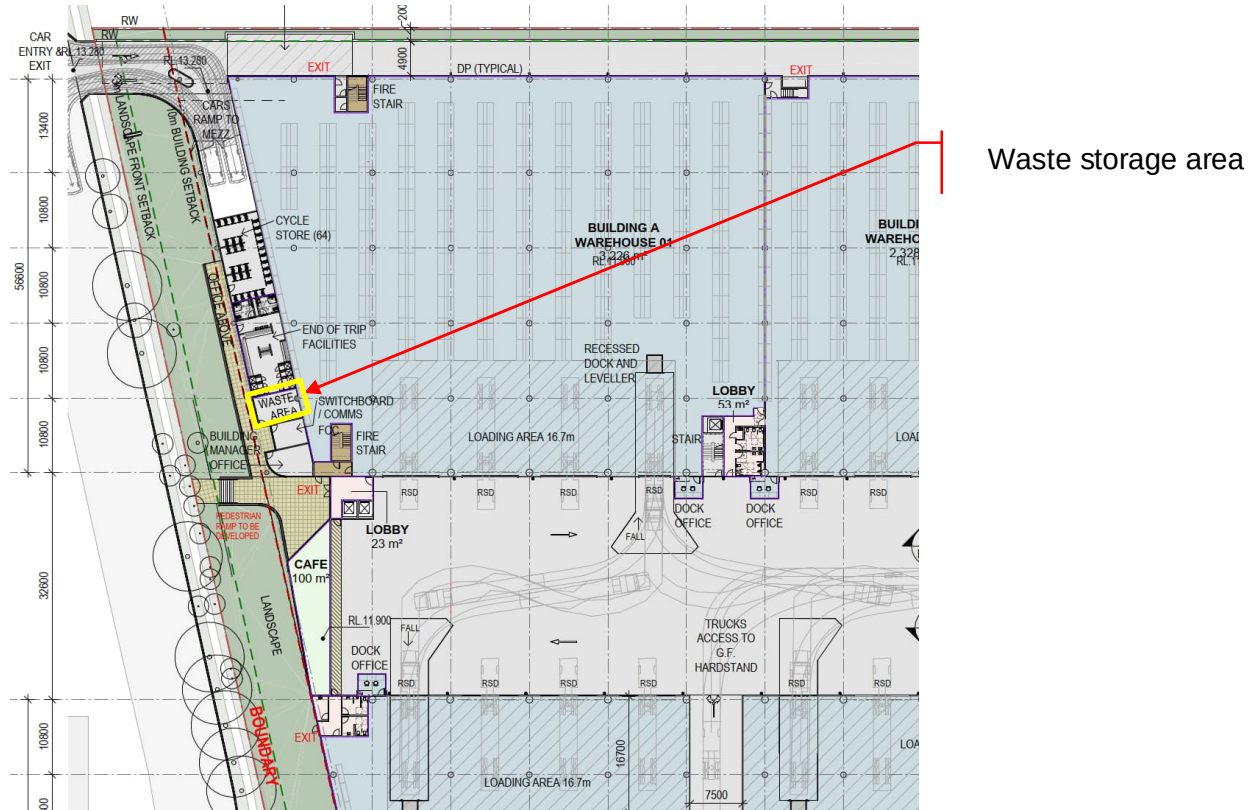


Figure 5 - Cafe and office waste area

The approximate area of this room is 27 m² which will be adequate to store waste from the offices on the floors above and the café nearby on this level.

The approximate relative size of the waste storage areas and proposed locations are shown in Figure 6, Figure 7 and Figure 8 below.

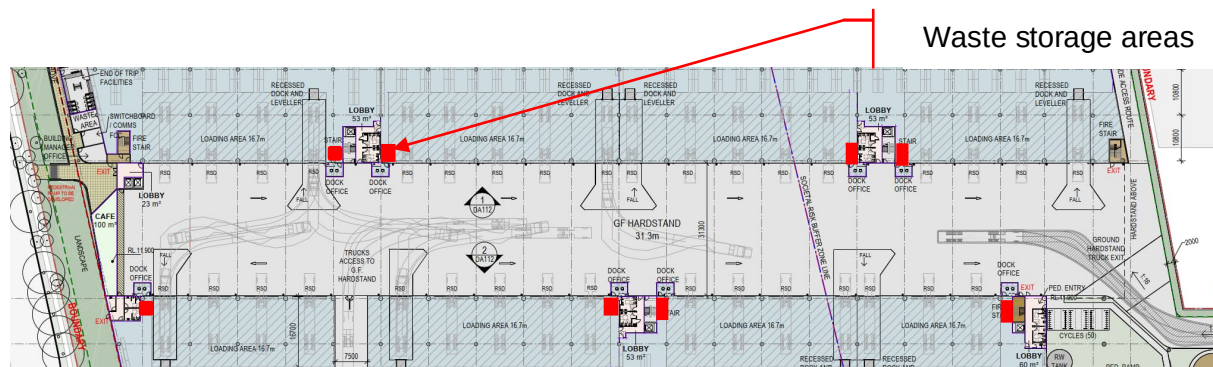


Figure 6 – Waste storage locations Ground Level



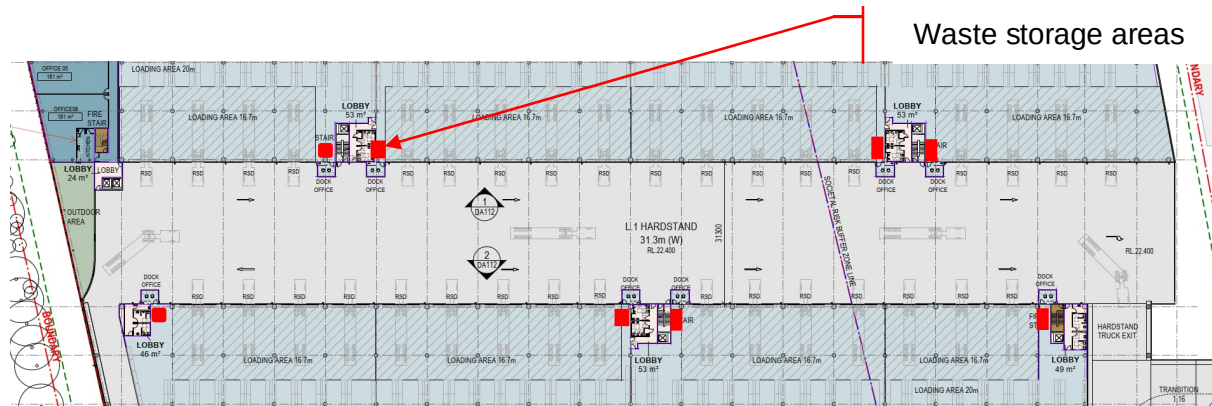


Figure 7 – Waste storage locations Level 1



Figure 8 – Waste storage locations Level 2

8.6 Waste System Description

8.6.1 Warehouses

Warehouse tenants will store bins within their premises in designated locations. Waste will be separated and placed in bins for each stream in their storage locations. Bins will be moved by tenants outside the doors for collection.

Waste collection vehicles will enter the site and drive to each warehouse. They park near the bins and empty them, then drive off and leave the site in a forward direction.

8.7 Waste Avoidance, Reuse and Recycling

8.7.1 Waste avoidance

Waste avoidance measures 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.

8.7.2 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.

8.7.3 Recycling

Recycling opportunities include:

- Collecting and recycling e-wastes
- 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
- Providing separate receptacles for general waste, recycling and paper and cardboard throughout public areas, as well as within staff areas, to encourage source-separation of waste streams
- Work with tenants to investigate opportunities for the use of recycled paper bags or reusable bags in place of plastics bags
- Separating, by a reasonable distance, the storage areas for recyclables from the general waste storage areas to avoid cross contamination, and
- Development of 'buy recycled' purchasing policy.

8.8 Communication Strategies

Education and communication on waste management initiatives and measures will be regularly and clearly conveyed to staff, cleaners and visitors. 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 which can incur a collection contractor penalty fee
- Increased recovery of recyclables and organics material, if implemented, and
- Greater contribution to state-wide targets for waste reduction and resource recovery.

To realise these benefits, the following communications strategies are recommended for the Facilities Manager:

- 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 general and comingled waste 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.

8.9 Signage

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

The design and use of safety signs will comply with Australian Standard AS 1319 *Safety Signs for the Occupational Environment* and clearly describe the types of materials designated for each bin.

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 will also follow the NSW EPA's standard signage.¹⁹

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 9
- 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.

¹⁹ NSW EPA waste signs/posters <http://www.epa.nsw.gov.au/wastetools/signs-posters-symbols.htm>





Figure 9 - Example NSW EPA labels for ongoing waste

8.10 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 15.

Table 15 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.
	Undertake liaison and management of contracted waste and recycling collections with Council, contractors and any relevant authorities.
	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.
	Conduct regular waste sorting, physical condition and cleanliness inspections of bins, waste storage rooms and all other waste management equipment for functionality, hygiene and safety.
	Organise cleaning and maintenance requirements for waste management equipment as required.
	Ensure waste and recycling storage rooms are kept tidy.
	Monitor bins to ensure no overfilling occurs and manage unexpected waste quantities to mitigate waste overflow in storage areas
	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.



Responsible Person	General Tasks
	Ultimately responsible for the management of all waste management equipment, cleaning requirements, waste transfer and collection arrangements.
Cleaners and caretakers, if employed	Transfer general waste, recyclables, cardboard waste and hazardous waste to waste and recycling storage areas as required.
	Maintain and operate compactors and balers, if in use, to ensure they are in good condition and operating safely and effectively.
	Cleaning of all bins and waste and recycling rooms as required.
	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 to allocated waste and recycling storage areas.
	Adhere to all waste management directions and comply with The Development's waste management provisions as outlined by the Facilities Manager.

9.0 Assessment and findings

The WMP establishes that during ongoing operation of the warehouse two collections for waste and recyclables will be provided per week at each warehouse and three garbage collections at the café. While it cannot be guaranteed, ideally one contractor will service the whole development so that there will be only four vehicle movements per week. However, It is possible that tenants will engage more than one contractor so more vehicle movements are likely.

The WMP also establishes that the amount of space allowed for waste and recycling on-site is more than adequate to store the amounts projected to be generated.

10.0 Cumulative impacts

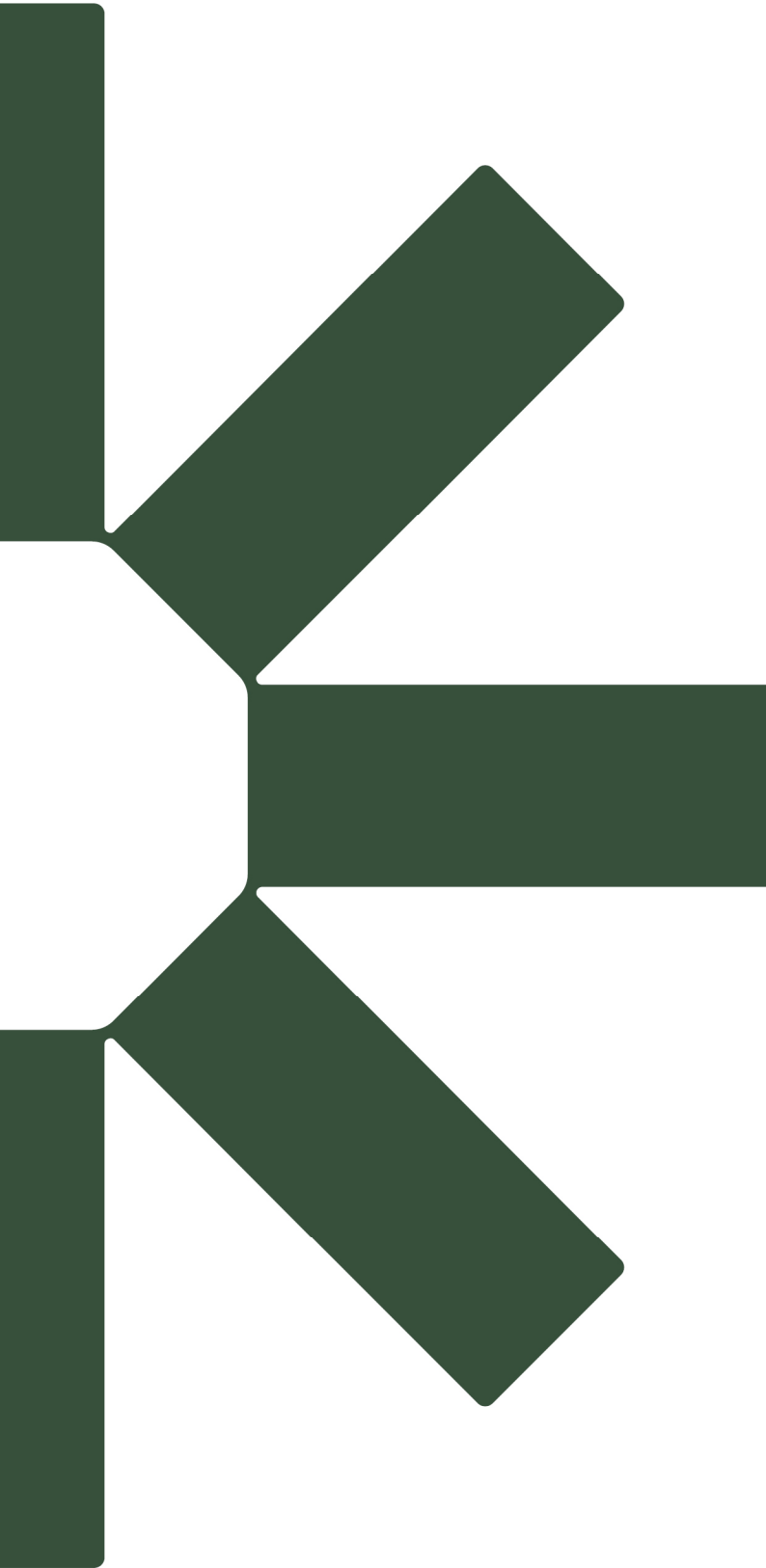
The projected quantities of waste and recyclables, a total of about 53 m³ per week each of garbage and recyclables from the whole development, or an average of about 2000 L each per week, are insignificant compared to the quantities of waste and recyclables generated in Sydney every day. Allowance has been made for the separation of recyclables as much as possible, guided by the waste generation rates in the Bayside DCP. It is possible that further separation and recovery of waste materials will be made during the operational phase of the development.

The number waste and recycling vehicle movements anticipated to be required each week are also insignificant compared to the number of vehicle movements undertaken in this industrial area every day. In addition, two waste transfer stations and processing facilities, Veolia's Banksmeadow Transfer Terminal and BM Recycling Banksmeadow are within 3 km by road from the site. These waste facilities are visited by thousands of large and small vehicles delivering waste and recyclables every week. It is likely that the vehicles collecting waste and recyclables at the proposed warehouse will dispose of them at the Veolia transfer station and would have been passing by on Stephen Road on the way to the transfer station, whether the warehouse was there or not. As a result, the number of waste collection vehicles travelling in the vicinity of the warehouse will not be affected by its development.

11.0 Mitigation measures

As the waste-related impact of the data centre is zero or negligible, no mitigating measures are proposed beyond those for the separation of recyclables already detailed.





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