

Bradfield Development Authority

Building Two Advanced Manufacturing Research Facility

Section 4.55 Modification Report
Appendix J – Amended Waste Management Plan

21 November 2025

The Western Parkland City Authority

Building Two Advanced Manufacturing Research Facility

Waste Management Plan

Reference: AMRFB2-ARU-REP-WM-00-00-01 - V6

Revision 6.0 | 21 November 2025

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.



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1. Introduction

1.1 Project Modification

Development consent SSD-58591961 for the Advanced Manufacturing Research Facility Building Two (AMRF2) was granted on 7 April 2025 by the Minister for Planning and Public Spaces. The approved development comprises the construction and operation of a five-storey advanced manufacturing (“high technology industry”) facility incorporating a café, parking, and landscaping. The site is located at Lot 3101 DP 1282964, 215 Badgerys Creek Road, Bradfield, within the Liverpool Local Government Area and the Western Sydney Aerotropolis (the Aerotropolis).

This Section 4.55(1A) modification seeks removal of a basement level, deletion of basement car parking, introduction of staged delivery of the development into two stages and minor design changes resulting from staging and ongoing design development.

1.2 Project Overview

This Waste Management Plan has been prepared by Arup as a revision to development consent SSD-58591961, to support the S4.55(1A) modification.

The subject site is 5,996sqm within the Bradfield City Centre, south-east of the new Western Sydney International (Nancy-Bird Walton) airport at the intersection of Badgerys Creek Road and the Northern Road within the Liverpool Council Local Government Area (LGA).

Bradfield City Centre will foster the innovation, industry and technology needed to sustain the broader Aerotropolis and fast track economic prosperity across the Western Parkland City. The nation’s newest city centre will be a 24-hour global metropolis with facilities for research, innovation and advanced manufacturing, education and housing.

The Advanced Manufacturing Research Facility business will be the key occupant of the building. The Western Parkland City Authority (WPCA) is anticipating interest from research and education organisations as additional occupants for the building.

AMRF2 will be operated in conjunction with the approved AMRF1 (currently under construction) and will serve to expand the manufacturing and research potential of the precinct. Focused on advanced semiconductor and electronics manufacturing for defence, aerospace, and SMEs, the Full-Scale Advanced Manufacturing Research Facility will catalyse growth of emerging industries. It will be an exemplar of Industry 4.0 through the unrivalled combination of functions in a single facility.

AMRF2 will provide services, specialist equipment and workspaces for small to medium enterprises (SMES) and start-ups, large multinational companies (such as defence primes), government and research institutions to collaboratively develop and commercialise projects and products that can be supplied to key emerging sectors, such as defence, space and cleantech.

This report has addressed the following matters within the Secretary’s Environmental Assessment Requirements (SEARs) issued for the SSDA on 14 June 2023 (see Table 1).

Table 1 SEARs requirements for Waste Management

SEARs item	Response
<i>Waste Requirements</i>	
Details of the quantities and classification of all waste streams to be generated on site during the development.	Section 5 of this report
Details of waste storage, handling and disposal during the development.	Sections 5.2, 5.3, 5.4 and 5.5 of this report
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.	Sections 2.2 and 6 of this report.

1.3 Purpose of this report

This Waste Management Plan (WMP) provides an overview of the proposed waste management system, includes the identification of operational waste management targets and aspirations, assesses preliminary compliance where relevant and identifies subsequent detail that is to be provided at the post-approval stage.

This WMP identifies how waste could be managed in the development at this design phase and how future iterations of the design will be undertaken to address the waste management requirements under the New South Wales State legislation and council guidelines.

This WMP identifies the anticipated operational waste sources for the development and outlines the potential management measures for each identified waste stream. It:

- Provides a waste generation estimate by type of material for each major area use of the proposed development
- Outlines the requirements for the management, storage, internal reticulation, and collection of the anticipated solid waste streams to be generated by the development
- Specifies the relevant design requirements including amenities for waste storage, clearance heights and the access requirements for waste loading and collection zones to be considered for the development
- Provides mark ups showing the proposed layout of the mobile garbage bins (MGBs) and equipment within the central waste storage rooms.

High-level estimates of waste generation rates have been provided for the main waste streams during operation. Specific waste generation types and quantities for the laboratories and all other unknown collaboration and manufacturing spaces may result in changes to the waste generation and therefore can have an impact on the waste storage space required. Confirmation of the types of waste and quantities (inclusive of hazardous waste streams) has been requested from the Advanced Manufacturing Research Facility business. More refined waste estimation and management provisions will be detailed in a Construction Waste Management Plan (CWMP) and Operational Waste Management Plan (OWMP) as the design progresses.

2. Legislative Requirements, Standards and Guidelines

2.1 Australian Standards

The following standards are applicable to this development. These standards have been reviewed and the WMP has been written in accordance with their requirements:

- Australian Standards, Mobile waste containers (AS4123.1 and AS4123.2)
- Building Code of Australia
- Australian Standards, Dangerous goods storage (AS/NZS 3883:2007 or Class specific standards such as AS1940:2017)

2.2 State Legislation and Policy

The legislative and policy framework for waste management in New South Wales is provided by the following:

- *The Protection of the Environmental Operations Act, 1997 (POEO Act)* covers the requirements for waste generators in terms of storage and correct disposal of waste. The POEO Act establishes the waste generator as having responsibility for the correct management of waste, including final disposal.
- *The Waste Avoidance and Resource Recovery Act, 2001 (WARR Act)* aims to encourage the efficient use of resources, provides a hierarchy for resource management and ensures that the industry shares with the community responsibility for reducing and dealing with waste. A waste management plan is a requirement for new developments in NSW and must be written with reference to the NSW Waste Avoidance and Resource Recovery Strategy 2014-2021, made under the Act.
- *The NSW Waste Reduction and Purchasing Policy, 2007 (WRAPP)* requires all state government agencies and state-owned corporations to develop and implement WRAPP plan to reduce waste.
- *The NSW Environment Protection Authority (EPA), Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities, 2013* detail better waste management practices into the design, establishment and ongoing management of waste services in commercial and industrial developments.
- *The NSW Waste and Sustainable Materials Strategy 2041, 2021* details how NSW plans to transition to a circular economy and use resources more efficiently. Targets include an 80% average recovery rate from all waste streams by 2030, phase out problematic and unnecessary plastics by 2025, and halve the amount of organic waste sent to landfill by 2030. Key reforms to achieve this include phasing out single use plastics and mandating the source separation of food & garden organics for selected businesses.

2.3 City and Council Guidelines

NSW Waste Classification Guidelines 2014

Waste Classification Guidelines (the Guidelines) covers the classification of wastes into groups that pose similar risks to the environment and human health. The following classes of waste are defined in clause 49 of Schedule 1 of the Protection of the Environment Operations Act 1997.

Western Sydney Aerotropolis Phase 2 Development Control Plan 2022

The Western Sydney Aerotropolis Phase 2 Development Control Plan (DCP) provides the planning, design and environmental objectives and controls which inform the preparation and assessment of Development Applications.

The Western Sydney Aerotropolis Phase 2 DCP is the guiding document for the waste management and circular economy initiatives and requirements for developments. This WMP has been developed in accordance with Section 2.16 of the DCP.

Council of the City of Sydney, The City’s Sustainable Sydney 2030

Sustainable Sydney 2030 details the long-term program and commitment to achieving the vision and targets set out for a Green, Global, Connected City. The Community Strategic Plan builds on this Sustainable Sydney 2030 and details the strategic directions and objections and actions for each direction. The key directions that relate to waste management include:

- Leading Environmental Performer: Waste from the city is managed as a valuable resource and the environmental impacts of its generation and disposal are minimised
- Sustainable Development, Renewal and Design: divert waste from landfill and increase resource recovery.

City of Sydney (CoS) Guidelines have been used to supplement the Western Sydney Aerotropolis Phase 2 DCP where appropriate for waste generation, storage, and collection requirements.

2.4 Green Star

The design of the AMRF2 is required to achieve a 5-star rating under the Green Building Council of Australia (GBCA) Green Star Buildings v1 rating tool.

Waste management can assist in achieving the overall Green Star rating for the development. The minimum expectation criteria for the Green Star Responsible Resource Management credit and reference to the relevant section/s of this WMP are outlined in Table 2. Future iterations of the design would be undertaken in line with the minimum expectation criteria.

Table 2 Green star Responsible resource management criteria

Responsible Resource Management Criteria	WMP Section
<ul style="list-style-type: none"> • The building is designed for the collection of separate waste and resource streams, including the following as a minimum: <ul style="list-style-type: none"> – General waste going to landfill. – Recycling streams (e.g., paper and cardboard, glass and plastic) – One additional waste stream (e.g., organics, e-waste, batteries) – Any other single waste stream (except food waste that is expected to represent more than 5% of total annual operational waste and resources by volume must be included. 	Sections 5 and 6
<ul style="list-style-type: none"> • The building provides a dedicated and adequately sized waste and resource storage area based on: <ul style="list-style-type: none"> – Forecasted waste generated by occupants. – Collection frequency of each waste stream. 	Sections 5.1 and 5.4
<ul style="list-style-type: none"> • The building ensures safe and efficient access to waste and resource storage areas for both occupants and waste and resource collection contractors. 	Sections 5.3 and 5.4

2.5 Reference Documents

The WMP references documents listed in Table 3 relevant to the development:

Table 3 WMP Reference documents

Date Prepared	Document Name	Author
24/01/2023	WPCA: Bradfield City Centre Master Plan	WSP

Date Prepared	Document Name	Author
07/11/2022	WCPA Request for Proposal – Part B – Statement of Requirements	WPCA
N/D	Bradfield City Centre Sustainability targets and objectives	WPCA
16/11/2023	State Environmental Planning Policy No. 33	Riskcon Engineering

2.6 Waste Targets

The NSW Waste and Sustainable Materials Strategy 2041 sets out state targets which focus on the environmental benefits and economic opportunities in how to manage waste. The first stage of this strategy is intended to lay the foundations in improving waste reduction and recycling. The targets within this strategy are:

- Reduce total waste generated by 10% per person by 2030
- Have an 80% average recovery rate from all waste streams by 2030
- Significantly increase the use of recycled content by governments and industry
- Phase out problematic and unnecessary plastics by 2025
- Halve the amount of organic waste sent to landfill by 2030.

Bradfield City Centre is set to embed circular economy principles at a precinct level. The AMRF2 will form part of the Bradfield City Centre and therefore must adhere to the relevant operational waste design requirements and targets for the City.

For construction waste, Bradfield City Centre aims to adopt the circular economy principles of designing out waste, keeping materials in use and return materials to system in order to achieve the target of 50% reduction by weight across 2026 to 2056.

Waste that is generated will need to be recycled, with the following targets to be achieved as set out in the Bradfield City Centre Sustainability targets and objectives document:

- 95% recycling of construction waste
- 90% recycling of operational waste
- 90% reduction of food waste to landfill via maceration and connection to the centralized piped food waste system. In-sink macerators will need to be installed in all sinks and connected to the centralized food waste collection piping system.
- For non-food waste – provision for and use of (for a fee) city wide waste management services and access. Including:
 - Designing tenancies to source separate a minimum of 7 waste streams (paper and cardboard, rigid food containers, e-waste including batteries, CDS containers, soft plastics, secure paper, mixed recyclables)
 - Including in basement areas for the aggregation and redistribution of useable bulky wastes such as furniture.

Food Waste Strategy

SydneyWater was approached regarding the use of in-sink macerators for food waste within the AMRF2 facility. Clarification on the use of in-sink macerators between SydneyWater and Western Parkland City Authority's Sustainability Team was provided during engagement for AMRF1. Following additional engagement with SydneyWater, WPCA instructed on 20/06/2024 that the proposed approach for reduction of

food waste to landfill is to use an alternative approach using source-separated organic bins to align with the ESD Strategy.

3. Site Details

The site consists of five storey state of the art manufacturing facility that contains offices/ research workplace, manufacturing halls and plants. The development has been modified to a staged delivery across two stages. Stage 1 incorporates the primary manufacturing and research workspaces, with Stage 2 adding a café, lobby and further research and office spaces.

Figure 1 shows the location of the central waste storage room, hazardous waste storage room and the loading dock on the ground level of the AMRF2 (Stage 1) as per DWG AMRFB2-ARC-AR-SR-210000 Rev. T02 (24/10/2025). Figure 2 presents the location of central waste storage room on basement 1 for Stage 2 of the AMRF2 as per DWG AR-S2-SSDA10 Rev. P02 (18/11/2025).

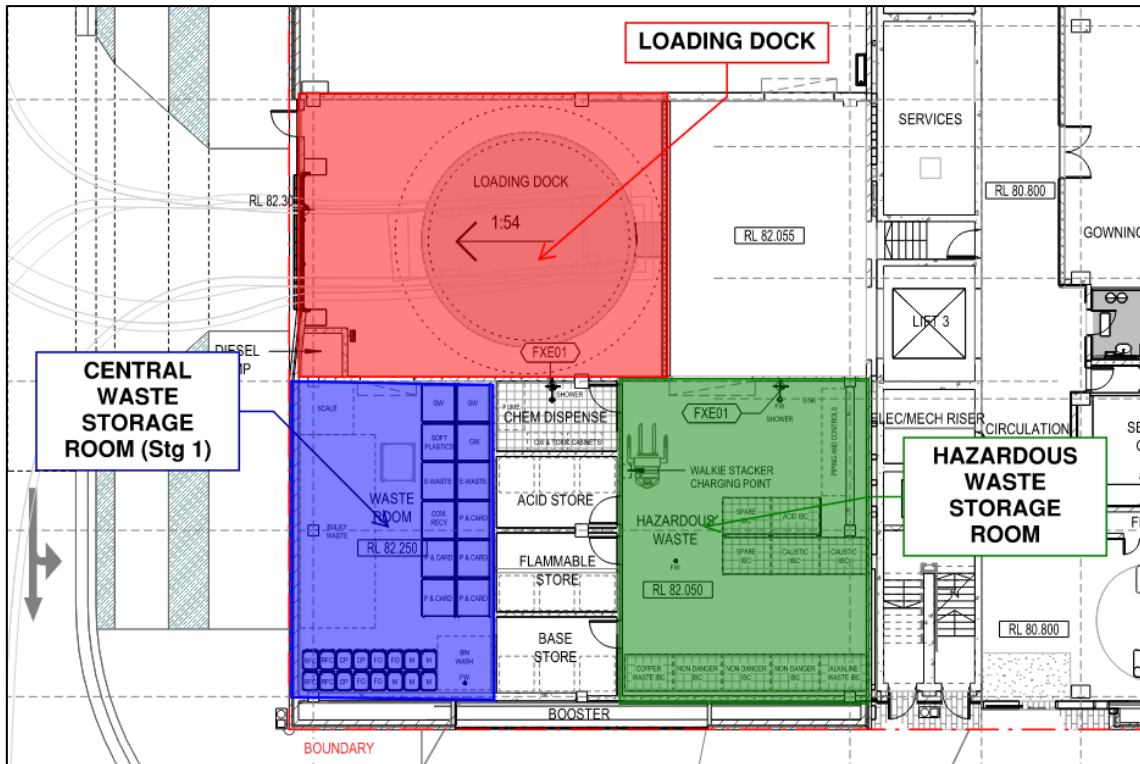


Figure 1 AMRF2 (Stage 1) ground level details

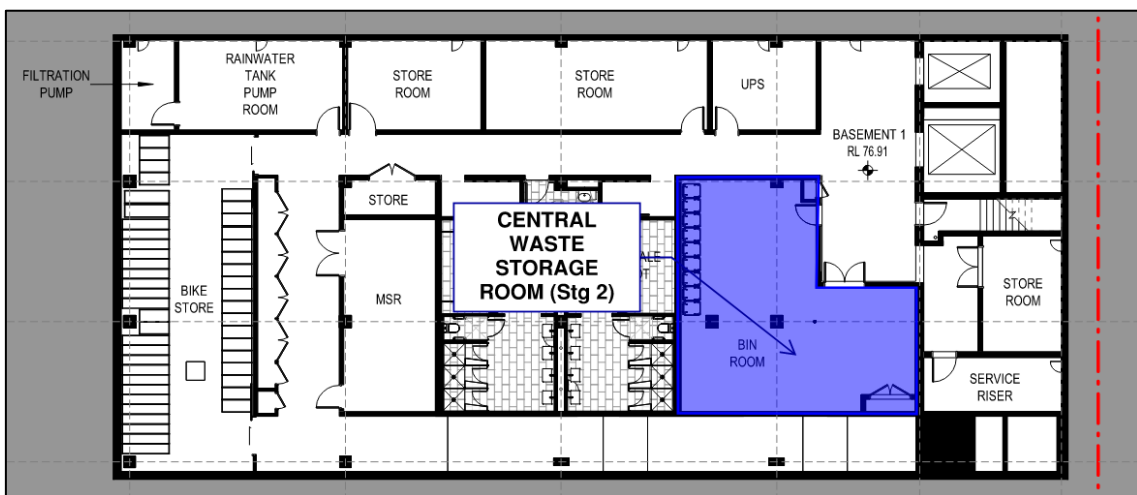


Figure 2 AMRF2 (Stage 2) basement 1 details

4. Construction Waste Management

4.1 Overview

Construction waste will be generated at the AMRF2 during the site clearance, excavation, and construction phase of the AMRF2. Construction waste will be managed in line with standard industry practice, to prevent environmental damage and, where possible, recover materials for reuse and recycling. A CWMP will be produced in later design phases for Stage 1 and Stage 2 of the AMRF2 development.

Construction waste management for the AMRF2 is routine and adequately managed through standard industry practice and will be documented in the CWMP before starting on-site works. The CWMP will outline:

- Types and volumes of waste likely to be generated
- The procedure for assessing, classifying, and storing waste in line with the NSW EPA Waste Classification Guidelines
- Storage, sorting areas and treatment of waste on the Site, including stockpiles. Stockpiles of excavated material should be constructed and managed in accordance with the Department of Environment & Climate Change NSW: Managing Urban Stormwater; Soils and Construction 2008
- Methods of transport and disposal of wastes, including waste that possesses hazardous characteristics, so that any waste leaving the site is transported and disposed of lawfully and does not pose a risk to human health or the environment
- Reuse/recycling opportunities to manage excess construction materials generated during the construction phase and steps taken to reduce waste brought to the AMRF2 site
- Requirements for compliance with the *Waste Avoidance and Resource Recovery Act 2001*
- The Resource Recovery Orders and Exemptions requirements applicable to the waste on-site.

Construction waste has the potential to pollute land or waterways including groundwater through accidental escape of waste or runoff, and through disposal of waste to an inappropriate site.

4.2 Contaminated Hazardous Waste

The NSW EPA regulates the management of hazardous waste. If unexpected contaminated / hazardous waste materials are identified, the NSW EPA and Council may need to be notified. All contaminated/hazardous waste must be transported by a NSW EPA licensed contractor and treated or disposed of at an appropriate licensed facility.

If a material is suspected of being contaminated or hazardous, work should be halted, with all potentially contaminated or hazardous waste handled in accordance with appropriate legislation and regulations including the Work Health and Safety Regulation 2011.

Construction waste may cause health risks arising from handling or contact with contaminated soil and hazardous waste materials.

A CWMP will be developed before construction commences for the appropriate management of hazardous waste on the AMRF2 site. All waste for disposal will be classified, transported from the site and disposed of in line with the NSW EPA Waste Classification Guidelines.

4.3 Preliminary Earthworks

The construction works will aim to minimise disposal of waste soil by:

- Reusing clean excavated material on-site

- Minimising excavation of contaminated material and considering on-site capping and immobilisation where appropriate.

4.4 Weed Management

Construction waste may cause the spread of weeds, pests or pathogens within recovered waste materials.

The CWMP may specify appropriate control and disposal measures to minimise impacts associated with the spread of weeds and plant pathogens if required.

4.5 Potential waste streams

Potential construction waste streams may include:

- Site excavation waste
- Construction waste
- Packaging waste
- Construction work compound waste from on-site employees.

If site excavation material results in a surplus of material, it will be required to be taken off site and disposed of. Site excavation material will be temporarily stockpiled for collection and off-site reuse, in line with the CWMP.

Waste and recyclable materials will be removed from the site by appropriately licensed contractors and reused, recycled, or disposed of at appropriately licensed facilities, in line with the NSW EPA Waste Classification Guidelines.

5. Operational Waste Management

5.1 Overview

Operational waste will be generated at the AMRF2 during the daily operation of the facility. Operational waste will be managed in line with standard industry practice and where possible, to recover materials for reuse and recycling. An OWMP will be produced in later design phases.

5.1.1 Operational Waste Streams

The waste streams that will be generated during operation of the site, their source of generation and proposed management destination are summarised in Table 4.

Table 4 Operational waste streams by operational area (Stage 1 and Stage 2)

Waste Stream	Operational Area	Destination
General waste	All operational areas	Off-site landfill
Food Organics	Commercial office, food and beverage, collaboration spaces and kitchen areas	Off-site organic treatment
Garden Organics	Landscaping areas	Off-site recycling
Paper and cardboard	All operational areas	Off-site recycling
Commingled recycling	All operational areas	Off-site recycling
Soft plastics	All operational areas	Off-site recycling
Hard/ bulky items	All operational areas	Off-site recycling/ off-site landfill
Electronic waste, batteries, toner cartridges	All operational areas	Off-site recycling
Crates	Laboratory areas	Off-site recycling
Confidential paper	All operational areas	Off-site recycling
Sanitary waste	All bathroom areas	Off-site landfill
CDS containers	Commercial office, food and beverage and kitchen areas	Approved Container Deposit Scheme recycling facility
Rigid food containers	Commercial office, food and beverage and kitchen areas	Approved Container Deposit Scheme recycling facility
Metal	All operational areas	Off-site recycling
Hazardous waste	Workshops, labs and manufacturing areas	Off-site recycling/ off-site landfill
PPE waste	Workshops, labs and manufacturing areas	Off-site landfill / incineration

5.1.2 Waste Generation Assumptions

The following assumptions have been made when calculating operational waste generation volumes for the proposed development across both Stage 1 and Stage 2:

- Best practice is to design waste storage requirements assuming collection every two days, to provide contingency in case of a missed collection
- Applicable generation areas have been delineated from the provided architectural drawings dated 24/10/2025
- Waste generation from public realm, car park areas, EOT facilities, bike store areas, plant areas, circulation corridors, bathrooms, and lifts areas will be negligible and therefore have been excluded from the waste generation estimates
- Lobby/foyer area have been assumed as lobby space for generation estimate purposes
- Café area has been assumed as a restaurant/eating space for generation estimate purposes
- There are no waste generation rates for the following area uses: research workplace, ISO, lab, chase, advanced microscopy, SUB-FAB, shared spaces, collaboration spaces, tenancy and manufacturing. Therefore, these spaces are assumed as commercial office for waste generation purposes
- The conference hall space is expected to be used similar to the other collaboration spaces and has been assumed as a commercial office for generation estimate purposes
- Specific waste generation types and quantities for the laboratories and all other unknown collaboration and manufacturing spaces may result in changes to the waste generation and therefore can have an impact on the waste storage space required. Confirmation of the types of waste and quantities (inclusive of hazardous waste streams) has been requested from the Advanced Manufacturing Research Facility business.

The waste stream volumes estimated for waste generation calculations include ‘Landfill’ (i.e., general waste stream), ‘Organics’ and ‘Recycling’. It is assumed that 96% of the recycling stream from offices comprises paper and cardboard, while the remaining 4% is comprised of commingled recycling. For restaurants/eating areas it is assumed that paper and cardboard represent 51% of the recycling stream, with commingled recycling comprising 49%.¹

5.1.3 Operational Waste Generation

Waste generation volumes for the proposed development have been estimated to determine potential storage collection frequency requirements for the central waste storage rooms across Stage 1 and Stage 2. Waste generation volumes have been calculated from the assumed area types listed in Table 5 based on the assumptions listed above for the various area uses.

Table 5 Proposed development area schedule

Area Type	Area (m ²)	
	Stage 1	Stage 2
Commercial Office	7,669	2,660
Lobby	0	360
Restaurants/Eating	0	194
<u>TOTAL</u>	<u>7,669</u>	<u>3,214</u>

5.1.4 Generation Rates

To calculate anticipated waste generation volumes for the development, the most suitable waste generation rates have been selected from the CoS Guidelines as no commercial generation rates are provided in the Western Sydney Aerotropolis Phase 2 DCP, based on the area uses specified above.

¹ Encycle (2013) A Study into commercial & industrial (C&I) waste and recycling in Australia by industry division

Table 6 CoS generation rates

Area Type	Landfill Volume (L/100m ² /day)	Recycling Volume (L/100m ² /day)	Organics Volume (L/100m ² /day)
Commercial Offices	15	25	5
Lobby	20	25	0
Restaurant/Eating	100	500	100

5.1.5 Total Waste Generation

The total daily waste generation was calculated by multiplying each area type per the area schedule by the CoS Guidelines waste generation rate, as presented in Table 7 and Table 8 for Stage 1 and Stage 2 respectively.

Table 7 Total waste generation (Stage 1)

Area Type	Area (m ²)	Landfill (L/day)	Organic Waste (L/day)	Recycling	
				Commingled (L/day)	Paper and cardboard (L/day)
Commercial offices	7,669	1150	383	72	1845
Lobby	0	0	0	0	0
Restaurant/Eating	0	0	0	0	0
<u>TOTAL</u>	<u>7,669</u>	<u>1150</u>	<u>383</u>	<u>72</u>	<u>1845</u>

Table 8 Total waste generation (Stage 2)

Area Type	Area (m ²)	Landfill (L/day)	Organic Waste (L/day)	Recycling	
				Commingled (L/day)	Paper and cardboard (L/day)
Commercial offices	2,660	399	133	25	640
Lobby	360	72	0	90	0
Restaurant/Eating	194	194	194	475	495
<u>TOTAL</u>	<u>3,214</u>	<u>665</u>	<u>327</u>	<u>590</u>	<u>1135</u>

These calculations have been determined based on detailed design only and any changes to the proposed area use during design development can have significant impact on waste generation and therefore the space required for waste storage.

5.2 Waste Management System

A proposed waste management system for the central waste storage room (Stage 1) and hazardous waste storage room is detailed below in Figure 3 and Figure 4. The waste management system for Stage 2 will operate in a similar manner as the Stage 1 development. Storage of confidential paper and metals is only provided within the Stage 1 central waste storage room, however, will service both stages. The collection point for Stage 2 is still to be determined through further design development.

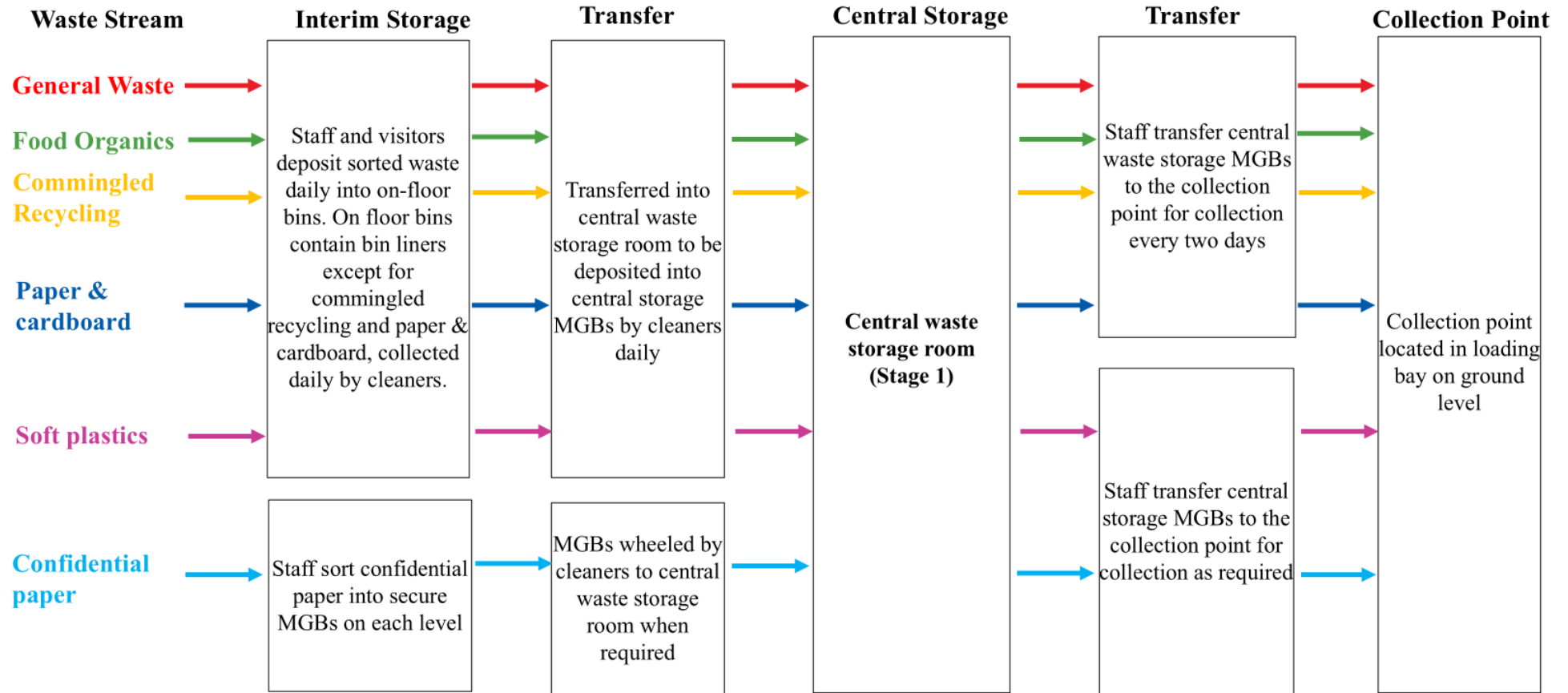


Figure 3 Proposed waste management system (1 of 2)

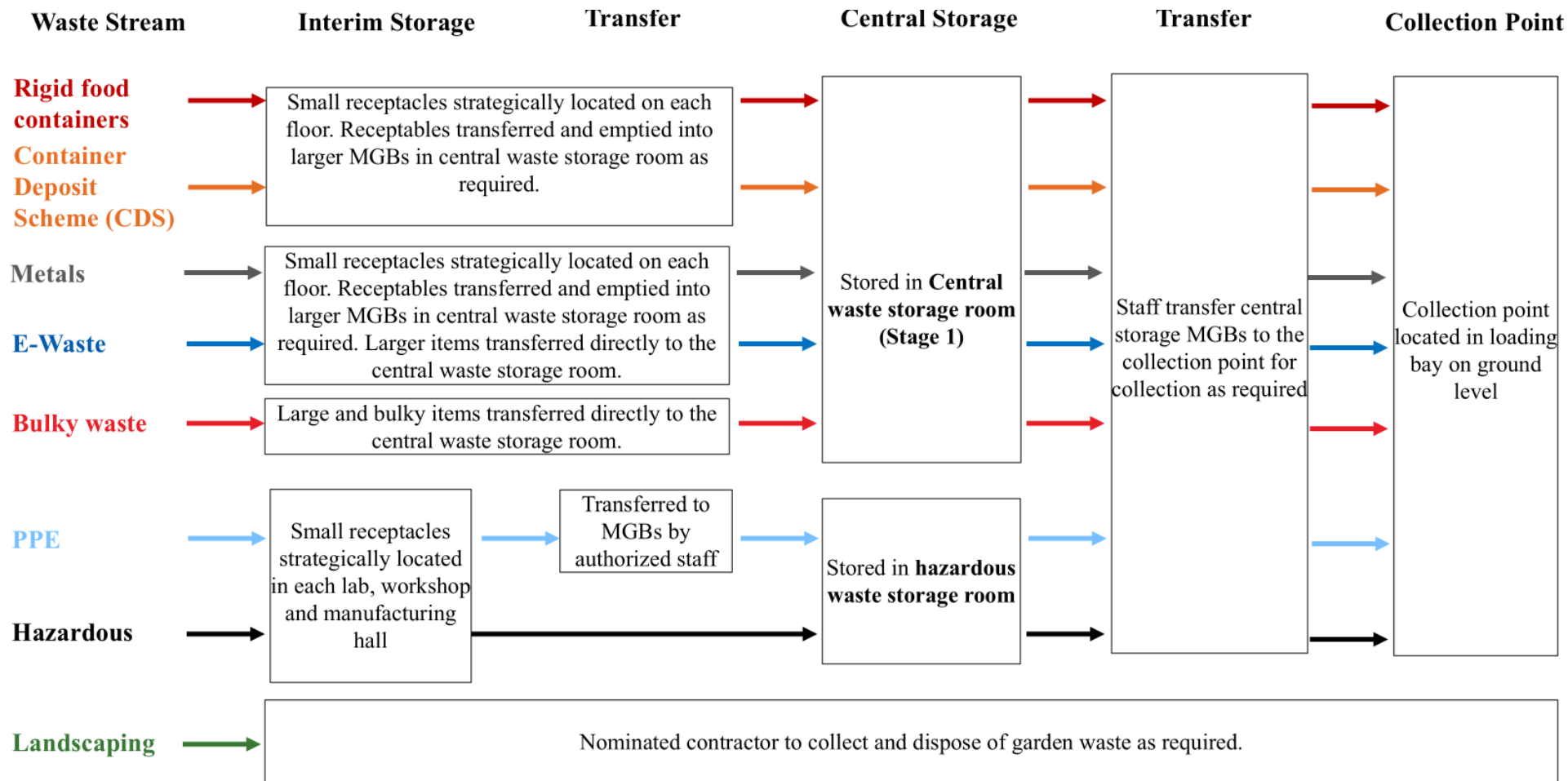


Figure 4 Proposed waste management system (2 of 2)

5.3 Interim Storage

It is proposed that each floor of the site will have waste collection points, containing as a minimum three bins (general waste, paper & cardboard, and commingled recycling) in offices and collaboration areas, five bins in kitchens/eating areas (general waste, food organics, CDS containers, rigid food containers and commingled recycling) and two bins (general waste and commingled recycling) in workshops and manufacturing halls. It is proposed that other waste bins will be placed throughout the site as required based on waste generated within each space.

All general waste, commingled recycling, food organics, paper & cardboard, CDS containers, rigid food containers, and soft plastics receptacles or bags will be collected out of hours by cleaners and transferred via the lifts to the central waste storage rooms respectively across the Stage 1 and Stage 2 developments.

The detailed requirement for hazardous waste storage at the point of generation is to be confirmed.

5.4 Central Waste Storage Room

5.4.1 Locations

A central waste storage room will be located on the ground level for the Stage 1 development and in the basement level 1 for the Stage 2 development to minimise the visual, odour and safety impacts, refer to Figure 1 and Figure 2 respectively. The central waste storage rooms will be used to store the frequently collected waste streams. This placement follows the requirements of the CoS guidelines including:

- MGB storage rooms should be located on the same floor as the collection point
- Located in a convenient position with internal access for the commercial tenant.

The central waste storage room for Stage 2 is currently shown on basement level 1, with the collection point and associated bin transfer route to be confirmed during further design development.

5.4.2 Waste Storage Area Requirements and Assumptions

Waste storage area requirements were calculated using the daily waste generation volumes, and additional requirements as stipulated by the relevant guidelines. Future design iterations would be undertaken to comply with relevant guideline requirements. The Western Sydney Aerotropolis Phase 2 DCP states that the bin room must:

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

The CoS Guidelines have been used to supplement the Western Sydney Aerotropolis Phase 2 DCP and outlines that for non-residential developments, space is to be dedicated for storing bulky waste and problem waste for recycling. For a development of this size a minimum 8m² is required for storing of bulky waste items based on the CoS Guidelines. However, due to the unique operations of the facility an additional 12m² is proposed to support the reuse and recycling of bulky waste within the Stage 1 central waste storage room. An additional 4m² has been proposed in the Stage 2 central waste storage room.

For the central waste storage rooms in both Stage 1 and Stage 2, to allow for sufficient manoeuvring and accessibility of the MGBs within the room, an MGB Scaling factor of 2 has been applied. The area requirement estimations for the central waste storage rooms for Stage 1 and Stage 2 are shown in Table 9.

Hazardous waste expected to be generated at the facility currently includes surplus chemicals requiring disposal. It is also assumed as a worst-case scenario that the source separated PPE is also considered hazardous. A separate hazardous waste room has been designed by others and is shown on Figure 1 above.

It is a WPCA requirement that food waste is to be processed via maceration and connected to the centralized piped food waste system. Correspondence with the WPCA Development Manager on 20/06/2024 instructed that an alternative approach for organic waste collection using source-separated food organic bins is the preferred pathway.

Table 9 Area requirement estimation for the central waste storage rooms

Storage Location	Waste Stream	Storage Requirements	Area (m ²)
Central waste storage room (Stage 1)	General Waste	4 x 660L MGBs	8
	Food Organics	4 x 240 L MGBs	4
	Commingled recycling	1 x 240 L MGBs	1
	Paper and cardboard	6 x 660 L MGBs	12
	Soft plastics	1 x 660 L MGBs	2
	E-waste	3 x 660L MGBs	6
	Confidential Paper	4 x 240 L MGBs	4
	Metals Waste	4 x 240 L MGBs	4
	CDS	2 x 240 L MGBs	2
	Rigid food container	2 x 240 L MGBs	2
	Bulky Waste	Contained Area	20
	Bin Wash	1 x bin wash	4
	Scales	1 x scales	4
Total – Stage 1			<u>73</u>
Central waste storage room (Stage 2)	General Waste	3 x 660 L MGBs	6
	Food Organics	3 x 240 L MGBs	3
	Commingled recycling	1 x 660 L MGBs	4
	Paper and cardboard	4 x 660L MGBs	8
	Soft plastics	1 x 600 L MGBs	2
	E-waste	1 x 600 L MGBs	2
	CDS	1 x 240 L MGBs	1
	Rigid food container	1 x 240 L MGBs	1
	Cooking Oil	Bunded Area	2
	Bulky Waste	Contained Area	4
	Bin Wash	1 x bin wash	4
	Scales	1 x scales	4
Total – Stage 2			<u>41</u>

Based on the bin numbers and area requirements outlined in Table 9, the space provided in the Stage 1 (82m²) and Stage 2 (74m²) developments for the central waste storage rooms are adequate. This is based on the following assumptions:

- Servicing frequency:
 - Every two days for general waste, food organics, commingled and paper & cardboard recycling
 - As required for other waste streams
 - An arrangement with nominated waste contractors for ad hoc collections to be provided as required.
- Allowance for scales to support waste tracking against targets
- Bin wash areas are required to be connected to hot and cold water and discharge to sewer
- Bin wash areas are to be bunded.

5.4.3 Location and Layouts

The proposed central waste storage rooms are shown below in Figure 5 and Figure 6 for Stage 1 and Stage 2 respectively. These layouts are designed so that there is a minimum allowable gap of 15cm between each MGB as well as between MGBs and walls.

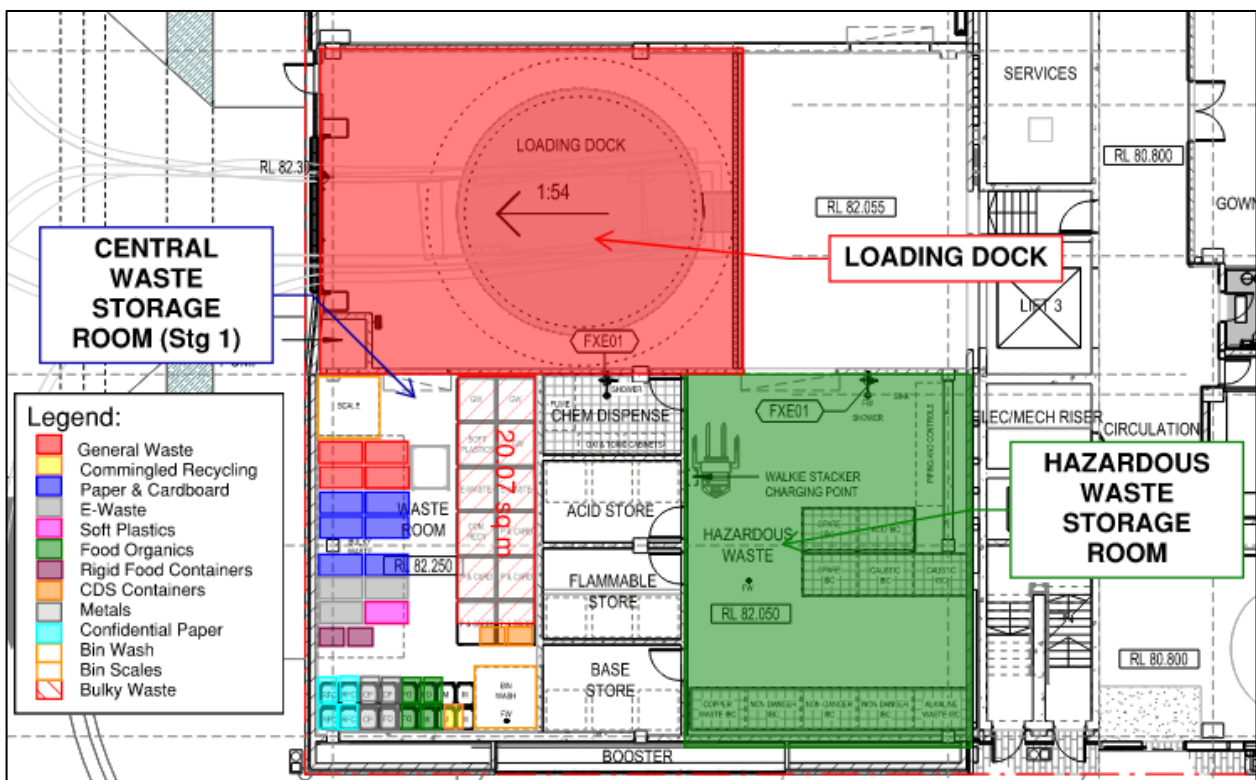


Figure 5 Central waste storage room layout (Stage 1)

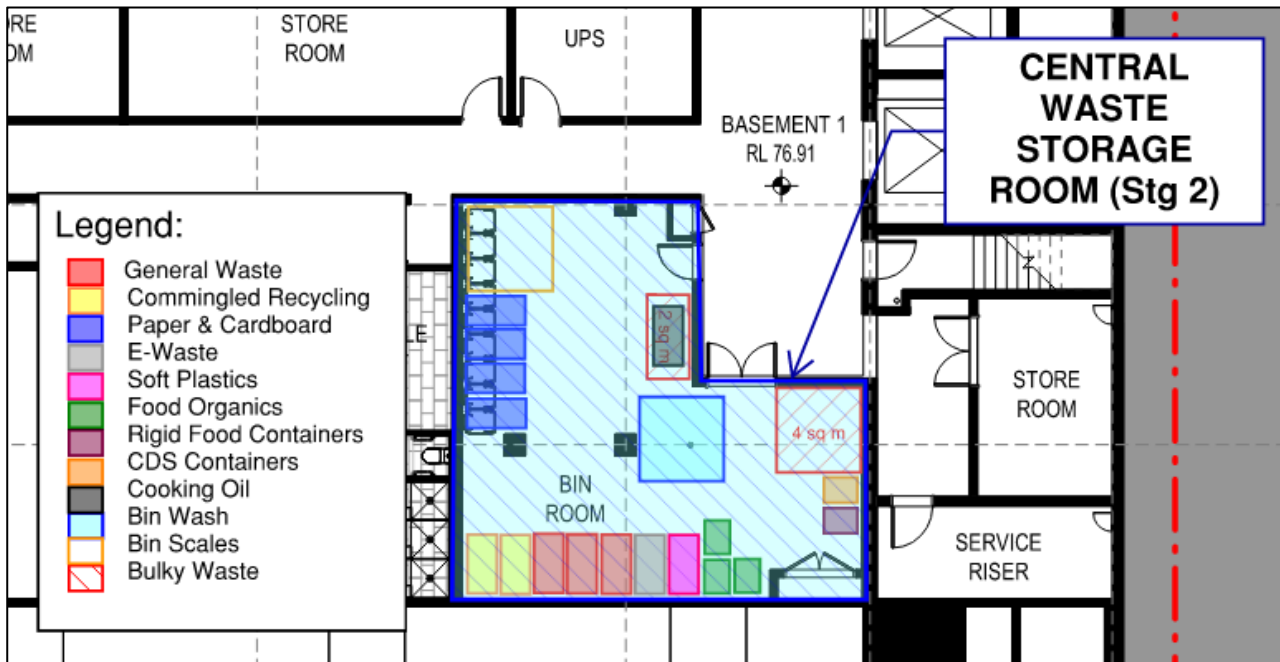


Figure 6 Central waste storage room (Stage 2)

5.5 Collection

The central waste storage room and collection point for Stage 1 will be located on the ground level. This position is convenient for staff and facilities management. The waste collection contractor will transfer the waste and recycling MGBs from the storage area to the waste collection vehicle located at the waste collection point (loading bay) outlined in Figure 7. On an as needs basis, a waste collection contractor will collect bulky waste, and problem wastes from the central waste storage rooms. Staff and tenants will transfer bulky, and problem wastes to the collection area prior to collection.

The Stage 2 collection point is to be confirmed as the design develops.

The nominated waste collection point/s where the waste loading operations occur will be on a level surface away from slopes or vehicle access ramps in a convenient location for collection contractors. The path where the waste contractor will transport the MGBs from the central waste storage room/s to the collection vehicle will be free of steps, kerbs and other uneven surfaces. The CoS Guideline indicate that the distance between the central waste storage room and its respective collection points will not exceed 10 m and must not exceed grade of 1 in 14.

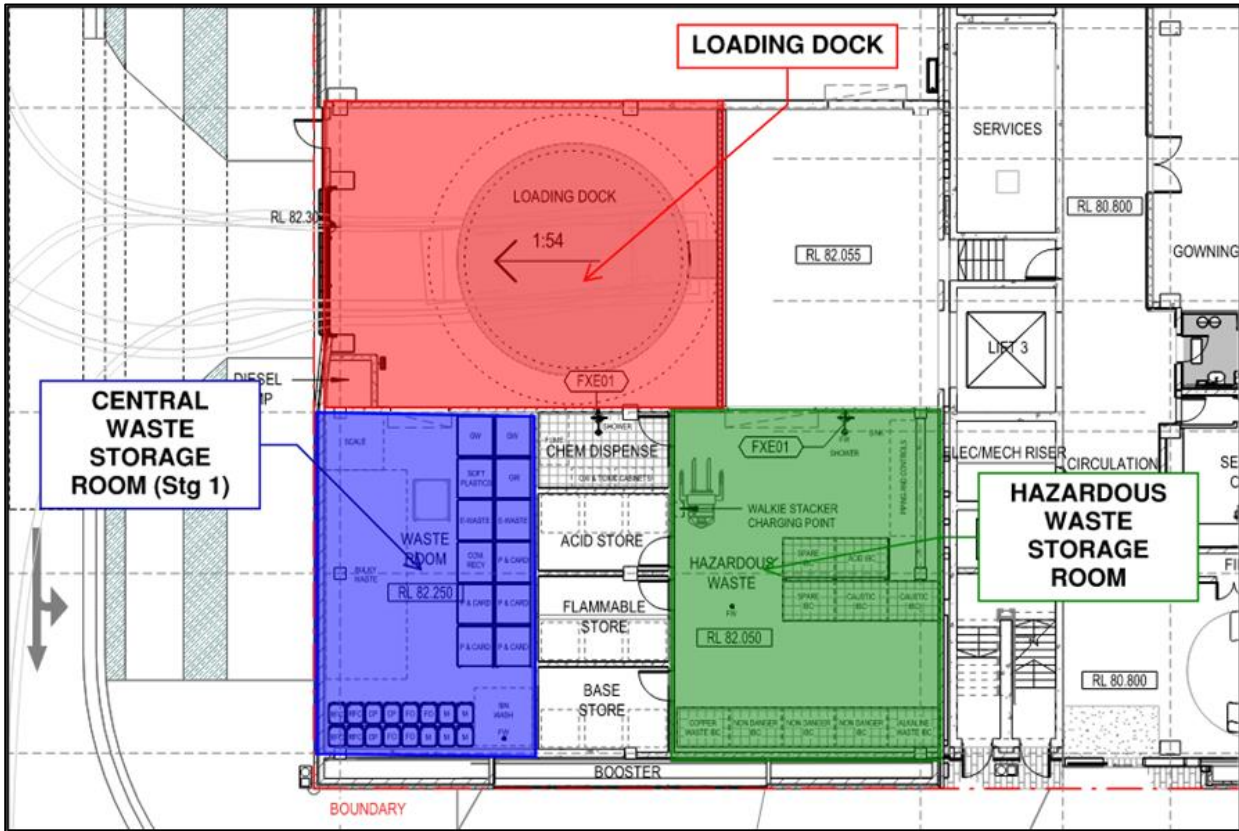


Figure 7 Collection vehicle location (Stage 1)

5.6 Signage

Signage must be provided in the waste and recycling MGB areas/drop off points throughout the site to encourage correct recycling and waste disposal. All waste streams will be stored in clearly labelled, colour coded MGBs as appropriate to ensure that waste streams are not inadvertently mixed.

Uniform waste management design and colour coding is to be in accordance with AS 4123 across commercial developments as specified in the Western Sydney Aerotropolis Phase 2 DCP, with the standard colours of each waste stream for CoS Guidelines as guidance provided in Table 10. These measures are necessary in order to encourage the appropriate separation of waste streams and the recovery of resources.

Table 10 CoS standard MGB colours

MGB	Colour
General waste	Red lid and dark green body
Organic waste	Lime green lid and dark green body
Commingled recycling	Yellow and dark green body
Paper and cardboard recycling	Blue lid and dark green body

In addition, clear Occupational Health and Safety (OHS) signage must be provided as appropriate. In particular, appropriate OHS must be provided within each waste and recycling storage room.

5.7 Design

The central waste storage rooms will be designed according to best practice provision, the Building Code of Australia, and all relevant Australian Standards. Refer to Table 11 below.

Hazardous waste and dangerous goods are to be stored in a manner which complies with the applicable storage standards (i.e. AS/NZA 3833:2007 or Class specific standards such as AS1940:2017). Further storage design and handling of dangerous goods including hazardous waste materials is to be line with the

Table 11 Waste storage design provisions

Design aspect	Design provision
General	<p>All waste management facilities will be compliant with the Building Code of Australia (BCA) and all relevant Australian Standards.</p> <p>The waste management system and storage areas will not be visible from the exterior of the building.</p>
Surfaces	<p>The floors of the central waste storage rooms will be constructed of concrete of at least 75mm thickness and graded and drained to the sewerage system.</p> <p>The floors will be finished to a smooth, even surface, and covered at their intersection with walls and plinths.</p>
Structure	<p>The walls, ceilings and floors of the central waste storage rooms will be finished with a light colour.</p> <p>The walls of the central waste storage rooms will be constructed of approved solid impervious material and will be cement rendered internally to a smooth even surface coved at all intersections.</p> <p>The central waste storage rooms will be constructed and finished to prevent absorption of liquids and odours and will be easily cleanable.</p>
Doors	<p>A close-fitting and self-closing door or gate operable from within the room must be fitted to all central waste storage rooms.</p> <p>At least one door to the central waste storage rooms must have sufficient dimensions to allow the entry and exit of waste containers of a capacity nominated for the development.</p>
Water	<p>The central waste storage rooms must be provided with an adequate supply of cold water. A floor waste basket trap connected to the sewer shall be provided within the central waste storage rooms. Storm water shall not be permitted to enter this floor waste trap.</p>
Drainage	<p>The central waste storage rooms will be sealed and bunded internally, with all water draining to the sewerage system.</p>
Lighting	<p>Adequate lighting will be provided for all rooms, controllable from a switch located both outside and inside the room. Lighting will ensure safe access to the area at night. Automatic light sensors may be installed for ease of manual handling during transfer of MGBs.</p>
Pest control	<p>The potential for vermin must be minimised. To achieve this, all waste and recycling awaiting collection is to be stored in a Council approved container (such as an MGB or bulk MGB).</p>
Ventilation	<p>The central waste storage rooms will be supplied with an approved system of mechanical exhaust ventilation, exhausting at a rate of 5L/s.m² floor area, with a minimum rate of 100L/s minimum or permanent, unobstructed natural ventilation openings direct to the external air, not less than one-twentieth (1/20th) of the floor area. Mechanical exhaust systems shall comply with AS1668 and not cause any inconvenience, noise, or odour problem.</p>
Safety	<p>Smoke detectors will be fitted in accordance with AS1670 Automatic Fire Detection and Alarm Systems and connected to the fire prevention system of the building.</p> <p>All equipment will be protected from theft and vandalism.</p>
Signage	<p>Signs will be provided to demonstrate how to use the waste management system (including segregation of wastes for recycling), as well as appropriate safety signage.</p> <p>The different recycling and waste MGBs will be stored in their streams and will be clearly identified and signed appropriately. Standard signage on how to use the waste management system and what materials are acceptable in the recycling system will be posted in all waste and recycling rooms, waste service compartments and communal MGB areas, after the Occupation Certificate is issued but before the first users occupy the building.</p>

5.8 Amenity

The waste management systems and constructed elements of this development will be designed and installed so as to enhance outcomes for building amenity and to meet expectations of neighbours, visitors, and the tenant. Any potential for noise and odour to arise will be minimised. Specifically:

- **Visual aspects:** Any facet of the waste management system that is visible from outside the building must be in keeping with the dominant design of the remainder of the proposed development.
- **Noise:** The potential for noise must be minimised. Significant noise-generating waste management equipment will not be utilised in this development. Production of offensive noise will be avoided.
- **Odour:** The potential for odour must be minimised. Any putrescible waste awaiting collection will be stored in a council approved container with permanently tight-fitting lids and smooth, washable internal surfaces. The central waste storage rooms will be fitted with mechanical vertical ventilation systems. Adequate mechanical ventilation and regular collection of waste will eliminate the risk of odour to building inhabitants and neighbours.

6. Targets, Monitoring and Measurement

High quality waste data can improve the overall level of accuracy, transparency, and confidence in waste generation rates and understanding of disposal and recycling behaviours. It enables meaningful and accurate comparisons and benchmarking to be conducted both within portfolios and between waste contractors. It can also inform strategic resource planning and provide insight into equipment/operational efficiency as well as ensuring accuracy of invoicing and fees. Greater resource recovery can be achieved by accurately measuring current and future waste performance.

6.1 Monitoring and Measurement

Data pertaining to the site's waste generation will be collected, collated, and recorded by the waste service provider to ensure best practice monitoring procedures to help measure progress towards achieving waste target above. Scales have been provided in the central waste storage rooms to support waste tracking on-site where appropriate.

6.1.1 Operations

The nominated waste service provider for the site must adhere to this WMP and comply with minimum operational safety standards.

The waste service provider must supply equipment (MGBs, signage/stickers etc.) colour-coded in accordance with the Australian Standard 4123 and approved by the preferred contact at the site.

6.1.2 Reporting

The waste service provider is to issue periodic operational waste management reports (e.g., on a monthly basis) to the preferred contact for the site, including:

- A list quantifying the amount and types of waste generated
- A list of contamination incidents including the masses of contaminated MGBs
- Records and evidence to substantiate data contained within reports to the nominated reporting standard.

6.1.3 Review of WMP

The waste service provider and cleaning contractor will annually review the WMP with the preferred contact for the site as well as any other relevant parties to determine enhancements, sustainability initiatives and other waste management initiatives. They will communicate any changes to waste management arrangements to the tenant of the site at a minimum on an annual basis or as needs dictate.