Green Square Integrated Community Facility and School
3 Joynton Ave Zetland NSW

OPERATIONAL WASTE MANAGEMENT PLAN

5/09/2022
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Revision I

Client

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GLOSSARY OF ABBREVIATIONS AND TERMS

TERM	DESCRIPTION
Bin-carting Route	Travel route for transferring bins from the storage area to a nominated collection point
Collection Area/Point	The identified position or area where general waste or recyclables are loaded onto the collection vehicle
Compactor	A machine for compressing waste into disposable or reusable containers
Composter	A container/machine used for composting specific food scraps
Crate	A plastic box used for the collection of recyclable materials
DA	Development Application
DCP	Development Control Plan
EPA	Environmental Protection Authority
HRV	Heavy Rigid Vehicle described by AS 2890.2-2002 Parking facilities – Off-street commercial vehicle facilities
L	Litre(s)
LEP	Local Environmental Plans guide planning decisions for local government areas
Liquid Waste	Non-hazardous liquid waste generated by commercial premises that must be connected to sewer or collected for treatment and disposal by a liquid waste contractor (including grease trap waste)
Mixed Use Development	A development comprised of two or more different uses
Mobile Garbage Bin(s) (MGB)	A waste container generally constructed of plastic with wheels with a capacity in litres of 120, 240, 360, 660, 1000 or 1100
MRV	Medium Rigid Vehicle described by AS 2890.2-2002 Parking facilities – Off-street commercial vehicle facilities
Onsite Collection	When the collection vehicle enters the property and services the development within the property boundary from a designated loading area
Owners Corporation	An organisation or group of persons that is identified by a particular name and acts, or may act, as an entity
Service Bins	Bin set side to be placed under a chute while the remainder of the bins are being collected
SRV	Small Rigid Vehicle described by AS 2890.2-2002 Parking facilities – Off-street commercial vehicle facilities
WHS	Workplace Health and Safety
Wheel-in wheel-out service	A type of waste collection service offered by local councils where the council waste collection personnel enter the premises to collect the bins and returns them to the property

1.0 INTRODUCTION

Elephants Foot Recycling Solutions (EFRS) has been engaged to prepare the following waste management plan for the operational management of waste generated by the Green Square Integrated Community Facility and School. This report addresses the SEARs Requirement 21. Waste, including (but not limited to) the estimates of the quantity and types of waste steams generated during operation and the measures to be implemented in operation to manage each waste stream.

The proposed development is located at 3 Joynton Street Zetland. The development includes a primary school education facility for up to 600 kindergarten to year 6 students as well as Share multi-function spaces for school and community use.

Waste management strategies and audits are required for new developments in order to support the design and sustainable performance of the building. It is EFRS's belief that a successful waste management strategy contains three key objectives:

i. ***Promote responsible source separation*** to reduce the amount of waste that goes to landfill by implementing convenient and efficient waste management systems.

ii. ***Ensure adequate waste provisions and robust procedures*** that will cater for potential changes during the operational phase of the development.

iii. ***Comply*** with all relevant council codes, policies, and guidelines.

To achieve these objectives, this operational waste management plan (OWMP) identifies the different waste streams likely to be generated during the operational phase of the development, as well as how the waste will be handled and disposed, details of bin sizes/quantities and waste rooms, descriptions of the proposed waste management equipment used, and information on waste collection points and frequencies.

It is essential that this OWMP is integrated into the overall management of the building and is clearly communicated to all relevant stakeholders.

1.1 SCOPE OF REPORT

This operational waste management plan (OWMP) applies to the **operational** phase of the proposed development. The requirements outlined in this OWMP must be implemented during the operational phase of the site.

The report addresses the operational aspect of SEARs Requirement 21. Waste.

The waste management of the **construction** and **demolition** phases of the development are not addressed in this report. A construction and demolition waste management plan will be provided separately.

2.0 LEGISLATION & GUIDANCE

Waste management and resource recovery regulation in Australia is administered by the Australian Constitution, Commonwealth laws, and international agreements. State and territory governments maintain primary responsibility for controlling development and regulating waste. The following legislation has been enacted in New South Wales, and provides the lawful underpinnings of this OWMP.

- NSW *Environmental Planning & Assessment Act 1979*
- NSW *Protection of the Environment Operations Act 1997*
- NSW *Waste Avoidance & Resource Recovery Act 2001*

At the local level, councils or Local Government Areas (LGAs) require OWMPs to be included in new development applications. This OWMP is specifically required by:

- Sydney Development Control Plan 2012
- Sydney Local Environmental Plan 2012

The primary purpose of a development control plan (DCP) is to guide development according to the aims of the corresponding local environmental plan (LEP). The DCP must be read in conjunction with the provisions of the relevant LEP.

Information provided in this OWMP comes from a wide range of waste management guidance at the local, state, and federal levels. The primary sources of guidance include:

- City of Sydney Council: *Guidelines for Waste Management in New Developments Development* 2018
- *DoE Education Facilities Standards and Guidelines (EFSG) DG02*
- NSW EPA's Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities 2012
- NSW Better Practice Guide for Resource Recovery in Residential Developments 2019
- NSW Waste Avoidance and Resource Recovery (WARR) Strategy 2014-2021
- NSW Waste Classification Guidelines 2014
- Australia's National Waste Policy 2018

2.1 CITY OF SYDNEY COUNCIL OBJECTIVES

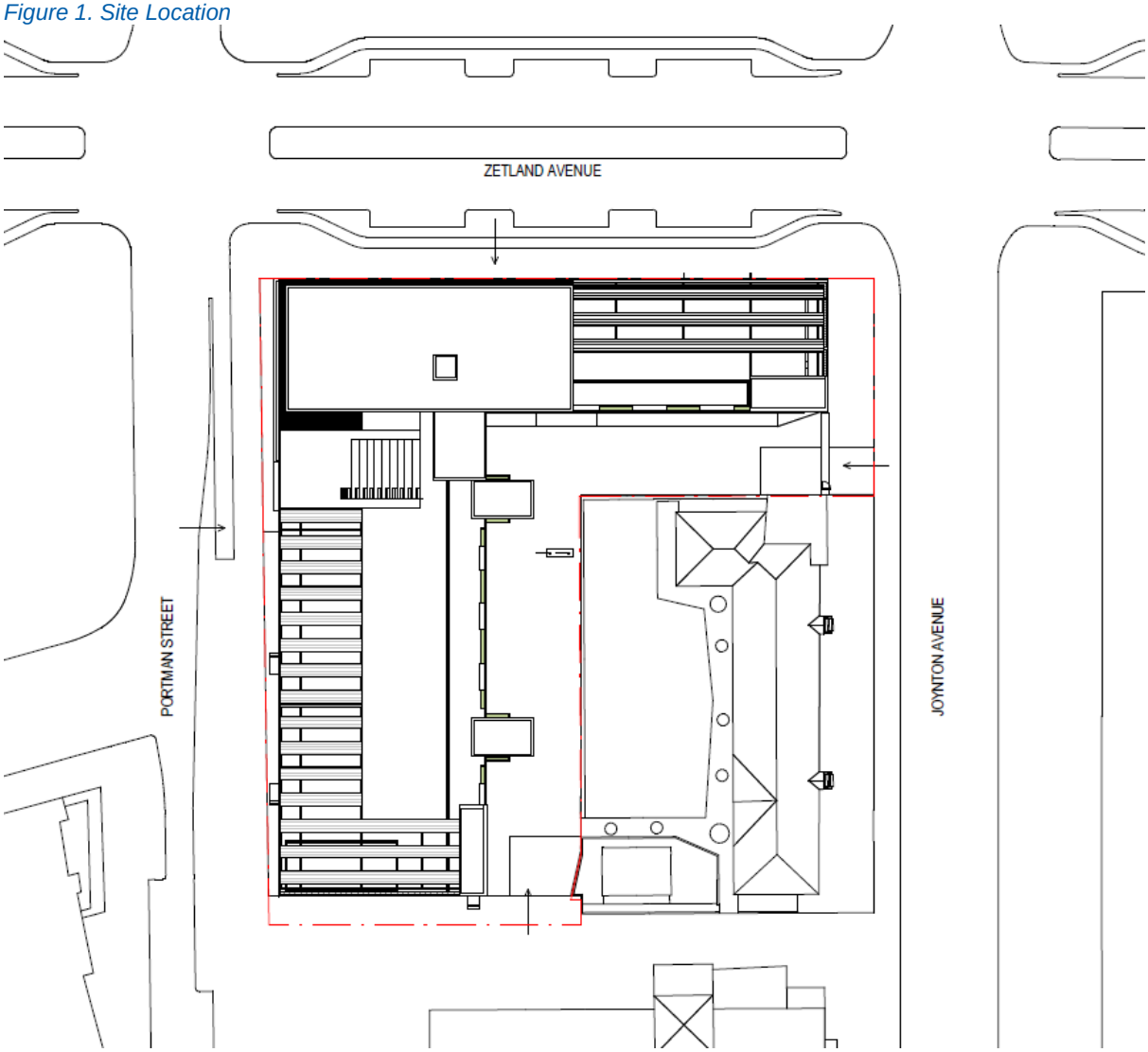
City of Sydney (CoS) promotes efficient building design and effective ongoing management systems for the handling of waste and recyclable materials in all developments. The guiding principles for the requirements of waste management planning in the CoS DCP are as follows:

- To allocate sufficient areas within developments for the efficient access, storage and collection of waste and recycling;
- To ensure waste systems are easy to use and that collection vehicles are able to access buildings to remove waste safely and efficiently;
- To maintain a visually appealing streetscape and minimise the impacts of noise and odour from waste and recycling handling on building occupants, near neighbours and the local area;
- To ensure safe practises for storage, handling and collection of waste and recycling;
- To provide guidance on the Council's expectations for delivering effective waste services including bin handling and collection points, and managing bulky, problem waste and stripout waste;
- To ensure clarify regarding the roles providing waste management systems for developments and to demarcate service provision.

3.0 SITE LOCATION

The site is located at 3 Joynton Ave Zetland and has frontages to Zetland Ave, Portman St and Joynton Ave , with vehicle access entering from Portmans St and exiting onto Joynton Ave.

Figure 1. Site Location



Source: BVN Architects, Green Square Integrated Community Facilities and School, Drawing No AR-A100-XX-05, Rev H, Oct 2020 - Site Plan

3.1 DEVELOPMENT OVERVIEW

The proposed development is located at 3 Joynton Street Zetland. The development is known as the Green Square Integrated Community Facility and School. This is a joint project between School Infrastructure NSW and the City of Sydney Council.

The development will comprise a four-storey building made up of various indoor and outdoor functional spaces including:

- Primary education facilities for up to 600 kindergarten to year 6 students
    - Indoor and outdoor learning spaces
    - Administration and staff rooms
    - Library and School community hall
- shared multi function spaces within for school and community use
    - 2 x multipurpose community facilities rooms to be operated solely by City of Sydney
    - 2 x multipurpose rooms to e shared by the City of Sydney and the primary school
- At ground level there is:
    - play spaces which will be a shared use between school and community.
    - multipurpose games court

All figures and calculations are based on area schedules as advised by our client and shown on architectural drawings.

4.0 WASTE MANAGEMENT

The following section outlines best practice waste management for the school and the community facilities, including waste generation estimates and waste disposal and collection procedures.

4.1 WASTE GENERATION ESTIMATES

The operational information provided by NSW Department of Education has been used to develop a general waste and general recycling rate to estimate the future waste generation of the primary school operations. The full calculations used to develop the waste and recycling rate for the primary school can be found in Appendix B.1.

Waste and recycling rates from City of Sydney's *Guidelines for Waste Management in New Developments 2019* has been referenced to estimate the future waste generation of the community and multi purpose facilities. Calculations are based on estimated figures, therefore waste generation rates may differ according to the actual waste management practices.

The following table shows the estimated volume in litres of general waste and recyclables that will be generated by the community centre and school as well as the recommended number of bins for the site. It is assumed that all operations within the site will share waste bins, the waste storage room, and the waste collection service.

The following estimates are based on a five-day operating week for the school and a seven-day operating week for the community facilities.

Table 1: Estimated Waste and Recycling Volumes

# Students		**Garbage Generation Rate** (L/students/day)	**Generated Garbage** (L/school week)	**Recycling Generation Rate** (L/student/day)	**Generated Recycling** (L/school week)
600		0.75	2250	1.04	3120
Type	**GFA** (m2)	**Garbage Generation Rate** (L/100m2/day)	**Generated Garbage** (L/week)	**Recycling Generation Rate** (L/100m2/day)	**Generated Recycling** (L/week)
Community Hall	373.09	65	1697.56	50	1305.82
Canteen, CMTY and OSHC Kitchen	43.25	200	605.5	500	1513.75
Shared Community Space	741.45	65	3373.60	50	2595.08
TOTAL			**7926.66**		**8534.64**
Collections & Equipment - By Day		Garbage Bin Size (L)	1100	Recycling Bin Size (L)	1100
		Garbage Bins per Day	1.03	Recycling Bins per Day	1.11
		Garbage Bins for 3 days (three times weekly collections)	4	Recycling for 3 days (three times weekly collections)	4

4.2 BIN SUMMARY

The estimates above reflect the total volumes of typical waste and recycling and the bins required to handle these volumes between collection. For the purposes of sizing the waste rooms, the bins have been calculated as general waste, general recycling (for all components) and paper/cardboard recycling (for the school only).

The recommended bin quantities and collection frequencies for board general waste and general recycling, and cardboard/paper recycling stream are as follows:

General Waste: 4 x 1100L Bins collected **three times weekly**

General Recyclables: 3 x 1100L Bins collected **three times weekly**

Cardboard/Paper Recyclables (school only): 1 x 1100L Bins collected **three times weekly**

During operation, bin sizes, quantities, and/or collection frequencies may be modified by the building manager. Building management will be required to negotiate any changes to bins or collections with the collection service provider. Seasonal peak periods such as school terms should also be considered.

The general waste and general recycling can be further divided into more specific waste and recycling streams to increase recovery. The general waste stream can be separated into landfill waste, food waste and soft plastics recycling. The general recycling can be divided into co-mingled recycling, glass recycling and refundable containers. It is recommended that the further separation of waste streams is conducted once the site is operational to best reflect the operations of the site and the proportion of each waste stream generated. It is recommended that annual waste audits are conducted to help understand the composition and total volumes of each waste stream generated during operation.

4.3 WASTE DISPOSAL PROCEDURES

All operations within the building will share bins, Bin Room and collection services.

The Bin Room for the building will be located on the ground level, near the loading area. The Bin Room will contain 1100L mobile garbage bins (MGBs) for the collection of the waste and recycling.

The building management, waste collection staff and cleaners will be the only personnel with access to the waste room. All transportation of waste and recycling must be co-ordinated with building management or cleaners.

4.3.1 COMMUNITY FACITLIES

As the community facilities can be rented out by members of the public. It is recommended that waste streams from these sections are kept as straight forward as possible to help streamline education and maximise resource recovery. Therefore, these components of the site will have general waste (which includes food waste) and a general recycling stream (which includes co-mingled recycling and paper product recycling).

1x 240L MGB for the general waste stream and 1x 240L MGB for the recycling stream will be placed in each multipurpose community room. Staff, patrons who hire the community facilities and visitors will be responsible for placing their waste and recycling into the 240L MGBs located within each space.

At the end of each day cleaners or other nominated staff will transport the 240L bins to the main Bin Room. The cleaners will decant the 240L MGBs into the appropriate bin using the bin lifter. The bin lifter will be manoeuvrable, therefore the bin lifter will be moved to each bulk bin as required.

After the 240L MGBs have been emptied and cleaned, the cleaners will return the bins to the multipurpose room.

4.3.2 PRIMARY SCHOOL

Suitably labelled waste, co-mingled recycling and paper product recycling bins will be placed in each room throughout the campus. Garbage and recycling receptacles should be provided in convenient locations and areas of high waste generation.

The students, staff and visitors will be responsible for placing their waste and recycling into the correct receptacle. The fullness of the source separation bins will be monitored by building management and cleaners.

The cleaners will circulate throughout the campus after hours and empty the waste and recycling receptacles situated throughout the school. The cleaners will then transport the waste and recycling to the bulk bins in the Bin Room and dispose of the waste and recycling into the appropriate bins.

4.5 OTHER WASTE MANAGEMENT CONSIDERATIONS

Based on the types of tenancies anticipated for this development, the following waste management practices are recommended.

4.5.1 KITCHENS, OFFICE TEA ROOMS AND FOOD PREPARATION AREAS

Any food preparation area, including kitchens and office tea rooms will be provided with dedicated source separation bins including a general waste bin and a recycling bin. Cleaners or nominated staff will be responsible for monitoring these bins and emptying them as required.

4.5.2 BATHROOMS

Washroom facilities should be supplied with collection bins for paper towels (if used). Sanitary bins for female restroom facilities must also be arranged with an appropriate contractor.

4.5.3 PRINTING & PHOTOCOPYING AREAS

It is recommended that printing and photocopying areas are supplied with bins for the collection of paper, as well as separate receptacles for ink toner cartridges for recycling. The cleaners or nominated staff are responsible for monitoring these bins and ensuring the items are collected and recycled by an appropriate contractor.

4.5.4 FOOD WASTE – SCHOOL

For the purpose of calculating the number of bins and sizing the waste room, this report has consolidated the food waste generation rate and the general waste generation rates as detailed in City of Sydney Council's *Guidelines for Waste Management in New Developments 2018.*

In operation, if the school management chooses to introduce food waste separation and collection, this can be done by monitoring the food waste generated by the school for a fixed

period. If the volume of food waste is small, the school can implement a food waste management system such as composting suitable for smaller volumes. If the volume of food waste is larger the school can introduce 240L MGBs for food waste into the waste area. This would need to be supported with additional food waste store separation bins around the school and in any food preparation areas as well as extensive education programs with students and staff about which items are accepted in the food waste bins.

As food waste separation will reduce the volume of general waste, it is assumed that the number of general waste bins would go down by the corresponding number of food waste bins.

If food waste management is introduced, the school management would be responsible for setting up and maintaining the food waste management procedures, including a food waste recycling contractor to collect the food waste.

As successful food waste separation and recovery requires consistent and managed communication. Therefore, food waste separation should only be considered for the school.

4.5.5 BULKY & PROBLEM WASTE (CITY OF SYDNEY)

A room or caged area will be made available for the storage of discarded bulky items and problem waste for recycling, such as e-waste and chemical waste. This room should have a minimum doorway width of 1.5m to allow for easy movement of large waste items in and out of the room. Based on the City of Sydney requirements, it is recommended that the bulky waste room is at least 8m^2 for this development. (see Appendix A.1)

The facilities caretaker will be responsible the management of the bulky goods room and storage of reusable items. School staff will need to liaise with the school caretaker for assistance with disposing of bulky items.

On the day of bulky waste collection, a the bulk waste collection vehicle will enter the site from Portman St and park in the loading bay. The building caretaker will provide the driver with access to the bulky waste storage room where then the bulky waste will be collected directly from this room. Once bulky items have been loaded, the collection vehicle will exit the site onto Joynton Ave in a forward direction. Bulky waste collections should occur on alternate days to bin collections and must occur outside school operating hours.

4.5.6 LIQUID WASTE

Liquid wastes such as cleaning products, chemicals, paints, and cooking oil, etc., should be stored in a secure space that is bunded and drained to a grease trap in accordance with State government authorities and legislation.

4.5.7 PROBLEM WASTE

The facilities caretaker is responsible for making arrangements for the disposal and recycling of problem waste streams with an appropriate contractor. Problem wastes cannot be placed in general waste as they can have adverse impacts to human health and the environment if disposed of in landfill. School staff and community facility guest will need to liaise with the facilities caretaker when disposing of problem waste streams.

Problem waste streams include:

- Chemical Waste
- Toner cartridges
- Fit out waste
- Lightbulbs
- eWaste
- Batteries

4.5.8 FUTURE WASTE AND RECYCLING STREAM SEPARATION

To design the Waste Room and Waste Facilities in the site, all possible waste and recycling streams have been grouped together into 'general waste' and 'general recycling'. This is to ensure the waste facilities have adequate capacity to manage total volumes of waste and recycling streams, regardless of the management of waste and recycling during operation.

Once the school is operational, the school management can choose to separate the general recycling stream and the general waste stream into more specific recyclable waste streams. This allows the site's waste management system to have greater potential to divert waste from landfill and contribute to wider environmental sustainability.

The more waste streams that are separated, the more complex the waste management strategy becomes. In turn, it is likely to increase operational cost, manual input of building caretaker and cleaners as well as the level engagement required by all stakeholders involved in waste management. Therefore, it is recommended that the decision to separate and manage any additional waste streams comes from the school management, once the school is operational, and is directed by the operational experience and needs of the school.

As identified in NSW Department of Education *Educational Facilities Standards and Guidelines Requirement DG02 (2.7.2)* the waste streams that can be managed at schools are as follows;

- Food Organics and Garden Organics
- Co-Mingled Container Recycling
- Paper & Cardboard Recycling
- Container Deposit Scheme Recycling
- Soft Plastic Recycling
- General Waste
- Other waste streams such as batteries, e-waste, coffee cups

The school management can choose which waste streams are handled in the waste management strategy at any time by assessing the composition of waste and recycling generated in operation as well as the costs/benefits at that time.

The successful separation of the waste streams is significantly impacted by the behaviours of the waste generators and the key personnel who looks after the waste management systems. At this site, most of the waste generators will be primary school aged children. The managers of the waste system will be the building manager and grounds keeper.

The following are the key responsibilities required for successful ongoing source separation. These responsibilities should be taken into consideration when assessing whether to introduce the separation and management of more waste streams.

Responsibilities of the waste stream generator:

- Correctly identify the waste type.
- Place the waste item into the correct bin.
- Pending on waste item, partially dismantle waste item into different stream types (i.e empty food waste into organics, lid into recycling and main container into landfill)

Responsibilities of the Key Staff Managing the Waste Systems:

- Provide source separation bins in convenient locations.
- Monitor contamination of waste streams.
- Organise contracts with collection and recycling services of all waste streams.

- Educate waste stream generators on a ongoing basis
- Provide signage on all bins.
- Monitor and correct any issues.

If the management of any additional waste stream is introduced during operation, the school management would be responsible for setting up and maintaining the waste stream management procedures. Including;

- The provision of appropriate source separation bins around the campus.
- The update all waste related signage and waste management education material.
- The introduction of the collection bins of the waste stream in the Bin Room.
- The reduction to the number of bins(or size of bins) for the general waste or general recycling stream being diverted.
- Engaging a specialist contractor to collect the bins and recycle the waste stream.
- Ensuring the collection timetables minimise conflicts with the loading area.
- Educating all staff and students on the new procedures, including which items are excepted in each bin.

Separation of food waste and soft plastic recycling streams will reduce the volume of general waste. Therefore, it is assumed that the number of general waste bins would go down by the corresponding number of food waste bins and or/soft plastic bins.

Separation of co-mingled recycling, paper & cardboard recycling and items refundable under the container deposit scheme will reduce the volume of general recycling. Therefore, it is assumed that the number of general recycling bins would go down by the corresponding number of co-mingled, paper & cardboard and refundable container bins introduced.

Please note: Any future source separation of additional waste streams is only recommended for the Primary School. The community facilities will be used by the public. Therefore, successful source separation of additional waste streams is unlikely to be viable for this component. As all components share the bins, waste room and collection services, a "general recycling" bin must always be provided in the Bin Room.

In addition, as identified in NSW Department of Education's *Educational Facilities Standards and Guidelines Requirement DG02 (2.7.2),* during operation the school management can implement measures to reduce the volumes of waste generated by;

- Examining all processes to determine where wastes are produced and to devise measure for waste prevention or reduction.
- Devising ways of recycling waste with students so they too can share in the savings (for example rewards for students who reduce waste).
- Partnering with others to assist with waste minimisation.
- Keep track of changes and improvements
- Reusing drums, cartridges and containers where possible
- Selling or donating usable waste materials to other organisations.

4.6 WASTE COLLECTION PROCEDURES

A private waste collection contractor will be engaged to service the waste and recycling bins per an agreed schedule. The private contractor engaged to service the site must be in line with NSW Government's *Buy NSW C9698 Waste Management Contract.* Collections should occur outside of school hours to minimise conflicts with operations on site including school drop off and pickups.

This report assumes all bins are collected three times weekly, with no more than three days between collections pf each waste stream.

On the day of servicing, after school hours, the cleaner will transport the 1100L bins to be service from the Bin Room to the Bin Presentation Area adjacent to the gate.

The private waste collection vehicle will enter the site from Portman St via the access way and park in the loading bay, adjacent to the Bin Presentation Area. The collections staff will be given access to the side gate.

The bins will be collected directly from the Bin Presentation Area via an arrangement where the waste collection staff wheels a full from the Bin Presentation Area to the collection vehicle and returns the empty bin, then repeats the process until all relevant bins are emptied.

Once the bins are serviced, the collection vehicle will exit the site onto Joynton Avenue in a forward direction.

In the morning, or as soon as possible, cleaners, grounds keepers or other nominated staff will return the empty bins to the Bin Room.

5.0 STAKEHOLDER ROLES & RESPONSIBILITIES

The following table demonstrates the primary roles and responsibilities of the respective stakeholders:

Table 2: Stakeholder Roles and Responsibilities

Roles	Responsibilities
Site Management	• Ensuring that all waste service providers submit regular (i.e monthly) reports on all equipment movements and waste quantities/weights; • Organising internal waste audits/visual assessments on a regular basis; and • Manage any non-compliances/complaints reported through waste audits.
School Management, facilities caretaker or Community Facilities Management	• Ensuring effective signage, communication and education is provided to students, staff and cleaners; • Providing staff/contractors with equipment manuals, training, health and safety procedures, risk assessments, and PPE to control hazards associated with all waste management activities; • Ensuring site safety for students, visitors, staff and contractors; • Abiding by all relevant OH&S legislation, regulations, and guidelines; • Assessing any manual handling risks and prepare a manual handling control plan for waste and bin transfers; • Preventing storm water pollution by taking necessary precautions (securing bin rooms, preventing overfilling of bins) • Cleaning and transporting of bins as required; • Organising, maintaining and cleaning the general and recycled waste holding area; • Organising both garbage and recycled waste pick-ups as required; • Organising replacement or maintenance requirements for bins; • Organising bulky goods collection when required; and • Investigating and ensuring prompt clean-up of illegally dumped waste materials.
Cleaners, Staff, Students and Guest of The Community Facilities	• Dispose of all garbage and recycling in the allocated MGBs provided; • Ensure adequate separation of garbage and recycling; and • Compliance with the provisions of Council and the WMP.
Private Waste Contractor	• Provide a reliable and appropriate waste collection service; • Provide feedback to School Caretaker in regards to contamination of recyclables; and • Work with building managers to customise waste systems where possible.
Gardening/Landscaping Contractor	• Removal of all garden organic waste generated during gardening maintenance activities for recycling at an offsite location.
Building Contractors	• Removing all construction related waste offsite in a manner that meets all authority requirements.

6.0 SOURCE SEPARATION

Better practice waste management includes the avoidance, reuse, and recovery of unwanted items, which can be achieved through source separation. The table below outlines what is typically included in various waste streams and how they can be managed. Refer to your local council for a list of accepted materials. Planet Ark can be accessed online to find other facilities that recover unwanted items.

Table 3: Operational Waste Streams

Waste Stream	Description	Typical Destination	Waste Stream Management
General Waste	The remaining portion of the waste stream that is not recovered for re-use, processing, or recycling. May include soft plastics, food scraps, polystyrene, etc.	Landfill	Waste should be bagged before placing in the designated waste bins.
Recycling	A mixture of items that are commonly recycled usually segregated through a MRF. Typically include food and beverage containers (e.g. aluminium, glass, steel, hard plastics, cartons). Also included cardboard and paper products.	Resource Recovery Centre	Recycling must not be bagged, and instead should be placed loosely in the designated recycling bins. Cardboard should be flattened before placing in the designated cardboard bin.
Paper and Cardboard Recyclables	Cardboard and paper products are recyclable materials that can be re-processed into new products.	Resource Recovery Centre	Cardboard should be flattened before placing in the designated cardboard bin.
Secure Documents	Secure documents are printed paper materials that contain sensitive information.	Recycling Facility	Secure documents are placed in allocated secure document bins. Private contractor removes bins from site.
Green Waste	Green waste consists of unwanted organic materials that are easily biodegradable and/or compostable (e.g. lawn clippings, branches)	Resource Recovery Centre	Landscape Maintenance Contractors will remove the green waste from site during scheduled maintenance.
Electronic Waste	Discarded e-waste, electronic components and materials such as computers, mobile phones, keyboards, etc.	Resource Recovery Centre	Building manager arranges collection for e-waste recycling as needed.
Bulky Items	Items that are to too large to place into general rubbish collection. This includes disused and/or broken furniture, mattresses, white goods, etc.	Resource Recovery Centre or Landfill	Bulky items are to be managed by the building manager. A private contractor will be engaged to collect the bulky waste with an appropriate contractor as required.
Sanitary Waste	Feminine hygiene waste generated from female bathrooms.	Incineration or Landfill	Sanitary bins are serviced by sanitary waste contractor.
Other	Other recyclable items that require special recovery may include ink cartridges, batteries, chemical waste, fluorescent tubes, etc.	Resource Recovery Facility	Building manager arranges collection by appropriate recycling services when required.

7.0 EDUCATION

7.1 SIGNAGE

Signage and education are essential components to support best practice waste management including resource recovery, source separation, and diversion of waste from landfill.

Signage should include:

- Clear and correctly labelled waste and recycling bins,
- Instructions for separating and disposing of waste items. Different languages should be considered,
- Locations of, and directions to, the waste storage areas with directional signs, arrows, or lines,
- The identification of all hazards or potential dangers associated with the waste facilities, and
- Emergency contact information should there be issues with the waste systems or services in the building.

The building manager is responsible for waste room signage including safety signage. Appropriate signage must be prominently displayed on doors, walls and above all bins, clearly stating what type of waste or recyclables is to be placed in each bin.

All signage should conform to the relevant Australian Standards.

7.2 POLLUTION PREVENTION

Building management shall be responsible for the following to minimise dispersion of site litter and prevent stormwater pollution to avoid impact to the environment and local amenity:

- Promoting adequate waste disposal into the bins
- Securing all bin rooms (whilst affording access to staff/contractors)
- Prevent overfilling of bins, keep all bin lids closed and bungs leak-free
- Taking action to prevent dumping or unauthorised use of waste areas
- Require collection contractor/s to clean up any spillage when clearing bins

8.0 EQUIPMENT SUMMARY

Table 4: Equipment Summary

	Part	Qty	Notes
Equipment	Movable Bin Lifter suitable for 240L MGBs	1	(See Appendix C.4 for example)
	Suitable Bin Moving Equipment	1	(See for Appendix C.5 for example)

9.0 WASTE ROOMS

The areas allocated for waste storage and collection areas are detailed in the table below, and are estimates only. Final areas will depend on room and bin layouts.

Table 5: Waste Room Areas

Level	Waste Room Type	Equipment	Estimated Area Required (m^2)	Actual Area Provided (m^2)
G	Bin Room	1x Transportable Bin Lifter Suitable for 240L MGBs 4x 1100L MGBs (general waste) 3x 1100L MGBs (general recycling) 1x 1100L MGBs (paper product recycling)	>25	31
G	Bulky Waste Storage Room		Minimum 8	8.15
G	Bin Presentation Area (collection point)	*Minimum* 4x 1100L MGBs	>8	

The waste room estimated areas have been calculated based on equipment requirements and/or bin dimensions with an additional 70% of bin GFA factored in for manoeuvrability.

In addition, all doorways and passageways facilitating the movement of bins and/or bulky waste items must be at least 1500mm wide. The following table provides further waste room requirements.

Table 6: Waste Room Requirements

Waste Room Type	Waste Room Requirements
Bin Room	• Bins should be arranged so that all bins are accessible. Bins are not be placed in front another or in such away as to restrict access to the other bins for use.
Bulky Goods Waste Storage Room	• May be a dedicated room or screened area within another waste room • Must be in close proximity to the collection area • Area must also be allocated for the segregation of e-waste, gas bottles, cardboard, etc. • Doorway should be a minimum of 1500mm wide

10.0 BIN MOVING PATHS

The building manager, cleaners or other nominated staff are responsible for the transportation of bins as required from their designated operational locations to the bin holding room as required and returning them once emptied to resume operational use.

Cleansers will be responsible for moving the 1100L bins from the Bin Room to the bin presentation area prior to collections. Due to the size of the bins, two people will be required to move the full bins to the presentation area. Cleaners will be responsible for return the empty bins after servicing, the next day, before school hours. A Bin Moving Aid such as the one show in Appendix C4, will be provided to assist with the transfer of bins.

Transfer of bins should minimise manual handling where possible, as bins become heavy when full. The building manager must assess manual handling risks and provide any relevant documentation to key personal.

The routes along the bin moving path should;

- Allow for a continuous route that is wholly within the property boundary.
- Be free from obstruction and obstacles such as steps and kerbs.
- Be constructed of solid materials with a non-slip surface
- Be A minimum of 300mm wider than the largest bin used onsite.
- If bins are moved manually, the route must not exceed a grade of 1:14.
- When the bin moving device is used, the route cannot exceed the maximum operating grade of the device. This is typically a grade of 1:4, however this will vary depending on the model of bin moving device acquired for the site.

As the distance of the bin moving paths exceed 10m, a bin moving device is required to aid the movement of full bins. The developer is responsible for supplying all equipment required for moving bins this includes any bin lifters, bin moving devices and waste transfer bins. This equipment must be new and appropriate for the site. The developer should contact a bin-tug, trailer or tractor consultant to provide equipment recommendations.

Once the site is operational (and the developers is no longer involved) the building management will be responsible for maintaining, repairing and replacing waste management equipment.

11.0 DESIGN AND CONSTRUCTION REQUIREMENTS

Waste room design and construction must comply with the minimum standards as outlined in the *Sydney Development Control Plan 2012,* in order to minimise odours, deter vermin, protect surrounding areas, and make it a user-friendly and safe area.

The *NSW Better Practice Guide for Resource Recovery in Residential Developments (2019)* also states that better practice bin storage areas should achieve more than the minimum compliance requirements, which are as follows:

- Ensuring BCA compliance, including ventilation. Where required, ventilation system must comply with AS1668.4-2012 The use of ventilation and air conditioning in buildings.
- Ensuring storage areas are well lit (sensor lighting preferred) and have lighting available 24 hours a day.
- Provision of bin washing facilities, including taps for hot and cold water provided through a centralised mixing valve. The taps must be protected from bins and be located where they can be easily accessed even when the area is at bin capacity.
- Floor constructed of concrete at least 75mm thick.
- Floor graded so that any water is directed to a sewer authority approved drainage connection to ensure washing bins and/or waste storage areas do not discharge flow into the stormwater drain.
- Provision of smooth, cleanable and durable floor and wall surfaces that extend up the wall to a height equivalent to any bins held in the area.
- Ensuring ceilings are finished with a smooth-faced non-absorbent material capable of being cleaned.
- All surfaces (walls, ceiling and floors) finished in a light colour.
- Waste and recycling rooms must have their own exhaust ventilation system either;
    - Mechanically - exhausting at a rate of 5L/m² floor area, with a minimum rate of 100L/s minimum; Mechanical exhaust systems shall comply with AS1668.4.2012 and not cause any inconvenience, noise or odour problem or
    - Naturally - permanent, unobstructed, and opening direct to the external air, not less than one-twentieth (1/20) of the floor area.

11.1 ADDITIONAL CONSIDERATIONS

- Waste room floor to be sealed with a two-pack epoxy;
- All corners coved and sealed 100mm up, this is to eliminate build-up of dirt;
- Tap height and light switch height of 1.6m;
- Storm water access preventatives (grate);
- All walls painted with light colour and washable paint;
- Equipment electric outlets to be installed 1700mm above finished floor level;
- Optional automatic odour and pest control system installed
- If 660L or 1100L bins are utilised, 2 x 820mm (minimum) double-doors must be used;
- All personnel doors are hinged, lockable and self-closing;
- Conform to the Building Code of Australia, Australian standards and local laws; and
- Childproofing and public/operator safety shall be assessed and ensured

12.0 REPORT CONDITIONS

The purpose of this report is to document an OWMP as part of a SSDA, which is supplied by EFRS with the following limitations:

- Drawings, estimates and information contained in this OWMP have been prepared by analysing the information, plans and documents supplied by the client and third parties including Council and other government agencies. The assumptions based on the information contained in the OWMP is outside the control of EFRS,
- The figures presented in the report are an estimate only – the actual amount of waste generated will be dependent on the occupancy rate of the building/s and waste generation intensity as well as the building management's approach to educating building occupants regarding waste management operations and responsibilities,
- The facilities manager will adjust waste management operations as required based on actual waste volumes (e.g. if waste is greater than estimated) and increase the number of bins and collections accordingly,
- The report will not be used to determine or forecast operational costs or prepare any feasibility study or to document any safety or operational procedures,
- The report has been prepared with all due care; however no assurance is made that the OWMP reflects the actual outcome of the proposed waste facilities, services, and operations, and EFRS will not be liable for plans or results that are not suitable for purpose due to incorrect or unsuitable information or otherwise,
- EFRS offer no warranty or representation of accuracy or reliability of the OWMP unless specifically stated,
- Any manual handling equipment recommended in this OWMP should be provided at the recommendation of the appropriate equipment provider who will assess the correct equipment for supply,
- Design of waste management equipment and systems must be approved by the supplier,
- EFRS cannot be held accountable for late changes to the design after the OWMP has been submitted to Council,
- EFRS will provide specifications and recommendations on bin access and travel paths within the OWMP, however it is the architect's responsibility to ensure the architectural drawings meet these provisions,
- EFRS are not required to provide information on collection vehicle swept paths, head heights, internal manoeuvring or loading requirements. It is assumed this information will be provided by a traffic consultant,
- Council are subject to changing waste and recycling policies and requirements at their own discretion.

This OWMP is only finalised once the Draft Watermark has been removed. If the Draft Watermark is present, the information in the OWMP is not confirmed.

13.0 USEFUL CONTACTS

EFRS does not warrant or make representation for goods or services provided by suppliers.

LOCAL COUNCIL

City of Sydney Customer Service	Ph: (02) 9265 9333	E: council@cityofsydney.nsw.gov.au

PRIVATE WASTE COLLECTION PROVIDER

Capital City Waste Services	Ph: 02 9599 9999	E: service@ccws.net.au
Remondis	Ph: 02 9032 7100	
Suez Environmental	Ph: 13 13 35	
Wastewise NSW	Ph: 1300 550 408	E: admin@wastewise.com.au

BIN MOVING DEVICE SUPPLIERS

Electrodrive	Ph: 1800 333 002	E: sales@electrodrive.com.au
Sitecraft	Ph: 1300 363 152	E: sales@sitecraft.com.au
Spacepac	Ph: 1300 763 444	

ORGANIC DIGESTERS AND DEHYDRATORS

Closed Loop	Ph: 1300 762 166	
Orca		E: contact.australia@feedtheorca.com
Soil Food	Ph: 1300 556 628	
Waste Master	Ph: 1800 614 272	E: hello@wastemasterpacific.com.au

COOKING OIL CONTAINERS AND DISPOSAL

Auscol	Ph: 1800 629 476	E: sales@auscol.com

ODOUR CONTROL

Purifying Solutions	Ph: 1300 636 877	E: sales@purifyingsolutions.com.au

SOURCE SPERATION BINS

Source Separation Systems	Ph: 1300 739 913	E: info@sourceseparationsystems.com.au

MOBILE GARBAGE BINS, BULK BINS AND BIN EQUIPMENT

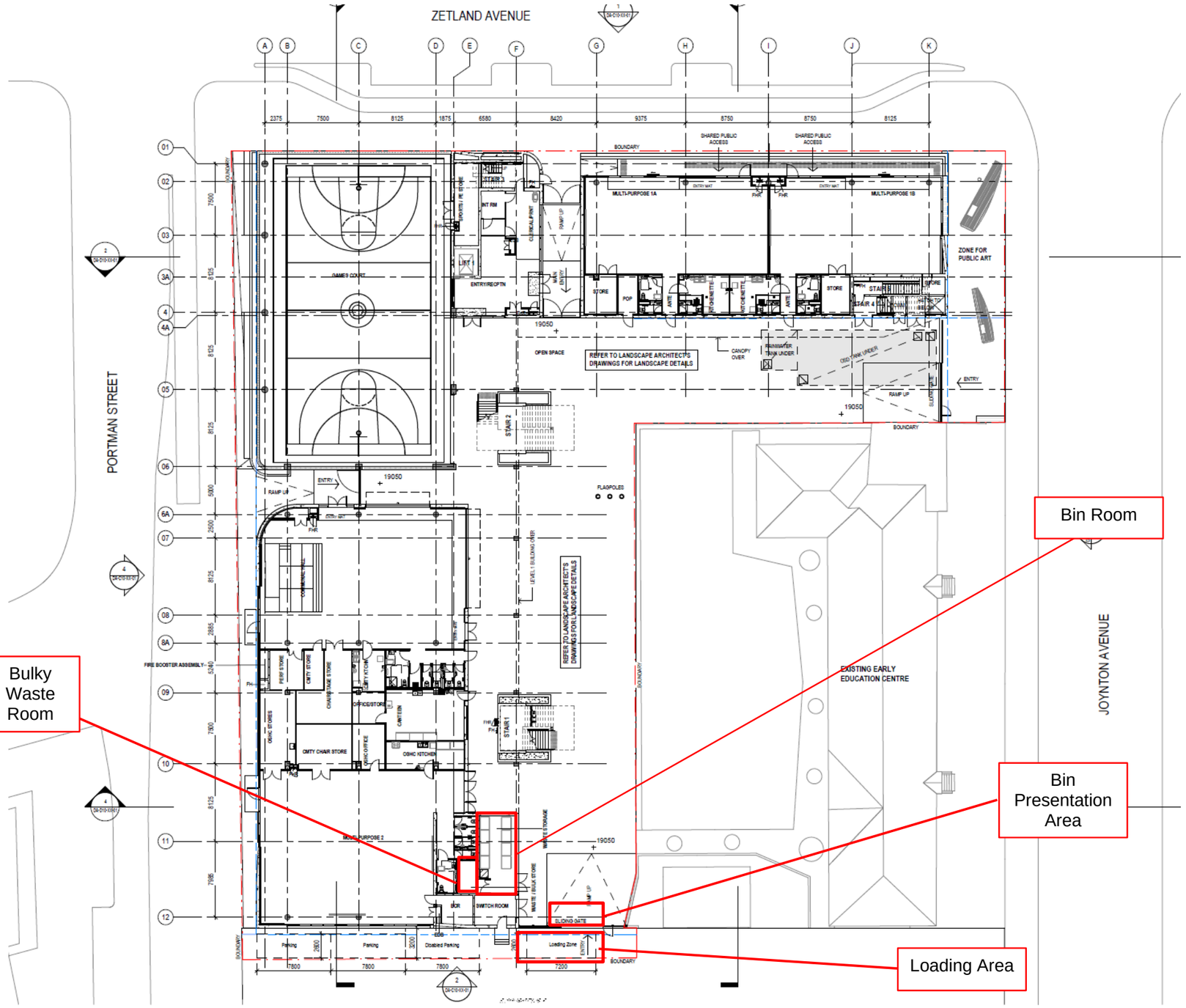
SULO	Ph: 1300 364 388	E: sales@sulo.com.au
OTTO Australia	Ph: 02 9153 6999	

CHUTES, COMPACTORS AND EDIVERTER SYSTEMS

Elephants Foot Recycling Solutions	Ph: 1800 025 073	E: info@elephantsfoot.com.au

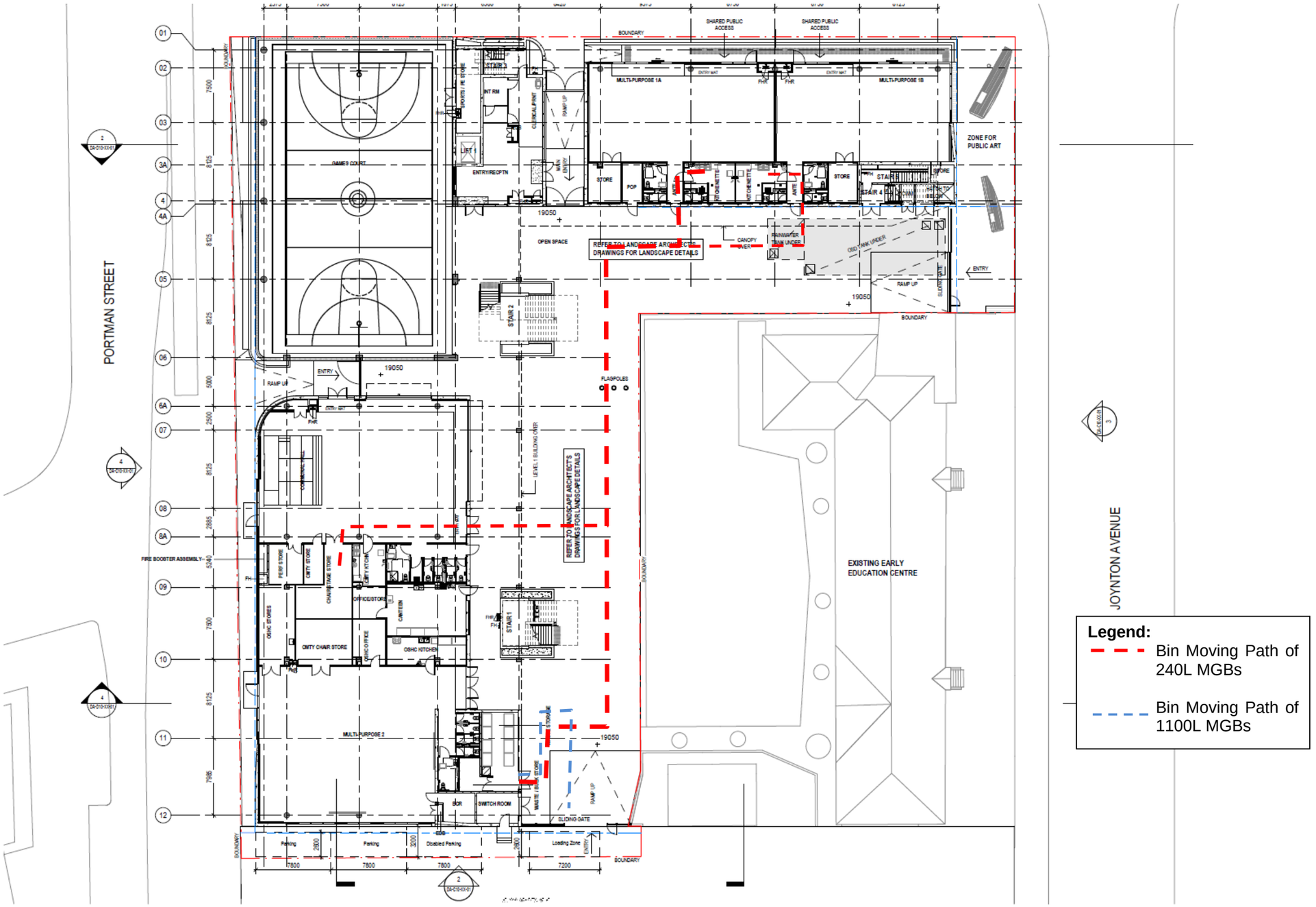
APPENDIX A: ARCHITECTURAL PLANS

APPENDIX A.1 GROUND FLOOR PLAN – WASTE FACILTIES



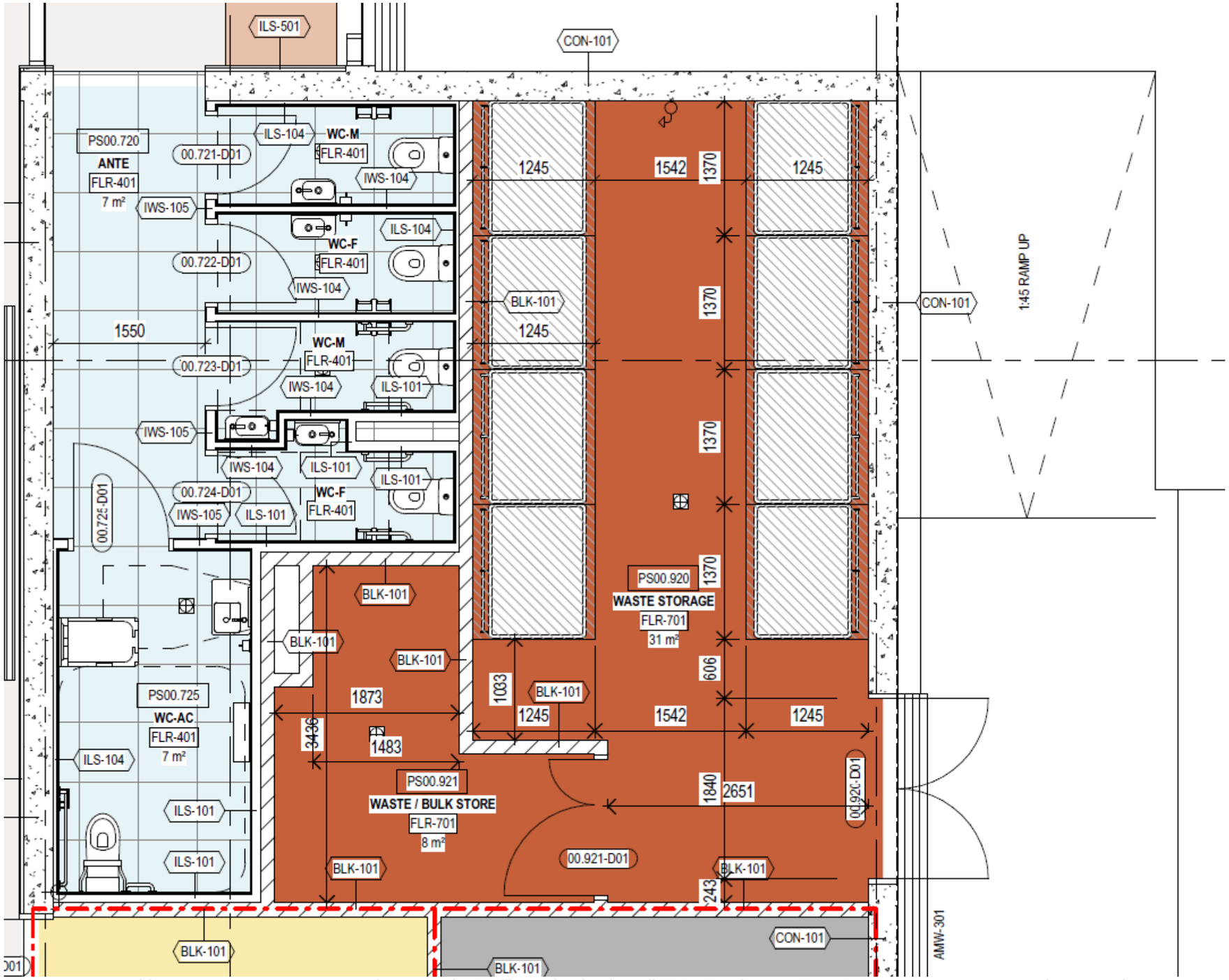
Source: BVN Architects, Green Square Integrated Community Facility and School, March2021, Drawing No. DA-B10-00-00 Issue A, GA Plan – Ground Level

APPENDIX A.2 GROUND FLOOR PLAN – INDICATIVE BIN MOVING PATH



Adapted: BVN Architects, Green Square Integrated Community Facility and School, March2021, Drawing No. DA-B10-00-00 Issue A, GA Plan – Ground Level

APPENDIX A.3 WASTE ROOM LAYOUT



Excerpt: BVN Architects, Green Square Integrated Community Facility and School, April2021, Drawing No. DA-AR-B11-0016 Issue 1, Part Plan – Level 00 – Zone 6

APPENDIX B: PRIMARY WASTE MANAGEMENT PROVISIONS

APPENDIX B.1 CALCULATIONS FOR PRIMARY SCHOOL WASTE GENERATION RATES

The waste generation rates use to project the volume of the general waste and general recycling streams generated by the primary school operations has been based on data from a waste audit conducted on a existing school provided by the NSW Department of Education. The process to convert the data from the current site to a waste generation rate is outlined below.

Key Information Data of Waste Audit

The key Information from the audit used to calculate the waste and recycling generation rates is as follow:

Number of Students:	1011 Students
Number of School Days per Year:	200
Total Volumes from 3 Day Audit:	5357L
Audit summary of Volumes Waste/Student/Year:	362L
Composition of waste from Audit – General Waste:	42%
Composition of waste from Audit – Recycling:	58%

Converting Data To Total Volumes Of Waste Per Student Per Day

Formula 1:

Volume Waste per student per year from Audit Summary / Number of School Days= Volume of total waste & recycling per student per day

Formula 2:

Total volumes of waste material from 3 day audit (L) / Number of Students/ 3 = Volume of total waste & recycling per student per day

Volume of total waste & recycling per student per day x Number of School Days = Total Volume of waste per student per year

Total Volumes Per student Per day			
		Student/day (L)	**Student/Year** (L)
Formula 1	**Volume Waste (from Audit Summary)**	1.81	362
Formula 2	**Volume Waste (From 3-day audit total)**	1.77	353.25

Composition of Waste and Recycling Per Student Per Day

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Formula for general waste:

Volume of total waste & recycling per student per day x % Composition of general waste from Audit = volume of general waste/student/day

Formula for general recycling

Volume of total waste & recycling per student per day x % Composition of general recycling from Audit = volume of general recycling/student/day

Composition of General Waste and Recycling			
		Student/day (L)	**Student/Year** (L)
Volume of waste (from Audit Summary)	**General Waste (42%)**	0.76	152.04
	Recycling (58%)	1.05	209.96
Volume Waste (From 3-day audit total)	**General Waste (42%)**	0.74	148.36
	Recycling (58%)	1.02	204.88

Waste and Recycling Generation Rates:

Formula for general waste:

Average of waste generated per student per day = waste generation per student per day

Average Waste Generation Rate			
		Student/day (L)	**Average Student/day** (L)
Volume of waste (from Audit Summary)	**General Waste (42%)**	0.76	**0.75**
Volume Waste (From 3-day audit total)	**General Waste (42%)**	0.74	

Formula for general recycling:

Average of waste generated per student per day = waste generation per student per day

Average Waste Generation Rate			
		Student/day (L)	**Average Student/day** (L)
Volume of waste (from Audit Summary)	**Recycling (58%)**	1.05	**1.04**
Volume Waste (From 3-day audit total)	**Recycling (58%)**	1.02	

APPENDIX C: PRIMARY WASTE MANAGEMENT PROVISIONS

APPENDIX C.1 TYPICAL BIN SPECIFICATIONS

Mobile bins

Mobile bins come in a variety of sizes and are designed for lifting and emptying by purpose-built equipment.

Mobile bins with capacities of up to 1700L must comply with *AS4123.6-2006 Mobile waste containers* which specifies standard sizes and sets out the colour designations for the bodies and lids of mobile waste containers indicating the type of materials they are used to collect.

The most common bin sizes are provided below, although not all sizes are shown. The dimensions are a guide only and differ slightly between manufacturers. Some bins have flat or domed lids and are used with different lifting devices. Refer to *AS4123.6-2006* for further details.

Table G1.1: Average dimension ranges for two-wheel mobile bins

Wheelie bin

Bin capacity	80L	120L		140L		240L	360L
Height (mm)	870	940	1065	1080	1100		
Depth (mm)	530	530		540		735	820
Width (mm)	450	485		500		580	600
Approximate footprint (m^2)	0.24	0.26–0.33		0.27-0.33		0.41–0.43	0.49
Approximate weight (kg)	8.5	9.5		10.4		15.5	23
Approximate maximum load (kg)	32	48		56		96	Not known

Sources include Sulo, Single Waste, Cleanaway, SUEZ, just wheelie bins and Perth Waste for two-wheel mobile bins

Table G1.2: Average dimension ranges for four-wheel bulk bins

Dome or flat lid container

Bin capacity	660L	770L	1100L	1300L	1700L
Height (mm)	1250	1425	1470	1480	1470
Depth (mm)	850	1100	1245	1250	1250
Width (mm)	1370	1370	1370	1770	1770
Approx footprint (m^2)	0.86–1.16	1.51	1.33–1.74	2.21	2.21
Approx weight (kg)	45	Not known	65	Not known	Not known
Approx maximum load (kg)	310	Not known	440	Not known	Not known

Sources include Sulo, Signal Waste, Cleanaway, SUEZ, Just Wheelie Bins and Perth Waste

SOURCE: Better Practice Guide For Resource Recovery In Residential Developments 2019, NSW Environmental Protection Authority

APPENDIX C.2 SIGNAGE FOR WASTE & RECYCLING BINS

Waste signs

Signs and educational materials perform several functions including:

- informing residents why it is important to recover resources and protect the environment
- providing clear instructions on how to use the bins and services provided
- alerting people to any dangers or hazards within the bin storage areas.

All waste, recycling and organic bins should be Australian Standard colours and clearly and correctly labelled, such as by a sticker on the lid and/or the body of the bin.

Communal bin storage areas should be clearly signposted with signs outlining how to correctly separate waste into the bins provided. The local council responsible for waste services may be a good source of signs and posters and can advise on what signs are suitable.

Information on who to contact to find out more about the recycling and/or other resource recovery services in the building should also be displayed in communal areas, such as on a noticeboard.

The Planet Ark website also has resources available free of charge for use by businesses and councils. These signs can be found at businessrecycling.com.au/research/signage.cfm

Figure I1.1: Examples of waste wall posters (EPA supplied)

Figure I1.2: Examples of bin lid stickers (EPA supplied)

SOURCE: Better Practice Guide For Resource Recovery In Residential Developments 2019, NSW Environmental Protection Authority

Problem waste signs

The EPA has also produced a range of images and signs that can be used for problem wastes, such as fluoro globes and tubes, household and car batteries, e-waste and smoke detectors. To access these resources, contact the NSW EPA. Some examples are shown below.

Figure I2.1: Problem waste signs

Safety signs

The use of safety signs for waste resource recovery rooms must comply with *AS1319 Safety signs for occupational environments*. Safety signs must be used to regulate and control safety related to behaviour, warn of hazards and provide emergency information, including fire protection information. Suitable signs should be decided for each development as required.

Figure I3.1: Example safety signs

SOURCE: Better Practice Guide For Resource Recovery In Residential Developments 2019, NSW Environmental Protection Authority

APPENDIX C.3 TYPICAL COLLECTION VEHICLE INFORMATION

General

Appropriate heavy rigid vehicle standards should be incorporated into the road and street designs in new developments where onsite collections are proposed. Road and street designs must comply with relevant Acts, regulations, guidelines, and codes administered by Austroads, Standards Australia, NSW Roads and Maritime Services, WorkSafe NSW and any local council traffic requirements.

Applicants and building designers should consult with councils and other relevant authorities before designing new roads or streets and access points for waste collection vehicles to establish specific design requirements.

Table H4.1: Australian Standards for turning circles for medium and heavy rigid class vehicles

Vehicle class	Overall length (m)	Design width (m)	Design turning radius (m)	Swept circle (m)	Clearance (travel) height (m)
Medium rigid vehicle	8.80	2.5	10.0	21.6	4.5
Heavy rigid vehicle	12.5	2.5	12.5	27.8	4.5

SOURCE: Better Practice Guide For Resource Recovery In Residential Developments 2019, NSW Environmental Protection Authority

Large collection vehicles

Waste collection vehicles may be side-loading, rear-loading, front-lift-loading, hook or crane lift trucks. Vehicle dimensions vary by collection service, manufacturer, make and model. It is not possible to provide definitive dimensions, so architects and developers should consult with the local council and/or contractors.

The following characteristics represent typical collection vehicles and are provided for guidance only. Reference to *AS2890.2 Parking facilities: off-street commercial vehicle facilities* for detailed requirements, including vehicle dimensions, is recommended.

Table B2.1: Collection vehicle dimensions

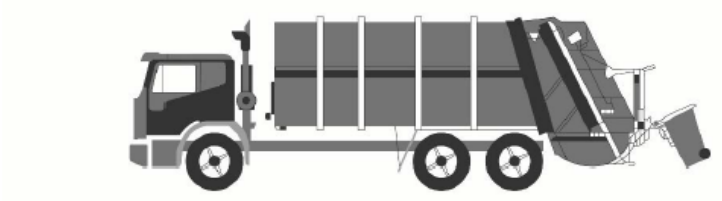
Vehicle type	Rear-loading	Side-loading*	Front-lift-loading	Hook truck	Crane truck
Length overall (m)	10.5	9.6	11.8	10.0	10.0
Width overall (m)	2.5	2.5	2.5	3.0	2.5
Travel height (m)	3.9	3.6	4.8	4.7	3.8
Operational height for loading (m)	3.9	4.2	6.5	3.0	8.75
Vehicle tare weight (t)	13.1	11.8	16.7	13.0	13.0
Maximum payload (t)	10.0	10.8	11.0	14.5	9.5
Turning circle (m)	25.0	21.4	25.0	25.0	18

* The maximum reach of a side arm is 3 m.

Sources: JJ Richards, SUEZ, MacDonald Johnson, Cleanaway, Garwood, Ros Roca, Bingo and Edbro. Figures shown represent the maximum dimensions for each vehicle type.

Rear-loading collection vehicles

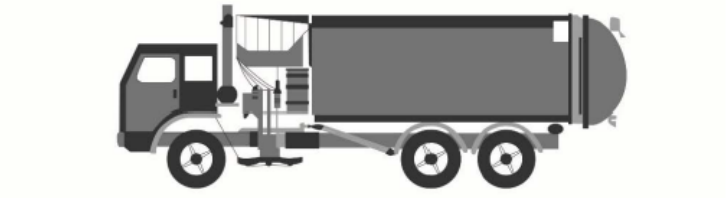
These vehicles are commonly used for domestic waste collections from MUDs and RFBs and sometimes for recycling. They can be used to collect waste stored in mobile bins or bulk bins, particularly where bins are not presented at the kerbside. They are also used for collecting bulky waste.



Rear-loading waste collection vehicle

Side-loading collection vehicles

This is the most commonly used vehicle for domestic waste, recycling and organics collections. It is only suitable for collecting mobile bins up to 360L in capacity.



Side-loading waste collection vehicle

Front-lift-loading collection vehicles

These vehicles are commonly used for collecting commercial and industrial waste. They can only collect specially designed front-lift bulk bins and not mobile bins.

Front-lift-loading waste collection vehicle

Small collection vehicles

Typically, councils and their contractors operate with large collection vehicles (heavy rigid class vehicles) because they carry greater payloads and allow for more cost-effective collection services. Some councils, or their contractors, may have smaller collection vehicles in their fleet. Early discussion with the council is important to confirm this, but it should not be assumed that the council will have access to small collection vehicles.

The waste management systems and the location of the collection point should always be designed so that the council can provide the standard domestic waste service.

SOURCE: Better Practice Guide For Resource Recovery In Residential Developments 2019, NSW Environmental Protection Authority

APPENDIX C.4 EXAMPLE MANOEVERABLE BIN LIFTER FOR 240L MGBS

Fallshaw Liftmaster Rugged Manual Binlifter

A Full swing, Manually operated Binlifter. Has spark free operation.
Is recommended for trained operators, away from the general public.
Suitable for building or construction sites.

Features of Fallshaw Liftmaster Rugged Manual Binlifter

- **Compact and lightweight**
- Easily manoeuverable
- **Full swing operation**
- **Has a small footprint**
- Fits through internal doorways
- **Safe lifting capacity of 100kg**
- Suitable for 10 lifts per person, per day - for more frequent lifts a powered lifter is recommended
- Lifts 80L, 120L, 140L and 240L bins (with manual adjustment)
- **Hydraulic (No spark) hand pump operation - suits building and construction sites**
- **Suits trained operators, for safe use**
- All Terrain Model also available - fitted with pneumatic wheels add 140-150mm height to BLHP1500

** **Bin Tipper Top Point Height**

BLHP1500 3250mm
BLHP1500LL 3250mm
BLHP1800 3550mm

Product Codes

BLHP1500	Manual Binlifter 100 for 1500mm high bins
BLHP1500LL	Lid lifter compatible
BLHP1800	Manual Binlifter 100 for 1800mm high bins
BLPAT1500	Manual Binlifter ALL TERRAIN for 1500mm high bins

Source: https://www.rjcox.com.au/product/4582/73827/fallshaw-liftmaster-rugged-binlifter-manual/

APPENDIX C.5 EXAMPLE BIN MOVING AID

Battery powered tug with a 1 or 2 tonne tow capacity

Features at a glance

One tonne (Evo 1T) or two tonne (Evo 2T) tow capacity
Auto latching hitch
Three speed motor with emergency stop

Typical applications

The Tug Evo is suitable for airports, factories, warehouses, apartment buildings or large facilities. This powered tug is also suitable for transporting medical carts around hospitals or moving heavy specialist equipment.

Features:

- 1 or 2 tonne tow capacity of inclines up to 6 degrees
- 500kg tow capacity if inclines up to 14 degrees
- CE Compliant
- 5 km/h max speed
- 2 x 12V 42Ah MK-gel batteries with 24V smart charger.
- Powerful transaxle

Safety Features:

- Intuitive control with standard automatic safety brake, forward and reverse drive.
- Emergency stop button.

Emergency back-off button

Source: http://www.electrodrive.com.au/products/tugs/tug-evo.aspx

APPENDIX D: SECONDARY WASTE MANAGEMENT PROVISIONS

APPENDIX D.3 TYPICAL COOKING OIL CONTAINERS

Drums 205L

Pour in Bulk Tank

View Brochure

Oil Kaddy System

View Brochure

Eco Systems

Direct-Connect to Fryer

SOURCE: http://www.auscol.com/services/collection-systems/

APPENDIX D.4 EXAMPLE SOURCE SEPARATION BINS

SOURCE: https://www.sourceseparationsystems.com.au/