



Consulting.TM
an Elephants Foot Company

100 Edinburgh Rd, Castlecrag
Mixed Use Development

OPERATIONAL WASTE MANAGEMENT PLAN

14/10/2025
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Revision H

Client

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GLOSSARY OF ABBREVIATIONS AND TERMS

TERM	DESCRIPTION
<i>Baler</i>	A device that compresses waste into a mould to form bales which may be self-supporting or retained in shape by strapping
<i>Bin-carting Route</i>	Travel route for transferring bins from the storage area to a nominated collection point
<i>Collection Area/Point</i>	The identified position or area where general waste or recyclables are loaded onto the collection vehicle
<i>Compactor</i>	A machine for compressing waste into disposable or reusable containers
<i>Composter</i>	A container/machine used for composting specific food scraps
<i>Crate</i>	A plastic box used for the collection of recyclable materials
<i>DA</i>	Development Application
<i>DCP</i>	Development Control Plan
<i>EPA</i>	Environmental Protection Authority
<i>HRV</i>	Heavy Rigid Vehicle described by AS 2890.2-2002 Parking facilities – Off-street commercial vehicle facilities
<i>L</i>	Litre(s)
<i>LEP</i>	Local Environmental Plans guide planning decisions for local government areas
<i>Liquid Waste</i>	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)
<i>Mixed Use Development</i>	A development comprised of two or more different uses
<i>MUD</i>	Multi-Unit Dwellings comprise of a development with more than one dwelling. This ranges from dual occupancies and attached dwellings to high-rise residential developments
<i>Mobile Garbage Bin(s) (MGB)</i>	A waste container generally constructed of plastic with wheels with a capacity in litres of 120, 240, 360, 660, 1000 or 1100
<i>MRV</i>	Medium Rigid Vehicle described by AS 2890.2-2002 Parking facilities – Off-street commercial vehicle facilities
<i>Onsite Collection</i>	When the collection vehicle enters the property and services the development within the property boundary from a designated loading area
<i>Owners Corporation</i>	An organisation or group of persons that is identified by a particular name and acts, or may act, as an entity
<i>Service Bins</i>	Bin set aside 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 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 mixed use development located at 100 Edinburgh Road, Castlecrag NSW 2068.

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) only applies to the **operational** phase of the proposed development; therefore, the requirements outlined in this OWMP must be implemented during the operational phase of the site and may be subject to review upon further expansion of, and/or changes to the development.

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

1.2 REPORT CONDITIONS

The purpose of this report is to document an OWMP as part of a development application, 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 residents and tenants regarding waste management operations and responsibilities,
- The building 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.

2 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:

- Willoughby Development Control Plan 2023
- Willoughby 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:

- NSW 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

3 DEVELOPMENT OVERVIEW

This SSDA seeks consent for the construction of a shop top housing development comprising of a 4-storey podium with ground floor specialty retail tenancies, two 11-storeys residential envelopes from the existing ground level with communal open space on the rooftop, and 5 levels of basement car parking with retail space. The proposal includes 150 dwellings and strata subdivision at 100 Edinburgh Road, Castlecrag. Development breakdown below:

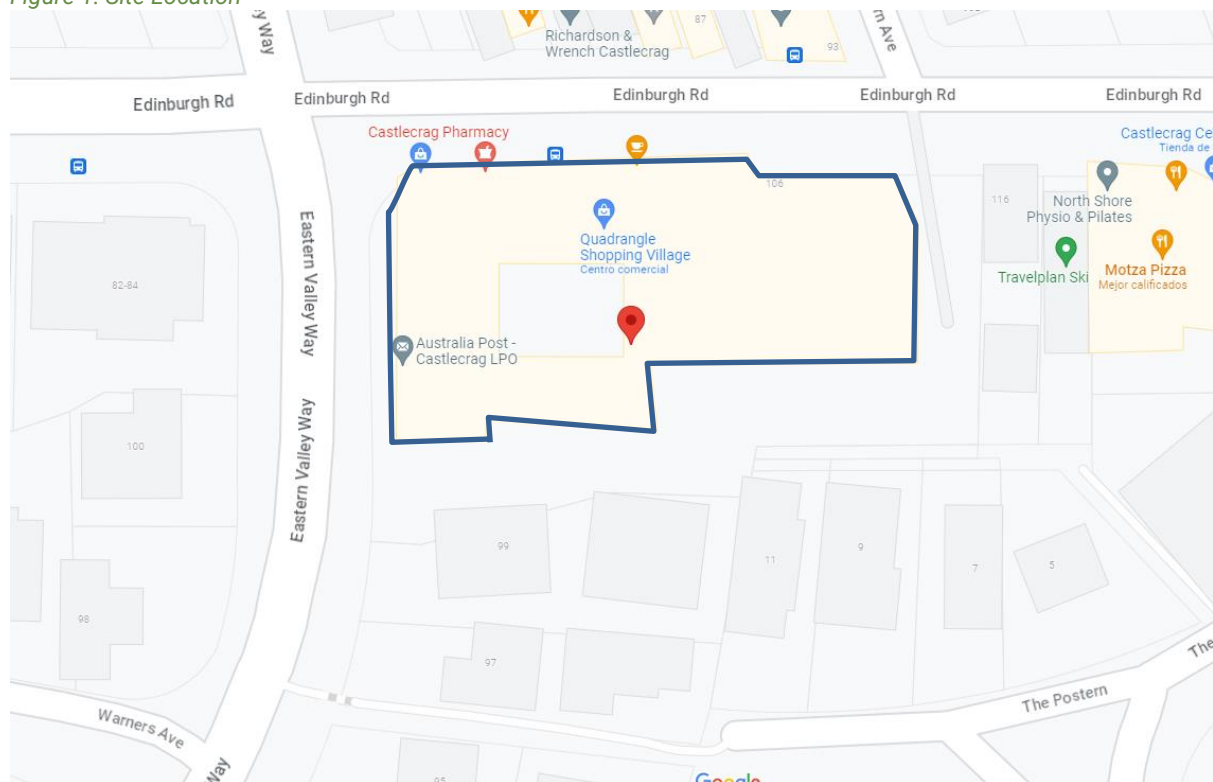
- Two towers with 11 levels
 - 150 residential units in total
 - 5 Retail tenancies with a total GFA of 1707 m²
 - One Supermarket with a total GFA of 1964 m²

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

3.1 SITE LOCATION

The site is located at 100 Edinburgh Road, Castlecrag NSW 2068, as shown in Figure.1. The site has frontages to Edinburgh Road and Eastern Valley Way, with vehicle access via Edinburgh Road.

Figure 1. Site Location



Source: Google Maps

4 RESIDENTIAL WASTE MANAGEMENT

The following section outlines best practice waste management for the residential component of the development, including waste generation estimates and waste disposal and collection procedures.

4.1 WASTE GENERATION ESTIMATES

The Willoughby Development Control Plan 2023 including NSROC (2018) which has been adopted by Council and the NSW EPA's Better Practice Guide for Resource Recovery in Residential Development (2019), have been referenced to calculate the total number of bins required for the residential units. The NSW EPA's Better Practice Guide has been referenced to calculate the FOGO waste bins required. Calculations are based on generic figures, and waste generation rates may differ according to the residents' actual waste management practice.

The following table shows the estimated volume (L) of general waste and recyclables generated by the development.

Table 1: Estimated General Waste, Recycling and Green Waste Volumes

Type of Dwelling	Core	# Units	General Waste Generation Rate (L/unit/week)	Generated General Waste (L/week)	Compacted Generated General Waste (L/week)	Commingled Recycling Generation Rate (L/unit/week)	Generated Recycling (L/week)	Green Waste Generation Rate (L/unit/week)	Generated Green Waste (L/week)
Apartment	1	75	140	10500	5250	120	9000	30	2250
	2	75	140	10500	5250	120	9000	30	2250
TOTAL		150		21000	10500		18000		4500
Bins and Collections			General Waste Bin Size (L)	1100	1100	Recycling Bin Size (L)	1100	Green Waste Bin Size (L)	240
			General Waste bins Core 1	5	3	Recycling Bins Core 1	9	Green Waste bin Core 1	10
			General Waste bins Core 2	5	3	Recycling Bins Core 2	9	Green Waste bin Core 2	10
			General Waste Collections per Week	2	2	Recycling Collections per Week	1	Green Waste Collections per Week	1
			Total General Waste Bins Required for Collection	10	6	Total Recycling Bins Required for Collection	18	Total Green Waste Bins Required for Collection	20

4.2 BIN SUMMARY

Based on the estimated waste generated by the residential component of this development, the recommended bin quantities and collection frequencies are as follows:

General Waste: 6 x 660L MGBs collected **2 x weekly**

Recycling: 18 x 1100L MGBs collected **1 x weekly**

Green Waste: 20 x 240L MGB collected **1 x weekly**

EFRS recommends bins sizes, collection frequencies and/or equipment for best practice waste management at this site, however EFRS also acknowledges there are a range of other suitable options that may alter waste room requirements (e.g. floor area, accessibility, head height, etc.).

4.3 RESIDENTIAL CHUTE DISCHARGE EQUIPMENT SUMMARY

It is strongly recommended that the bins and equipment at the base of each chute allows for at least 2 days' worth of general waste and recycling generation. Based on the estimated general waste and recycling volumes generated by each building/core, the following equipment is recommended:

Volume Handling Equipment							
General Waste				Recycling			
CORE	Generated General Waste (L/week)	# 660L Bins Required for 2 days' Capacity	Recommended Chute Discharge Equipment	CORE	Generated Recycling (L/week)	# 1100L Bins Required for 2 days' Capacity	Recommended Chute Discharge Equipment
1	5250	1.36	2-Bin Linear System	1	9000	2.34	3-Bin Linear System
2	5250	1.36	2-Bin Linear System	2	9000	2.34	3-Bin Linear System

For Core 1 and 2:

The equipment underneath the waste chute consists of a 3-bin 660L linear system, and for the recycling chute, a 3-1100L linear system with sufficient capacity to accommodate up to two days of waste generation.

The above is a recommendation only and equivalent volume handling equipment may be used subject to equipment supplier's recommendation/review.

4.4 RESIDENTIAL WASTE DISPOSAL PROCEDURES

All residents will have access to a storage area within their own unit capable of holding separate receptacles for general waste, recycling and FOGO. This is typically located within kitchen areas beneath the workbench. This space should be sized to accommodate 40L receptacles (minimum) to account for 2 days' worth of general waste, recycling and 20L for Green Waste storage.

4.4.1 RESIDENTIAL GENERAL WASTE AND RECYCLING DISPOSAL PROCEDURES

2 x eDiverter chute systems, comprising single chutes fitted with general waste and recycling diversion systems, will be installed in each building core. Access to the eDiverter chute system will be provided to all residents on each residential level.

eDiverter systems allow for the installation of a single-use chute door for both general waste and recycling disposal. Residents will be responsible for walking their general waste and recycling to their allocated disposal point and selecting either the general waste or recycling function button on the eDiverter chute door. The selection button moves a mechanism at the base of the chute that guides general waste into the general waste collection bins or recycling into the recycling collection bins located in the Chute Discharge Rooms on the Lower Ground.

Residents will wrap or bag their general waste before placing into the eDiverter chute. Bagged waste should not exceed 3kg in weight, or 35cm x 35cm x 35cm. Residents will be responsible for loosely placing their recycling into the eDiverter chute. Recycling should be clean and must not be bagged as soft plastics contaminate recycling.

Cardboard boxes or large containers should not be disposed of in the recycling chute. These items will be disposed of in a 240L bin located next to the chutes on each floor of each core. The building caretaker will transport these bins and decant them into the 1100L bins with the aid of a bin lifter in the Residential Bin Holding Room.

The general waste and recycling will be discharged from the diverter chute into 660L and 1100L bins in the Chute Discharge Rooms located on the Lower Ground Level. General waste will be compacted and recycling will not be compacted.

NOTE: The eDiverter chute operation will default to general waste in the case of a power outage.

The building manager will monitor bin capacities under the eDiverter chute discharge systems and exchange full bins with empty bins when required. Full and spare bins will be kept in the residential waste room.

Refer to Council guidance for the types of materials accepted in the general waste and recycling streams.

4.4.2 RESIDENTIAL FOGO DISPOSAL PROCEDURES

The majority of organics waste generated from multi-unit residential developments (MUD's) comprises of food waste as opposed to garden waste. As such, calculations and management recommendations provided in this report considers that FOGO bins will primarily comprise of food organics.

The residents of each unit will be provided with a kitchen caddy for the separation of FOGO. Food organics must be contained in accordance with Willoughby City Council's FOGO collection service procedures (for example a compostable liner). Any plant clippings from residential units can also be disposed of with the FOGO.

240L FOGO bins will be provided in the residential waste room. The residents will be responsible for walking their own FOGO down to the residential waste room and placing it into the bins.

Building management is responsible for ensuring that the Residential Waste Room and FOGO bins are washed down frequently to ensure that hygiene and odour is managed.

4.5 RESIDENTIAL WASTE COLLECTION PROCEDURES

Council will be engaged to collect the general waste, recycling and green waste generated at this site. This report assumes that general waste will be collected twice weekly. Recycling and green waste will be collected on a once-weekly basis.

The building caretaker will be responsible for transporting the 660L and 1100L MGBs from the Chute Discharge Rooms to the Residential Waste Room.

To service the bins, a waste collection vehicle will enter the site from Edinburgh Road and pull up onto the turntable on Lower Ground Level, where the vehicle will turn so that the rear of the vehicle parks in the loading bay. (See Appendix A.3). The building caretaker will provide the driver with access to the residential waste room. Once the bins are serviced, the collection vehicle will exit the site onto Edinburgh Road in a forward direction.

To future-proof the development, a driveway clearance of 4.5m is provided.

It is the responsibility of the caretaker to ensure that the loading area is clear of any vehicles or obstructions prior to waste collection.

4.6 BULKY WASTE PROCEDURES

Two rooms will be made available in the Lower Ground Level and Basement 3 for the storage of discarded residential bulky items (e.g. whitegoods, furniture, etc.). These rooms must have a minimum doorway width of 2.5m to allow for easy movement of large waste items in and out of the room.

Willoughby Council requires that the bulky goods area be provided at a rate of 10m² for the first 40 units and 2m² every additional 10 units thereafter as per the *NSROC Waste Management Guidelines 2018*. The bulky waste room is also considered an available space for a charity bin.

Bulky Waste Room Size

$$\begin{aligned} & (\text{Total number of units} - 40) / 10 \times 2 + 10 = \text{m}^2 \text{ of bulky waste room} \\ & = (150 - 40) / 10 \times 2 + 10 = \\ & = 110 / 10 \times 2 + 10 \\ & = 11 \times 2 + 10 \\ & = 22 + 10 \\ & = 32 \end{aligned}$$

bulky waste storage area: minimum 32m²

Residents will need to liaise with the building manager regarding the transportation of bulky items and the availability of the bulky waste storage room. It is the building manager's responsibility to arrange collection dates with the Council, coordinate with the residents, and transport the bulky waste items from basement 3 to the Lower Ground Level for collection.

5 RETAIL WASTE MANAGEMENT

The following section outlines best practice waste management for the retail component of the development, including waste generation estimates and waste disposal and collection procedures.

5.1 WASTE GENERATION ESTIMATES

The NSW EPA's *Better Practice Guide for Resource Recovery in Residential Developments* (2019) has been referenced to calculate the total number of bins required. Calculations are based on generic figures, and waste generation rates may differ according to actual waste management practice. The recycling generation rate has been divided to take into account commingled recycling waste generation and paper/cardboard recycling generation.

The table 2 shows the estimated volume (L) of general waste, recyclables and paper/cardboard that will be generated by the Supermarket. A seven-day operating week has been assumed.

The total GFA of retail tenancies have been divided into five to take into account the waste generation of future possible tenancies. It is assumed that all retail tenancies will share waste bins, the waste storage room, and the waste collection service. See table 3.

The retail tenancies estimations are based on a seven-day operating week.

Table 2: Estimated Waste and Recycling Volumes – Supermarket

Tenancy	GFA	General Waste Generation Rates (L/100m ² /day)	Generated General waste	Co-mingled Recycling Generation Rate	Generated Comingled Recycling
	(m ²)		(L/week)	(L/100m ² /day)	(L/week)
Supermarket	1964	240	32995	150	20622
Equipment and Collections	General Waste Bin Size (L)		1100	Recycling Bin Size (L)	1100
	General Waste collections per week		5	Comingled collections per week	5
	General Waste Bins required Supermarket		6	Comingled Recycling Bins required Supermarket	4

Waste and recyclables generated by supermarkets are usually stored and managed separately from all other tenancies. In general, supermarket staff are expected to dispose of waste and recyclables near the loading area, and an appointed waste collection contractor will remove the waste from the loading area or waste room on an arranged schedule.

Table 3 shows the estimated volume (L) of general waste, commingled recyclables and paper/cardboard recyclables that will be generated by the retail tenancies.

Table 3: Estimated General Waste and Recycling Volumes – Retail

Tenancy	Waste Generation Type	GFA (m2)	General Waste Generation Rate (L/100m2/day)	Generated Waste (L/week)	Co-mingled Recycling Generation Rate (L/100m2/day)	Generated Co-mingled Recycling (L/week)	FOGO Generation Rate (L/100m2/day)	Generated FOGO (L/week)
Café	Café	782.0	100.0	5474.0	120.0	6568.8	100.0	5474.0
Restaurant	Restaurant	324.0	400.0	9072.0	280.0	6350.4	100.0	2268.0
Other non food	Retail	292.0	50.0	350.0	100.0	700.0	5.0	35.0
Takeaway food	Food retail: takeaway	209.0	150.0	2194.5	75.0	1097.3	100.0	1463.0
Gym	gym	100.0	20.0	140.0	15.0	105.0		
TOTAL		1707		17231		14821		9240
Equipment and Collections		General Waste Bin Size (L)		1100	Recycling Bin Size (L)		1100	Paper/cardboard Bin Size (L) 240
		General Waste Bins Per Week		16	Recycling Bins Per Week		14	Paper/cardboard Bins Per Week 39
		General Waste Collections per Week		6	Recycling Collections per Week		5	Paper/cardboard Collections per Week 6
		Total General Waste Bins Required		3	Total Recycling Bins Required		3	Total Paper/cardboard Bins Required 7

5.2 BIN SUMMARY

5.2.1 SUPERMARKET

Based on the estimated waste generated by the supermarket the total recommended bin quantities are as follows:

<u>General Waste:</u>	6 x 1100L MGB
<u>Commingled Recycling:</u>	4 x 1100L MGBs
<u>Paper/Cardboard Recyclables:</u>	1 x vertical baler, Pallet Jack, bale

5.2.2 RETAIL TENANCIES

Based on the estimated waste generated by the retail tenancies, the total recommended bin quantities are as follows:

<u>General Waste:</u>	3 x 1100L MGBs
<u>Recycling:</u>	3 x 1100L MGBs
<u>FOGO:</u>	7 x 240L MGBs

Bin sizes, quantities, and/or collection frequencies may be modified by the building manager once the proposed development is operational. Building management will be required to negotiate any changes to bins or collections with the collection service provider. Seasonal peak periods such as public and school holidays should also be considered.

5.3 WASTE DISPOSAL PROCEDURES

The following section outlines the waste disposal procedures for the development. All retail tenancies will be responsible for their back of house (BOH) waste management bins during daily operations. This report assumes that retail tenancies will share waste bins, the waste storage room, and the waste collection service.

5.3.1 FOOD AND BEVERAGE TENANCIES

All food-based tenancies including restaurants, cafe, and other food retail will be responsible for their own storage of waste and recycling streams back of house (BOH) during daily operation.

Any food cooked or prepared, served or consumed on site will produce a typical waste composition of food scraps from plates, packaging waste and some plastics. Café or restaurant staff will be responsible for their own BOH waste management of food waste.

To ensure the proper management and disposal of waste, food and beverage tenants should be made aware of the following practices:

- All waste should be bagged and waste bins should be plastic lined;
- Bagging of recyclables is not permitted;
- Individual recycling programs are recommended for retailers to ensure commingled recycling is correctly separated;

- Any food and beverage tenant will make arrangements for storing used and unused cooking oil in a bunded storage area;
- The operator will organise grease interceptor trap servicing;
- A suitable storage area needs to be provided and effectively bunded for chemicals, pesticides and cleaning products;
- Dry basket arrestors need to be provided to the floor wastes in the food preparation and waste storage areas; and
- All flattened cardboard will be collected and removed to the waste room paper/cardboard recycling MGBs.

On completion of each trading day or as required, nominated staff or cleaners will transport all general waste and recyclables to the Waste Storage Room and place into the appropriate collection bins. Waste will not be compacted, and recyclables are not baled.

WASTE OILS

Consideration should be given to the use of cooking oil collection systems. A single service provider may be used to reduce the amount of commercial traffic into the loading bay or around the precinct area. This should be measured against bulk delivery of oils where the same vehicle is used to remove containers of waste cooking oils (see APPENDIX D.2 for Typical Cooking Oil Collection System).

5.3.2 SUPERMARKET

Waste and recyclables generated by the supermarket are usually stored and managed separately from all other tenancies. In general, it is expected that supermarket staff will dispose of waste and recyclables in their assigned Supermarket Waste Room. (See Appendix A.3)

5.3.3 RETAIL TENANCIES

Retail tenancies will be responsible for their own storage of waste and recycling streams back of house (BOH) during daily operation. Cardboard is a major component of the waste generated by retail tenancies. All cardboard should be flattened (to save bin space) before being placed in bulk 1100L bins.

On completion of each trading day or as required, nominated staff or cleaners will transport all general waste and recyclables to the Retail Waste Room and place into the appropriate collection bins. Waste will not be compacted, and recyclables are not baled.

5.4 WASTE COLLECTION PROCEDURES

5.4.1 SUPERMARKET

A private waste collection contractor will be engaged to service the waste and recycling bins per an agreed schedule.

On the day of service, a private waste collection vehicle will enter the site from Edinburgh Road and pull up onto the turntable on the Lower Ground Level where the vehicle will turn so that the rear park in the loading bay. (See Appendix A.3). The building caretaker will provide the driver with access to the supermarket waste room. Once the bins are serviced, the collection vehicle will exit the site onto Edinburgh Road in a forward direction.

5.4.2 RETAIL TENANCIES

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5.5 OTHER WASTE MANAGEMENT CONSIDERATIONS

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

5.5.1 KITCHEN AND FOOD PREPARATION AREAS

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

5.5.2 PRINTING & PHOTOCOPYING ROOMS

It is recommended that printing rooms and photocopying rooms 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.

5.5.3 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.

5.5.4 RE-USEABLE COMMERCIAL ITEMS

Space will be provided back of house for the storage of re-usable commercial items such as crates, pallets, kegs and strip out waste. The building manager will be responsible for ensuring that storage of these items in public places is completely avoided.

5.5.5 LIQUID WASTE

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

5.5.6 PROBLEM WASTE

The building manager 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. Retail tenants will need to liaise with the building manager when disposing of problem waste streams.

Problem waste streams include:

- Chemical Waste
- Liquid wastes
- Toner cartridges
- Lightbulbs
- eWaste
- Batteries

6 STAKEHOLDER ROLES & RESPONSIBILITIES

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

Table 4: Stakeholder Roles and Responsibilities

Roles	Responsibilities
Strata or Management	- Ensuring that all waste service providers submit monthly reports on all equipment movements and waste quantities/weights; - Organising internal waste audits/visual assessments on a regular basis - Purchasing any on-going waste management equipment or maintenance of equipment once building is operational; and - Managing any non-compliances/complaints reported through waste audits.
Building Manager or Waste Caretaker	- Coordinating general waste, recycling and food waste collections; - Cleaning and transporting bins as required; - Organising replacement or maintenance requirements for bins; - Organising, maintaining and cleaning the waste holding area; - Organising bulky goods collection when required - Investigating and ensuring prompt clean-up of illegally dumped waste materials. - Preventing storm water pollution by taking necessary precautions (securing bin rooms, preventing overfilling of bins) - Abiding by all relevant WH&S legislation, regulations, and guidelines; - Providing staff/contractors with equipment manuals, training, health and safety procedures, risk assessments, and PPE to control hazards associated with all waste management; - Assessing any manual handling risks and preparing a manual handling control plan for waste and bin transfers; - Ensuring site safety for residents, children, visitors, staff and contractors; and - Ensuring effective signage, communication and education is provided to occupants, tenants, maintenance staff, and cleaning contractors.
Residents	- Dispose of all general waste, recycling and food waste in the allocated MGBs provided; - Ensure adequate separation of general waste, recycling and food waste ; and - Compliance with the provisions of Council and the OWMP.
Retail Tenants	- Managing the back of house storage of generated general waste, recycling and food waste during daily operation. - Correctly separating waste streams. Including bagging general waste and ensuring recyclables are not bagged. - Flattening cardboard within the recycling bin. - If required, making arrangements for storing used and unused cooking oil in a bunded storage area, - Organizing grease interceptor trap servicing, - Ensure dry basket arrestors are provided to the floor wastes in the food preparation, and - Ensuring the suitable storage for chemicals, pesticides and cleaning products waste back of house.
Waste Collection Contractor	- Provide a reliable and appropriate waste collection service; - Provide feedback to building managers/residents regarding 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.
Developer	Purchasing all equipment required to implement this OWMP prior to the occupation of the building to be provided to the strata.

7 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 5: 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	General waste should be bagged before placing in the designated waste bins.
Commingled 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 or Materials Recovery Centre	Commingled recyclables must not be bagged, and instead should be placed loosely in designated recycling bins.
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 it 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. Green waste from residential units may be deposited into green waste bins.
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 by residents. Retail tenants will organise their own e-waste recycling collections.
Bulky Items	Items that are too large to place into general rubbish collection. This includes disused and/or broken furniture, mattresses, white goods, etc.	Resource Recovery Centre or Landfill	Residents liaise with building manager to store in bulky waste room. Building manager arranges with Council for removal. Retail tenants will organise their own bulky waste storage and collections.
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.

8 EDUCATION

Educational materials encouraging correct separation of general waste and recyclables must be provided to each resident and retail tenant. This should include the correct disposal process for bulky waste such as old furniture, large discarded items, and other materials including electronic and chemical wastes. It is recommended that the building caretaker provides information in multiple languages to support correct behaviours, and to minimise the possibility of contamination in communal waste bins.

8.1 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.

8.2 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

9 EQUIPMENT SUMMARY

Table 6: Equipment Summary

Part		Qty	Notes
Chutes	Please refer to supplier's information	2	(See Appendix B for Typical ediverter Chute Layout)
Chute Equipment	Waste 3-bin 660L MGB Linear Track System 3-bin 1100L MGB Linear Track System	2	(See Appendix B.2 and B.3 for Typical Linear System)
	Recycling 3-bin 660L MGB Linear Track System 4-bin 1100L MGB Linear Track System	2	
Other Equipment	Suitable Bin Moving Equipment	Recommended	(See Appendix D.1 for Typical Bin Movers)
	Bin Lifter	1	(See Appendix D.4 for typical Bin Lifter)

10 WASTE ROOMS

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

Table 7: Waste Room Areas

Level	Waste Room Type	Equipment and MGBs	Estimated Area Required (m ²)	Actual Area Provided (m ²)
Basement 1	Residential Chute Discharge Room Core 1	Minimum 3-Bin linear track System for 660L MGBs (General Waste) 3-Bin linear track System for 1100L MGBs (Recycling)	22	51
Lower Ground	Residential Chute Discharge Room Core 2	Minimum 3-Bin linear track System for 660L MGBs (General Waste) 3-Bin linear track System for 1100L MGBs (Recycling)	22	58
Lower Ground	Residential Waste Room/collection area	6 x 660L MGBs (General Waste) 18 x 1100L MGBs (Recycling) 20 x 240L MGBs (Green Waste) Bin lifer	91	96
Lower Ground Level	Residential Bulky Goods Waste Storage Room	Charity bin	36	18
Basement 3				34
Lower Ground	Supermarket Waste Room	6 x 1100L MGBs (General Waste) 4 x 1100L MGBs (Commingle Recycling) 1 x Vertical Baler (Paper/Cardboard Recycling) Pallet Jack, Bale	35	35
Lower Ground	Retail Waste Room	3 x 1100L MGBs (General Waste) 3 x 1100L MGBs (Recycling) 7 x 240L MGBs (FOGO)	25	33

EFRS recommends bins sizes, collection frequencies and/or equipment for best practice waste management at this site, however EFRS also acknowledges there are a range of other

suitable options that may alter waste room requirements (e.g. floor area, accessibility, head height, etc.)

The waste room 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 passageways facilitating the movement of bulky waste items should be at least 1500mm wide and doorways at a minimum of 2.5m wide. The following table provides further waste room requirements.

Table 8: Waste Room Requirements

Waste Room Type	Waste Room Requirements
Chute Discharge Room	• Ceiling clearance height must be a minimum of 3000mm (3100mm with compactor) (subject to penetration location) • The chute penetration must have a minimum 500mm clearance of any service pipes or other overhead obstacles • All waste discharge points should be caged off to ensure the safety of any personnel accessing the waste room • 200mm clearance is required around compaction equipment • Where a chute offset is required, the angle of the offset must not exceed 40 degrees (subject to number of consecutive offset and/or up to 1500mm) • Where the chute discharge room also acts as the collection point, the chute discharge and any equipment underneath the chute should be caged off to ensure the safety of personnel accessing the room.
Residential Waste Room/Collection Area	• Bins must not be stacked in rows that are more than two bins deep
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 2500mm wide.
Retail Waste Room	• In order to ensure staff safety, all bins should be arranged so they can be accessed without moving another bin

11 BIN MOVING PATHS

The building caretaker is responsible for the transportation of bins as required from their designated operational locations to the residential bin room as required and returning them once emptied to resume operational use.

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.
- If a 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.

If the distance of the bin moving paths exceed 10m, a bin moving device is recommended 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 proprietors/strata/body corporate will be responsible for maintaining, repairing and replacing waste management equipment.

Bins may have to be fitted with hitches to enable the simultaneous transportation of multiple bins to the collection area. Council must be informed of any hitch attachments required to be installed on bins.

12 CONSTRUCTION REQUIREMENTS

Waste room construction must comply with the minimum standards as outlined in the *Willoughby Development Control Plan 2023*, 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.

12.1 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
- 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.

13 USEFUL CONTACTS

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

LOCAL COUNCIL

Willoughby Council Customer Service Ph: 02 9777 1000 E: email@willoughby.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
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ODOUR CONTROL

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

Source Separation Systems	Ph: 1300 739 913	E: info@sourceseparationsystems.com.au
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MOBILE GARBAGE BINS, BULK BINS AND BIN EQUIPMENT

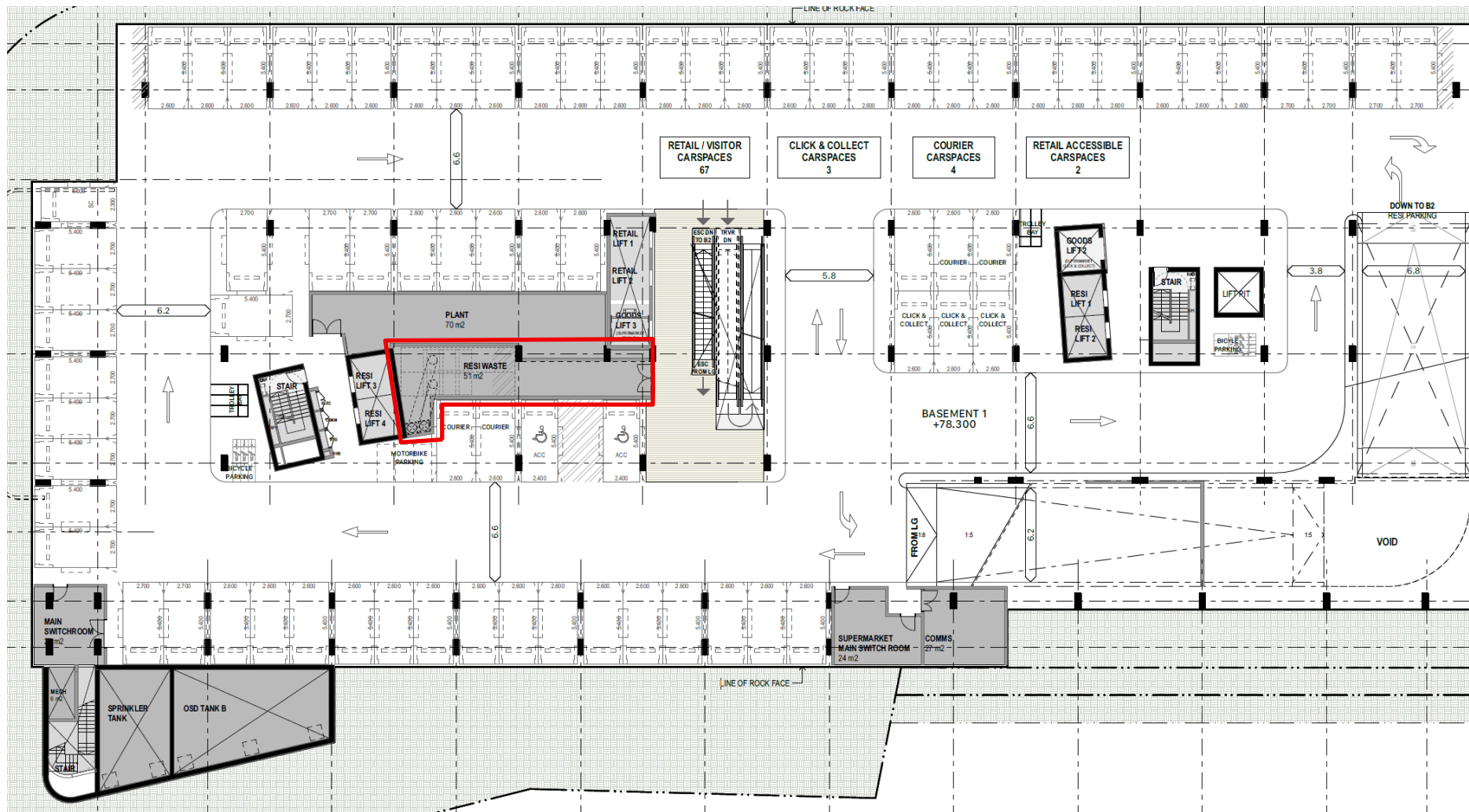
SULO	Ph: 1300 364 388	E: sales@sulo.com.au
OTTO Australia	Ph: 02 9153 6999	

CHUTES, COMPACTORS AND EDIVERTER SYSTEMS

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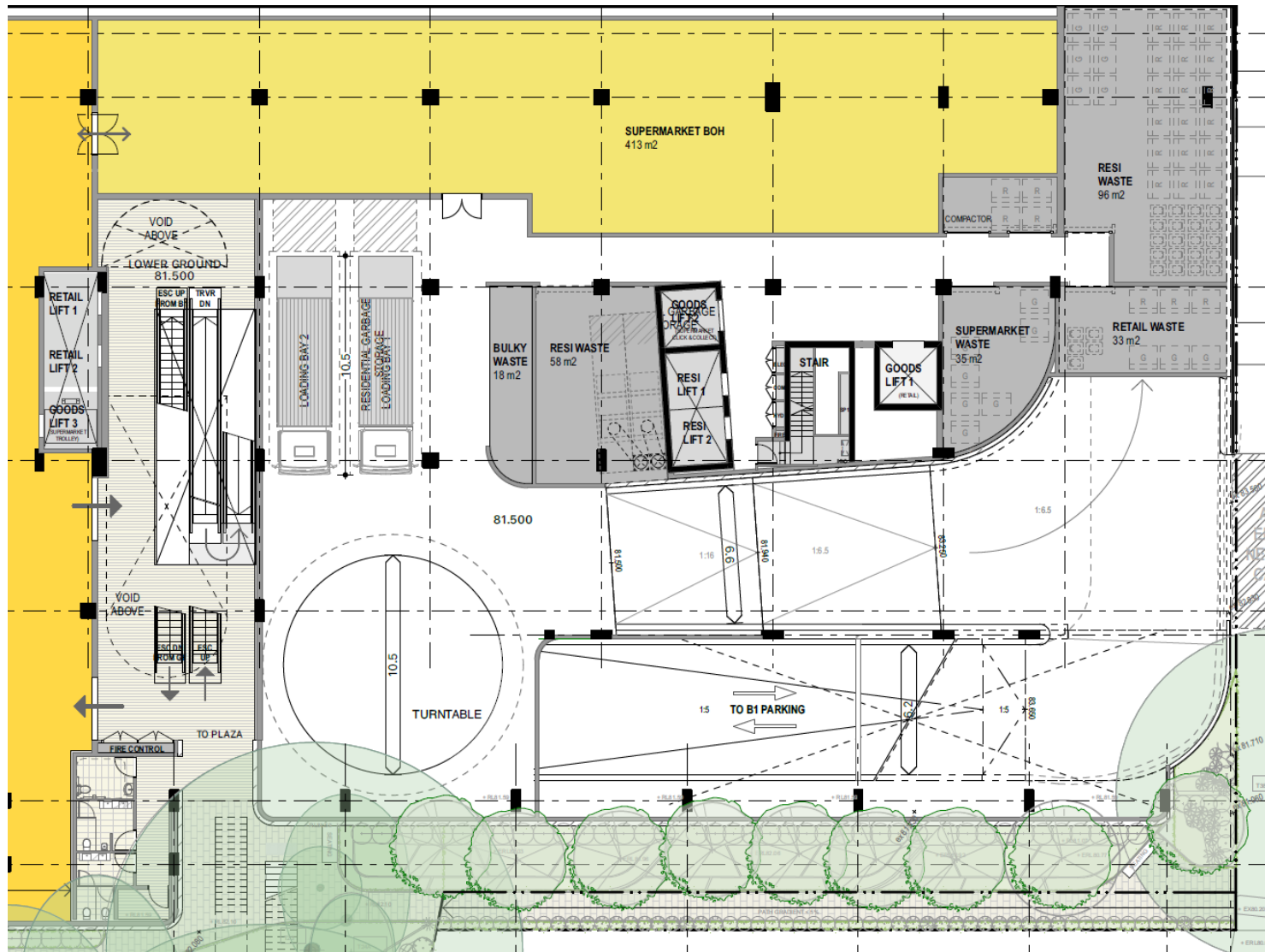
APPENDIX A: ARCHITECTURAL PLANS

APPENDIX: A.2 BASEMENT 2 - RESIDENTIAL WASTE ROOM 2



Source: FJC Studio, Basement 1, 05/11/2025

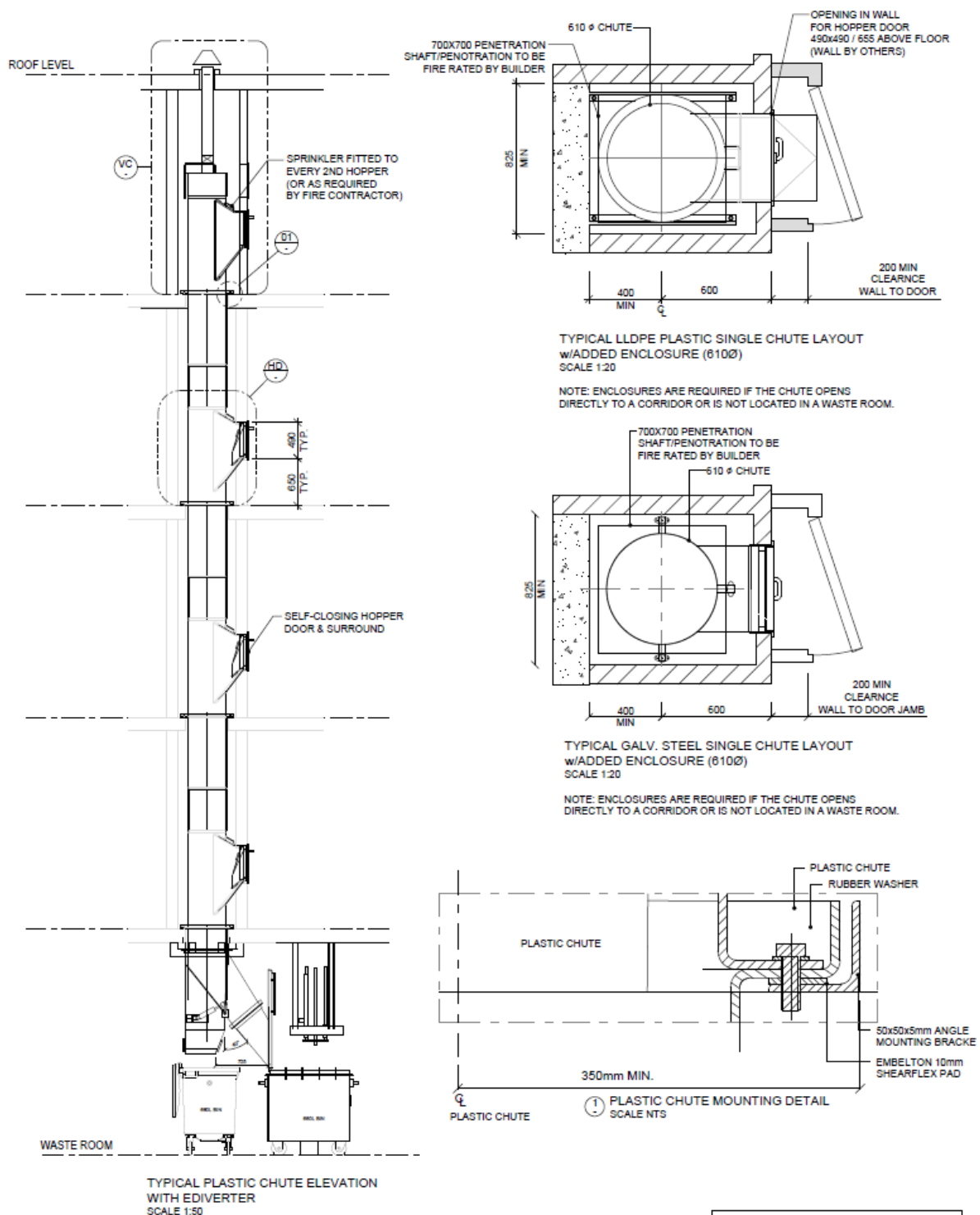
APPENDIX: A.3 LOWER GROUND LEVEL



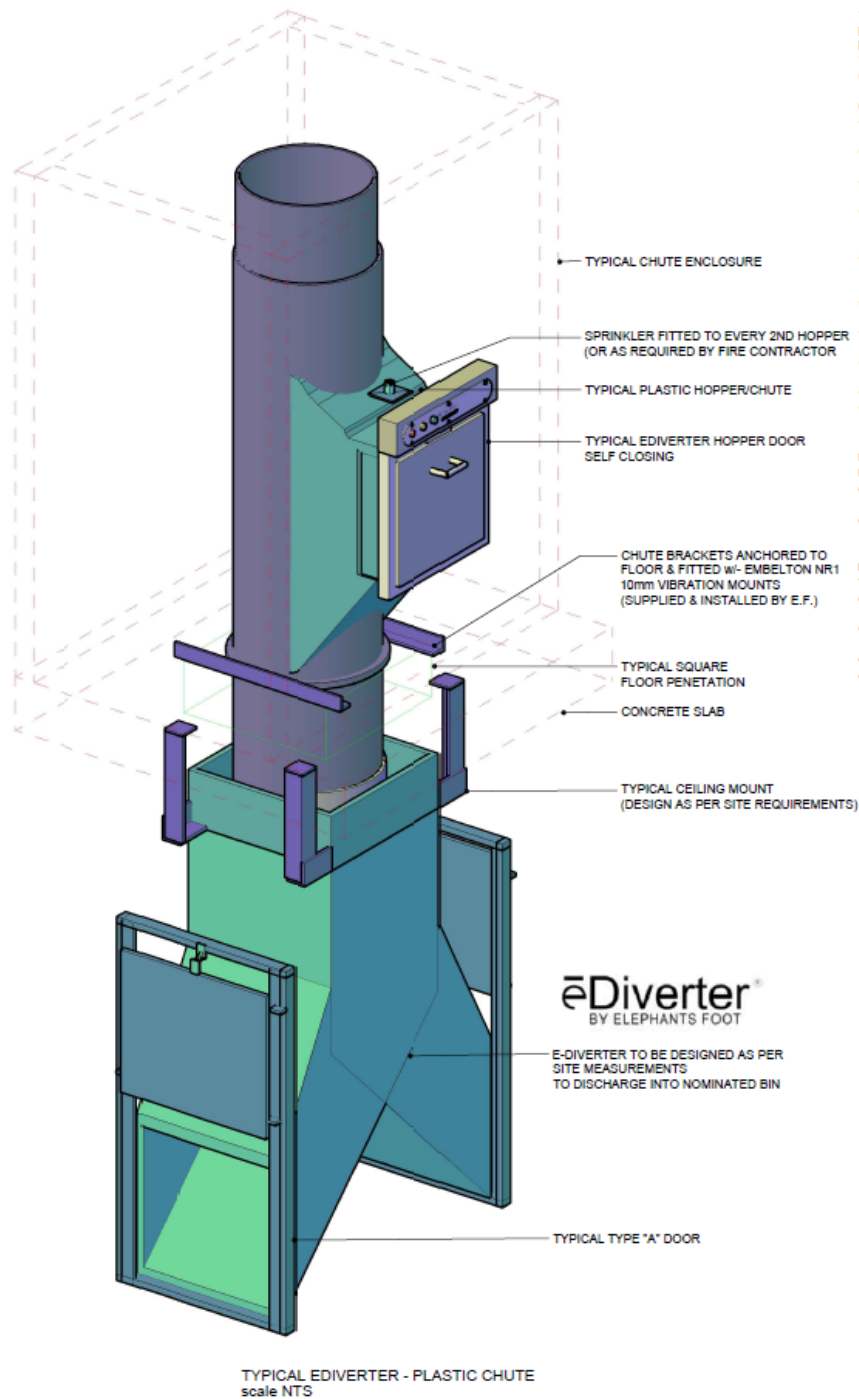
Source: FJC Studio. Lower Ground Level, 05/11/2025

APPENDIX B: INSTALLATION EQUIPMENT

APPENDIX: B.1 TYPICAL EDIVERTER SPECIFICATIONS



Please Note: This is an example only – please refer to supplier's information and specification



EDIVERTER

THE WASTE ROOM WILL BE SUPPLIED WITH AN ELEPHANTS FOOT eDIVERTER WASTE AND RECYCLING DIVERSION SYSTEM. BOTTOM CHUTES WILL DIRECT PRODUCT INTO NOMINATED GARBAGE/RECYCLING SYSTEMS.

eDIVERTER SPECIFICATIONS:

- SPLIT SYSTEM BODY 5mm PLATE WITH TWO BOTTOM OUTLETS
- SHUT OUT DOOR WITH MANUAL OVER RIDE TO CLOSE OFF CHUTE FITTED WITH FUSIBLE LINK
- INTERNAL DIVERTER PLATE 5mm ACTIVATED BY A HYDRAULIC CYLINDER
- HYDRAULICS POWER PACK WITH SINGLE PHASE 0.55kW MOTOR AND ALL ASSOCIATED CONNECTIONS
- PLC CONTROL BOX IN GARBAGE ROOM, PROGRAMMED TO OPERATE DIVERTER AND LOCK OUT DOORS
- 12 CORE 24 VOLT CABLES MOUNTED TO THE EXTERNAL OF CHUTE PIPES
- DOORS FITTING WITH ELECTRONIC LOCK OUT NORMALLY CLOSED SOLENOID
- AT EACH LEVEL ABOVE EVERY CHUTE FOUR BOTTOM OPERATING SWITCH BOARD
- ELECTRIC CONNECTIONS AT EACH STATION
- SYSTEM CONNECTIONS AND OPERATION FROM EVERY LEVEL - TEST AND COMMISSION

FIRE

FIRE SYSTEM CONTRACTOR TO:

- SUPPLY FIRE SPRINKLERS AND CONNECTION FOR SPRINKLER SYSTEM
- SPRINKLERS FITTED ON EVERY 2ND LEVEL (OR AS PER FIRE CONTRACTOR INSTRUCTION)

ELECTRICAL

YOUR ELECTRICIAN TO PROVIDE:

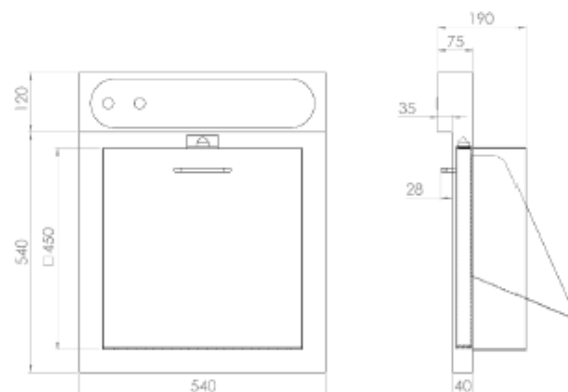
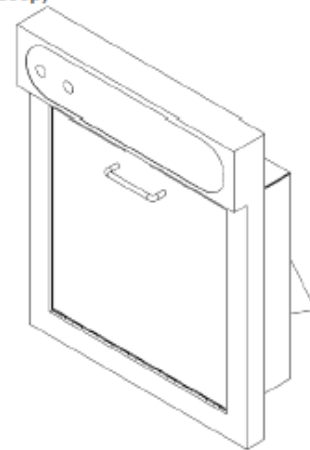
- ONE (1) STANDARD 240V GPO IN MAIN GARBAGE ROOM
- ONE (1) 415VOLTS, 5 PINS, 20AMPS FOR EACH REQUIRED COMPACTOR, CAROUSEL OR LINEAR
- COORDINATE WITH ELECTRICAL SUBCONTRACTOR
- OUTLETS TO BE WATER PROOF AND TO BE WATER PROOF ADD TO ME LOCATED 1700mm OFF THE GROUND OFF THE GROUND.

Please Note: This is an example only – please refer to supplier's information and specification



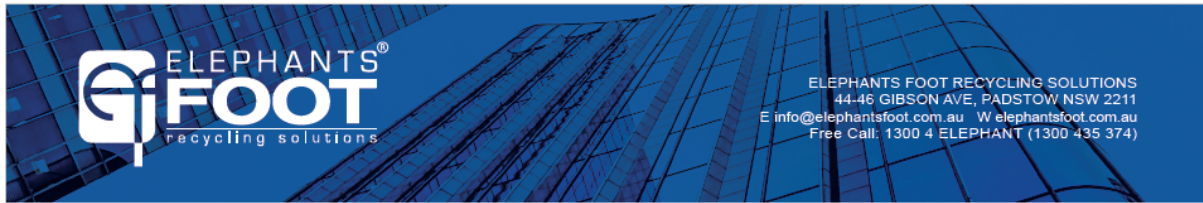
Elephants Foot Specification – Self-Closing Hopper (eDiverter)

Performance / Standards	Fire Resistant Level (FRL)	-/120/30* tested to AS1530.4 – compliant in hebel, masonry, speedpanel and variety of light weight wall systems *To ensure the FRL is achieved, the shaft wall and aperture are to comply with code, standard and applicable manufactures specifications and tested system documentation, including approved Elephants Foot aperture details
	NCC	C3.13(b) compliant
Control Panel	Power Supply	24v DC
	Power Consumption	≤150 mA
Frame	Buttons	Illuminated Push Button
	Overall	540mm (wide) x 660mm (long) x 190mm (deep)
	Rebate	40mm (wide) x 40mm (edge flange)
	Finish	Powder coated - White
	Material	1.6mm Mild Steel - folded and welded along seams
Leaf	Front Panel	304 Stainless Steel
	Back Panel	1.6mm Galvanised Steel
	Core	Calcium Silicate Magnesia Fibre
	Bucket	1.6mm Galvanised Steel
	Opening Range	- Angle: 29° - Distance: 215mm
Hardware	Strike	Electric
	Latch	Spring latch bolt
	Handle	Stainless Steel
	Hinge	Stainless Steel
	Gas Strut	Nominal Force: 100N
Seals	Intumescent Strip	High-performance intumescent seal
	Acoustic/Smoke Seal*	Medium duty architectural seal to contain sound and restrict the spread of medium temperature smoke *available as an additional option. Please speak with an Elephants Foot representative for more detail



Please Note: This is an example only – please refer to supplier's information and specification.

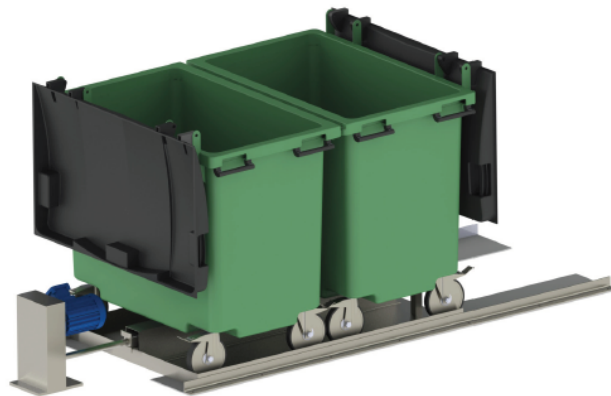
APPENDIX: B.2 TYPICAL LINEAR TRACK SYSTEM FOR 660L MGBS



660 LITRE LINEAR TRACK SYSTEM

PRODUCT INFORMATION

Elephants Foot 660 Litre bin Linear Track System is a versatile waste handling solution for many types of multi-storey or multi-level developments. The Linear Track System collects waste or recycling being disposed from the floors above through the chute system, discharging the material via a hopper that feeds the bins. Electromechanically driven with automated operation, the system utilises linear motion to automatically change over full bins. Once all the bins are filled, an indicator light will illuminate signifying that the bins are ready for withdrawal and collection. Available with or without compaction unit, our standard 660 litre bin Linear Track System is available in standard 2 or 3. Our 4 Bin option is available as a special order.



SPECIFICATIONS

System Control	Electric PLC
Power Supply	415 V AC / 10A / 5 PIN
Motor Size (kW)	0.55
Maximum bin load	265 kg
Noise (dBA)	<85
Bin Size (L)	660
Cycle time (sec)	60
Bin Quantity options	2, 3, or 4

OPTIONAL EXTRAS

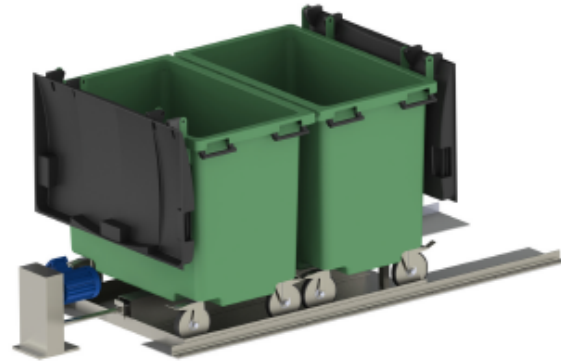
- Compaction unit – Please refer to the bin compactor product information sheet for details and specifications
- Enhanced safety add on's – Interlocking barriers, occupancy sensors or safety light curtains (presence sensing light barriers)
- Full bin SMS and email notification
- CMMS and BMS integration
- Extend warranty – Terms and conditions apply

STANDARD FEATURES & BENEFITS

- Simple operation with user friendly controls
- Increased waste servicing efficiency for the development
- Automatic system control with manual override
- Robust unit construction for long performance life
- Low service and maintain costs
- Rotating flashing beacon (activated during operation)
- Quiet and efficient system operation
- Maximise safety for residents, caretakers and collectors
- Restrained design with minimal moving parts
- Can suit low ceiling clearances
- Floor contact components fully galvanised steel
- Retro fitting options to suit other chutes systems
- Compliant with relevant Building Codes and Standards
- Standard 12 month warranty

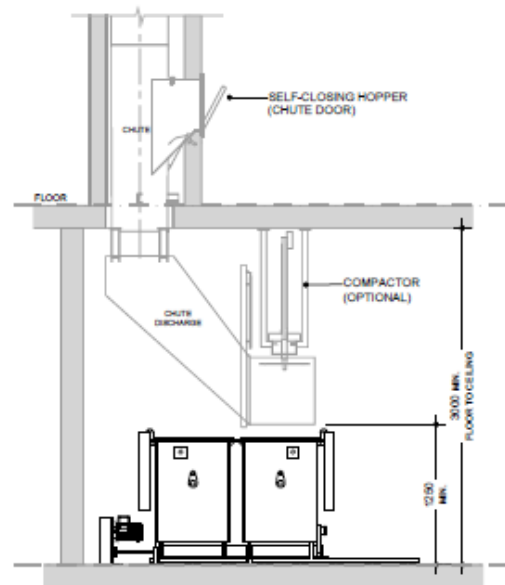
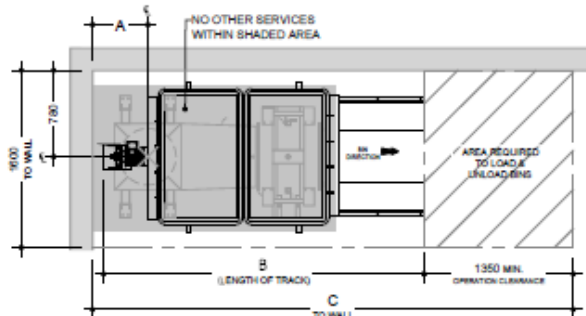


660 LITRE LINEAR TRACK SYSTEM



No. of Bins	Reference (mm)		
	A	B	C
2	500	2950	4350
3	1450	4850	6050
4	2300	6300	7750

Available with or without compaction unit, our standard 240 litre bin Linear Track System can support 2, 3 or 4 bin quantities.



Notes:
Bins not provided by Elephants Foot

Drawings shown are for general information purposes only and provide minimum equipment spatial requirements for waste room design.

These drawings are not intended for site specific use or for construction. Each project is unique and will be designed to suit.

Additional equipment options, systems and configurations are available. For design assessment, information and advice, please contact an Elephants Foot design consultant on 1300 435 374

Please Note: This is an example only – please refer to supplier's information and specification

APPENDIX: B.3 TYPICAL LINEAR TRACK SYSTEM FOR 1100L MGBS



ELEPHANTS FOOT RECYCLING SOLUTIONS
 44-46 GIBSON AVE. PADSTOW NSW 2211
 E info@elephantsfoot.com.au W elephantsfoot.com.au
 Free Call: 1300 4 ELEPHANT (1300 435 374)

1100 LITRE LINEAR TRACK SYSTEM

PRODUCT INFORMATION

Elephants Foot 1100 Litre bin Linear Track System is a versatile waste handling solution for many types of multi-storey or multi-level developments. The Linear Track System collects waste or recycling being disposed from the floors above through the chute system, discharging the material via a hopper that feeds the bins. Electromechanically driven with automated operation, the system utilises linear motion to automatically change over full bins. Once all the bins are filled, an indicator light will illuminate signifying that the bins are ready for withdrawal and collection. Available with or without compaction unit, our standard 660 litre bin Linear Track System is available in the standard 2 bin option. Our 3 Bin option is available as a special order.



SPECIFICATIONS

System Control	Electric PLC
Power Supply	415 V AC / 10A / 5 PIN
Motor Size (kW)	1.1
Maximum bin load	440 kg
Noise (dBA)	<85
Bin Size (L)	1100
Cycle time (sec)	60
Bin Quantity options	2 or 3

OPTIONAL EXTRAS

- Compaction unit – Please refer to the bin compactor product information sheet for details and specifications
- Enhanced safety add on's – Interlocking barriers, occupancy sensors or safety light curtains (presence sensing light barriers)
- Full bin SMS and email notification
- CMMS and BMS integration
- Extend warranty – Terms and conditions apply

STANDARD FEATURES & BENEFITS

- Simple operation with user friendly controls
- Increased waste servicing efficiency for the development.
- Automatic system control with manual override
- Robust unit construction for long performance life
- Low service and maintain costs
- Rotating flashing beacon (activated during operation)
- Quiet and efficient system operation
- Maximise safety for residents, caretakers and collectors
- Restrained design with minimal moving parts
- Can suit low ceiling clearances
- Floor contact components fully galvanised steel
- Retro fitting options to suit other chutes systems
- Compliant with relevant Building Codes and Standards
- Standard 12 month warranty

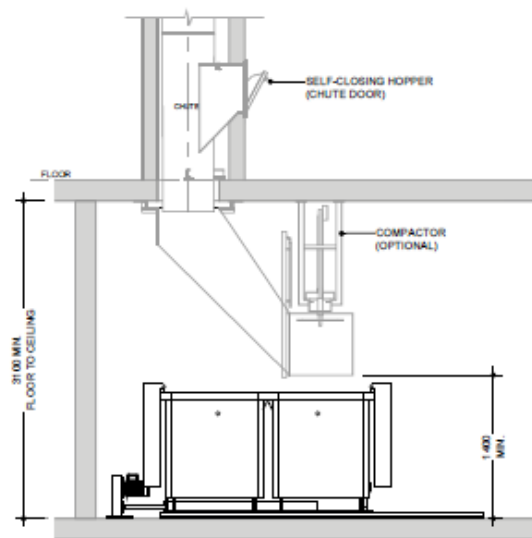
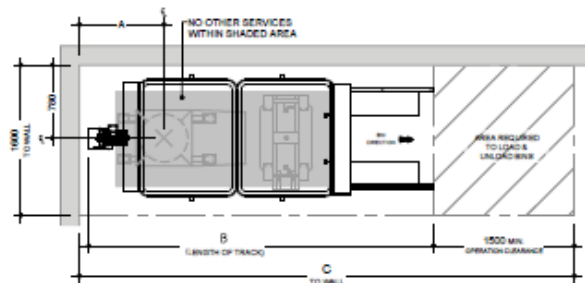


1,100 LITRE LINEAR TRACK SYSTEM



No. of Bins	Reference (mm)		
	A	B	C
2	900	3700	5300
3	2100	5940	7550

Available with or without compaction unit, our standard 1100 litre bin Linear Track System is available in the standard 2 bin option. Our 3 Bin option is available as a special order.



Notes:
Bins not provided by Elephants Foot

Drawings shown are for general information purposes only and provide minimum equipment spacial requirements for waste room design.

These drawings are not intended for site specific use or for construction. Each project is unique and will be designed to suit.

Additional equipment options, systems and configurations are available. For design assessment, information and advice, please contact an Elephants Foot design consultant on 1300 435 374

Please Note: This is an example only – please refer to supplier's information and specification

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



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

Wheelie bin

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



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

Dome or flat lid container

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 AND 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

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 B3.1: Collection vehicle dimensions

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

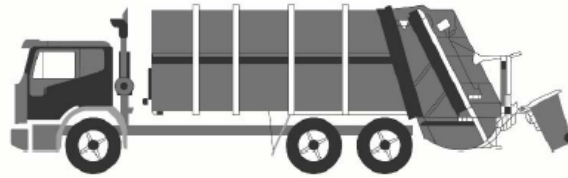
Vehicle class	Overall length (m)	Design width (m)	Design turning radius (m)	Swept circle (m)	Clearance (travel) height (m)
Medium rigid vehicle	8.80	2.5	10.0	21.6	4.5
Heavy rigid vehicle	12.5	2.5	12.5	27.8	4.5
loading (m)					
Vehicle tare weight (t)	13.1	11.8	16.7	13.0	13.0
Maximum payload (t)	10.0	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 D: SECONDARY WASTE MANAGEMENT PROVISIONS

APPENDIX: D.1 EXAMPLE HANDHELD BIN MOVERS

movexx
 smart electric tugs

MOVEXX T2500 BIN MOVER BATTERY ELECTRIC

Movexx T2500 Tow Tug is an extremely user friendly battery powered mobile towing unit that is ideal for applications where trolleys and rolling objects need to be moved from one place to another simply, efficiently and without physical effort. Some standard features included are: battery indicator, on board battery charger, battery, adjustable handle, dual speed and electric brake.

These units are fitted with an electromagnetic brake system for use on ramps and slopes.

Features

- Electromagnetic brake for use on ramps and slopes
- Adjustable height handle



SPECIFICATION

MODEL	DIMENSIONS (MM)	OPTIONS	PULL - PUSH CAPACITY (KG)	BATTERY
T2500-D	511 (w) x 757 (l)	* Centre mount 2x 240 lt. wheelie bin attachment	2500	AGM batteries 2x 85AH up to 8 hrs continuous operation
TOWING CAPACITY - ON FLAT GROUND (all models)			TOWING CAPACITY - SLOPE (all models)	
Towing up to 4x 660 lt. Wheelie Bin			Towing up to 2x 660 lt. Wheelie Bin Up / Down maximum 25% (1:4 slope)	
Towing up to 4x 1100 lt. Wheelie Bin			Towing up to 1x 1100 lt. Wheelie Bin Up / Down maximum 25% (1:4 slope)	
**Electromagnetic brake for use on ramps and slopes				



APPENDIX: D.2 EXAMPLE SEATED BIN MOVERS



MOTREC MT180 36V BATTERY ELECTRIC BIN MOVER

This hardworking tow device delivers outstanding performance. With its efficient motor and 4,500kg push-pull capacity. The MT180 is ideal for moving bin trailer also narrow enough to fit through most door openings. From its all-steel construction to its all-wheel braking, this tow tractor is built for years of heavy use in total comfort and safety. All this combined with superior AC technology makes short work of tough requests.

Features

- Front & rear brakes
- Pneumatic Tyres
- Comfortable ergonomic adjustable seat
- Complete with headlight, break lights, tailing lights & horn



SPECIFICATION

MODEL	DIMENSIONS (MM)	OPTIONAL EXTRAS	PULL - PUSH CAPACITY (KG)	BATTERY
MT180 36V	760 (w) x 2030 (l) x 1160 (h)	Flashing light on pole Conditional registration kit Cabin includes windscreen Weather Curtains	4500	48v TPPL battery pack, 157AH

TOWING CAPACITY - ON FLAT GROUND / SLOPE (all models) (all models)

Towing up to 5x 660 lt. Wheelie Bin Up / Down maximum 25% (1:4 slope)

Towing up to 4x 1100 lt. Wheelie Bin Up / Down maximum 25% (1:4 slope)



Please Note: This is an example only – please contact supplier for specific recommendations.
Source: Sitecraft - www.sitecraft.net.au

APPENDIX: D.3 EXAMPLE BIN TRAILERS



BIN TRAILER WITH ALUMINUM RAMP

Bin trailer suitable for moving 240lt, 660lt and 1,100lt bins including a 1200mm rear ramp complete with locking latches and gas strut assist. Height draw bar fitted with a jockey wheel large pneumatic tyres with precision bearing hubs



SPECIFICATION

MODEL	DIMENSION (MM)	SUITABLE FOR MOVING	PART NUMBERS	REAR RAMP DIMENSION (MM)
4x Bins Trailer	Internal - 1560 (l) x 1200 (w)	4x 240lt. Wheelie Bin	78811604	1200mm rear ramp complete with positive locking and gas strut assist
	External - 2300 (l) x 1500	2x 660lt. Wheelie Bin		
		1x 110lt. Wheelie Bin		
6x Bins Trailer	Internal - 2350 (l) x 1200 (w)	6x 240lt. Wheelie Bin	78811065	1200mm rear ramp complete with positive locking and gas strut assist
	External - 3100 (l) x 1500 (w)	3x 660lt. Wheelie Bin		
		2x 1100lt. Wheelie Bin		
8x Bins Trailer	Internal - 3200 (l) x 1200 (w)	8x 240lt. Wheelie Bin	78811066	1200mm rear ramp complete with positive locking and gas strut assist
	External - 3900 (l) x 1500 (w)	4x 660lt. Wheelie Bin		
		3x 1100lt. Wheelie Bin		
10x Bins Trailer	Internal - 3900 (l) x 1200 (w)	10x 240lt. Wheelie Bin	78811067	1200mm rear ramp complete with positive locking and gas strut assist
	External - 4600 (l) x 1500 (w)	5x 660lt. Wheelie Bin		
		4x 1100lt. Wheelie Bin		

OPTIONS

- Full registration
- Upgrade Includes : Lights | Wiring | Suspension | aaa Tyres | Compliance Plate

Please Note: This is an example only – please contact supplier for specific recommendations.
 Source: Sitecraft - www.sitecraft.net.au

APPENDIX: D.4 EXAMPLE BIN LIFTER FOR 240L BINS

versatip

Versatip Bin Tipper – 1500mm Tip



Specifications

Product Code	69121009
Product Name	1500mm Tip – Battery Powered
Capacity (kg)	250
Height (mm)	2085
Length (mm)	1330
Power Source	Battery Powered
Tipping Height (mm)	1500
Width (mm)	990

Please Note: This is an example only – please contact supplier for specific recommendations.

Source: Elephants Foot Equipment - www.elephantsfoot.com.au/equipment/

APPENDIX: D.5 EXAMPLE BALER

EF 300

This baler is suitable for premises with substantial waste. It produces an excellent bale of plastic or cardboard. It is an excellent starter machine for mill size bales.

EF300 baler produces bales of cardboard up to 250kg, making it possible to gain revenue on bales. It can be used to bale a range of materials including plastic and cardboard.

Features

- Two hand control for safe bale ejection
- Produces up to 250 kg bale cardboard which can be sold
- Visual bale full indicator informs operator when bale is full
- Automatic cycle saves labour time
- User friendly push button controls
- Robustly constructed for long life
- IP55 rated so machine can be situated outdoors



Excellent starter machine for mill size bales



Two hand control for safe bale ejection.



IP55 rated so machine can be situated outdoors



The robust construction ensures a long life span.

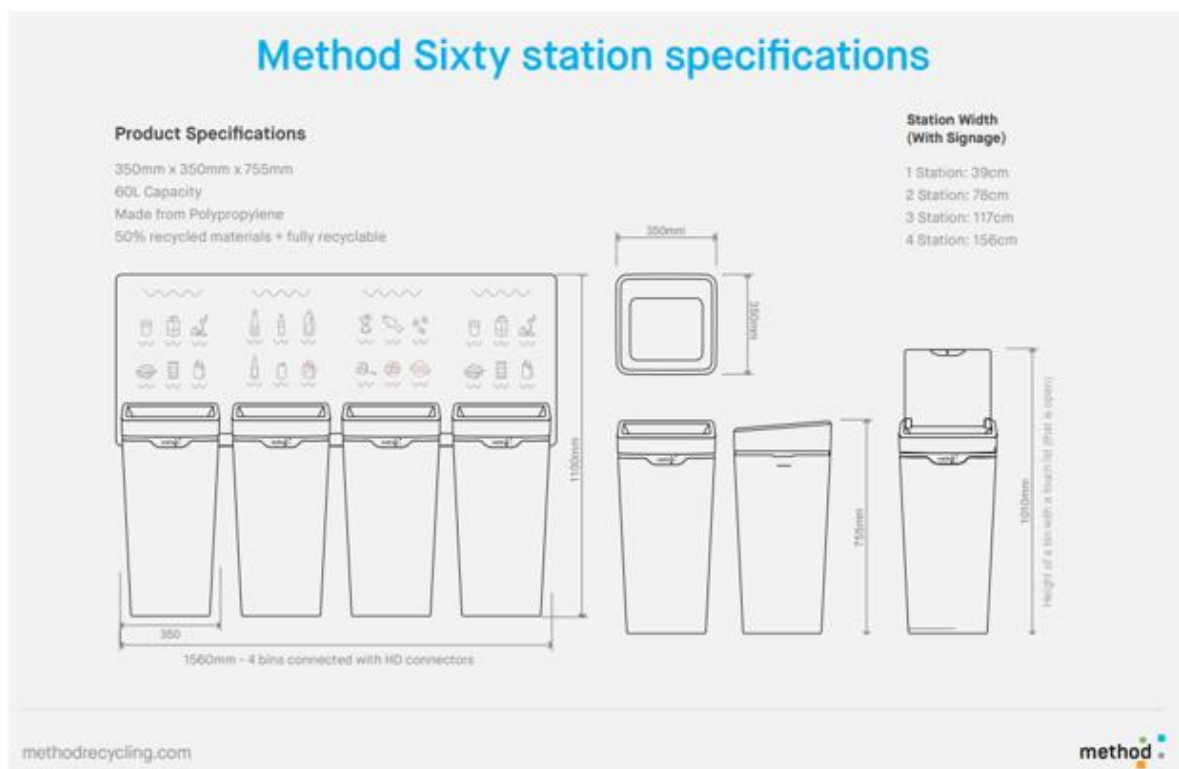
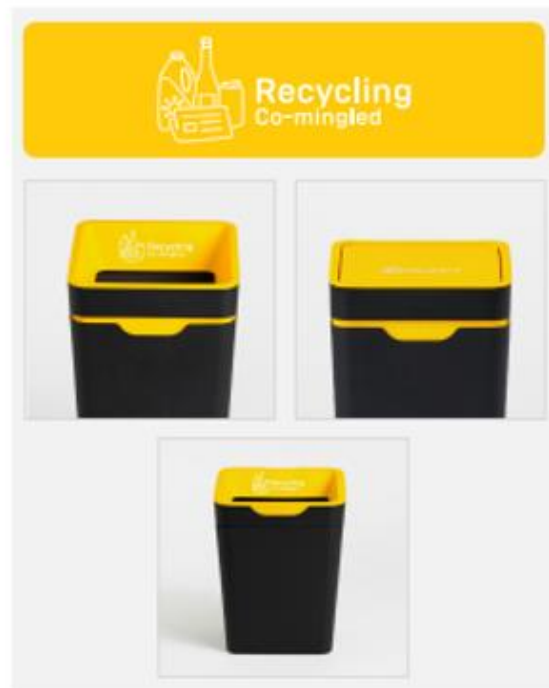
Specifications

Dimensions HxWxD	2900x1500x1050
Feed Opening L x H (mm)	1100x500
Weight (Kg)	1900
Cycle Time (sec)	30
Compaction Force (T)	30
Power Supply (V)	415v 3 phase 20A
Motor (kW)	5.5kw
Chamber Height (mm)	1400
BALE DIMENSIONS	
HxWxD (mm):	900x700x1100
Bale Weight (kg):	Up to 250 (cardboard)

Please Note: This is an example only – please contact supplier for specific recommendations.

Source: Elephants Foot Equipment - www.elephantsfoot.com.au/equipment/

APPENDIX: D.6 EXAMPLE SOURCE SEPARATION RECEPTACLES



Source: Method Recycling - www.methodrecycling.com

APPENDIX: D.7 TYPICAL COOKING OIL CONTAINERS



Drums 205L



Pour in Bulk Tank

[View Brochure](#)



Oil Kaddy System

[View Brochure](#)



Eco System 700L Fixed

Eco System 310L mobile

Eco Systems



Direct-Connect to Fryer

APPENDIX: D.8 TYPICAL SOURCE SEPARATION BINS



Source: <https://www.sourceseparationsystems.com.au/>