410-416 Victoria Ave, Chatswood NSW 2067

Mixed-Use

OPERATIONAL WASTE MANAGEMENT PLAN

24/03/2025
Report No. 6540
Revision C

Client

Novus Management Pty Ltd
https://www.novusaus.com/

Architect

FENDER KATSALIDIS
https://fkaustralia.com/

ABN: 47 644 736 514
ELEPHANTS FOOT CONSULTING. PTY LTD
1300 456 374 | consulting@elephantsfoot.com.au
www.elephantsfoot.com.au

REVISION REFERENCE

Revision	Date	Prepared by	Reviewed by	Description
A	19/02/2025	S. Dib	T. McPherson	Draft
B	21/03/2025	T. McPherson	J. Parker	Amendment
C	24/03/2025	T. McPherson	J. Parker	Final (Watermark Removal)

Consulting
an Elephants Foot Company

ABN: 47 644 736 514
ELEPHANTS FOOT CONSULTING. PTY LTD
1300 456 374 | consulting@elephantsfoot.com.au
www.elephantsfoot.com.au

TABLE OF CONTENTS

LIST OF TABLES

GLOSSARY OF ABBREVIATIONS AND TERMS

TERM	DESCRIPTION
Bin-Carting Route	Travel path for transporting bins from their allocated storage location to the nominated collection point
Bin Hoist	A device used for lifting or lowering bins between different levels
Bin Lifter	A device used to mechanically lift bins for the purpose of emptying them into larger bins and/or compactors.
Bin Mover	Either a handheld device (commonly referred to as a bin tug) or a ride-on device (typically a tractor or Class C vehicle with an attached bin trailer) used to facilitate the movement of bins across long distances or up ramps
Bulky Waste	Recycling items that are too large to be deposited into bins, including furniture, whitegoods, electronics and mattresses
Chute	A vertical pipe passing from floor to floor of a building with openings at each level for the disposal of general waste, recycling or FOGO.
Chute Discharge	The termination point of a chute whereby the chute offsets deposited general waste, recycling or FOGO into bins
Chute Discharge Room	A room enclosing the termination point of the chute/s, including bins and volume handling equipment that is accessible only to the building caretaker
Collection Area/Point	Designated area or point where bins are loaded onto the collection vehicle for servicing
Communal Bin Room	A central, shared bin room accessible to all residents or staff to dispose of their waste stream
DA	Development Application
DCP	Development Control Plan
EPA	Environment Protect Authority
FOGO	Food organics and garden organics
General Waste	All non-recyclable and non-hazardous waste that is sent to landfill
HRV	Heavy Rigid Vehicle
Kerbside Collection	A collection arrangement whereby bins are presented in a single row along the kerb and serviced by a collection vehicle on the street.
L	Litre
LEP	Local Environmental Plan
Mixed Use Development	A development comprising a combination of both residential and commercial units or two or more different land uses within the one development.
Mobile Bins	Containers with a capacity up to and including 1100L designed to be

	collected by a rear-loading vehicle
Multi-unit Residential Development	Also known as MUD's, residential flat buildings, or apartment blocks, this is a residential development with multiple units that typically share facilities and services such as bins and collections.
Onsite Collection	A collection arrangement whereby all bins are serviced by a collection vehicle within the property boundary, either in the building's basement or at grade and off-street.
Owners Corporation	An organisation or group of persons that is identified by a particular name and that acts, or may act, as an entity
Recycling	Waste stream that combines all recycling, including comingled recycling, paper/cardboard and metals.
Service Bins	Supplementary bins which are provided to residents or staff for use during collection periods either in communal bin rooms or under chutes
Source Separation Receptacles	Communal containers used throughout the development for the day-to-day disposal of different waste streams
Volume Handling Equipment	Equipment which comes in the form of either carousel or linear tracks positioned at the base of the chute/s to mechanically replace full bins with empty bins
Waste Stream	A classification used to describe waste of a particular type (eg. food waste stream)
WHS	Workplace Health and Safety

1.0 ACKNOWLEDGEMENT OF COUNTRY

Elephants Foot Consulting (EFC) acknowledges that every project we work on takes place on First Peoples land. We recognise Aboriginal and Torres Strait Islander People as Traditional Custodians of this land. We pay respect to ancestors and Elders, past and present.

2.0 INTRODUCTION

This Operational Waste Management Plan has been prepared by T. McPherson to support a State Significant Development Application (SSDA) for the redevelopment of 410-416 Victoria Avenue, Chatswood (the Site), comprising the construction and operation of a Build-to-Rent (BTR) shop-top housing development.

2.1 SCOPE OF REPORT

This 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.

2.2 REPORT CONDITIONS

The purpose of this report is to document an OWMP as part of a development application, which is supplied by EFC 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 EFC,
- 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 EFC will not be liable for plans or results that are not suitable for purpose due to incorrect or unsuitable information or otherwise,
- EFC 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 chute equipment and systems must be approved by the supplier,
- EFC cannot be held accountable for late changes to the design after the OWMP has been submitted to Council,
- EFC 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,
- EFC 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.

3.0 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:

- Willoughby Development Control Plan 2023
- Willoughby Local Environmental Plan 2012

The primary purpose of a Development Control Plan (DCP) is to guide the planning process according to the aims of the corresponding local environmental plan (LEP). Under Section 2.10 of the Planning Systems SEPP, DCPs do not apply to State Significant Development and are not a relevant matter for consideration in the assessment of such applications. Notwithstanding, the Willoughby DCP has been referred to as a guide for the purposes of this report.

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:

- North Sydney Regional Organisation of Councils (NSROC): Waste Management Technical Guide and Development Controls 2018
- NSW Better Practice Guide For Resource Recovery In Residential Developments 2019
- NSW Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities 2012
- NSW Waste Avoidance and Resource Recovery (WARR) Strategy 2014-2021
- NSW Waste Classification Guidelines 2014
- Australia's National Waste Policy 2018

4.0 SITE DESCRIPTION

The Site is located at 410-416 Victoria Avenue, Chatswood, within the Willoughby City Council Local Government Area (LGA). The Site is located within the Chatswood Central Business District (CBD) and is approximately 50m East of Chatswood Transport Interchange, 5.2km Northwest of the North Sydney CBD and 7.8km Northwest of the Sydney CBD. A Site Location Aerial is provided in Figure 1 below.

Figure 1 – Site Location Aerial (Site highlighted with red outline)
Source: Nearmap

4.1 PROPOSED DEVELOPMENT

This SSDA seeks the redevelopment of the Site for the purposes of a BTR shop-top housing development, with BTR residential accommodation positioned above Ground Floor and Level 1 retail / business premises and lobby areas, as well as associated basement areas, communal recreation spaces and public domain works (the Proposal). Specifically, the Proposal seeks consent for the following:

- Site preparation works including demolition of the existing buildings, excavation and earthworks;
- Construction and use of a 46-storey BTR shop-top housing development comprising:
  - Ground Floor and Level 1 retail / business premises and lobby areas;
  - Residential amenities at Levels 2 and 6 including a pool and gym, as well as a communal outdoor terrace on the podium rooftop;
  - 260 BTR dwellings;
  - Mid-rise residential amenities including a communal outdoor terrace; and
  - Upper-level communal spaces on L44 including coworking facilities, lounge and dining area.
- Landscaping and associated public domain works throughout the ground floor and podium areas.
- Construction of three (3) basement levels, comprising resident car parking, loading facilities, plant and associated basement level uses.
- Extension and augmentation of services and infrastructure and services as required.

From May to July 2024, the Proposal was the subject of a Design Excellence Competition under Clause 6.23 of the Willoughby Local Environmental Plan 2012 (Willoughby LEP). Fender Katsalidis was awarded the winner and has been retained as the project architect for the Proposal. The abovementioned SSDA reflects the winning competition scheme prepared by Fender Katsalidis.

Development for the purposes of BTR located within the Eastern Harbour City (as identified in the Six Cities Region), with an Estimated Development Cost (EDC) of more than $50 million, and a tenanted component of at least 60% of the total EDC, is identified in Schedule 1 of State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP) to be State Significant Development (SSD) pursuant to the Environmental Planning & Assessment Act 1979 (EP&A Act).

Further, under Section 2.10 of the Planning Systems SEPP, Development Control Plans (DCPs) do not apply to SSD and are not a relevant matter for consideration in the assessment of such applications. Notwithstanding, the Willoughby DCP 2023 (Willougby DCP) has been referred to as a guide on certain matters (where appropriate). A further detailed description of the Site, the Proposal and applicable legislation is contained in the supporting Environmental Impact Statement (EIS) prepared for the SSDA by Ethos Urban.

5.0 RESIDENTIAL WASTE MANAGEMENT

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

5.1 RESIDENTIAL WASTE GENERATION ESTIMATES

The *'NSROC Waste Management Technical Guide 2018'* has been referenced to calculate the total number of bins required for the residential units. Calculations are based on generic general waste, and recycling. The FOGO rates have been calculated with accordance to the NSW EPA's *'Better practice Guidelines for Resource Recovery in New Developments 2019'* for the estimation of FOGO volumes.

Actual volumes of general waste, recycling and FOGO generated in operation may differ according to the residents' actual waste management practices. The following table shows the estimated volume (L) of general waste, recycling and FOGO generated by the residential component of the development.

Table 1: Estimated Waste, Recycling and FOGO Volumes – Residential

# Units	General Waste Generation Rate (L/unit/week)	Generated General Waste (L/week)	Recycling Generation Rate (L/unit/week)	Generated Recycling (L/week)	FOGO Waste Generation Rate (L/unit/week)	Generated FOGO Waste (L/week)
260	140	36400	120	31200	30	7800
Bins & Collections	General Waste Bin Size (L)	1100	Recycling Bin Size (L)	1100	FOGO Waste Bin Size (L)	240
	General Waste Collections per Week	2	Recycling Collections per Week	2	FOGO Waste Collections per Week	2
	Total General Waste Bins Required	**17**	**Total Recycling Bins Required**	**15**	**Total FOGO Waste Bins Required**	**17**

5.2 RESIDENTIAL BIN SUMMARY

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

General Waste: 17 x 1100L bins collected **2 x weekly.**
Recycling: 15 x 1100L bins collected **2 x weekly.**
FOGO: 17 x 240L bins collected **2 x weekly.**

During operation, it is the responsibility of the building manager to monitor the number of bins required for the residential component of the development. General waste, recycling and FOGO volumes may change according to residents' attitudes to waste disposal, building occupancy levels or the development's management.

Any requirements for adjusting the capacity of the waste facilities may be achieved by changing the number of bins, the bin sizes or collection frequencies. Building management

will be required to negotiate any changes to bins or collections with the collection service provider.

5.3 RESIDENTIAL CHUTE DISCHARGE EQUIPMENT SUMMARY

Based on the estimated general waste and recycling volumes generated by each building core at this site, less than 1 day's capacity is the maximum that can be achieved. As a result, the following equipment is recommended:

Table 2: Chute Discharge Equipment Summary

General Waste			Recycling		
Generated General Waste (L/week)	**# 1100L Bins Required for 1 days' Capacity**	**Recommended Chute Discharge Equipment**	**Generated Recycling** (L/week)	**# 1100L Bins Required for 1 days' Capacity**	**Recommended Chute Discharge Equipment**
36400	4.73	3-bin 1100L Linear Track System	31200	4.05	2-bin 1100L Linear Track System

Due to spatial restrictions, a 3-bin linear track system for waste and a 2-bin linear track system for recycling has been proposed. This can be operationally feasible if building management monitors the fullness of bins regularly, or installs an automatic alert system for when the bins become full and the bins are rotated more than once a day.

Daily rotations will be performed by the building manager through regular walkthroughs when required. The above is a recommendation only and equivalent volume handling equipment may be used subject to equipment supplier's recommendation/review.

5.4 RESIDENTIAL WASTE DISPOSAL PROCEDURES

The following sections outline the procedures the resident will follow to dispose of general waste, recycling and FOGO:

5.4.1 RESIDENTIAL GENERAL WASTE AND RECYCLING DISPOSAL PROCEDURES

Dual chute systems comprising of a single general waste chute and single recycling chute will be installed. Access will be provided to all residents on each residential level. Residents will be responsible for walking their own general waste and recycling to their allocated disposal point and placing their general waste into the general waste chute and recycling into the recycling chute.

Residents will wrap or bag their general waste before placing in the general waste 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 recycling 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. Cardboard cupboards on each floor for bulky cardboard waste/irregular shaped items are present for disposal.

The general waste and recycling will discharge from each chute into their respective 1100L bins on carousel track systems in the chute discharge room located on the Basement 03 level. The building manager will monitor bin capacities under the dual chute systems and exchange full bins with empty bins on the track systems when required. Full and spare bins will be kept in the chute discharge room as well.

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

5.4.2 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 clippings from residential units can also be disposed of with the FOGO.

The building will be provided with a communal FOGO bin room which contains 240L bins for FOGO. The residents will be responsible for walking their own FOGO down to the communal FOGO bin room and placing it into the bins.

Building management is responsible for ensuring that the communal FOGO bin room and FOGO bins are washed down frequently to ensure that hygiene and odour is managed.

5.5 RESIDENTIAL BIN COLLECTION PROCEDURES

A private contractor will be engaged to collect residential general waste, recycling, and FOGO in accordance with an agreed-upon collection schedule. This report assumes that all waste streams will be collected twice weekly.

The building manager/caretaker is responsible for ensuring that the loading area is clear of vehicles or obstructions before waste collection. They must also ensure that the bins are properly arranged for efficient collection.

On collection day, the private contractor's vehicle will enter the site from Post Office Lane and park in the loading area. The building manager/caretaker will ensure that the collection staff have access to the collection point. The collection staff will exit the vehicle and transport the bins from the chute discharge room and the communal FOGO bin room in Basement 3 to the ground floor loading area using the allocated refuse lift. Once the bins are serviced, the staff will return the empty bins to their original locations.

Upon completion of servicing, the collection vehicle will exit the site onto Post Office Lane in a forward direction. The building manager/caretaker is responsible for returning the bins to their designated operational locations for continued use.

All access routes and clearances to the waste collection point have been designed to accommodate an SRV (private contractor).

5.6 OTHER RESIDENTIAL WASTE MANAGEMENT CONSIDERATIONS

The following sections outline other waste management considerations for the residential components.

5.6.1 RESIDENTIAL COMMON AREAS

Residential common areas will be supplied with suitably branded source separation receptacles where considered appropriate. Residential common areas will also have access to the residential chute room. Receptacles should be placed in convenient locations which are accessible to all residents. The building manager will monitor the capacity of these receptacles and empty the contents into the central collection bins as required.

5.6.2 LANDSCAPED AREAS AND GARDEN ORGANICS

Garden organics generated from landscaped areas and indoor foliage typically consists of cuttings, leaves and branches. These will be managed and removed from the site by the designated landscaping contractors as they carry out scheduled landscaping maintenance works. Garden organics generated from within residential units will be managed by the residents and should be disposed of into the FOGO bins.

5.6.3 RESIDENTIAL BULKY WASTE PROCEDURES

An area will be made available for the storage of discarded residential bulky waste items (e.g. whitegoods, furniture, etc.). The bulky waste room is located in basement 3 directly adjacent to the refuse lift that services the loading dock. Residents can transport their goods to the bulky goods room using the tower goods lift.

Willoughby Council requires that size of the bulky waste room provided is proportional to the number of units in the building at a rate of $10m^2$ for the first 40 units then $2m^2$ for every 10 units thereafter at per the *NSROC Waste Management Guidelines 2018*.

Based on this rate, the bulky waste room required for this development is as follows;

Bulky Waste Room Size

$$\left[\left(\frac{260-40}{10}\right)\times 2\right]+10=54m^2$$

Bulky waste storage area: minimum $54m^2$

Residents will need to liaise with building management regarding the transportation of bulky items and the availability of the bulky waste room. It is the caretaker's responsibility to arrange collection dates with a private contractor and coordinate these times with the residents.

On the day of bulky waste collection, a private contractor's collection vehicle will enter the site via Post Office Lane and park in the loading bay. Collection staff will collect the bulky waste items from the bulky waste room. Once bulky items have been loaded onto the vehicle, the collection vehicle will exit the site onto Post Office Lane in a forward direction.

6.0 RETAIL WASTE MANAGEMENT

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

6.1 RETAIL WASTE GENERATION ESTIMATES

The 'NSROC Waste Management Technical Guide 2018' has been referenced to calculate the total number of bins required for the anticipated tenants. Calculations are based on generic generation rates. Actual volumes of waste and recycling may differ in operation according to the tenants' actual waste management practices.

The following table shows the estimated volume (L) of general waste and recycling that will be generated by the retail tenants. The estimates are based on a seven-day operating week.

Table 3: Estimated Waste and Recycling Volumes – Retail

Tenancy Type	Category	Floor Area (m^2)	General Waste Generation Rate (L/100m^2/day)	Generated General Waste (L/week)	Recycling Generation Rate (L/100m^2/day)	Generated Recycling (L/week)
Café (GF)	**Restaurant, Café**	**85**	660	3927	120	714
Restaurant + Bar/ Bistro (GF)	**Restaurant, Café**	**302**	660	13952	120	2537
Dining Room + Kitchen (L1)	**Restaurant, Café**	**708**	660	32710	120	5947
TOTAL		**1095**		**50589**		**9198**
Bins & Collections			General Waste Bin Size (L)	1100	Recycling Bin Size (L)	1100
			General Waste Bins per Day	6.6	Recycling Bins per Day	1.2
			General Waste Collections per Week	5	Recycling Collections per Week	5
			Total General Waste Bins Required	**10**	**Total Recycling Bins Required**	**2**

6.2 RETAIL BIN SUMMARY

Based on the estimated waste and recycling volumes generated by the retail tenancies, the recommended bin quantities and collection frequencies are as follows:

General Waste: 10 x 1100L bins collected **5 x weekly.**
Recycling: 2 x 1100L bins collected **5 x weekly.**

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 should also be considered.

6.3 RETAIL WASTE DISPOSAL PROCEDURES

All tenancies will be responsible for their own general waste and recycling disposal procedures within their own vicinity. On completion of each trading day or as required, nominated staff or contracted cleaners will transport all general waste and recycling to the retail bin room and place into the appropriate collection bins.

6.4 RETAIL WASTE COLLECTION PROCEDURES

A private waste contractor will be engaged to service the retail general waste and recycling bins as per an agreed collection schedule. This report assumes that general waste and recycling is collected with the frequencies listed in section 6.2.

On the day of service, a private waste collection vehicle will enter the site from Post Office Lane and park in the loading area. The building caretaker will provide the driver with access to the retail waste room. Contractors will park on the loading bay during designated collection periods, and will transport the bins via the bin hoist from B3 to the ground level. Once the bins are serviced, the collection vehicle will exit the site onto Post Office Lane in a forward direction.

Please note: The collection of retail bins should occur on separate days from the collection of residential bins to ensure proper segregation of waste streams.

6.5 OTHER RETAIL WASTE MANAGEMENT CONSIDERATIONS

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

6.5.1 WASHROOM FACILITIES

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.

6.5.2 FOOD WASTE

Kitchens, tearooms, and service and food preparation areas will be provided with a dedicated receptacle to collect food waste. Staff or cleaners will be responsible for monitoring these receptacles and transferring food waste to the central food waste bins when full.

6.5.3 LIQUID WASTE

Liquid wastes as such cleaning products, chemicals, paints, solvents, and motor and cooking oil will be stored in a secure room and enclosed by a low wall intended to contain any liquid spillage or inundation to other areas. Liquid waste will be drained to a grease trap, in accordance with legislation and the requirements of State government authorities and agencies. Further information can be provided by the Services Consultant.

6.5.4 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 the general waste stream as they can have adverse impacts to human health and the

environment if disposed of in landfill. Retail tenants must liaise with the building manager when disposing of problem waste streams.

Problem waste streams include chemical wastes, liquid wastes, toner cartridges, lightbulbs, batteries and eWaste.

7.0 STAKEHOLDER ROLES & RESPONSIBILITIES

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

Table 4: Stakeholder Roles and Responsibilities

Roles	Responsibilities
Management	• Co-ordinate the waste strategy within the site. • Ensure all waste service providers submit monthly reports on all equipment movements and waste quantities/weights. • Organise internal waste audits/visual assessments on a regular basis. • Purchase any on-going waste management equipment or maintenance of equipment once building is operational; and • Manage any non-compliances/complaints reported through waste audits. • Co-ordinate general waste, recycling and FOGO collections • Clean and transport bins as required. • Maintain and clean chute doors on each level. • Organise replacement or maintenance requirements for bins. • Organise, maintain and clean bin storage areas. • Organise bulky waste collections when required. • Investigate and ensure prompt clean-up of illegally dumped waste materials. • Prevent storm water pollution by taking necessary precautions (secure bin rooms, prevent overfilling of bins). • Abide by all relevant WH&S legislation, regulations, and guidelines. • Provide staff/contractors with equipment manuals, training, health and safety procedures, risk assessments, and PPE to control hazards associated with all waste management. • Assess any manual handling risks and prepare a manual handling control plan for bin transfers. • Ensure site safety for residents, children, visitors, staff and contractors; and • Ensure effective signage, communication and education is provided to occupants, tenants, maintenance staff, and cleaning contractors.
Residents	• Dispose of all general waste, recycling and FOGO in the allocated chutes and/or bins provided. • Ensure adequate separation of general waste, recycling and FOGO; and • Comply with the provisions of Council and the OWMP.
Retail Tenants	• Management co-ordinates own private contractor collections. • Manage general waste and recycling within their tenancy during daily operations. • Correctly separate general waste and recycling streams. • Flatten cardboard within the recycling bin. • If required, arrange for storing used and unused cooking oil in a bunded area, • Organise grease interceptor trap servicing, and • Ensure the suitable storage for chemicals, pesticides and cleaning products waste back of house.
Waste Collection Contractor	• Provide a reliable and appropriate bin 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	• Remove all garden organics generated during gardening maintenance activities for recycling at an offsite location.

8.0 SOURCE SEPERATION

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	Waste should be bagged before placing in chutes.
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 chute. Bulky cardboard must not be placed in any chute. Cardboard should be flattened before placing in the designated cardboard recycling bin.
FOGO	FOGO consists of unwanted or uneaten kitchen scraps that are easily compostable/biodegradable (e.g. vegetable peels, fruit rinds, coffee grounds) and garden organics including lawn clippings, leaves, pruning's and branches.	Composting Facility	FOGO should be bagged in compostable liners when deposited into the chute/s or bins and will be collected by Council.
Garden Organics	Garden organics 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 garden organics from site during scheduled maintenance. Garden organics will be collected in Council or private contractor bins and removed from site.
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.
Bulky Waste 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	Residents liaise with building manager to store in bulky waste room. Building manager arranges with Council for removal. Retail tenants are responsible for removal of their bulky items.
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.

9.0 EDUCATION

Educational material encouraging correct separation of general waste, recycling and FOGO 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 Manager's website provide information in multiple languages to support correct behaviours, and to minimise the possibility of chute blockages and contamination in communal bins.

Education and communication must be provided consistently on a regular basis to encourage behaviour change and account for transient building personnel such as new residents, tenants, or cleaning staff. It is also recommended that the owners' corporation website contain information for residents' referral regarding use of the chute. Information should include:

- Directions on using the chute doors;
- Descriptions of items accepted in the general waste, recycling and FOGO streams (refer to Council guidance);
- How to dispose of bulky waste and any other items that are not general waste, recycling or FOGO (refer to Council guidance);
- Residents' obligations to health and safety as well as building management; and
- How to prevent damage or blockages to the chute (example below).

9.1 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 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 chute doors on all residential levels will be labelled with signs directing chute operations and use of chute door.

All signage should conform to the relevant Australian Standards.

10.0 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

11.0 BIN WASHING

The bins will be cleaned by the building manager periodically to ensure hygiene and minimise odour.

Bin washing can occur within the bin rooms, using the room clean down facilities (i.e tap connection and drain). Alternatively, a specialist bin washing contractor can be engaged to clean the bins to an agreed schedule. The specialist bin contactor would collect the bins from the bin holding area and clean the bins with their specialised vehicle.

12.0 BIN MOVING PATHS

Any movement 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.

As the distance of the bin moving paths exceeds 10m and includes a transfer through levels, a bin moving device and lift will be 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 manager 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.

13.0 EQUIPMENT SUMMARY

Table 6: Equipment Summary

	Part	Qty	Notes
Chutes	Please refer to supplier's information	2	(See APPENDIX: B.1 for Typical Dual Chute Layout)
Chute Equipment	**Waste** 3-Bin 1100L Linear Track System	1	(See APPENDIX B.2 for Typical Linear System)
	Recycling 2-Bin 1100L Linear Track System	1	(See APPENDIX B.2 for Typical Linear System)
Other Equipment	Suitable Bin Moving Equipment	1	(See APPENDIX: D.1 and APPENDIX: D.2 for Typical Bin Movers)

14.0 WASTE ROOMS

The areas allocated for waste storage and collection areas are detailed in the table below and are estimates only.

The equipment recommended in the chute discharge rooms is to manage 1 days' worth of estimated general waste and recycling from that building core. Therefore, this represents the minimum equipment required in these rooms to satisfy best practice requirements. Additional bins or volume handling equipment can be included in these rooms to increase days of capacity or manual labour required in operation.

Table 7: Waste Room Areas

Level	Waste Room Type	Equipment	Estimated Area Required (m^2)	Actual Area Provided (m^2)
Basement 3	Chute Discharge Room	**General Waste**: 1 x 3-Bin Linear Track System 17 x 1100L bins **Recycling**: 1 x 2-Bin Linear Track System 15 x 1100L bins	109	>109
Basement 3	FOGO Bin Room	**FOGO**: 17 x 240L bins	>15	>15
Basement 3	Bulky Waste Room		54	54
Basement 3	Retail Bin Room	**General Waste**: 10 x 1100L bins **Recycling:** 2 x 1100L bins	33	>33

EFC recommends bins sizes, collection frequencies and/or equipment for best practice waste management at this site, however EFC 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.

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 (subject to penetration location) • The chute penetration must have a minimum 500mm clearance of any service pipes or other overhead obstacles • All chute 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 30 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. • Bins must not be stacked in rows that are more than two bins deep.
Communal FOGO Room	• Bins should be arranged so that all bins are accessible. Bins are not to be placed in front of one another or in such a way as to restrict access to the other bins for use. • Rooms must be well ventilated either naturally or mechanically in accordance with AS1668.4.2012 • Cleaning facilities such as hose hock and drainage for odour and hygiene control must be provided. • It is recommended a dustpan and broom is provided in this room for residents to clean up unexpected spillages when using bins.
Bulky Waste 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
Retail Bin Room	• In order to ensure staff safety, all bins should be arranged so they can be accessed without moving another bin • Bins must be coordinated with the hinge of the lid facing the back. This is to allow for ideal access to the bin.

15.0 CONSTRUCTION REQUIRMENTS

Waste room construction must comply with the minimum standards as outlined in the *Willoughby Development Control Plan 2013,* 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.

15.1 ADDITIONAL CONSIDERATIONS

- Waste room floor to be sealed with a two-pack epoxy;
- All corners coved and sealed 1,200mm up, this is to eliminate build-up of dirt;
- Hot and cold water 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.

16.0 USEFUL CONTACTS

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

LOCAL COUNCIL

Willoughby City 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
Sydney Waste	Ph: 02 8661 0031	
Waste Clear	Ph: 1300 525 352	E: admin@wastecleart.com.au

BIN MOVING DEVICE SUPPLIERS

Elephants Foot Equipment	Ph: 1300 435 374	E: equipment@elephantsfoot.com.au
Sitecraft	Ph: 1300 363 152	E: sales@sitecraft.com.au

BALER SUPPLIERS

Elephants Foot Equipment	Ph: 1300 435 374	E: equipment@elephantsfoot.com.au

ORGANIC DIGESTERS AND DEHYDRATORS

Elephants Foot Equipment	Ph: 1300 435 374	E: equipment@elephantsfoot.com.au
Waste Master	Ph: 1800 614 272	E: hello@wastemasterpacific.com.au

COOKING OIL CONTAINERS AND DISPOSAL

Cookers	Ph: 1300 882 299	E: info@cookers.com.au
Auscol	Ph: 1800 629 476	E: sales@auscol.com

ODOUR CONTROL

Elephants Foot Equipment	Ph: 1300 435 374	E: equipment@elephantsfoot.com.au

SOURCE SPERATION BINS

Method Recycling	Ph: 0499 890 455	

BINS AND BIN EQUIPMENT

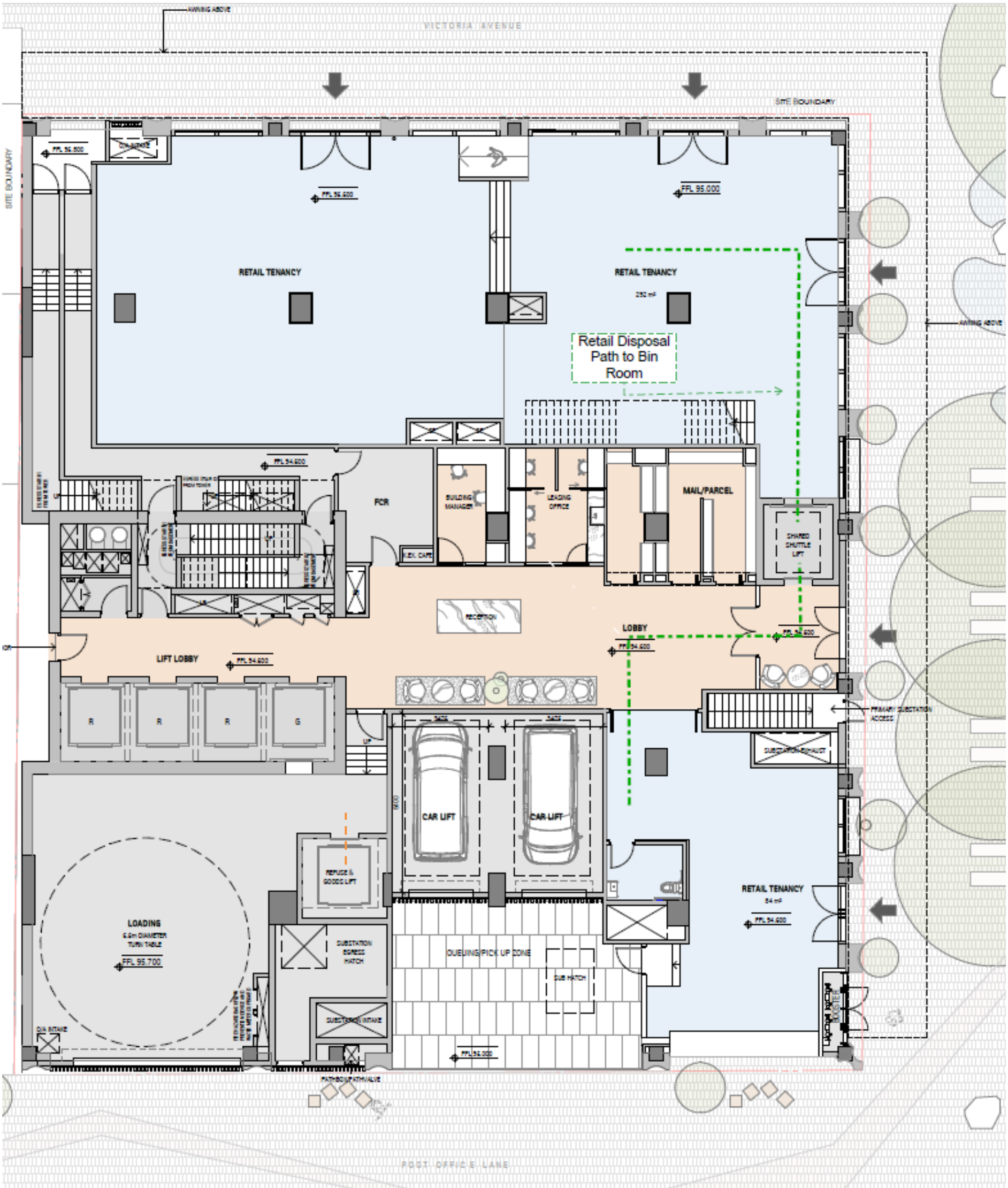
Elephants Foot Equipment	Ph: 1300 435 374	E: equipment@elephantsfoot.com.au
SULO	Ph: 1300 364 388	E: sulosales@pactgroup.com

CHUTES, COMPACTORS AND EDIVERTER SYSTEMS

Elephants Foot Chute Solutions	Ph: 1300 435 374	E: chutes@elephantsfoot.com.au

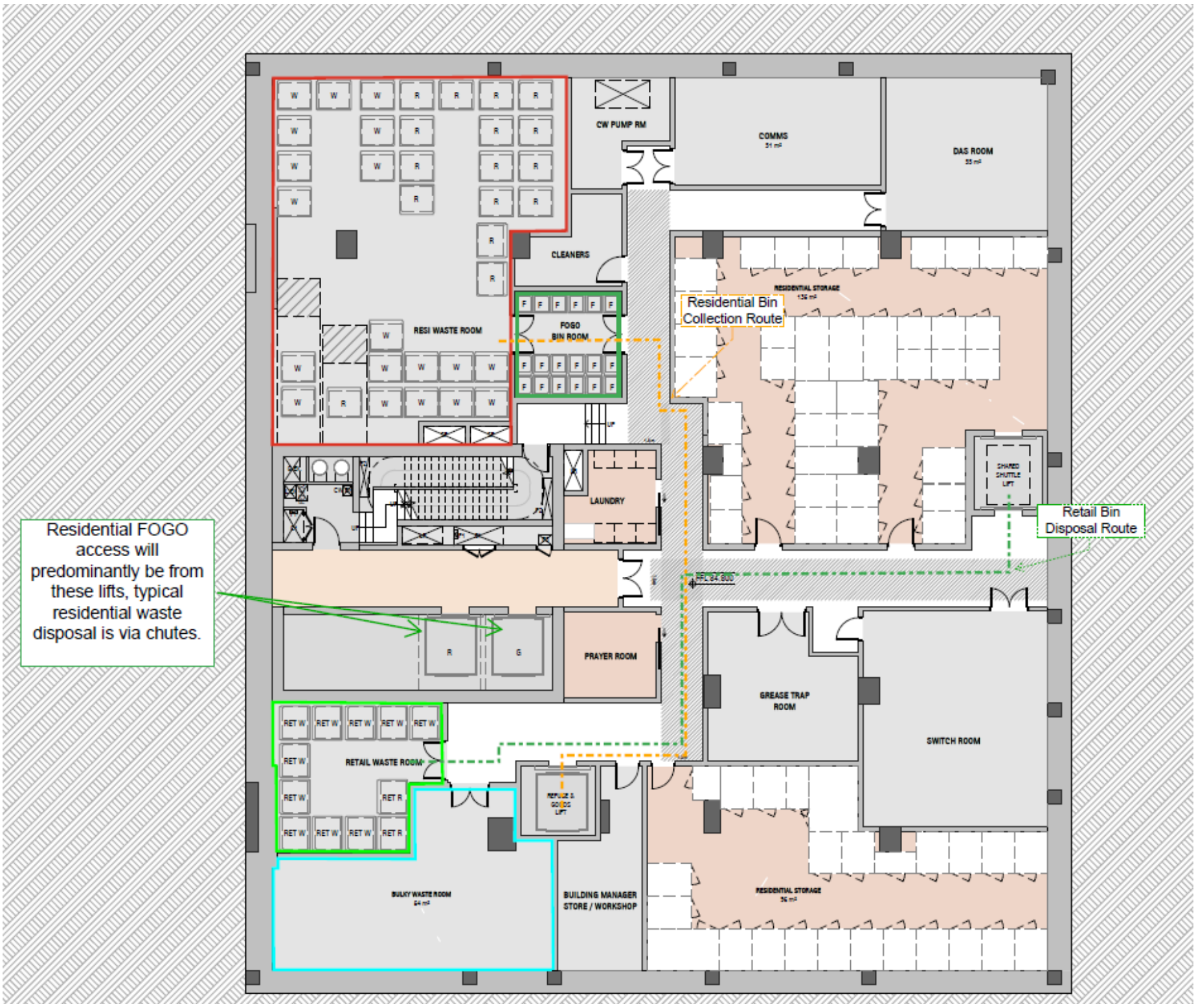
APPENDIX A: ARCHITECTURAL PLANS

APPENDIX: A.1 GROUND FLOOR PLAN



Source: Fender Katsalidis, Rev A, Drawing no. DA 100, 18/03/2024 – Ground Floor Plan

APPENDIX: A.2 BASEMENT LEVEL 3



Source: Fender Katsalidis, Rev 2, DA 097, 19/12/2024 – Basement 02 Floor Plan

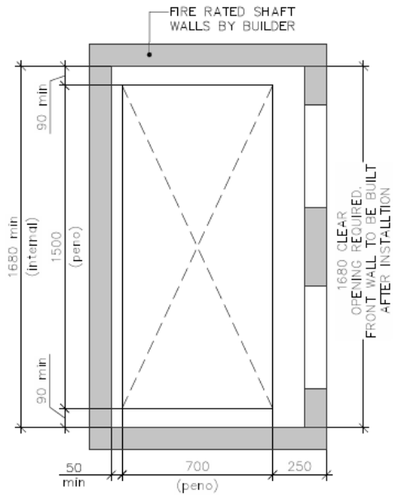
APPENDIX B: INSTALLATION EQUIPMENT

APPENDIX: B.1 TYPICAL DUAL CHUTE SHAFT & PENETRATION LAYOUT

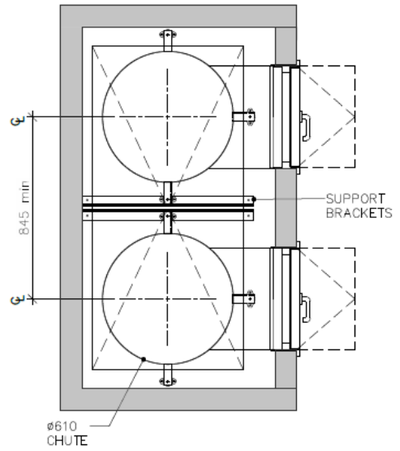
Chute Solutions.™
an Elephants Foot Company

CHUTE SHAFT & PENETRATION SET-OUT

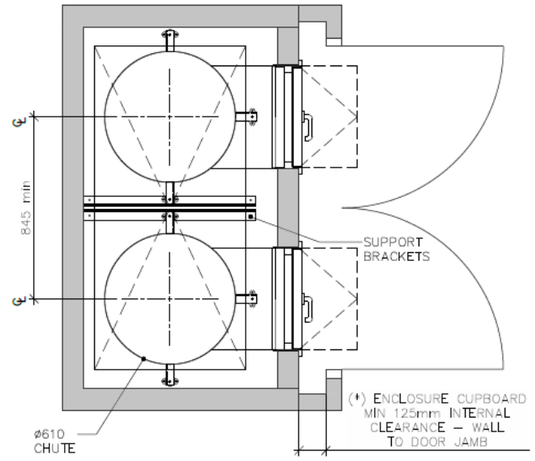
DUAL Ø610 STEEL



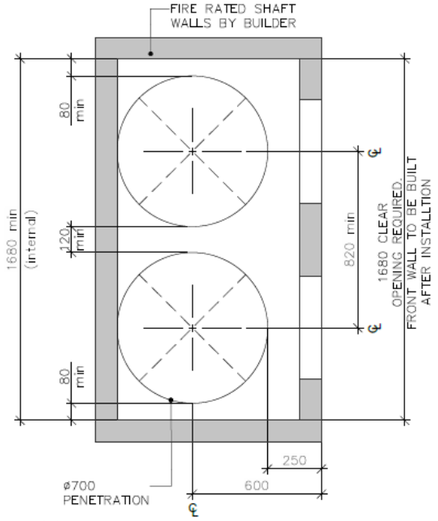
(01) DUAL (610ø) GALV. STEEL CHUTE LAYOUT
PENETRATION SET–OUT



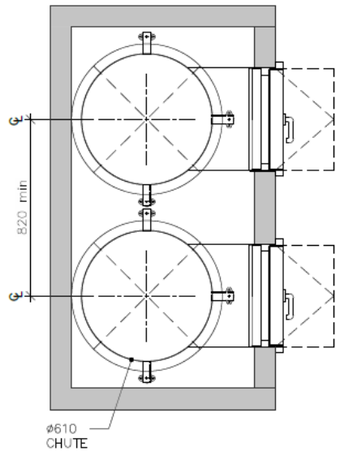
(02) DUAL (610ø) GALV. STEEL CHUTE LAYOUT



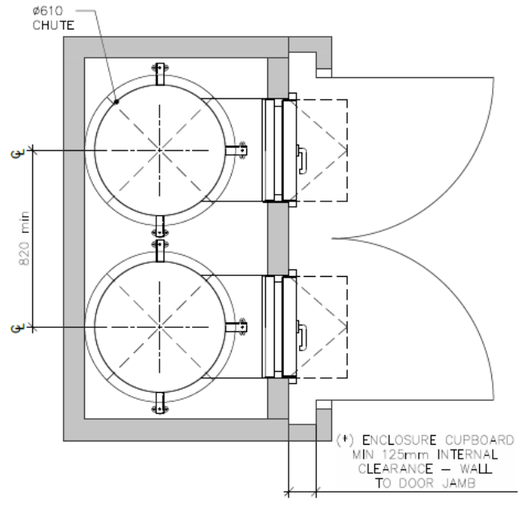
(03) DUAL (610ø) GALV. STEEL CHUTE LAYOUT
with ENCLOSURE CUPBOARD (*)



(04) DUAL (610ø) GALV. STEEL CHUTE LAYOUT
WITH CIRCULAR PENETRATION SET–OUT



(05) DUAL (610ø) GALV. STEEL CHUTE
LAYOUT (W/ CIRCULAR PENETRATION)



(06) DUAL (610ø) GALV. STEEL CHUTE LAYOUT
with ENCLOSURE CUPBOARD (*)

(*) NOTE: ENCLOSURES ARE RECOMMENDED IF THE CHUTE OPENS DIRECTLY TO A CORRIDOR OR IS NOT LOCATED IN A WASTE ROOM. IF CHUTE ACCESS IS WITHIN A WASTE ROOM THEN THE CUPBOARD ENCLOSURES ARE NOT REQUIRED.

SCALE 1:25 @ A3

Chute Shaft & Peno – Ver 1.2 April 26, 2022

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

APPENDIX: B.2 TYPICAL LINEAR TRACK SYSTEM FOR 1100L MGBS

ELEPHANTS FOOT recycling solutions

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

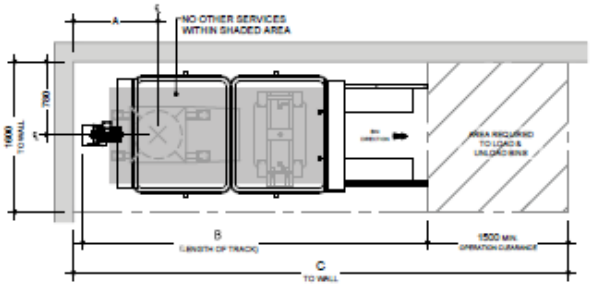
Chute Solutions.™
an Elephants Foot Company

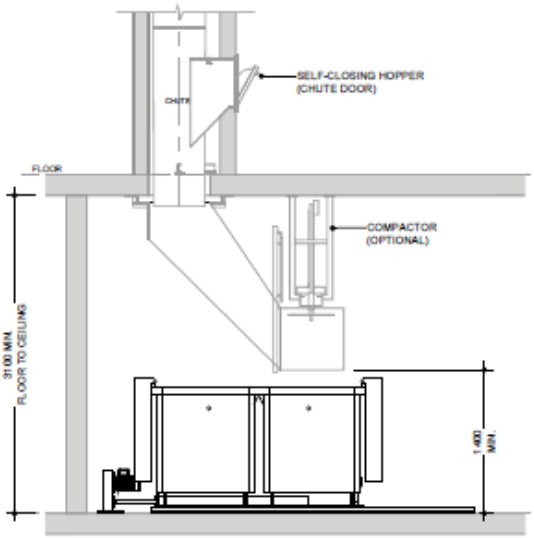
ELEPHANTS FOOT

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

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 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)

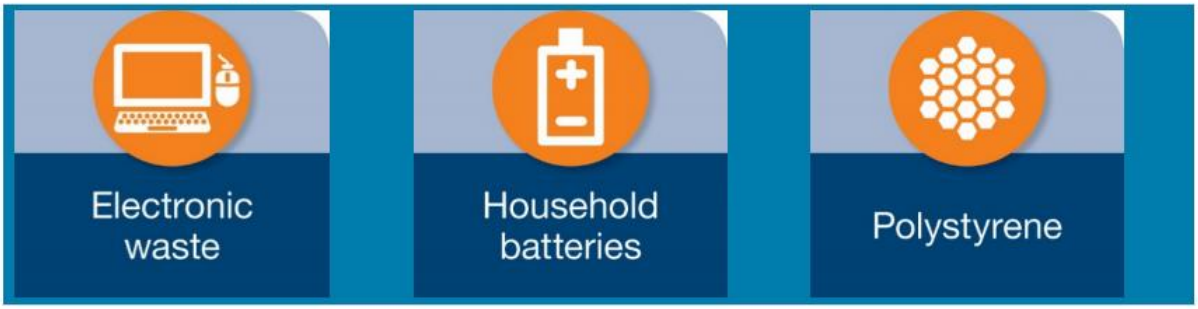
Figure I1.2: Examples of bin lid stickers (EPA supplied)

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 EXAMPLE 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

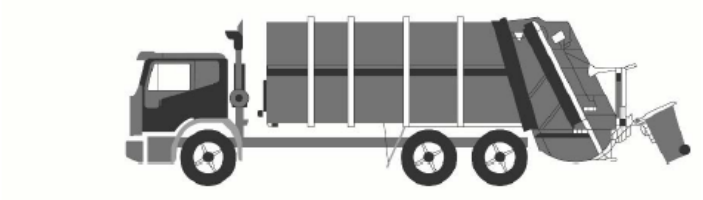
Vehicle type	Rear-loading	Side-loading*	Front-lift-loading	Hook truck	Crane truck
Length overall (m)	10.5	9.6	11.8	10.0	10.0
Width overall (m)	2.5	2.5	2.5	3.0	2.5
Travel height (m)	3.9	3.6	4.8	4.7	3.8
Operational height for loading (m)	3.9	4.2	6.5	3.0	8.75
Vehicle tare weight (t)	13.1	11.8	16.7	13.0	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

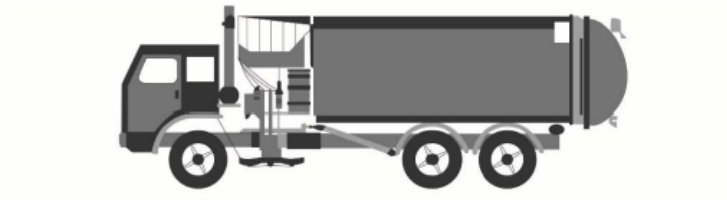
These vehicles are commonly used for domestic waste collections from MUDs and RFBs and sometimes for recycling. They can be used to collect waste stored in mobile bins or bulk bins, particularly where bins are not presented at the kerbside. They are also used for collecting bulky waste.



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 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

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

Source: Sitecraft - www.sitecraft.net.au

APPENDIX: D.2 EXAMPLE SEATED BIN MOVERS

MOTREC

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 though 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

SITECRAFT
MATERIALS HANDLING EQUIPMENT

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

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 TOWING ATTACHMENTS

Logistec

UNIVERSAL BIN TOWING ATTACHMENTS

SUITE 660LT / 1100LT WHEELIE BINS

PARTS & FEATURES

Front Only - Part Number: 78811672
- Suit Sulo & Otto 600lt / 1100lt MGBs
- Spring loaded draw bar folds up
- No drilling of holes in the bin required
- Solidly fixed to the base of the bin using the castor mounting bolts
- Passivated zinc finish for long life
- Correct Rear Fixed or Directional Lock castors should be used

Rear Only - Part Number: 78811673
- Suit Sulo & Otto 600lt / 1100lt MGBs
- No drilling of holes in the bin required
- Solidly fixed to the base of the bin using the castor mounting bolts
- Passivated zinc finish for long life
- Correct Rear Fixed or Directional Lock castors should be used

For Steel Bin Front Only - Part Number: 78811781
- Suit Sulo & Otto 600lt / 1100lt MGBs
- No drilling of holes in the bin required
- Solidly fixed to the base of the bin using the castor mounting bolts
- Passivated zinc finish for long life
- Correct Rear Fixed or Directional Lock castors should be used

Direction Lock : 53191001
- Suit Sulo & Otto 600lt / 1100lt MGBs
- No drilling of holes in the bin required
- Solidly fixed to the base of the bin using the castor mounting bolts
- Passivated zinc finish for long life
- Correct Rear Fixed or Directional Lock castors should be used

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

Source: Sitecraft - www.sitecraft.net.au

APPENDIX: D.5 EXAMPLE BIN LIFTER FOR 240L BINS

versatip

Versatip Bin Tipper – 1500mm Tip

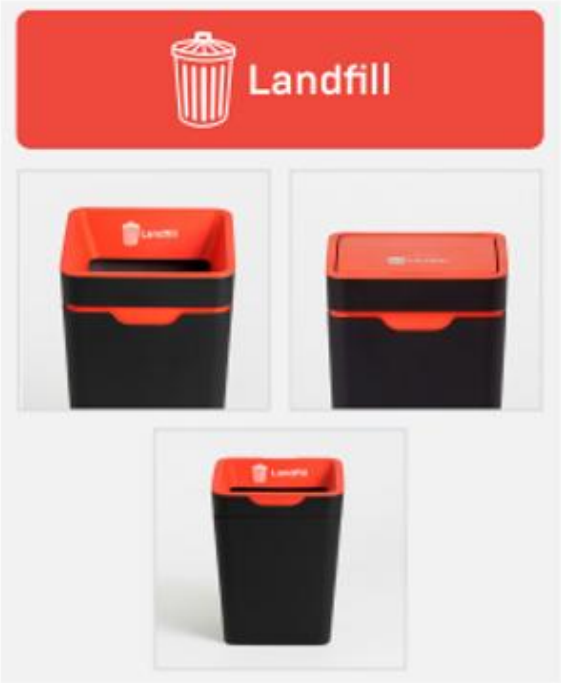
Specifications

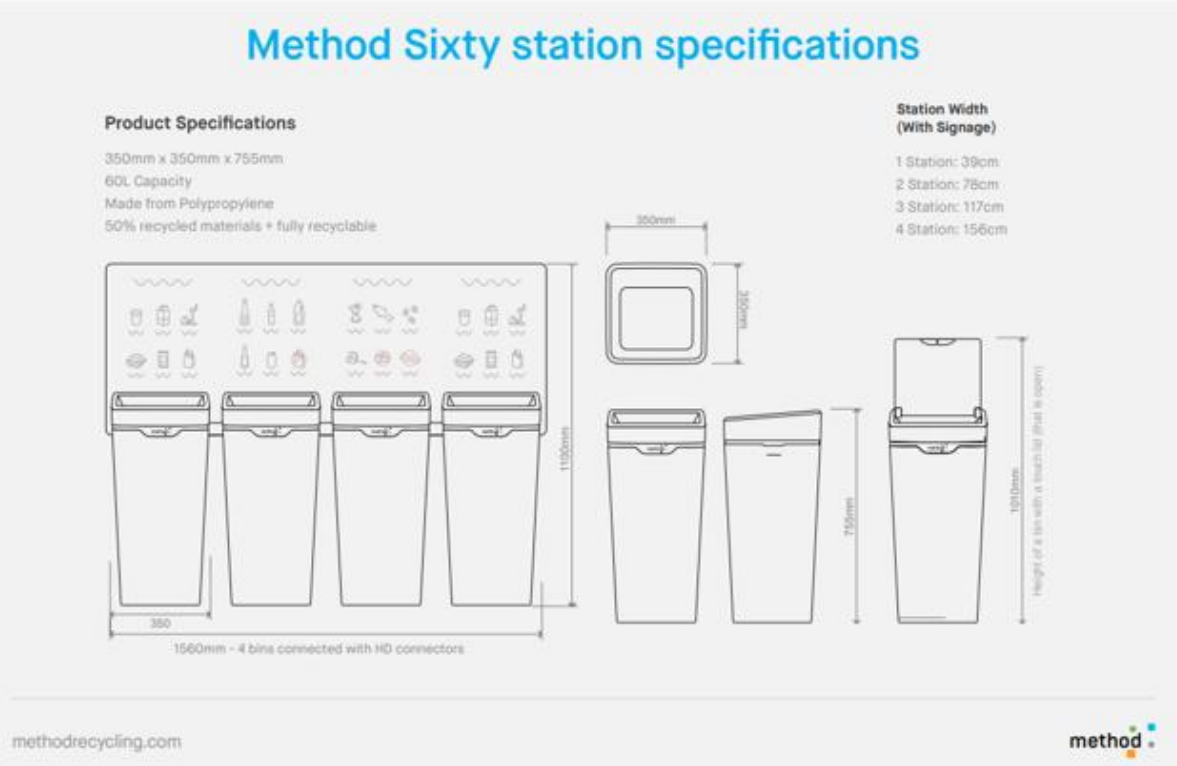
Product Code	69121009
Product Name	1500mm Tip – Battery Powered
Capacity (kg)	250
Height (mm)	2085
Length (mm)	1330
Power Source	Battery Powered
Tipping Height (mm)	1500
Width (mm)	990

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

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

APPENDIX: D.6 EXAMPLE SOURCE SEPARATION RECEPTACLES





Source: Method Recycling - www.methodrecycling.com