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an Elephants Foot Company

Hills Showground Precinct East
3 Andalusian Way Castle Hill, Lot DP is Lot 56 in DP 1253217

OPERATIONAL WASTE MANAGEMENT PLAN

9/01/2024
Revision E

Client

Deicorp Projects (Showground East) Pty Ltd

<https://www.deicorp.com.au/>

Architect

Turner Studio

<https://turnerstudio.com.au/>

Architect

Group GSA

<https://groupgsa.com/>





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GLOSSARY OF ABBREVIATIONS AND TERMS

TERM	DESCRIPTION
<i>Bin-carting Route</i>	Travel route for transferring bins from the storage area to a nominated collection point
<i>Chute</i>	A ventilated, vertical pipe passing from floor to floor of a building with openings as required to connect with hoppers and normally terminating at its lower end at the roof of the central waste room(s)
<i>Chute Discharge</i>	The point at which refuse exits from the refuse chute
<i>Chute Discharge Room</i>	A secure, enclosed area or room housing the discharge and associated equipment for the refuse chute
<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
<i>SRV</i>	Small Rigid Vehicle described by AS 2890.2-2002 Parking facilities – Off-street commercial vehicle facilities
<i>WHS</i>	Workplace Health and Safety
<i>Wheel-in wheel-out service</i>	A type of waste collection service offered by local councils where the council waste collection personnel enter the premises to collect the bins and returns them to the property

1.0 ACKNOWLEDGEMENT OF COUNTRY

Elephants Foot Consulting 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

Elephants Foot Consulting (EFC) has been engaged to prepare the following waste management plan for the operational management of waste generated by the residential development located at 3 Andalusian Way Castle Hill, Lot DP is Lot 56 in DP.

Waste management strategies and audits are required for new developments in order to support the design and sustainable performance of the building. It is EFC'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.

2.1 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.

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.

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.

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:

- The Hills Development Control Plan 2012
- The Hills Local Environmental Plan 2019

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:

- The Hills Development Control Plan 2012 – Part B Section 5 Residential Flat Building
- 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

4.0 DEVELOPMENT OVERVIEW

The proposed development falls under the LGA of The Hills Shire Council and consists of five multi-level buildings. It is assumed that buildings connected by basement levels will share a bin collection point. As such, the buildings have been grouped by collection point/shared basements/lots through out this report.

Building A, B & C share a basement -

- Building A has a total of 116 residential units.
- Building B1 has a total of 87 residential units
- Building B2 has a total of 87 residential units
- Building C has a total of 135 residential units over 2 cores;
 - Building C –Core 1 has 75 units.
 - Building C –Core 2 has 60 units.

Building D & E share a basement -

- Building D consists of 2 buildings;
 - Building D1 has a total of 149 residential units over 2 cores:
 - Building D1 – Core 1 has 75 units.
 - Building D1 – Core 2 has 74 units.
 - Building D2 has a total of 142 residential units over 2 cores:
 - Building D2 – Core 1 has 77- units.
 - Building D2 – Core 2 has 65 units.
- Building E1 has a total of 42 residential units
- Building E2 has a total of 115 residential units

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

4.1 SITE LOCATION

The site is located at 3 Andalusian Way Castle Hill, Lot DP is Lot 56 in DP 1253217 as shown below. The site, Lot 56 in DP 1253217, is located to the east of Hills Showground Station at 3 Andalusian Way, Castle Hill (the site). It is located in the eastern part of the Precinct, known as Hills Showground Precinct East. It is boarded by Showground Road to the north east, Carrington Road to the south and south east, Andalusian Way to the southwest and De Clambe Drive to the northwest.



Source: Group GSA, Drawing No DA-0001 A – Location Plan

5.0 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.

5.1 RESIDENTIAL WASTE GENERATION ESTIMATES

The *Hills Shire Development Control Plan 2012* and 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 for the residential units. Calculations are based on generic waste, recycling and FOGO rates. Actual volumes of 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 and recyclables generated by the development.

Table 1: Estimated Waste and Recycling Volumes – Buildings A, B & C

Building/ Core	# Units	General Waste Generation Rate (L/unit/week)	Generated General Waste (L/week)	Recycling Generation Rate (L/unit/week)	Generated Recycling (L/week)
Building A	116	120	13920	120	13920
Building B1	87	120	10440	120	10440
Building B2	87	120	10440	120	10440
Building C - Core 1	75	120	9000	120	9000
Building C - Core 2	60	120	7200	120	7200
TOTAL	425		51000		51000
Bins and Collections		General Waste Bin Size (L)	1100	Recycling Bin Size (L)	1100
		General Waste Bins per Week	47	Recycling Bins per Week	46.36
		General Waste Collections per Week	2	Recycling Collections per Week	2
		Total General Waste Bins Required for Collection	<u>24</u>	Total Recycling Bins Required for Collection	<u>24</u>

**Note: An additional 1100L MGB should be provided for each chute discharge for use during collection periods. These bins are not included in the above figures.*

***Note: It is strongly recommended bins/equipment at the base of each chute allow for 2-days' worth of waste or recycling generation.*

Table 2: Estimated FOGO Volumes – Buildings A, B & C

Building/ Core	# Units	FOGO Waste Generation Rate (L/unit/week)	Generated FOGO Waste (L/week)
Building A	116	25	2900
Building B1	87	25	2175
Building B2	87	25	2175
Building C - Core 1	75	25	1875
Building C - Core 2	60	25	1500
TOTAL	425		10625
Bins and Collections		FOGO Bin Size (L)	240
		FOGO Bins per Week	45
		FOGO Collections per Week	2
		Total FOGO Bins Required for Collection	<u>23</u>

Table 3: Estimated Waste and Recycling Volumes – Buildings D & E

Building/ Core	# Units	General Waste Generation Rate (L/unit/week)	Generated General Waste (L/week)	Recycling Generation Rate (L/unit/week)	Generated Recycling (L/week)
Building D1 - Core 1	75	120	9000	120	9000
Building D1 - Core 2	74	120	8880	120	8880
Building D2 - Core 1	77	120	9240	120	9240
Building D2 - Core 2	65	120	7800	120	7800
Building E1	42	120	5040	120	5040
Building E2	115	120	13800	120	13800
TOTAL	448		53760		53760
Bins and Collections		General Waste Bin Size (L)	1100	Recycling Bin Size (L)	1100
		General Waste Bins per Week	49	Recycling Bins per Week	48.87
		General Waste Collections per Week	2	Recycling Collections per Week	2
		Total General Waste Bins Required for Collection	<u>25</u>	Total Recycling Bins Required for Collection	<u>25</u>

*Note: An additional 1100L MGB should be provided for each chute discharge for use during collection periods. These bins are not included in the above figures.

**Note: It is strongly recommended bins/equipment at the base of each chute allow for 2-days' worth of waste or recycling generation.

Table 4: Estimated FOGO Volumes – Buildings D & E

Building/ Core	# Units	FOGO Waste Generation Rate (L/unit/week)	Generated FOGO Waste (L/week)
Building D1 - Core 1	75	25	1875
Building D1 - Core 2	74	25	1850
Building D2 - Core 1	77	25	1925
Building D2 - Core 2	65	25	1625
Building E1	42	25	1050
Building E2	115	25	2875
TOTAL	448		11200
Bins and Collections		FOGO Bin Size (L)	240
		FOGO Bins per Week	47
		FOGO Collections per Week	2
		Total FOGO Bins Required for Collection	24

5.2 RESIDENTIAL 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:

Buildings A,B & C

General Waste: 24x 1100L MGBs collected **2 x weekly**

Recycling: 24 x 1100L MGBs collected **2 x weekly**

FOGO: 23x 240L MGBs collected **2 x weekly**

Service Bins: 6x 1100L MGBs

Buildings D & E

General Waste: 25 x 1100L MGBs collected **2 x weekly**

Recycling: 25 x 1100L MGBs collected **2 x weekly**

FOGO: 24x 240L MGBs collected **2 x weekly**

Service Bins: 2x 1100L MGBs

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

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

Table 5: Chute Discharge Equipment Summary – Buildings A, B & C

General Waste				Recycling			
Building/ Core	Generated General Waste (L/week)	# 1100L Bins Required for 2 days' Capacity	Recommended Chute Discharge Equipment	Building/ Core	Generated Recycling (L/week)	# 1100L Bins Required for 2 days' Capacity	Recommended Chute Discharge Equipment
Building A	13920	3.62	4-Bin Carousel System	Building A	13920	3.62	4-Bin Carousel System
Building B1	10440	2.71	3-Bin Linear System	Building B1	10440	2.71	3-Bin Linear System
Building B2	10440	2.71	3-Bin Linear System	Building B2	10440	2.71	3-Bin Linear System
Building C - Core 1	9000	2.34	3-Bin Linear System	Building C - Core 1	9000	2.34	3-Bin Linear System
Building C - Core 2	7200	1.87	2-Bin Linear System	Building C - Core 2	7200	1.87	2-Bin Linear System

Table 6: Chute Discharge Equipment Summary – Buildings D & E

Volume Handling Equipment							
General Waste				Recycling			
Building/ Core	Generated General Waste (L/week)	# 1100L Bins Required for 2 days' Capacity	Recommended Chute Discharge Equipment	Building/ Core	Generated Recycling (L/week)	# 1100L Bins Required for 2 days' Capacity	Recommended Chute Discharge Equipment
Building D1 - Core 1	9000	2.34	3-Bin Linear System	Building D1 - Core 1	9000	2.34	3-Bin Linear System
Building D1 - Core 2	8880	2.31	3-Bin Linear System	Building D1 - Core 2	8880	2.31	3-Bin Linear System
Building D2 - Core 1	9240	2.40	3-Bin Linear System	Building D2 - Core 1	9240	2.40	3-Bin Linear System
Building D2 - Core 2	7800	2.03	3-Bin Linear System	Building D2 - Core 2	7800	2.03	3-Bin Linear System
Building E1	5040	1.31	2-Bin Linear System	Building E1	5040	1.31	2-Bin Linear System
Building E2	13800	3.58	4-Bin Carousel System	Building E2	13800	3.58	4-Bin Carousel System

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

5.4 RESIDENTIAL WASTE DISPOSAL PROCEDURES

All residents will have access to a waste storage area within their unit, capable of holding separate receptacles for general waste, recycling and FOGO. This is usually located within kitchen areas, beneath the workbench. This space should be sized to hold at least 40L receptacles to account for 2 days' worth of waste.

5.4.1 RESIDENTIAL GENERAL WASTE AND RECYCLING WASTE DISPOSAL PROCEDURES

Dual chutes, consisting of a waste chute and a recycling chute will be installed in each building core with access on each residential level.

Residents will be responsible for walking their waste and recycling to the disposal point on their level and placing their waste and recycling into the correct chute.

Residents will wrap or bag their general waste before placing in the waste chute. Bagged waste should not exceed 3kg in weight, or 35cm x 35cm x 35cm. Recycling (comingle only) must not be bagged when disposed of into the recycling chute. Cardboard boxes or large containers should also not be disposed of in the chute and a separate cardboard collection bin must be made available and managed by the building caretaker.

The general waste and recycling will discharge from the chute into 1100L MGBs on track system in the Chute Discharge Rooms. The waste will be compacted under the chute at a maximum of a 2:1 ratio. The building manager will monitor the fullness of the bins under the chute and on each residential level and rotate the bins as required.

Full and spare bins will be kept in the Bin Holding Room.

5.4.2 RESIDENTIAL FOGO DISPOSAL PROCEDURES

Each building will be provided with a Communal Food Bin Room which contains 240L MGBs for food waste. The residents will be responsible for walking their food waste down to the Communal Food Waste Rooms and placing it into the bins.

Food waste must be contained in accordance with Hills Shire Council's future food waste collection service procedures (for example a compostable liner).

Upon moving in, the residents of each dwelling will be provided with a caddy for separating and containing food waste within their kitchens.

Building management is responsible for ensuring that the Communal Food Waste Rooms and FOGO bins are washed down frequently and ensuring that hygiene and odour is maintained.

5.5 RESIDENTIAL BIN COLLECTION PROCEDURES

Council will be engaged to collect the residential waste and recycling in accordance with Council's collection schedule. This report assumes waste, recycling and FOGO will be collected twice weekly.

Prior to collections the Building Manager/Caretaker will be responsible for transporting the bins from chute discharge rooms to the Bin Holding Room (Collection area) for each lot. The Building Manager/Caretaker is responsible for ensuring the bins are neatly arranged for easy of collection. It is recommended that extra 1100L service bins are placed under the chute to collect discharge while the other bins are being serviced.

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

On the day of collection, a Council collection vehicle will enter the site and park in the loading bay for each Building Group. The Building Manager/Caretaker will be responsible for ensuring the collection staff will have access to the waste collection point. The collection staff will exit the vehicle and collect the bins from the Bin holding Room (Collection Area) and return the empty bins.

Once the bins have been serviced, the collection vehicle will exit the site in a forward direction. The Building Manager/Caretaker is responsible for returning the bins to their operational location to resume use.

All access and clearances to the waste collection room must be able to accommodate a HRV per AS2890.2-2002.

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 general waste and recycling receptacles where considered appropriate. Receptacles should be placed in convenient locations. The building manager will monitor the fullness of these receptacles and empty into the main collection bins as required.

5.6.2 COMMUNAL LANDSCAPED AREAS

The majority of green waste from landscaped areas is generated from landscape maintenance. Green waste generated as a result of communal landscaped areas will be removed from site by the landscaping contractors when they carry out scheduled landscaping maintenance works.

5.6.3 RESIDENTIAL BULKY WASTE PROCEDURES

An area will be made available for the storage of discarded residential bulky items (e.g. whitegoods, furniture, etc.). This room should be located within close proximity of the waste and recycling collection area and must have a minimum doorway width of 1.5m to allow for easy movement of large waste items in and out of the room.

The Hills Shire Council requires that size of the Bulky Waste Room provided is proportional to the number of units in the building at a rate of 10m² for the first 40 units then 2m² for every 10 units thereafter at per the *NSW EPA's Better Practice Guide For Resource Recovery In New Development 2019*.

Based on this rate, the Bulky Waste Room required for each lot is as follows;

Bulky Waste Room Size - Building A, B & C

$$\begin{aligned} & (\text{Total number of units} - 40) / 10 \times 2 + 10 = \text{m}^2 \text{ of bulky waste room} \\ & = (425-40)/10 \times 2 + 10 \\ & = 385/10 \times 2 + 10 \\ & = 38.5 \times 2 + 10 \\ & = 77 + 10 \\ & = 87 \\ & \text{bulky waste storage area: minimum } 87\text{m}^2 \end{aligned}$$

Bulky Waste Room Size - Building D & E

$$\begin{aligned} & (\text{Total number of units} - 40) / 10 \times 2 + 10 = \text{m}^2 \text{ of bulky waste room} \\ & = (448-40)/10 \times 2 + 10 = \\ & = 408/10 \times 2 + 10 \\ & = 40.8 \times 2 + 10 \\ & = 81.6 + 10 \\ & = 91.6 \\ & \text{bulky waste storage area: minimum } 92\text{m}^2 \end{aligned}$$

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 Council and then coordinate with the residents.

Prior to bulky waste collections, the Building Manager/Caretaker will transport the bulky waste from the Bulky Waste Room to the Collection Area for each lot.

On the day of bulky waste collection, a Council collection vehicle will enter each site from and park in the loading bay. The Bulky Waste Collection Staff will collect the bulky waste items from the Collection Area/Bulky Waste Room. Once bulky items have been loaded, the collection vehicle will exit the site in a forward direction.

Refer to Council's website for acceptable items and other information regarding bulky waste collection.

6.0 STAKEHOLDER ROLES & RESPONSIBILITIES

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

Table 7: Stakeholder Roles and Responsibilities

Roles	Responsibilities
Strata, Body Corporate or Management	• 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.
Building Manager or Waste Caretaker	• Maintain and clean chute doors on each level; • Coordinate general waste and recycling collections; • Clean and transport bins as required; • Organise replacement or maintenance requirements for bins; • Organise, maintain and clean the waste holding area; • Organise bulky goods collection when required • Investigate and ensure prompt clean-up of illegally dumped waste materials. • Prevent storm water pollution by taking necessary precautions (securing bin rooms, preventing 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 waste and 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 and recycling in the allocated waste chutes and/or MGBs provided; • Ensure adequate separation of general waste and recycling; and • Compliance with the provisions of Council and the OWMP.
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	• Remove all garden organic waste generated during gardening maintenance activities for recycling at an offsite location.
Developer	• Purchase all equipment required to implement this OWMP prior to the occupation of the building to be provided to the strata/body corporate.

7.0 SOURCE SEPARATION

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

Table 8: 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, or in designated waste bins.
Recycling	A mixture of items that are commonly recycled usually segregated through a MRF. Typically include food and beverage containers (e.g. aluminium, glass, steel, hard plastics, cartons). Also included cardboard and paper products.	Resource Recovery Centre	Recycling must not be bagged, and instead should be placed loosely in the recycling chute or in designated recycling bins. Bulky cardboard must not be placed in any chute. Cardboard should be flattened before placing in the designated cardboard bin.
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.
Food Waste	Food waste consists of unwanted or uneaten kitchen scraps that are easily compostable/biodegradable (e.g. vegetable peels, fruit rinds, coffee grounds).	Composting facility	Food waste can be composted on-site, off-site, or else included in the FOGO 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.
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 Goods Room. Building manager arranges with Council for removal.
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.

8.0 EDUCATION

Educational materials encouraging correct separation of general waste and recyclables must be provided to each resident. 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 chute blockages and contamination in communal waste 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 recycling and general waste streams (refer to Council guidance);
- How to dispose of bulky goods and any other items that are not general waste or recycling (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).

To prevent damage or blockage to rubbish chute DO NOT dispose of any umbrellas, bedding, cigarettes, cartons, coat hangers, brooms, mops, large plastic wrappings from furniture, white goods, any sharp objects, hot liquid or ashes, oil, unwrapped vacuum dust, syringes, paint and solvents, car parts, bike parts, chemicals, corrosive and flammable items, soil, timber, furniture, bricks or other building materials down the chute.

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 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.

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

9.0 BIN MOVING PATHS

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

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.

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

Once the site is operational (and the developers is no longer involved) the building 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.

10.0 EQUIPMENT SUMMARY

Table 9: Equipment Summary – Building A, B & C

	Part	Qty	Notes
Chutes	Please refer to supplier's information	10	(See Appendix B.1 for Typical Dual Chute Layout)
Chute Equipment	2-bin 1100L MGB Linear Track System	1	(See Appendix B.2 for Typical Linear System)
	3-bin 1100L MGB Linear Track System	3	
	2-bin 1100L MGB Linear Track System with Compactor	1	
	3-bin 1100L MGB Linear Track System with Compactor	3	
	4-bin 1100L MGB Carousel	1	(See Appendix. B3 for Typical Carousel)
	4-bin 1100L MGB Carousel with Compactor	1	
Other Equipment	Suitable Bin Moving Equipment	1	(See APPENDIX C.4 for Typical Bin Movers)

Table 10: Equipment Summary – Building D & E

	Part	Qty	Notes
Chutes	Please refer to supplier's information	12	(See Appendix B.1 for Typical Dual Chute Layout)
Chute Equipment	2-bin 1100L MGB Linear Track System	1	(See Appendix B.2 for Typical Linear System)
	3-bin 1100L MGB Linear Track System	4	
	2-bin 1100L MGB Linear Track System with Compactor	1	
	3-bin 1100L MGB Linear Track System with Compactor	4	
	4-bin 1100L MGB Carousel	1	(See Appendix. B3 for Typical Carousel)
	4-bin 1100L MGB Carousel with Compactor	1	
Other Equipment	Suitable Bin Moving Equipment	1	(See APPENDIX C.4 for Typical Bin Movers)

11.0 WASTE ROOMS

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

The equipment recommended in the chute discharge rooms is to manage 2 days' worth of estimated waste and recycling volumes from that building core. Therefore, this represents the minimum equipment required in these rooms to satisfy best practice requirements. More bins or large volume handling equipment can be included in these rooms to increase days of capacity or manual labour required in operation.

Table 11: Waste Room Areas – Buildings A,B & C

Level	Waste Room Type	Equipment	Estimated Area Required (m ²)
B1	Chute Discharge Room – Building A	<i>Minimum</i> 1x 4-Bin Carousel for 1100L MGBs with compactor (Waste) 1x 4-Bin Carousel for 1100L MGBs (Recycling) 2x 1100L MGBs (Service Bins)	>66
B1	FOGO Bin Room – Building A	<i>Minimum</i> 4x 240L MGBs	>4
B1	Chute Discharge Room – Building B Core 1	<i>Minimum</i> 1x 3-Bin Linear for 1100L MGBs with compactor (Waste) 1x 3-Bin Linear for 1100L MGBs (Recycling) 2x1100L MGBs (Service Bins)	>53
B1	Chute Discharge Room – Building B Core 2	<i>Minimum</i> 1x 3-Bin Linear for 1100L MGBs with compactor (Waste) 1x 3-Bin Linear for 1100L MGBs (Recycling) 2x1100L MGBs (Service Bins)	>53
B1	FOGO Bin Room – Building B	<i>Minimum</i> 4x 240L MGBs	>4
B1	Chute Discharge Room – Building C Core 1	<i>Minimum</i> 1x 3-Bin Linear for 1100L MGBs with compactor (Waste) 1x 3-Bin Linear for 1100L MGBs (Recycling) 2x1100L MGBs (Service Bins)	>53
B1	Chute Discharge Room – Building C Core 2	<i>Minimum</i> 1x 2-Bin Linear for 1100L MGBs with compactor (Waste) 1x 2-Bin Linear for 1100L MGBs (Recycling) 2x1100L MGBs (Service Bins)	>39
B1	FOGO Bin Room – Building C	<i>Minimum</i> 4x 240L MGBs	>4
LG	Residential Bin Holding Room (collection area)	24x 1100L MGBs (Waste) 24x 1100L MGBs (Recycling) 23x 240L MGBs (FOGO)	>175
	Bulky Waste Storage Room		>87

Table 12: Waste Room Areas – Buildings D & E

Level	Waste Room Type	Equipment	Estimated Area Required (m ²)
B1	Chute Discharge Room – Building D1 Core 1	<i>Minimum</i> 1x 3-Bin Linear for 1100L MGBs with compactor (Waste) 1x 3-Bin Linear for 1100L MGBs (Recycling) 2x 1100L MGBs (Service Bins)	>53
B1	Chute Discharge Room – Building D1 Core 2	<i>Minimum</i> 1x 3-Bin Linear for 1100L MGBs with compactor (Waste) 1x 3-Bin Linear for 1100L MGBs (Recycling) 2x 1100L MGBs (Service Bins)	>53
B1	FOGO Bin Room – Building D1	<i>Minimum</i> 4x 240L MGBs	>4
B1	Chute Discharge Room – Building D2 Core 1	<i>Minimum</i> 1x 3-Bin Linear for 1100L MGBs with compactor (Waste) 1x 3-Bin Linear for 1100L MGBs (Recycling) 2x 1100L MGBs (Service Bins)	>53
B1	Chute Discharge Room – Building D2 Core 2	<i>Minimum</i> 1x 3-Bin Linear for 1100L MGBs with compactor (Waste) 1x 3-Bin Linear for 1100L MGBs (Recycling) 2x 1100L MGBs (Service Bins)	>53
B1	FOGO Bin Room – Building D2	<i>Minimum</i> 4x 240L MGBs	>4
B1	Chute Discharge Room – Building E1	<i>Minimum</i> 1x 2-Bin Linear for 1100L MGBs with compactor (Waste) 1x 2-Bin Linear for 1100L MGBs (Recycling) 2x 1100L MGBs (Service Bins)	>39
B1	FOGO Bin Room – Building E1	<i>Minimum</i> 4x 240L MGBs	>4
B1	Chute Discharge Room – Building E2	<i>Minimum</i> 1x 4-Bin Linear for 1100L MGBs with compactor (Waste) 1x 4-Bin Linear for 1100L MGBs (Recycling) 2x 1100L MGBs (Service Bins)	>66
B1	FOGO Bin Room – Building E2	<i>Minimum</i> 4x 240L MGBs	>4
B1	Residential Bin Holding Room (collection area)	25x 1100L MGBs (Waste) 25x 1100L MGBs (Recycling) 24x 240L MGBs (FOGO)	>182
B1	Bulky Waste Storage Room		>92

The waste room areas have been calculated based on equipment requirements and/or bin dimensions with an additional 90% of bin GFA factored in for manoeuvrability.

In addition, all doorways and passageways facilitating the movement of bins and/or bulky waste items must be at least 1600mm wide.

The following table provides further waste room requirements.

Table 13: Waste Room Requirements

Waste Room Type	Waste Room Requirements
Chute Discharge Room	• Ceiling clearance height must be a minimum of 3100mm • The chute penetration must have a minimum 500mm clearance of any service pipes or other overhead obstacles (subject to penetration location) • 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 30 degrees (Subject to number of consecutive offset and/pr up to 1500mm) • Where two sets of volume management equipment are placed under the chutes, a 200mm clearance is required between the equipment. • 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 Bin Holding Room and/or Bin Collection Area	• Bins must not be stacked in rows that are more than two bins deep
Bulky Waste Storage Room	• May be a dedicated room or screened area within another waste room • Must be in close proximity to the collection area • Area must also be allocated for the segregation of e-waste, gas bottles, cardboard, etc. • Doorway should be a minimum of 1500mm wide

12.0 CONSTRUCTION REQUIREMENTS

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

The *NSW Better practice guide for resource recovery in residential developments (2019)* also states that better practice bin storage areas should achieve more than the minimum compliance requirements, which are as follows:

- Ensuring BCA compliance, including ventilation. Where required, ventilation system must comply with AS1668.4-2012 The use of ventilation and air conditioning in buildings.
- Ensuring storage areas are well lit (sensor lighting preferred) and have lighting available 24 hours a day.
- Provision of bin washing facilities, including taps for hot and cold water provided through a centralised mixing valve. The taps must be protected from bins and be located where they can be easily accessed even when the area is at bin capacity.
- Floor constructed of concrete at least 75mm thick.
- Floor graded so that any water is directed to a sewer authority approved drainage connection to ensure washing bins and/or waste storage areas do not discharge flow into the stormwater drain.
- Provision of smooth, cleanable and durable floor and wall surfaces that extend up the wall to a height equivalent to any bins held in the area.
- Ensuring ceilings are finished with a smooth-faced non-absorbent material capable of being cleaned.
- All surfaces (walls, ceiling and floors) finished in a light colour.

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.

13.0 USEFUL CONTACTS

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

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

EF Neutralizer	Ph: 1300 435 374	E: info@elephantsfoot.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

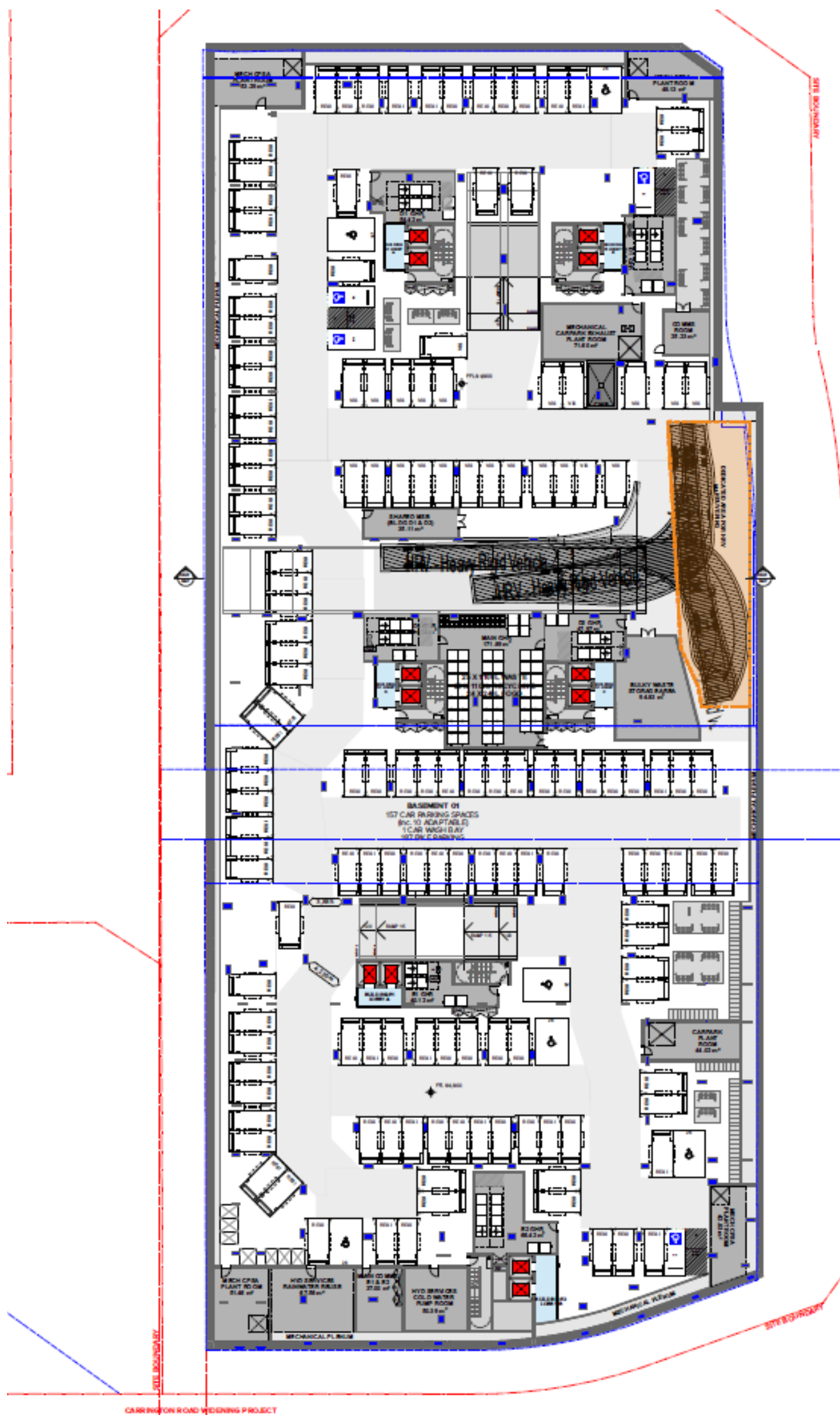
SULO	Ph: 1300 364 388	E: sales@sulo.com.au
OTTO Australia	Ph: 02 9153 6999	

CHUTES, COMPACTORS AND EDIVERTER SYSTEMS

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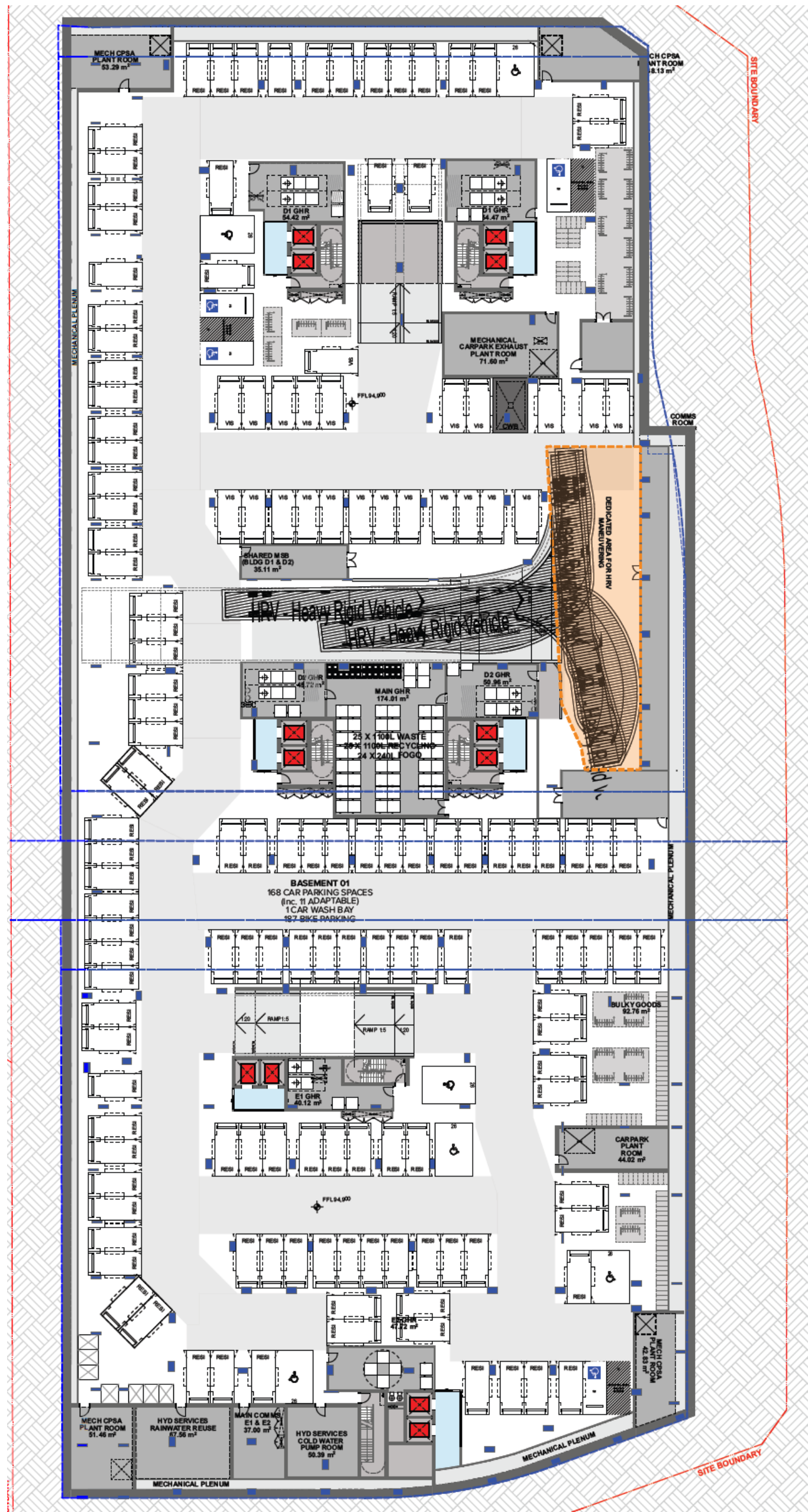
APPENDIX A: ARCHITECTURAL PLANS

APPENDIX: A.2 BUILDINGS A, B & C WASTE ROOMS – BASEMENT 1



Source: Group GSA, Drawing No DA2002, Rev M, Dec2023 –Basement Level 1 Floor Plan

APPENDIX: A.3 BUILDINGS D & E COLLECTION AREA AND WASTE ROOMS- BASEMENT 1



Source: Turner Studio, Drawing No DA-110-006, Rev K, Dec2023 – GA Plans Overall Basement 1

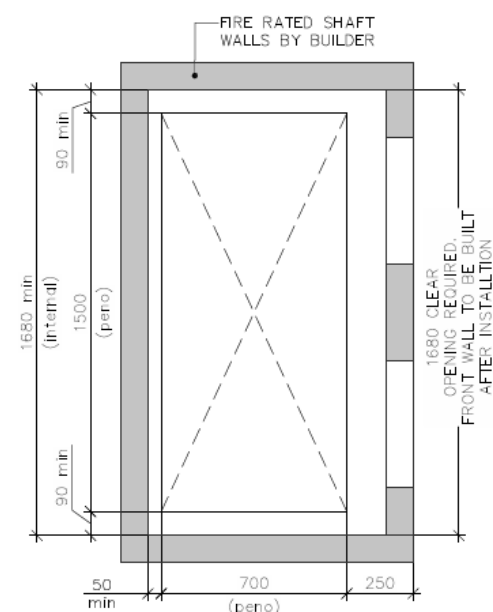
APPENDIX B: INSTALLATION EQUIPMENT

APPENDIX: B.1 TYPICAL DUAL CHUTE SHAFT & PENETRATION SET-OUT

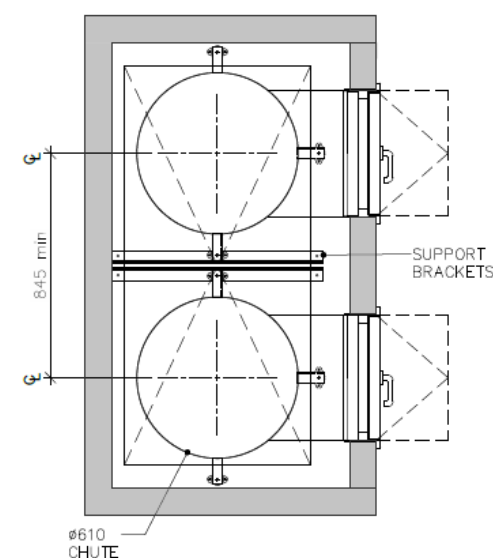


CHUTE SHAFT & PENETRATION SET-OUT

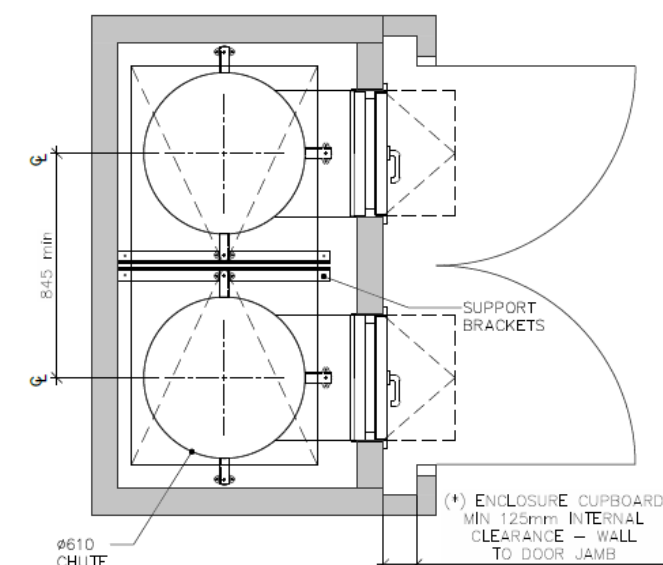
DUAL Ø610 STEEL



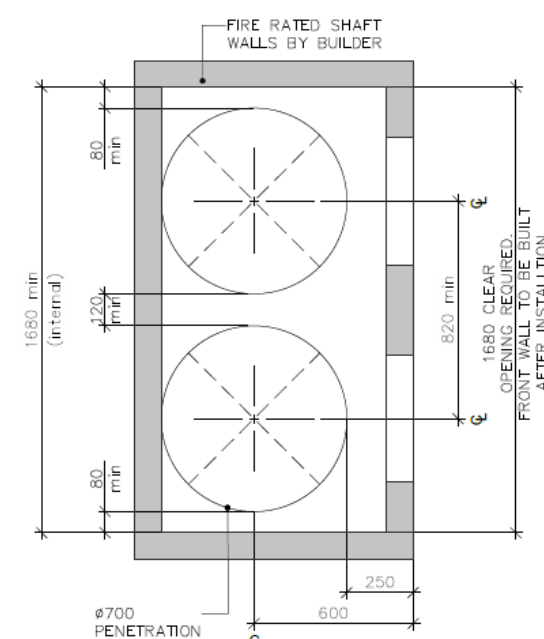
01 DUAL (610Ø) GALV. STEEL CHUTE LAYOUT PENETRATION SET-OUT



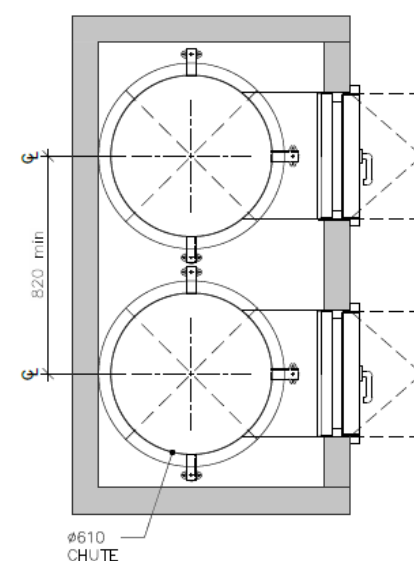
02 DUAL (610Ø) GALV. STEEL CHUTE LAYOUT



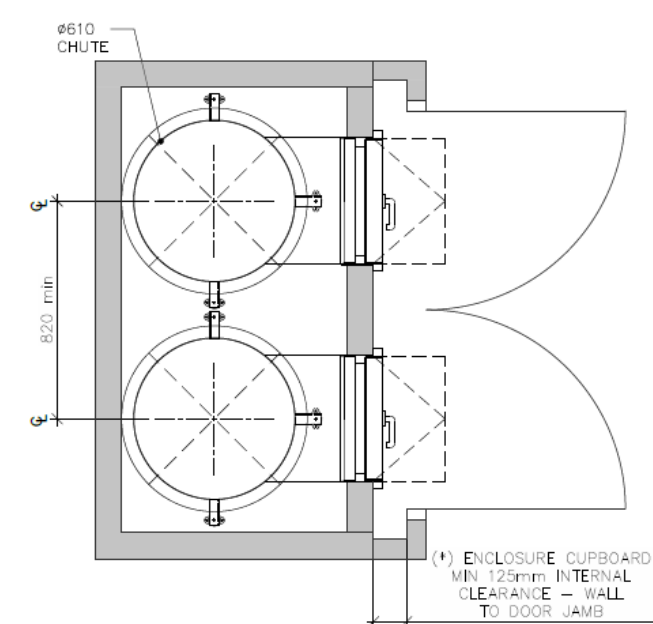
03 DUAL (610Ø) GALV. STEEL CHUTE LAYOUT with ENCLOSURE CUPBOARD (*)



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

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
 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

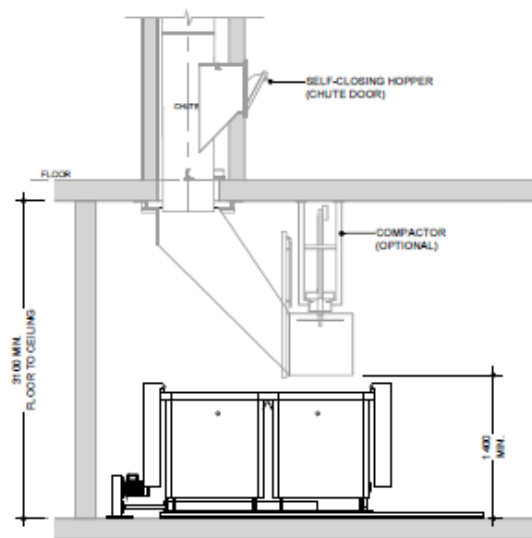
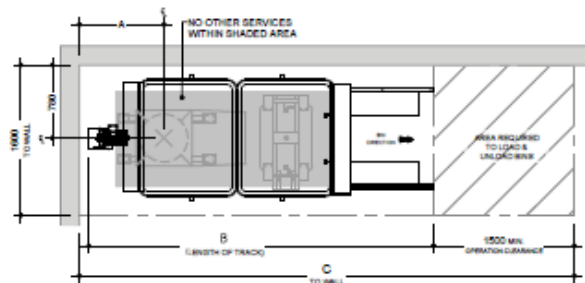


1,100 LITRE LINEAR TRACK SYSTEM



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: B.3 TYPICAL CAROUSEL 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 CAROUSEL SYSTEM

PRODUCT INFORMATION

Elephants Foot 1100 Litre bin Carousel System is a versatile waste handling solution for many types of multi-storey or multi-level developments. The Carousel 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 positioned on the unit. Electromechanically driven with automated operation, the Carousel System automatically replaces full bins by a revolving circular platform. Once all the bins on the system 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 660litre bin Carousel System is available in standard 2, 3 or 4 bin options. Our 5 Bin option is available as a special order.



SPECIFICATIONS

System Control	Electric PLC
Power Supply	415 V AC / 10A / 5 PIN
Motor Size (kW)	0.37
Maximum bin load	440 kg
Noise (dBA)	<85
Bin Size (L)	660
Cycle time (sec)	60
Bin Quantity options	2, 3, 4 or 5

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

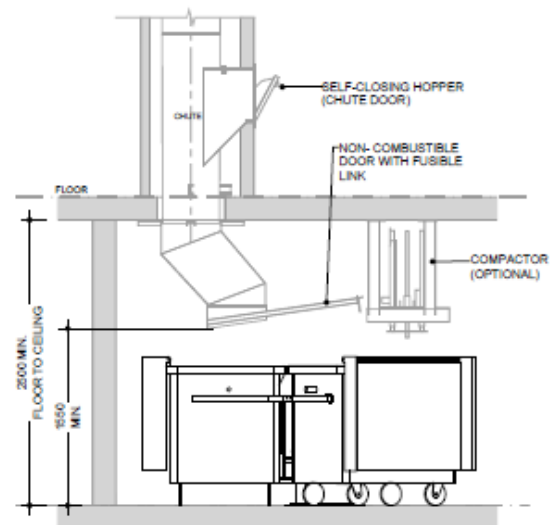
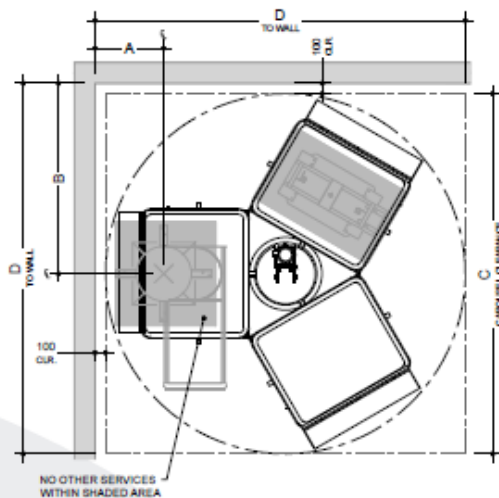
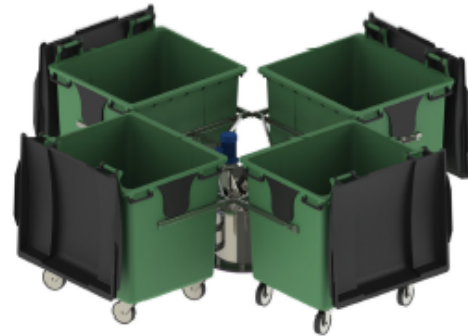
- Simple operation with user friendly controls
- Increased waste servicing efficiency for the development.
- Automatic system control with manual override
- Robust unit construction for long performance life
- Low service and maintain costs
- Rotating flashing beacon (activated during operation)
- Quiet 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 CAROUSEL SYSTEM

No. of Bins	Reference (mm)			
	A	B	C	D
2	650	1700	3200	3350
3	650	1850	3480	3600
4	650	2050	3940	4050

Available with or without compaction unit, our standard 1100 litre bin Carousel System is available in standard 2, 3 or 4 bin options. Our 5 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

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

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

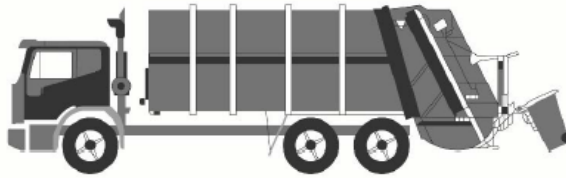
Vehicle type	Rear-loading	Side-loading*	Front-lift-loading	Hook truck	Crane truck
Length overall (m)	10.5	9.6	11.8	10.0	10.0
Width overall (m)	2.5	2.5	2.5	3.0	2.5
Travel height (m)	3.9	3.6	4.8	4.7	3.8
Operational height for loading (m)	3.9	4.2	6.5	3.0	8.75
Vehicle tare weight (t)	13.1	11.8	16.7	13.0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

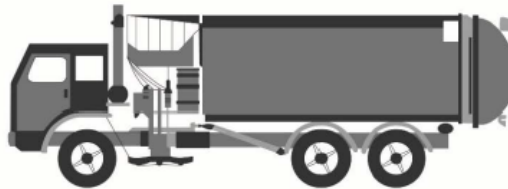
These vehicles are commonly used for domestic waste collections from MUDs and RFBs and sometimes for recycling. They can be used to collect waste stored in mobile bins or bulk bins, particularly where bins are not presented at the kerbside. They are also used for collecting bulky waste.



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

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 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 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



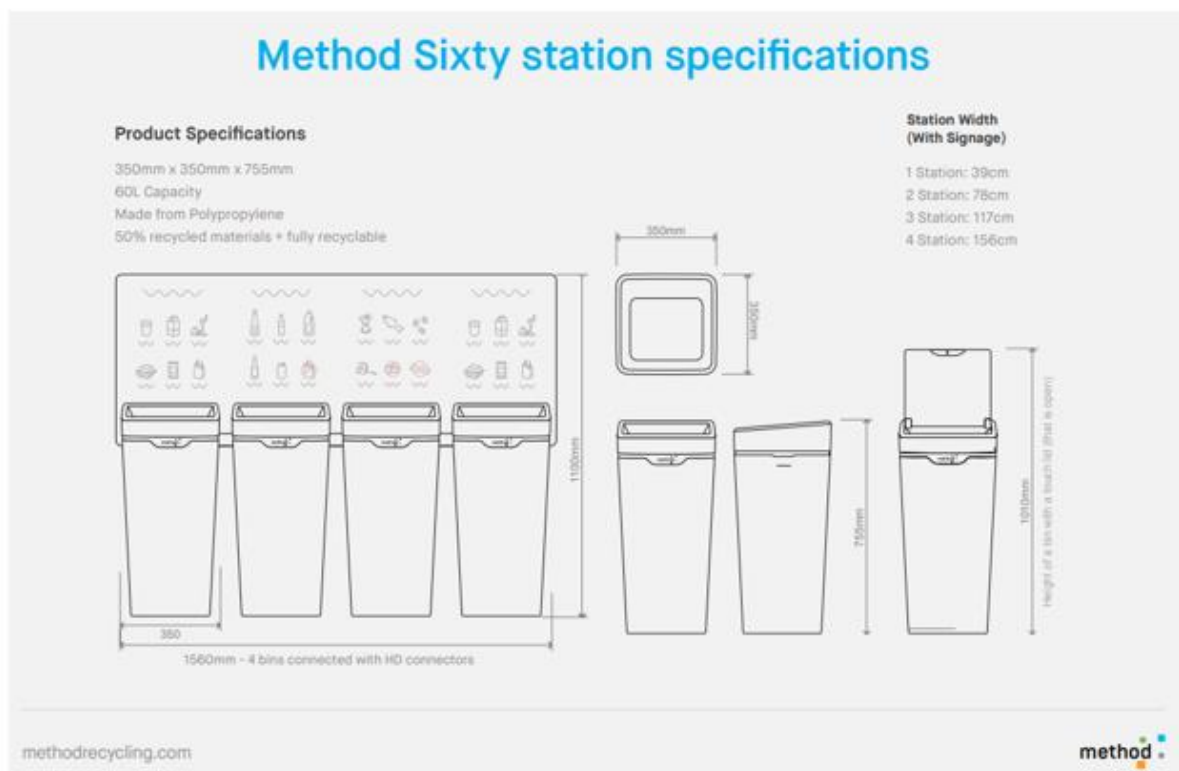
Specifications

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