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1 Veno St, Heathcote NSW
Mixed-Use Development

OPERATIONAL WASTE MANAGEMENT PLAN

4/07/2024
Report No. 5488
Revision D

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REVISION REFERENCE

Revision	Date	Prepared by	Reviewed by	Description
A	3/06/2024	S Semaan	H Wilkes	Draft
B	20/06/2024	H Wilkes	J Parker	Amendment
C	2/07/2024	H Wilkes	J Parker	Amendment
D	4/07/2024	H Wilkes	J Parker	Final

TABLE OF CONTENTS

TABLE OF FIGURES

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
Bulk Bins	Containers with a capacity greater than 1100L designed to be collected by a front-loading vehicle
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
Compactor	A device used for compressing general waste inside it's bin typically at a ratio of 2:1
Comingled Recycling	Waste stream for the recycling of plastic bottles, other plastics, paper, glass and metal containers
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
eDiverter	A single chute fitted with a diversion system to allow two separate waste streams (typically general waste and recycling) to be disposed of concurrently.
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.
MRV	Medium Rigid Vehicle
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
Paper/ Cardboard Recycling	Waste stream for the recycling of paper and cardboard only.
Recycling	Waste stream that combines all recycling, including comingled recycling, paper/cardboard and metals.
Ro-Ro Compactor Unit	A large, portable compactor unit which is collected and serviced by a hook lift vehicle
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
SRV	Small Rigid Vehicle
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
Wheel-Out Wheel Back	A collection arrangement whereby a collection vehicle parks on the street and collection staff exit the vehicle to wheel each bin from a designated storage area to the vehicle for servicing and returns them upon completion.

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

Elephants Foot Consulting (EFC) has been engaged to prepare the following Operational Waste Management Plan (OWMP) to satisfy the conditions of the Development Application Sutherland Shire Council requires for the mixed-use development located at 1 Veno St, Heathcote NSW.

Robust waste management strategies are required for new developments 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 and recycling provisions and procedures*** are established 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 OWMP identifies and details the following components:

- Waste streams expected to be generated onsite and anticipated volumes;
- Suitable bin sizes and quantities;
- Waste and recycling disposal procedures;
- Bin room size estimations and equipment recommendations; and
- Waste collection strategies, locations and frequencies.

It is vital 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 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:

- Sutherland Shire Development Control Plan 2015
- Sutherland Shire Local Environmental Plan 2015

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). 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:

- Sutherland Shire Environmental Specification: Waste Collection for New Multi-Unit Dwellings and Residential Flat Buildings 2017
- Sutherland Shire Development Control Plan 2015, Chapter 6: R4 Residential Flat Buildings
- 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 DEVELOPMENT OVERVIEW

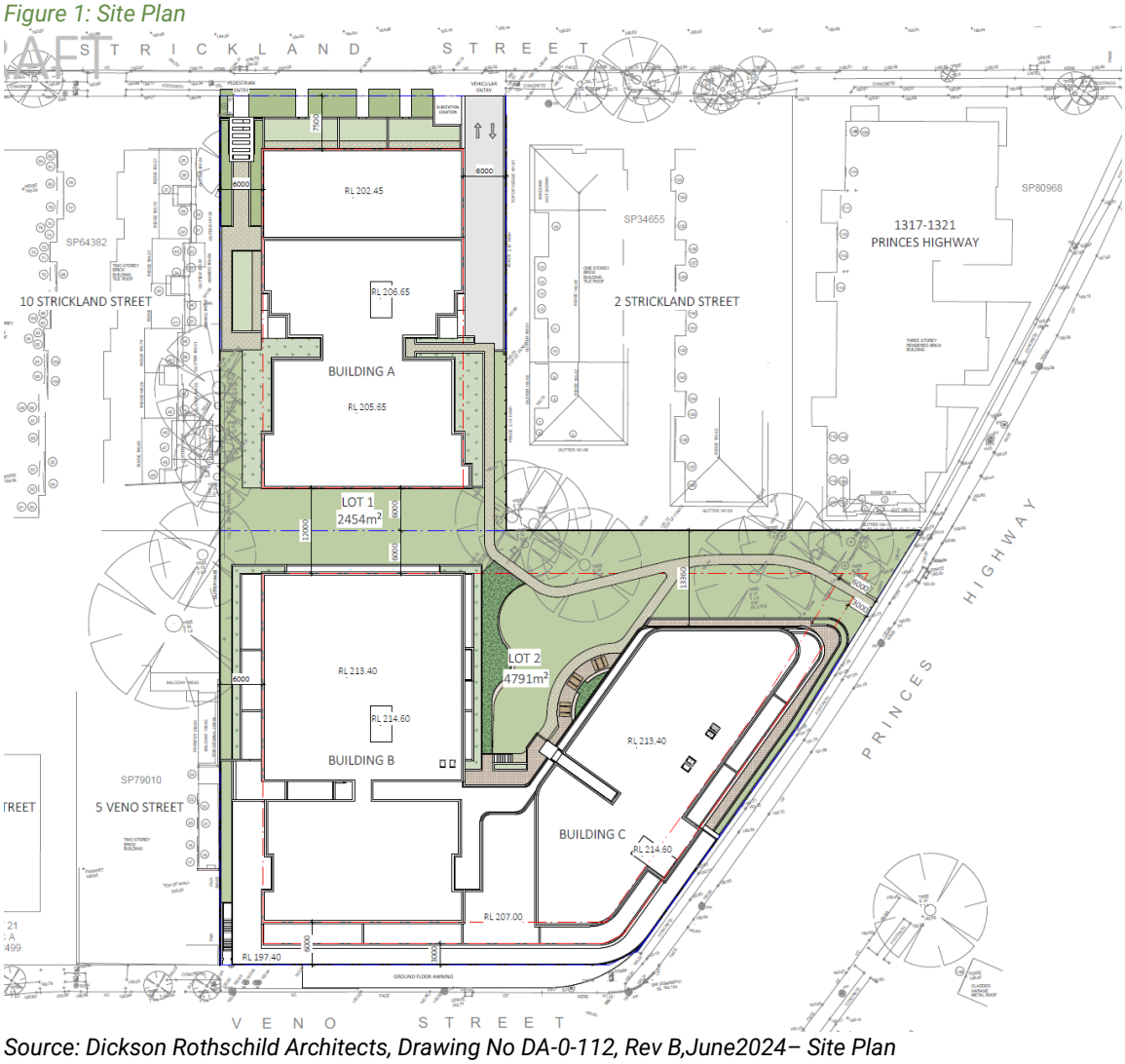
The proposed development falls under the LGA of Sutherland Shire, and consists of:

- 2 separate lots with three buildings total; . Each building is 5 levels and has separate basements.
    - Lot 1 consists of one building (Tower A) and has 60 residential units.
    - Lot 2 consists of two building (Tower B & Tower C) and contains;
        - 64 residential units in Tower B
        - 44 residential units in Tower C
        - A tavern with a total GFA of 895 m^2 a
        - A retail tenancy with a total GFA of 198 m^2

As Lot 1 and Lot 2 have separate basements, It is assumed that building/cores connected by basement levels will share a bin collection point. As such, the buildings been grouped by collection point/shared basements throughout this report.

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

Figure 1: Site Plan



Source: Dickson Rothschild Architects, Drawing No DA-0-112, Rev B,June2024– Site Plan

4.1 SITE LOCATION

The site is located at 1 Veno St, Heathcote NSW, as shown in Figure.1 (boundaries are indicative only). The site has frontages to Strickland Street, Veno Street, and Princes Highway. It has vehicle access via Strickland Street and Veno Street.

Figure 2: Site Location

Source: Google Earth 2024

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 Sutherland Shire *Environmental Specification: Waste Collection for New Multi-Unit Dwellings and Residential Flat Buildings 2017* has been referenced to calculate the total number of waste and recycling bins required for the residential units. In addition, the *NSW EPA's Better Practice Guide for Resource Recovery in Residential Developments (2019)* have been referenced to calculate the total number of Food Organics and Garden Organics (FOGO) bins required for the residential units.

Calculations are based on generic general waste, recycling and FOGO rates. Actual volumes of general waste, recycling and FOGO generated in operation may differ according to the residents' actual waste management practices.

The following tables show the estimated volume (L) of general waste, recycling and FOGO generated by the residential component of the development.

Table 1: Estimated Residential General Waste Volumes –Lot 1 Tower A

Building	**# Units**	**General Waste Generation Rate** (L/unit/week)	**Generated General Waste** (L/week)
Lot 1 - Tower A	60	120	7200
Bins and Collections		General Waste Bin Size (L)	660
		General Waste Bins per Week	11
		General Waste Collections per Week	1
		Total General Waste Bins Required for Collection	**11**

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

Table 2: Estimated Residential Recycling Volumes –Lot 1 Tower A

Level	**Units**	**Recycling Generation Rate** (L/unit/week)	**Generated Recycling** (L/week)	**Recycling Bins per Week** (240L)	**Recycling Collection Per Week**	**Total Recycling Bins Required**
Ground	5	120	600	3	1	3
Level 1	12	120	1440	6	1	6
Level 2	12	120	1440	6	1	6
Level 3	12	120	1440	6	1	6
Level 4	12	120	1440	6	1	6
Level 5	7	120	840	4	1	4
TOTAL	**60**		**7200**	**31**		**31**
					Total Recycling Bins (240L)	**31**

Table 3: Estimated Residential FOGO Volumes – Lot 1 Tower A

Building	# Units	FOGO Waste Generation Rate (L/unit/week)	Generated FOGO Waste (L/week)
Lot 1 - Tower A	60	25	1500
Bins and Collections		FOGO Bin Size (L)	240
		FOGO Bins per Week	7
		FOGO Collections per Week	1
		Total FOGO Bins Required for Collection	**7**

Note: At the time of writing, Council do not have an active FOGO collection service. Provision for FOGO bins at this development have been included to account for a future FOGO collection service.

Table 4: Estimated Residential General Waste Volumes –Lot 2 – Towers B & Tower C

Building/ Core	# Units	General Waste Generation Rate (L/unit/week)	Generated General Waste (L/week)
Lot 2 - Tower B	64	120	7680
Lot 2 - Tower C	44	120	5280
TOTAL	**108**		**12960**
Bins and Collections		General Waste Bin Size (L)	660
		General Waste Bins per Week	20
		General Waste Collections per Week	1
		Total General Waste Bins Required for Collection	**20**

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

Table 5: Estimated Residential Recycling Volumes – Lot 2 – Towers B & Tower C

Building / Core	Level	Units	Recycling Generation Rate (L/unit/week)	Generated Recycling (L/week)	Recycling Bins per Week (240L)	Recycling Collection Per Week	Total Recycling Bins Required
Lot 2 - Tower B	Ground	7	120	840	4	1	4
	Level 1	11	120	1320	6	1	6
	Level 2	12	120	1440	6	1	6
	Level 3	12	120	1440	6	1	6
	Level 4	11	120	1320	6	1	6
	Level 5	11	120	1320	6	1	6
Lot 2 - Tower C	Level 1	10	120	1200	5	1	5
	Level 2	10	120	1200	5	1	5
	Level 3	10	120	1200	5	1	5
	Level 4	7	120	840	4	1	4
	Level 5	7	120	840	4	1	4
TOTAL		**108**		**12960**	**57**		**57**
						Total Recycling Bins (240L)	**57**

Table 6: Estimated FOGO Volumes – Residential Lot 2 – Towers B & Tower C

Building/ Core	# Units	FOGO Waste Generation Rate (L/unit/week)	Generated FOGO Waste (L/week)
Lot 2 - Tower B	64	25	1600
Lot 2 - Tower C	44	25	1100
TOTAL	**108**		**2700**
Bins and Collections		FOGO Bin Size (L)	240
		FOGO Bins per Week	12
		FOGO Collections per Week	1
		Total FOGO Bins Required for Collection	**12**

Note: At the time of writing, Council do not have an active FOGO collection service. Provision for FOGO bins at this development have been included to account for a future FOGO collection service.

5.2 RESIDENTIAL BIN SUMMARY

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

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.

5.2.1 RESIDENTIAL BIN SUMMARY – LOT 1 TOWER A

General Waste: 11 x 660L bins collected **1 x weekly**
Recycling: 31 x 240L bins collected **1 x weekly**
FOGO: 7 x 240L bins collected **1 x weekly**
Service Bins: 1x 660L bin

5.2.2 RESIDENTIAL BIN SUMMARY – LOT 2 TOWER B & TOWER C

General Waste: 20 x 660L bins collected **1 x weekly**
Recycling: 57 x 240L bins collected **1 x weekly**
FOGO: 12 x 240L bins collected **1 x weekly**
Service Bins: 2x 660L bin

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 1 days' worth of general waste generation.

Based on the estimated general waste volumes generated by each building/core, the following number of bins are needed per day to manage 1 day's worth of chute discharge.

Table 7: Chute Discharge Equipment Summary – Lot 1

General Waste		
Building	**Generated General Waste** (L/week)	**# 660L Bins Required for 1 days' Capacity**
Tower A	7200	1.55

Table 8: Chute Discharge Equipment Summary – Lot 2

General Waste		
Building/ Core	**Generated General Waste** (L/week)	**# 660L Bins Required for 1 days' Capacity**
Tower B	7680	1.66
Tower C	5280	1.14

Track systems are strong recommended to automatically rotate full bins with empty bins under the chute, thereby increase the period of time the chutes can be left without manual intervention.

However, if the site does not have track systems the site will require a full time building manager on site. The bins under the chute will require manual rotation approximately 2 times per day.

5.4 RESIDENTIAL WASTE DISPOSAL PROCEDURES

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

5.4.1 RESIDENTIAL GENERAL WASTE AND RECYCLING DISPOSAL PROCEDURES

Single general waste chutes will be installed in each building core with access provided to all residents on each residential level. Separate 240L recycling bins will be provided in a compartment adjacent to the general waste chute for the storage of recycling.

Residents will be responsible for walking their general waste and recycling to the disposal point on their level and placing their general waste into the chute and recycling into the 240L bin. Residents will wrap or bag their general waste before placing in the 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 240L bins. Recycling should be clean and must not be bagged as soft plastics contaminate recycling.

The general waste chutes discharge into 660L bins within the chute discharge rooms for each building and building core. The building manager will monitor the fullness of the bins under the chute and rotate with empty bins are required.

Recycling bins on each level will also be monitored by the building caretaker and full bins will be exchanged with empty bins as required.

Full and spare bins will be kept in the Residential Bin Holding Rooms for each building.

5.4.2 RESIDENTIAL FOGO DISPOSAL PROCEDURES

The majority of organics waste generated from multi-unit residential developments 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 or 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 Sutherland Shire's future FOGO collection service procedures (for example a compostable liner). Any clippings from residential units can also be disposed of with the FOGO.

Each 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.

The Building Manager will monitor the fullness of the FOGO bins in each of the Communal FOGO Bin Rooms and rotate with empty bins as required. The FOGO bins will be kept in the respective Residential Bin Holding Rooms.

Building management is responsible for ensuring that the Communal FOGO Bin Rooms and FOGO bins are washed down frequently to ensure that hygiene and odour is managed.

5.5 RESIDENTIAL BIN COLLECTION PROCEDURES

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

Prior to collections, the Building Manager will be responsible for transporting the bins from Chute Discharge Rooms and each residential level to the respective collection points of each building. The Building Manager/Caretaker is also responsible for ensuring that the bins are adequately arranged for an efficient collection. It is recommended that additional 660L service bins be 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.

5.5.1 RESIDENTIAL BIN COLLECTIONS PROCEDURES – LOT 1 TOWER A

On the day of collection, a Council collection vehicle will enter the site from Strickland Street and park in the loading bay. The collection staff will exit the vehicle and collect the bins from the Residential Bin Holding Room on the ground floor and return the empty bins once serviced. Upon completion of servicing, the collection vehicle will exit the site onto Strickland Street in a forward direction.

The Building Manager/Caretaker will be responsible for ensuring that the collection staff have access to the collection point. Additionally, the Building Manager/Caretaker is responsible for returning the bins to their operational location to resume use.

5.5.2 RESIDENTIAL BIN COLLECTIONS PROCEDURES – LOT 2 TOWER B & TOWER C

On the day of collection, a Council collection vehicle will enter the site from Veno Street and park in the loading bay. The collection staff will exit the vehicle and collect the bins from the Residential Bin Holding Room on the ground floor and return the empty bins once serviced. Upon completion of servicing, the collection vehicle will exit the site onto Veno Street in a forward direction.

The Building Manager/Caretaker will be responsible for ensuring that the collection staff have access to the collection point. Additionally, the Building Manager/Caretaker is responsible for returning the bins to their operational location to resume use.

5.6 OTHER RESIDENTIAL WASTE MANAGEMENT CONSIDERATIONS

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

5.6.1 RESIDENTS OF BUILDING A – GROUND LEVEL

As the chute within Building A terminates on the ground level, the residents of Building A ground level will not have access to the chute for the disposal of their general waste. Instead, a general waste bin will be provided in the communal FOGO room of Building A, also located on Ground level.

The residents of the ground level will be responsible for walking their waste items and FOGO items to this room and disposing them into the correct bins.

The building manager will monitor the fullness of both the general waste bin and the FOGO bin and rotate with empty bin as required. The full and spare bins will be kept in the Residential Bin Holding Room (collection area) on Ground Level.

The ground level residents will be provided with a recycling bin cupboard, as per all the other levels.

5.6.2 RESIDENTIAL COMMON AREAS

Residential common areas will be supplied with suitably branded source separation receptacles where considered appropriate. 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.

5.6.3 LANDSCAPED AREAS AND GARDEN ORGANICS

Garden organics generated from surrounding landscaped areas and indoor foliage typically consists of lawn clippings, cuttings, leaves and branches. Garden organics generated from surrounding landscaped areas 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 foliage within each residential unit will be managed by the residents and should be disposed of into the FOGO bins.

5.6.4 RESIDENTIAL BULKY WASTE PROCEDURES

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

The New South Wales EPA's Better Practice Guide For Resource Recovery in New Developments recommended 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.

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

Bulky Waste Room Size – Lot 1

(Total number of units - 40) / 10*2+10 = m^2 of bulky waste room
= (60-40)/10*2 + 10 =
= 20/10*2 + 10
= 2.0*2 +10
= 4 +10
= 14
bulky waste storage area: minimum 14m²

Bulky Waste Room Size – Lot 2

(Total number of units - 40) / 10*2+10 = m^2 of bulky waste room
= (109-40)/10*2 + 10 =
= 69/10*2 + 10
= 6.9*2 + 10
= 13.8+ 10
= 23.8
bulky waste storage area: minimum 24m²

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 coordinate these times with the residents.

In Lot 1, on the day of bulky waste collection, a Council collection vehicle will enter the site from Strickland Street and park in the loading bay. Collection staff will collect the bulky waste items from the collection point. Once bulky items have been loaded onto the vehicle, the collection vehicle will exit the site onto Strickland Street in a forward direction.

In Lot 2, on the day of bulky waste collection, a Council collection vehicle will enter the site from Veno Street and park in the loading bay. Collection staff will collect the bulky waste items from the collection point. Once bulky items have been loaded onto the vehicle, the collection vehicle will exit the site onto Veno Street in a forward direction.

6.0 TAVERN AND RETAIL TENANCY 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 TAVERN AND RETAIL TENANCY WASTE GENERATION ESTIMATES

The NSW EPA's *Better Practice Guide for Resource Recovery in Residential Developments* (2019) has been referenced to calculate the total number of bins required 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 waste and recycling generation rates from the NSW EPA's *Better Practice Guide for Resource Recovery in Residential Developments* (2019) have been adapted to reflect litres per 100m^2 per day.

The following table shows the estimated volume (L) of general waste and recycling that will be generated by the retail tenants. It is assumed that the retail tenancy and tavern tenancy will share bin room, bins and collection services.

The following estimates are based on a seven-day operating week.

Table 9: Estimated Waste and Recycling Volumes – Retail Tenancy and Tavern

Tenancy	**Waste Generation Rate Type**	**Floor Area** (m²)	**General Waste Generation Rate** (L/100m²/day)	**Generated General Waste** (L/week)	**Recycling Generation Rate** (L/100m²/day)	**Generated Recycling** (L/week)
Retail	Food Retail: Other	198	150	2079	100	1386
Tavern	Licensed Clubs (with gaming)	794	50	2779	50	2779
	Restaurants	101	400	2828	280	1980
TOTAL		**1093**		**7686**		**6145**
Bins & Collections			General Waste Bin Size (L)	1100	Recycling Bin Size (L)	1100
			General Waste Collections per Week	3	Recycling Collections per Week	3
			Total General Waste Bins Required	**3**	Total Recycling Bins Required	**2**

6.2 TAVERN AND RETAIL TENANCY BIN SUMMARY

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

General Waste: 3 x 1100L bins collected **3 x weekly**

Recycling: 2 x 1100L bins collected **3 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 TAVERN AND RETAIL TENANCY WASTE DISPOSAL PROCEDURES

The retail tenancy and tavern tenancy will share a bin room, bins and collection service.

All tenancies will be responsible for their own general waste and recycling disposal procedures within their tenancy.

On completion of each trading day or as required, nominated staff or contracted cleaners will transport all general waste and recycling to the Retail/Tavern Bin Room and place into the appropriate collection bins.

6.4 TAVERN AND RETAIL TENANCY WASTE COLLECTION PROCEDURES

A private waste contractor will be engaged to service the retail/tavern bins as per an agreed collection schedule. This report assumes that general waste and recycling is collected three times weekly.

On the day of service, a private waste collection vehicle will enter the site from Veno Street and park in the loading bay. The collection staff will exit the vehicle and collect the bins from the Retail/Tavern Bin Room and return the empty bins once serviced.

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

Please note: The collection of retail bins should occur on separate days from the collection of residential bins to minimise conflicting timing with the uses of the loading dock.

6.5 OTHER TAVERN AND RETAIL TENANCY 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 LIQUID WASTE

Liquid wastes such as 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.

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

7.0 STAKEHOLDER ROLES & RESPONSIBILITIES

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

Table 10: Stakeholder Roles and Responsibilities

Roles	Responsibilities
Strata, Body Corporate or 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.
Building Manager or Waste Caretaker	• 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 and Taven Staff	• 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.
Developer	• Purchase all equipment required to implement this OWMP prior to the occupation of the building to be provided to the Strata or Body Corporate.

8.0 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 11: Operational Waste Streams

Waste Stream	Description	Typical Destination	Waste Stream Management
General Waste	The remaining portion of the waste stream that is not recovered for re-use, processing, or recycling. May include soft plastics, food scraps, polystyrene, etc.	Landfill	Waste should be bagged before placing in the 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 bins. Bulky cardboard must not be placed in any chute. Cardboard should be flattened before placing in the designated 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.
Electronic Waste	Discarded e-waste, electronic components and materials such as computers, mobile phones, keyboards, etc.	Resource Recovery Centre	Building manager arranges collection for e-waste recycling as needed by residents. Retail tenants arrange for recycling of their own e-waste.
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 Goods 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 caretaker 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 contractor would collect the bins from the bin holding area and clean the bins with their specialised vehicle.

12.0 BIN MOVING PATHS

Minimal movement of bins is anticipated for this site, as bins are to be collected directly from their storage location. The building manager will be responsible for any transportation of bins that does occur.

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 any bin moving paths 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.

13.0 EQUIPMENT SUMMARY

Table 12: Equipment Summary

	Part	Qty	Notes
Chutes	Please refer to supplier's information	3	(See APPENDIX: B.1 for Typical Single Chute Layout)

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 2 days' worth of estimated general waste 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 13: Waste Room Areas – Lot 1

Level	Waste Room Type	Equipment	Estimated Area Required (m^2)	Actual Area Provided (m^2)
G	Communal FOGO Bin Room & Ground level resident's waste disposal point – Tower A	*minimum* 4 x 240L bins (FOGO) 1x 660 L bin (general waste)	>7	7
G	Chute Discharge Room – Tower A & Residential Bin Holding Room – Tower A *(Collection Area)*	*CAGED OFF – CHUTE DISCHARGE* 1X 660l bin (waste) *Outside of caged area – collection point* 11 x 660L bins (general waste) 31 x 240L bins (recycling) 7 x 240L bins (FOGO)	>71	*46*
G	Bulky Waste Room – lot 1		>14	*9*

Table 14: Waste Room Areas – Lot 2

Level	Waste Room Type	Equipment	Estimated Area Required (m^2)	Actual Area Provided (m^2)
LG	Chute Discharge Room – Tower B	12x 660L bins (waste) 1 x 660L (service bin) 29x 240L bins (recycling- full & spare) Bin Hoist	>60	44
LG	Chute Discharge Room – Tower C	8x 660L bins (waste) 1 x 660L (service bin) 18x 240L bins (recycling -full & spare)	>35	39
G	Communal FOGO Bin Room	*Minimum* 5 x 240L bins (FOGO)	>10	11
B1	Residential Bin Collection Area	20 x 660L bins (general waste) 57 x 240L bins (recycling) 12 x 240L bins (FOGO)	>101	33
G	Bulky Waste Room – Lot 2		>24	26
G	Retail & Taven Bin Room	3 x 1100L bins (general waste) 2 x 1100L bins (recycling)	>24	12

The "estimated area required" in the table above have been calculated based on equipment requirements and/or bin dimensions with an additional 90% of bin GFA factored in for manoeuvrability. Other factors such as the shape of the room, position of the chutes, configuration of the equipment, access needs and position of the door may impact the size of the room required. Thus a smaller or larger room size may also be suitable for purpose, as long as the room can accommodate the required equipment with adequate access.

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 15: 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)
Residential Bin Holding Room and/or Bin Collection Area	• Bins must not be stacked in rows that are more than two bins deep.
Communal FOGO Rooms	• 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 and Tavern 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 REQUIREMENTS

Waste room construction must comply with the minimum standards as outlined in the *Sutherland Shire Development Control Plan 2015,* 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 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.

16.0 USEFUL CONTACTS

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

LOCAL COUNCIL

Sutherland Customer Service	Ph: (02) 9710 033	E: ssc@ssc.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

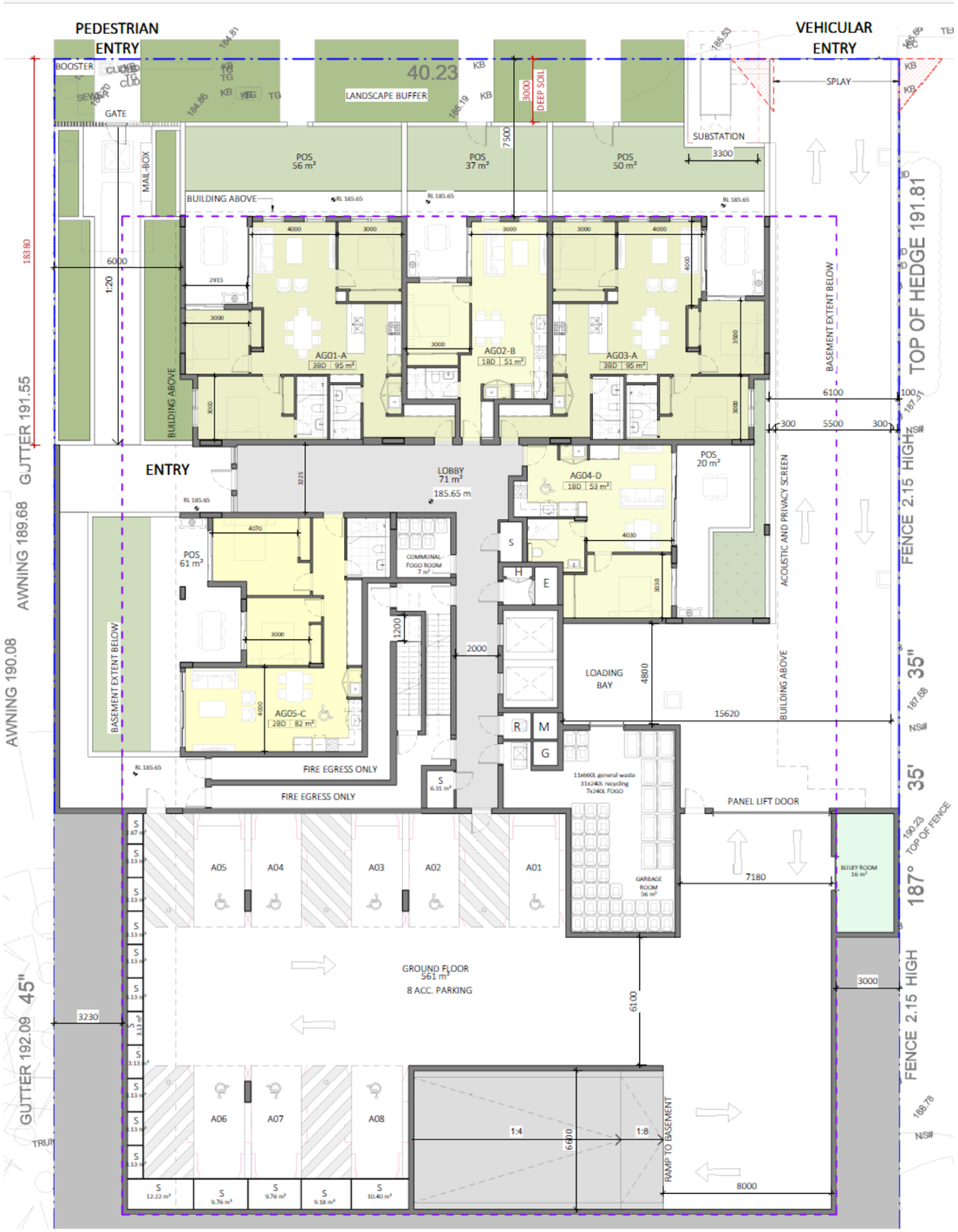
Elephants Foot Equipment	Ph: 1300 435 374	E: equipment@elephantsfoot.com.au
SULO	Ph: 1300 364 388	E: sulosales@pactgroup.com

CHUTES, COMPACTORS AND EDIVERTER SYSTEMS

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

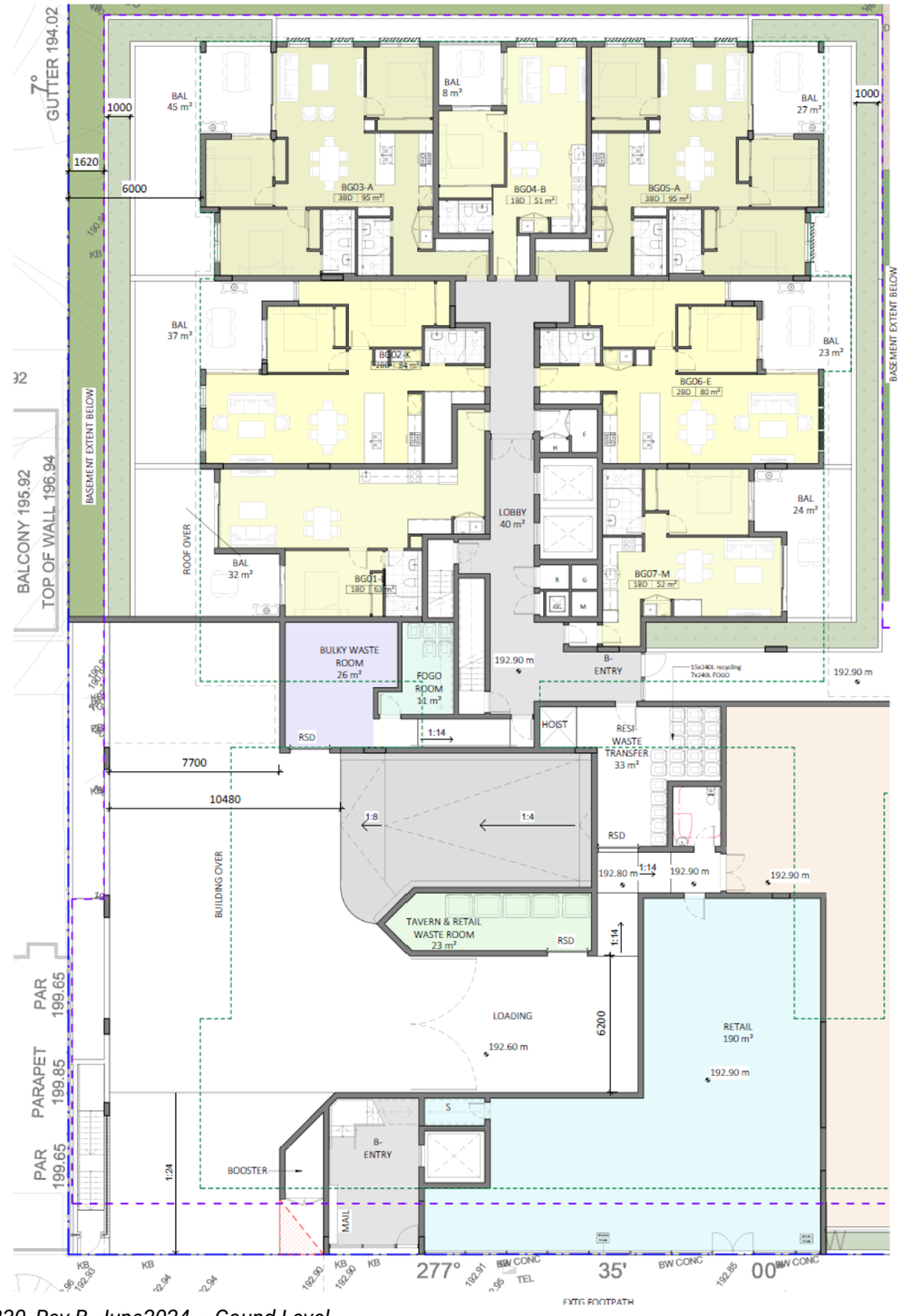
APPENDIX A: ARCHITECTURAL PLANS

APPENDIX: A.1 GROUND FLOOR PLAN – LOT 1



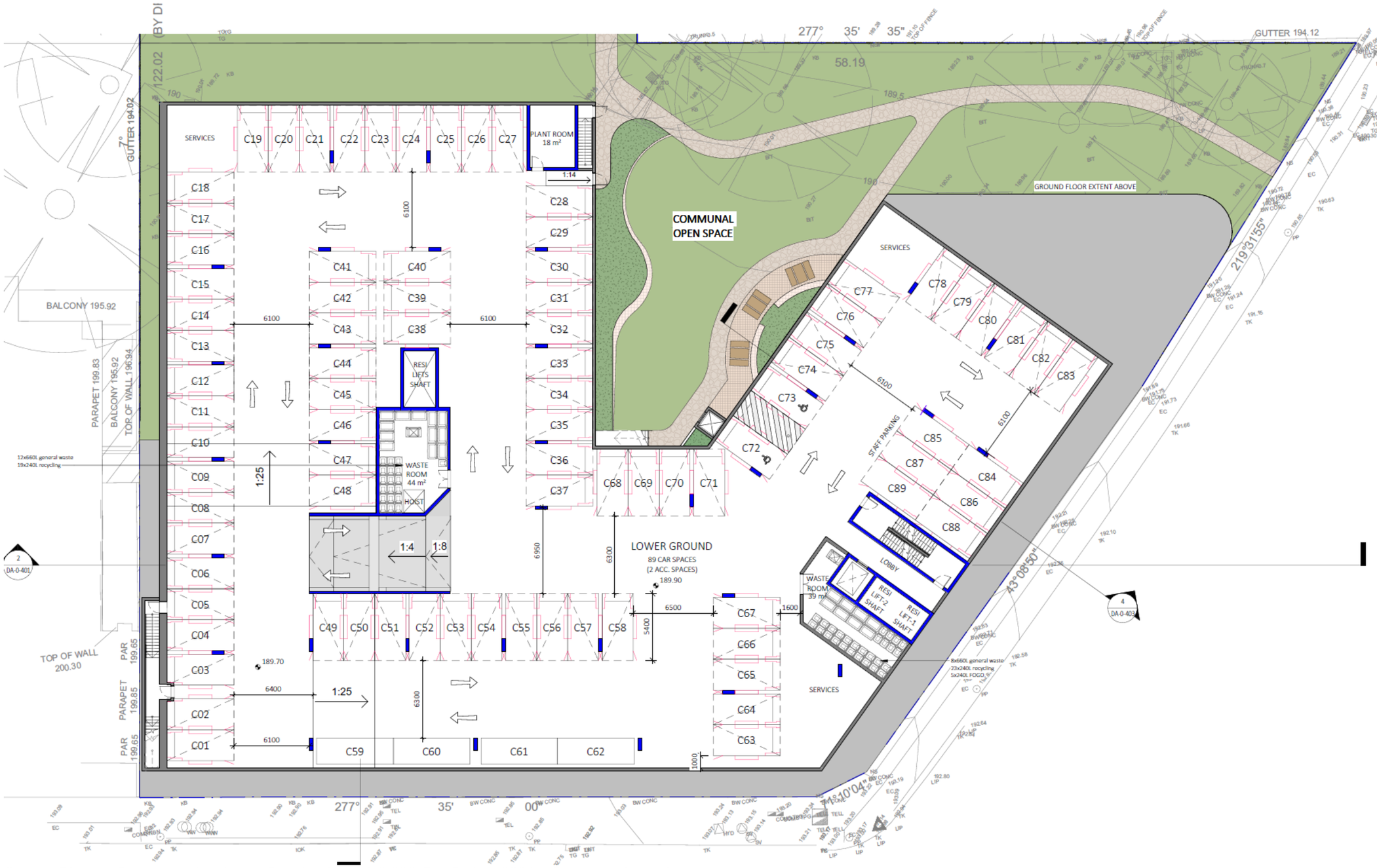
Source: Dickson Rothschild Architects, Drawing No. DA-0-221, Rev E, July 2024 – Ground Level

APPENDIX: A.1 GROUND FLOOR PLAN – LOT 2



Source: Dickson Rothschild Architects, Drawing No. DA-0-230, Rev B, June2024 – Gound Level

APPENDIX: A.2 BASEMENT LEVEL 1– LOT 2



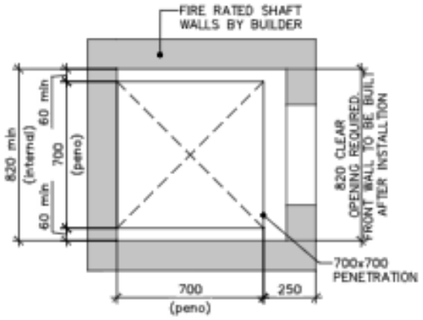
Source: Dickson Rothschild Architects, Drawing No. DA-0-230, Rev B, June2024 – Basement Level 1

APPENDIX B: INSTALLATION EQUIPMENT

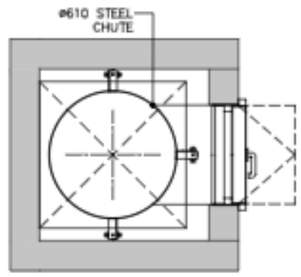
Chute Solutions.™
an Elephants Foot Company

CHUTE SHAFT & PENETRATION SET-OUT

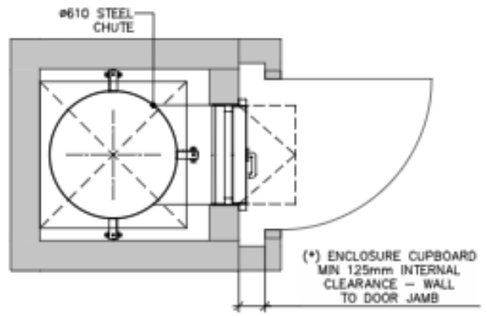
SINGLE Ø610 STEEL



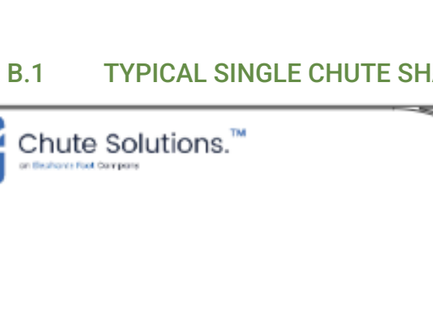
01 SINGLE (610ø) GALV. STEEL CHUTE PENETRATION SET-OUT



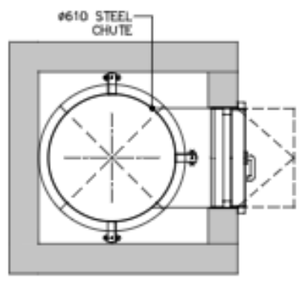
02 SINGLE (610ø) GALV. STEEL CHUTE LAYOUT



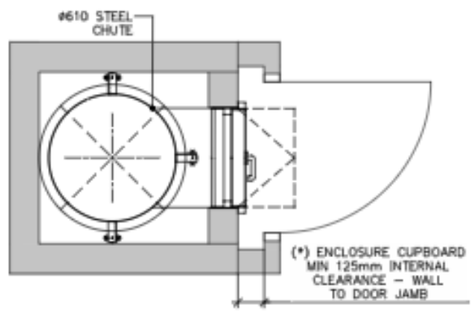
03 SINGLE (610ø) GALV. STEEL CHUTE LAYOUT with ENCLOSURE CUPBOARD (*)



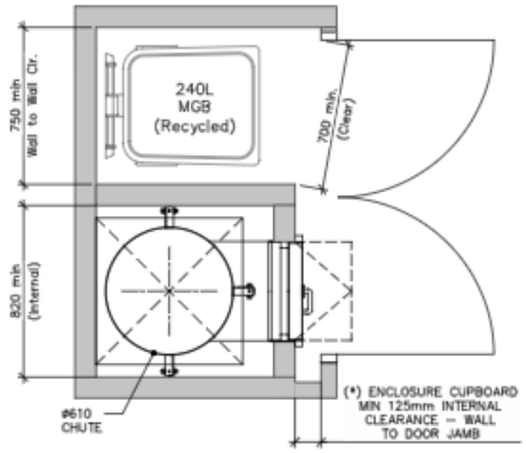
04 SINGLE (610ø) GALV. STEEL CHUTE WITH CIRCULAR PENETRATION SET-OUT



05 SINGLE (610ø) GALV. STEEL CHUTE LAYOUT (WITH CIRCULAR PENETRATION)



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



07 TYPICAL (610ø) GALV. STEEL CHUTE LAYOUT with ENCLOSURE(*) & RECYCLING COMPARTMENT

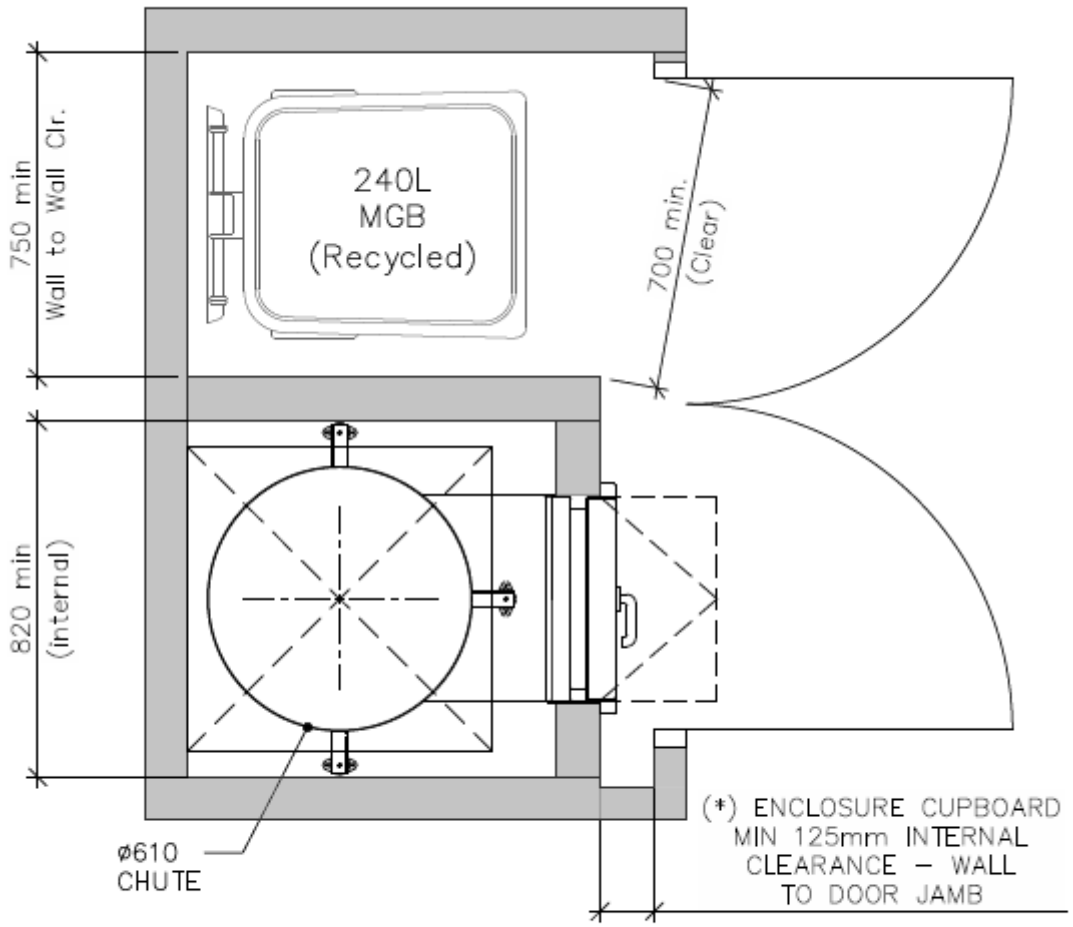
(*) NOTE: ENCLOSURES ARE RECOMMENDED IF THE CHUTE OPENS DIRECTLY TO A CORRIDOR OR IS NOT LOCATED IN A WASTE ROOM. IF CHUTE ACCESS IS WITHIN A WASTE ROOM THEN THE CUPBOARD ENCLOSURES ARE NOT REQUIRED.

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 EXAMPLE RESIDENTIAL LEVEL RECYCLING BIN LAYOUT



07 TYPICAL (610ø) GALV. STEEL CHUTE LAYOUT
with ENCLOSURE(*) & RECYCLING COMPARTMENT

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

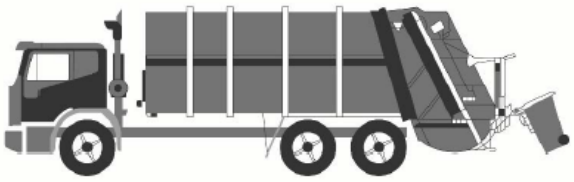
Vehicle type	Rear-loading	Side-loading*	Front-lift-loading	Hook truck	Crane truck
Length overall (m)	10.5	9.6	11.8	10.0	10.0
Width overall (m)	2.5	2.5	2.5	3.0	2.5
Travel height (m)	3.9	3.6	4.8	4.7	3.8
Operational height for loading (m)	3.9	4.2	6.5	3.0	8.75
Vehicle tare weight (t)	13.1	11.8	16.7	13.0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

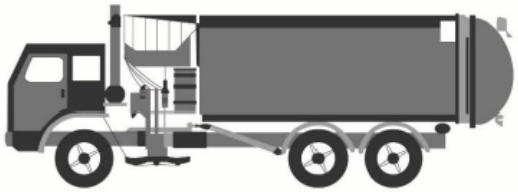
These vehicles are commonly used for domestic waste collections from MUDs and RFBs and sometimes for recycling. They can be used to collect waste stored in mobile bins or bulk bins, particularly where bins are not presented at the kerbside. They are also used for collecting bulky waste.



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

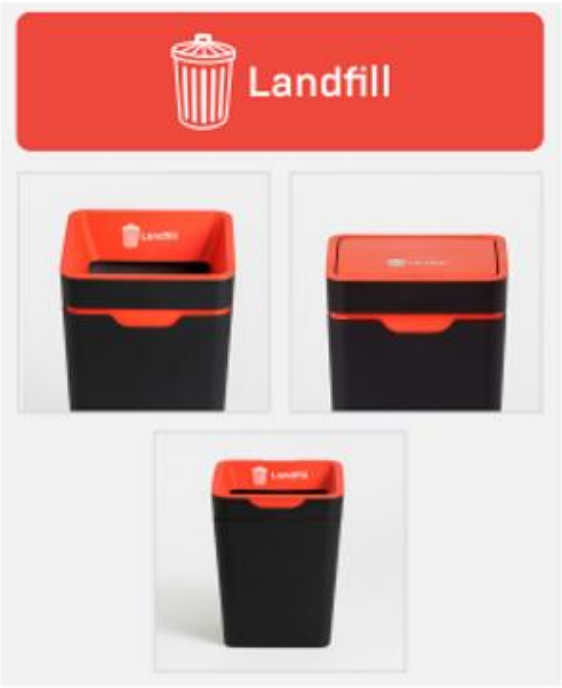
Typically, councils and their contractors operate with large collection vehicles (heavy rigid class vehicles) because they carry greater payloads and allow for more cost-effective collection services. Some councils, or their contractors, may have smaller collection vehicles in their fleet. Early discussion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

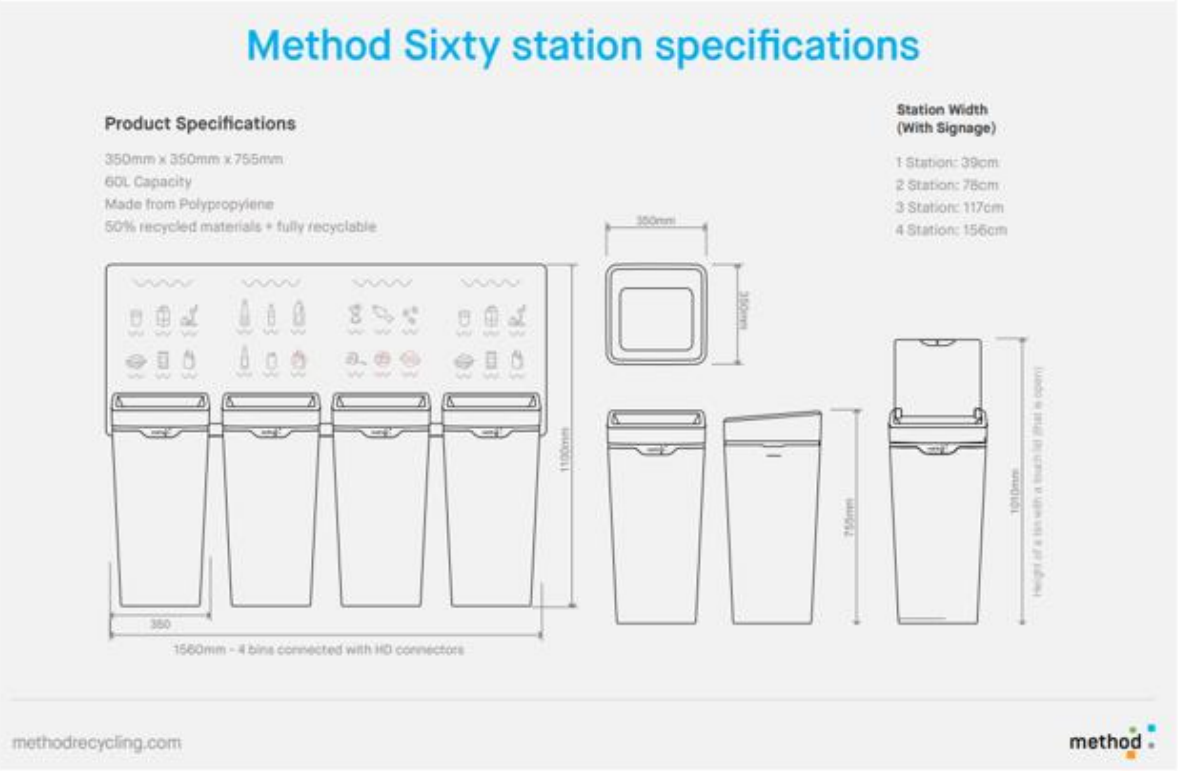
The waste management systems and the location of the collection point should always be designed so that the council can provide the standard domestic waste service.

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 SOURCE SEPARATION RECEPTACLES





Source: Method Recycling - www.methodrecycling.com