



61A-65 Albert Ave, Chatswood NSW
Mixed-Use Development

OPERATIONAL WASTE MANAGEMENT PLAN

16/12/2025
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Revision F

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Mandarin Developments Pty Ltd

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GLOSSARY OF ABBREVIATIONS AND TERMS

TERM	DESCRIPTION
<i>Bin-Carting Route</i>	Travel path for transporting bins from their allocated storage location to the nominated collection point
<i>Bin Hoist</i>	A device used for lifting or lowering bins between different levels
<i>Bin Lifter</i>	A device used to mechanically lift bins for the purpose of emptying them into larger bins and/or compactors.
<i>Bin Mover</i>	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
<i>Bulk Bins</i>	Containers with a capacity greater than 1100L designed to be collected by a front-loading vehicle
<i>Bulky Waste</i>	Recycling items that are too large to be deposited into bins, including furniture, whitegoods, electronics and mattresses
<i>Chute</i>	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.
<i>Chute Discharge</i>	The termination point of a chute whereby the chute offsets deposited general waste, recycling or FOGO into bins
<i>Chute Discharge Room</i>	A room enclosing the termination point of the chute/s, including bins and volume handling equipment that is accessible only to the building caretaker
<i>Collection Area/Point</i>	Designated area or point where bins are loaded onto the collection vehicle for servicing
<i>Compactor</i>	A device used for compressing general waste inside it's bin typically at a ratio of 2:1
<i>Comingled Recycling</i>	Waste stream for the recycling of plastic bottles, other plastics, paper, glass and metal containers
<i>Communal Bin Room</i>	A central, shared bin room accessible to all residents or staff to dispose of their waste stream
<i>DA</i>	Development Application
<i>DCP</i>	Development Control Plan
<i>eDiverter</i>	A single chute fitted with a diversion system to allow two separate waste streams (typically general waste and recycling) to be disposed of concurrently.
<i>EPA</i>	Environment Protect Authority
<i>FOGO</i>	Food Organics and Garden Organics
<i>General Waste</i>	All non-recyclable and non-hazardous waste that is sent to landfill
<i>HRV</i>	Heavy Rigid Vehicle

<i>Kerbside Collection</i>	A collection arrangement whereby bins are presented in a single row along the kerb and serviced by a collection vehicle on the street.
<i>L</i>	Litre
<i>LEP</i>	Local Environmental Plan
<i>Mixed Use Development</i>	A development comprising a combination of both residential and commercial units or two or more different land uses within the one development.
<i>Mobile Bins</i>	Containers with a capacity up to and including 1100L designed to be collected by a rear-loading vehicle
<i>Multi-unit Residential Development</i>	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.
<i>MRV</i>	Medium Rigid Vehicle
<i>Onsite Collection</i>	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.
<i>Owners Corporation</i>	An organisation or group of persons that is identified by a particular name and that acts, or may act, as an entity
<i>Paper/ Cardboard Recycling</i>	Waste stream for the recycling of paper and cardboard only.
<i>Recycling</i>	Waste stream that combines all recycling, including comingled recycling, paper/cardboard and metals.
<i>Ro-Ro Compactor Unit</i>	A large, portable compactor unit which is collected and serviced by a hook lift vehicle
<i>Service Bins</i>	Supplementary bins which are provided to residents or staff for use during collection periods either in communal bin rooms or under chutes
<i>Source Separation Receptacles</i>	Communal containers used throughout the development for the day-to-day disposal of different waste streams
<i>SRV</i>	Small Rigid Vehicle
<i>Volume Handling Equipment</i>	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
<i>Waste Stream</i>	A classification used to describe waste of a particular type (eg. food waste stream)
<i>WHS</i>	Workplace Health and Safety
<i>Wheel-Out Wheel Back</i>	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 EXECUTIVE SUMMARY

This Operational Waste Management Plan has been prepared by Elephants Foot Consulting to accompany a concurrent Rezoning Request and State Significant Development Application (SSDA) for a mixed-use development at 61A-65 Albert Avenue, Chatswood. The site is legally described as Lot 2 DP1035379. This report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARS) issued for the project (SSD-85024458).

2.0 INTRODUCTION

The application seeks consent for the concurrent rezoning of the site, demolition of the existing building and construction of a 32-storey mixed use tower.

Specifically, the SSDA seeks development consent for the following:

- Approval of an LEP amendment: to support the proposed development, a rezoning request is being sought concurrently with the SSDA under the HDA pathway. The rezoning request seeks to amend the Willoughby Local Environmental Plan 2012 (WLEP 2012) by:
 - Amend the Height of Building Map reference in clause 4.3 of the WLEP to specify a maximum building height of RL 192m and RL 205m.
 - Amend the Floor Space Ratio map referenced in clause 4.4 of the WLEP to remove the floor space ratio control, as is consistent with other sites in the Chatswood CBD
 - Amend the Affordable Housing Map referenced in clause 6.8 of the WLEP to specify an affordable housing contribution of 5%.
 - Amend clause 6.24 61A Albert Avenue, Chatswood to:
 - Remove the minimum non-residential floor space ratio restriction that applies to the land.
 - Remove the prohibition of serviced apartments. This is not a redundant subclause as serviced apartments are prohibited use throughout the E2 Commercial Centre zone.
 - Include a notation that permits strata subdivision of land on the site despite clause 4.1A.
 - Include a new subclause that states development for the purpose of advertising structure is permissible on the land with development consent.
 - Insert a new subclause withing clause 6.24, that states despite clause 6.15(2) Sun Access of the WLEP, development consent may be granted to development on the land that results in minor additional overshadowing between 11am – 12pm within Area 2 of Chatswood Oval, providing it results in no more than 5% additional overshadowing.
- State significant development consent for the proposed development , including:
 - Demolition of the existing building known as the Mandarin Centre.
 - Construction of a 32-storey mixed-use tower, including the following elements:
 - Six (6) levels of basement parking
 - Four (4) storey retail podium
 - 28-storey residential tower
 - Augmentation of infrastructure and services.
 - Site landscaping; and
 - Public domain improvements.

The purpose of the project is to deliver high-quality mixed-use development with a predominant residential focus within convenient walking distance of Chatswood Train Station and Commercial Core.

This report has been prepared in response to the requirements contained within the SEARS request dated 23 June 2025. Specifically, this report has been prepared to respond to the SEARS requirement issued below:

Table 1 – SEARs Requirements

Item	Description of Requirement	Section Reference
17	- Provide the measures to be implemented to manage, reuse, recycle and safely dispose of waste in accordance with any council waste management requirements. Refer to Willoughby City Council comments in Appendix A. Willoughby City Council Waste comments below. 10. Vehicle access and waste disposal Willoughby City Council has adopted the Waste Management Technical Guide and Development Controls by North Sydney Regional Organisation of Councils for mixed-use developments. The proposal is expected to comply with the requirements set out in this document concerning waste disposal. The following requires compliance for any proposal: - Council has a legislative responsibility to collect residential waste (NSROC 2018, Section 3.1.1). Private waste collection is not supported by Willoughby City Council. - Waste collection is required on-site and not on the street. - The development is to demonstrate that a Heavy Rigid Vehicle (HRV) can enter and exit the site in a forward direction to collect waste. The HRV should not cross property boundaries to enter and exit the building. - Residential waste collection holding rooms need to be located within 2.0m of the truck parking area. The Council collection team should not be required to collect bins or bulky waste up through a lift. - A loading/unloading area is to be provided on-site in the basement. - The vehicle access and waste disposal arrangements should not disrupt pedestrian safety. Waste management is to comply with the requirements in the Waste Management	Sections 6.1, 6.2, 6.3, 7.1, and 7.2, identify the waste streams and provide the waste estimations considering the Waste Management Technical Guide and Development Controls by North Sydney Regional Organisation of Councils for mixed-use developments. Sections 6.4, 6.5, 6.6, 7.3 and 7.4 describe the disposal procedures, and waste collections for the residential and retail components in the development's operation stage. The scale and density of the proposed residential units will generate waste volumes that exceed what can be efficiently accommodated on-site using the Council's standard collection methodology. Stantec, the appointed traffic consultant, has undertaken detailed swept-path analysis demonstrating that the Council-specified Heavy Rigid Vehicle (HRV) cannot safely access or egress the site via either Orchard Road or Victor Street. These constraints confirm that Council waste vehicles are unable to service the site (See Appendix C.4, C.5 and C.6). A private waste collection contractor will be engaged to service the waste and cardboard compactor, co-mingled bins and FOGO per an agreed schedule.



Item	Description of Requirement	Section Reference
	Technical Guide and Development Controls by the North Sydney Regional Organisation of Councils. Identify appropriately sited waste storage areas, collection access paths / roads, and appropriate servicing arrangements for the site.	Section 15 of the OWMP outlines the waste room areas, and Appendix A.1 provides the corresponding waste room area layouts.

2.1 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:

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

The primary purpose of a Development Control Plan (DCP) is to guide the planning process according to the aims of the corresponding local environmental plan (LEP). 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:

- North Sydney Regional Organisation of Councils (NSROC): Waste Management Technical Guide and Development Controls 2018
- Willoughby Development Control Plan 2023; Part B - Residential Development
- Willoughby Development Control Plan 2023; Part D - Commercial Development
- 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 and Sustainable Materials Strategy 2041
- NSW Waste Classification Guidelines 2014
- Australia's National Waste Policy 2018

4.0 PROJECT BACKGROUND AND HISTORY

The site has a long planning history, beginning in 2013 with a Planning Proposal to Willoughby Council to amend the WLEP for mixed-use development, including 70% shop top housing. Despite initial support, the Council rejected the proposal in 2015, leading to a new Planning Proposal in 2016, which was also refused. The Sydney North Planning Panel recognised the proposal's merits in 2019, and the Department of Planning granted Gateway Approval in 2020. The Chatswood CBD Strategy, finalised in 2020, recommended a prohibition on residential uses in the Commercial Core zone, despite market feasibility analyses indicating low demand for new commercial office development.

The proposal was amended to reduce residential floor space to 30%, which was approved but remains commercially unfeasible. Market conditions have worsened, with high office vacancy rates and low demand for new commercial office space in Chatswood CBD. The current proposal seeks a mixed-use development with a predominant residential emphasis, aligning with the original 2014 vision.

4.1 THE SITE

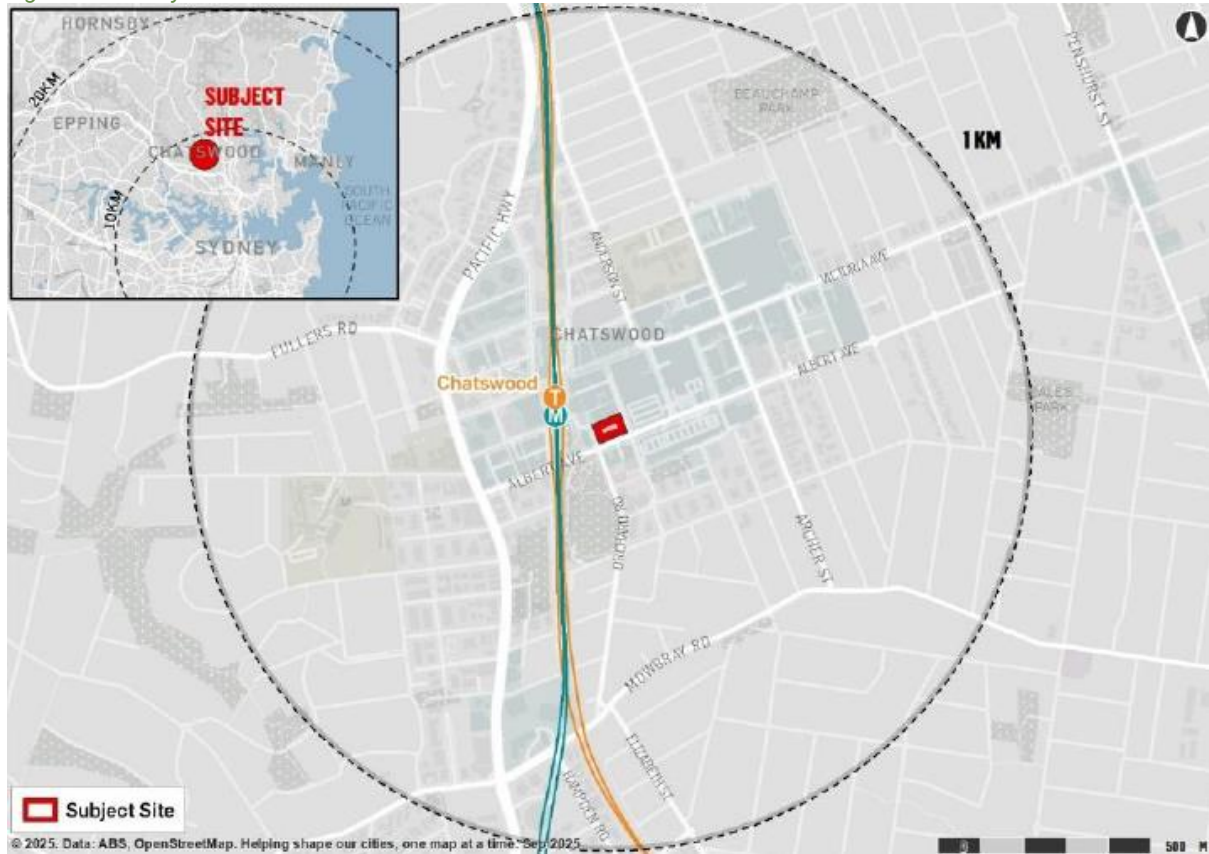
The site is 61A-65 Albert Avenue, Chatswood and is located within the Willoughby local government area (LGA). The site is legally described as Lot 2 in Deposited Plan (DP) 1035379. It is regularly shaped and falls approximately 3m from West to East. The site is within the Chatswood central business district (CBD).

The urban context surrounding the site is characterised by a mix of commercial, retail and residential developments. The surrounding locality is described as:

- Directly north of the site is the Sebel Hotel which is a 28-storey tower. Further north is a variety of commercial, and retail uses which form the Chatswood Westfield Shopping Centre.
- The east of the site is bounded by Victor Street. Development consists of predominately retail continuing the Chatswood Westfield Shopping Centre.
- To the south of the site is a multi-storey car park for the Chatswood Westfield Shopping Centre and high-density residential development. Chatswood Baptist Church adjoins the site on the southern side of Albert Avenue and Chatswood Park is located towards the south-west.
- To the west of the site is the Chatswood interchange which includes Train and Metro services to the Sydney CBD and Sydney's Northern suburbs. These key transport links are located within 160m of the site.

The site currently accommodates the Mandarin Shopping Centre featuring five levels of retail space and three levels of car parking. Retail tenants include Hoyts Cinemas and Strike Bowlin.

Figure 1: Locality Plan



Source: Urbis, 2025

Figure 2: Aerial photograph



Source: Urbis, 2025

5.0 MITIGATION MEASURES

Table 2: Mitigation Measures

Mitigation Name	When is Mitigation Measure to be complied with	Mitigation Measure
Recycling and Reuse	Operation	Retail tenants will dispose of their recycling into the bins provided. Residents will dispose their commingled recycling into the chute and cardboard into the 240L bins on each level.
Food Organics and Garden Organics	Operation	Residents will dispose of their FOGO into the bins provided within the residential FOGO room. This could include food scraps, garden clippings, and other biodegradable materials. Retail tenants will dispose of their FOGO into the 240L FOGO bins provided in the Retail Bin Room.
Odour, Hygiene & Pest Control	Operation	Increase wash-down frequency in FOGO and Chute Discharge Rooms during warm periods. Ensure sealed flooring and drainage in bin rooms to allow proper cleaning. Mandate resident compliance with compostable liners and clean recycling.
Manual Handling	Operation	Provide bin lifters to all compactors to eliminate manual lifting. Require all staff using bin lifters/compactors to undergo formal training with competency records.
Capacity management	Operation	Linear track system provides in the chute discharge room for waste and recycling stream to hold 1 day of waste generated.
Education	Operation	Building operator provide information in multiple languages to support correct behaviours, and to minimise the possibility of chute blockages and contamination in communal bins. The building operator will ensure everyone is aware of the importance of waste minimisation and how to dispose of waste correctly. Signage will be provided in the chute rooms and bin rooms. Also, it will be included in the Building Operations Manual for residents and tenants.
Policy and Regulation Compliance	Operation	Regularly review the policies to ensure they remain in line with evolving environmental regulations, and best practices.

6.0 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.

6.1 RESIDENTIAL WASTE GENERATION ESTIMATES

The North Sydney Regional Organisation of Councils (NSROC): *Waste Management Technical Guide and Development Controls* (2018) has been referenced to calculate the total number of waste and recycling bins required for the residential units. Calculations are based on generic general waste, recycling and Food Organics and Garden Organics (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 table shows the estimated volume (L) of general waste, recycling and FOGO generated by the residential component of the development.

Table 3: Estimated Waste, Recycling, and FOGO Volumes – Residential

# Units	General Waste Generation Rate (L/unit/week)	Generated General Waste (L/week)	Compacted Generated General Waste(3:1) (L/week)	Recycling Generation Rate (L/unit/week)	Generated Cardboard (L/week)	Compacted Cardboard (compacted 3:1) (2/3 of Total Recycling)	Generated Commingled Recycling (1/3 of Total Recycling)	FOGO Waste Generation Rate (L/unit/week)	Generated FOGO Waste (L/week)
325	140	45500	15167	120	39000	8667	13000	30	9750
TOTAL	325	45500	15167		39840	8853	13280		9750
Bins & Collections	General Waste Equipment Size (L)		10000	Recycling Equipment Size (L)		10000	1100	FOGO Waste Bin Size (L)	240
	General Waste Collections per Week		2	Recycling Collections per Week		1	4	FOGO Waste Collections per Week	4
	Total General Waste Equipment Required		1	Total Recycling Equipment Required		1	4	Total FOGO Waste Bins Required	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.

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

6.2 RESIDENTIAL BIN SUMMARY

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

General Waste: 1 x 10m³ compactor collected **2 x weekly**

Cardboard Recycling: 1 x 10m³ compactor collected **weekly**

Commingled Recycling: 4 x 1100L bins collected **4 x weekly**

FOGO: 11 x 240L bins collected **4 x weekly**

During operation, it is the responsibility of the building manager to monitor the number of bins required for the residential component of the development. General waste, recycling and FOGO volumes may change according to residents' attitudes to waste disposal, building occupancy levels or the development's management. Any requirements for adjusting the capacity of the waste facilities may be achieved by changing the number of bins, the bin sizes or collection frequencies. Building management will be required to negotiate any changes to bins or collections with the collection service provider.

The detailed operational procedures, including private waste collection arrangements, compactor operation, bin transfer protocols, and service frequencies management, will be formalised in the Building Manager's Manual and the Operational Waste Management Strategy for the building. These documents will govern ongoing waste handling and ensure long-term compliance with best practice and regulatory requirements.

6.3 RESIDENTIAL CHUTE DISCHARGE EQUIPMENT SUMMARY

Based on the estimated general waste and recycling volumes generated by the building, the following equipment is recommended:

Table 4: Chute Discharge Room Equipment

Volume Handling Equipment					
General Waste			Recycling		
Generated General Waste (L/week)	# 1100L Bins Required for 1 days' Capacity	Recommended Chute Discharge Equipment	Generated Recycling (L/week)	# 1100L Bins Required for 1days' Capacity	Recommended Chute Discharge Equipment
45500	5.91	5-1100L bin linear track system	39000	5.06	5 -1100bin linear track system

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

6.4 RESIDENTIAL WASTE DISPOSAL PROCEDURES

Each residential unit will be provided with a storage area 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.

6.4.1 RESIDENTIAL GENERAL WASTE AND RECYCLING DISPOSAL PROCEDURES

Dual chute systems comprising of a single general waste chute and single recycling chute will be installed in the building. Access will be provided to all residents on each residential level.

Residents will be responsible for walking their general waste and recycling to their allocated disposal point and placing their general waste into the general waste chute and recycling into the recycling chute.

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

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

The general waste will be discharged from the chute into 1100L bins on linear tracks, and the recycling will be discharged into 1100L bins on linear tracks in the Chute Discharge Rooms.

The building manager will monitor bin capacities under the dual chute systems and exchange full bins with empty bins on the track systems when required. Full and spare bins will be kept in the Residential Bin Holding Room. Refer to Council guidance for the types of materials accepted in the general waste and recycling streams.

The waste compactor and cardboard compactor units, and bin lifters for the respective compaction unit will be situated in the loading dock on the Level 1. 1100L MGBs for co-mingled recycling will be provided in the residential chute discharge room/ Bin Holding Room.

A bin lifter per compactor is available to decant waste and paper/cardboard recycling into the compactor units. This type of equipment will help with monitoring which staff have been trained and are authorised to use the bin lifter equipment and help allocate the cost of waste management to the tenancies.

At the end of each day or as required nominated staff will transport the 1100L bins to the waste management equipment in the loading dock, as per the following -

General Waste and cardboard

Staff will be responsible for loading waste and cardboard into the compactors and ensuring their proper operation.

Co-Mingled Recycling

1100L bins will be stored in the residential chute discharge room for collection.

6.4.2 RESIDENTIAL FOGO DISPOSAL PROCEDURES

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

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

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 Rooms and placing it into the bins.

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

6.5 RESIDENTIAL BIN COLLECTION PROCEDURES

The scale and density of the proposed residential units will generate waste volumes that exceed what can be efficiently accommodated on-site using the Council's standard collection methodology.

Stantec, the appointed traffic consultant, has undertaken detailed swept-path analysis demonstrating that the Council-specified Heavy Rigid Vehicle (HRV) cannot safely access or egress the site via either Orchard Road or Victor Street. These constraints confirm that Council waste vehicles are unable to service the site (See Appendix C.4, C.5 and C.6).

A MRV private waste collection vehicle will be engaged to service the waste and cardboard compactor, co-mingled and FOGO bins per an agreed schedule.

On the day of service, a private waste collection vehicle will enter the site from Orchard Road and park in the loading bay. Once servicing is completed, the collection vehicles will exit the site onto Orchard Road in a forward direction. All waste collection vehicle movements occur wholly within the property boundary.

For the collection of bins, a rear-loading collection vehicle will be used to service the bins. The waste collection staff will collect the bins from the Chute Discharge Room/ Bin Holding Room.

For the collection of the compactor, a hook lift truck will be used to collect the waste compactor unit and the cardboard compactor. The collection vehicle collects the entirety of the compactor unit and transports the compactor unit off site for emptying. The collection vehicle returns the empty compactor to the site and places it back in its operational location.

6.6 OTHER RESIDENTIAL WASTE MANAGEMENT CONSIDERATIONS

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

6.6.1 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.

6.6.2 LANDSCAPED AREAS AND GARDEN ORGANICS

Garden organics generated from within residential units will be managed by the residents and should be disposed of into the FOGO bins.

6.6.3 RESIDENTIAL BULKY WASTE PROCEDURES

A bulky waste room will be available for the storage of discarded residential bulky waste items (e.g. whitegoods, furniture, etc.) on Level one (See Appendix A.1). This room is located close to the collection point. It has a minimum doorway width of 2.5m to facilitate the movement of large items in and out of the room.

Willoughby Council requires that size of the Bulky Waste Room provided is proportional to the number of units in the building at a rate of 10m² for the first 40 units then 2m² for every 10 units thereafter as per the *NSROC Waste Management Guidelines 2018*.

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

Bulky Waste Room Size

$$\begin{aligned} & (\text{Total number of units} - 40) / 10 \times 2 + 10 = \text{m}^2 \text{ of bulky waste room} \\ & = (325 - 40) / 10 \times 2 + 10 = \\ & = 285 / 10 \times 2 + 10 \\ & = 28.5 \times 2 + 10 \\ & = 57 + 10 \\ & = 67 \end{aligned}$$

bulky waste storage area: minimum 67m²

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 for bulky waste with the bulky waste collection service and coordinate these times with the residents. The Bulky waste room also includes a 1100L bin for charity items, and when required, the building caretaker will arrange the collection by a Charitable organisation.

On the day of bulky waste collection, a private waste collection vehicle will enter the site from Orchard Road and park in the loading bay. Collection staff will collect the bulky waste items from the bulky Waste Room. Once bulky items have been loaded onto the vehicle, the collection vehicle will exit the site onto Orchard Road in a forward direction.

Note: the entrance from Orchard Avenue is on the same level as the bulky waste room.

7.0 RETAIL WASTE MANAGEMENT

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

7.1 WASTE GENERATION ESTIMATES

The *Willoughby Development Control Plan 2006* and North Sydney Regional Organisation of Councils (NSROC): *Waste Management Technical Guide and Development Controls 2018* has been referenced to calculate the total number of bins required for the anticipated tenants. Calculations are based on generic waste generation rates. Actual volumes of waste and recycling may differ according to the tenants' actual waste management practice.

The following table shows the estimated volume (L) of general waste and recycling that will be generated by the commercial and retail tenants. The FOGO generation rate has been calculated as 25% of the general waste rate, based *the Willoughby Development Control Plan 2023 including NSROC 2018*.

It is assumed that retail/commercial tenancies will share bins, bin storage facilities and collections.

The following estimates are based on a seven-day operating week for the retail tenancies and five-day operating week for the commercial tenancies.

Table 5: Estimated Waste and Recycling Volumes – Commercial and Retail

Tenancy Type	Floor Area (m²)	General Waste Generation Rate (L/100m²/day)	Generated General Waste (L/week)	Compacted General Waste (3:1)	Recycling Generation Rate (L/100m²/day)	Generated Recycling (L/week)	FOGO Generation Rate (L/100m²/day)	Generated FOGO (L/week)
Shops with less than 100sqm floor area	304	50	1064	355	25	532		
Shops with over 100sqm floor area	1262	50	4417	1472	50	4417		
Food and Beverage	2043	660	94387	31462	120	17161	25	3575
Gym	2338	10	1637	546	10	1637		
Supermarket	941	660	43474	14491	130	8563	25	1647
TOTAL	6888		144978	48326		32310		5222
Bins & Collections		General Waste Equipment Size (L)		10000	Recycling Equipment Size (L)	1100	FOGO Bin Size (L)	240
		General Waste Collections per Week		6	Recycling Collections per Week	3	FOGO Collections per Week	3
		Total General Waste Equipment Required		1	Total Recycling Equipment Required	10	Total FOGO Bins Required	8

7.2 BIN SUMMARY

7.2.1 RETAIL TENANCIES

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

General Waste: 1 x 10m³ compactor collected **6 x weekly**

Recycling: 10 x 1100L bins collected **3 x weekly**

FOGO: 8 x 240L 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.

7.3 WASTE DISPOSAL PROCEDURES

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

There are two dedicated BOH retail lifts that service all the retail floors and loading dock, including one BOH that goes directly next to the retail waste room.

7.3.1 FOOD AND BEVERAGE TENANCIES

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

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

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

- All waste should be bagged and waste bins should be plastic lined;
- Bagging of recyclables is not permitted;
- Individual recycling programs are recommended for retailers to ensure commingled recycling is correctly separated;
- Any food and beverage tenant will make arrangements for storing used and unused cooking oil in a bunded storage area;
- The operator will organise grease interceptor trap servicing;
- A suitable storage area needs to be provided and effectively bunded for chemicals, pesticides and cleaning products;
- Dry basket arrestors need to be provided to the floor wastes in the food preparation and waste storage areas; and
- All flattened cardboard will be collected and removed to the waste room paper/cardboard recycling MGBs.

On completion of each trading day or as required, nominated staff or cleaners will transport all general waste and recyclables to the Retail Bin Room using a dedicated BOH lifts and place into the compactor for general waste and 1100L bins for recycling.

WASTE OILS

Consideration should be given to the use of cooking oil collection systems. A single service provider may be used to reduce the amount of commercial traffic into the loading bay or around the precinct area. This should be measured against bulk delivery of oils where the same vehicle is used to remove containers of waste cooking oils (see Appendix D.1 for Typical Cooking Oil Collection System).

7.3.2 RETAIL TENANCIES

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

At the end of each day or as required, nominated staff will transport their waste from their tenancy to the waste management equipment in the loading dock using the dedicated BOH lifts as per the following -

General Waste

Staff will be responsible for loading waste into the compactor and ensuring its proper operation.

Recycling

The staff will place the recycling into the 1100L MGB for recycling located in the retail waste room.

The waste compactor units, and bin lifter for the respective compaction unit will be situated in the loading dock.

A bin lifter per compactor is available to decant waste into the compactor unit.

This type of equipment will help with monitoring which staff has been trained and are authorized to use the bin lifter equipment and help allocate cost of waste management to the tenancies.

The equipment in this loading dock will facilitate the collection of the waste, recycling streams, as the collections contractor will service this equipment.

7.4 WASTE COLLECTION PROCEDURES

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

On the day of service, a private waste collection vehicle will enter the site from Orchard Road and park in the loading bay. Once servicing is completed, the collection vehicles will exit the site onto Orchard Road in a forward direction. All waste collection vehicle movements occur wholly within the property boundary.

For the collection of bins, a rear-loading collection vehicle will be used to service the bins. The waste collection staff will collect the bins from the Retail Bin Room.

For the collection of the compactor, a hook lift truck will be used to collect the waste compactor unit. The collection vehicle collects the entirety of the compactor unit and transports the compactor unit off site for emptying. The collection vehicle returns the empty compactor to the site and places it back in its operational location

7.5 OTHER WASTE MANAGEMENT CONSIDERATIONS

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

7.5.1 WASHROOM FACILITIES

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

7.5.2 RE-USEABLE COMMERCIAL ITEMS

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

7.5.3 LIQUID WASTE

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

7.5.4 PROBLEM WASTE

The building manager is responsible for making arrangements for the disposal and recycling of problem waste streams with an appropriate contractor. Problem wastes cannot be placed in the general waste stream as they can have adverse impacts to human health and the environment if disposed of in landfill. Retail and commercial tenants must liaise with the building manager when disposing of problem waste streams.

Problem waste streams include:

- Chemical Waste
- Liquid wastes
- Toner cartridges
-

8.0 STAKEHOLDER ROLES & RESPONSIBILITIES

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

Table 6: 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/Commercial Tenants	- Management co-ordinates own private contractor collections in collaboration with the Building Manager. - 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.

9.0 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 7: 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 compactor units.
Recycling	A mixture of items that are commonly recycled usually segregated through a MRF. Typically include food and beverage containers (e.g. aluminium, glass, steel, hard plastics, cartons). Also included cardboard and paper products.	Resource Recovery Centre	Recycling must not be bagged, and instead should be placed loosely in the designated recycling chute. Bulky cardboard must not be placed in any chute. Cardboard should be flattened before placing in the designated cardboard recycling bin.
FOGO	FOGO consists of unwanted or uneaten kitchen scraps that are easily compostable/biodegradable (e.g. vegetable peels, fruit rinds, coffee grounds) and garden organics including lawn clippings, leaves, pruning's and branches.	Composting Facility	FOGO should be bagged in compostable liners when deposited into the bins and will be collected by private contractor.
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 too large to place into general rubbish collection. This includes disused and/or broken furniture, mattresses, white goods, etc.	Resource Recovery Centre or Landfill	Residents liaise with building manager to store in Bulky Waste Room. Building manager arranges with Council for removal. Retail tenants are responsible for removal of their bulky items.
Sanitary Waste	Feminine hygiene waste generated from female bathrooms.	Incineration or Landfill	Sanitary bins are serviced by sanitary waste contractor.
Other	Other recyclable items that require special recovery may include ink cartridges, batteries, chemical waste, fluorescent tubes, etc.	Resource Recovery Facility	Building manager arranges collection by appropriate recycling services when required.

10.0 EDUCATION

Educational material encouraging correct separation of general waste, recycling and FOGO must be provided to each resident and commercial/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).

10.1 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.

11.0 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

12.0 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.

13.0 BIN MOVING PATHS

The building manager is responsible for the transportation of bins from their designated operational locations to the collection area, returning them once emptied to resume operational use.

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 personnel.

The routes along the bin moving path should;

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

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

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

14.0 EQUIPMENT SUMMARY

Table 8: Equipment Summary

	Part	Qty	Notes
Chutes	Please refer to supplier's information	1	(See APPENDIX: B.1 for Typical Dual Chute Layout)
Chute Equipment	Waste 5-bin 1100L MGB Linear Track System	1	(See APPENDIX: B.2 for Typical Linear System)
	Recycling 5-bin 1100L MGB Linear Track System	1	

15.0 WASTE ROOMS

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

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

Table 9: Waste Room Areas

Level	Waste Room Type	Equipment	Estimated Area Required (m ²)	Actual Area Provided (m ²)
Level 1	Residential Chute Discharge Room/bin holding room/collection area	<u>Minimal chute equipment to hold 1 day of waste generated</u> • <u>General Waste:</u> 5-bin 1100L Linear Track • <u>Recycling:</u> 5-bin 1100L Linear Track • 4 x 1100L bins (Commingle Recycling)	>58	97
	Residential Compactors area	• 10m³ compactor unit (general waste) • 10 m³ compactor unit (cardboard) • 1 x bin lifter	-	-
	Residential FOGO Waste Room	• 11 x 240L bins	10	14.5
	Residential Bulky Waste Room	• 1x 1100L Charity Waste bin	>67	76
	Retail/ Bin compactors	• 10 x 1100L bins recycling • 8 x 240L for FOGO	21	71
	Retail compactor area	• 1 x 10m³ compactor for general waste	-	-

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

The waste room areas have been calculated based on equipment requirements and/or bin dimensions with an additional 70% of bin GFA factored in for manoeuvrability. In addition, all passageways facilitating the movement of bins and/or bulky waste items should be at least 1500mm wide and doorways at a minimum of 2.5m wide.

The following table provides further waste room requirements.

Table 10: Waste Room Requirements

Waste Room Type	Waste Room Requirements
Chute Discharge Room	• Ceiling clearance height must be a minimum of 3000mm (3100mm with compactor) (subject to penetration location) • The chute penetration must have a minimum 500mm clearance of any service pipes or other overhead obstacles • All 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) • If 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.
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 cock 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 2500mm wide
Retail/Commercial 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.

16.0 CONSTRUCTION REQUIREMENTS

Waste room construction must comply with the minimum standards as outlined in the *Willoughby Development Control Plan 2023*, in order to minimise odours, deter vermin, protect surrounding areas, and make it a user-friendly and safe area.

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

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

16.1 ADDITIONAL CONSIDERATIONS

- Waste room floor to be sealed with a two-pack epoxy;
- All corners coved and sealed 1,200mm up, this is to eliminate build-up of dirt;
- Hot and cold water tap height and light switch height of 1.6m;
- Storm water access preventatives (grate);
- All walls painted with light colour and washable paint;
- Equipment electric outlets to be installed 1700mm above finished floor level;
- Optional automatic odour and pest control system installed
- If 660L or 1100L bins are utilised, 2 x 820mm (minimum) double-doors must be used;
- All personnel doors are hinged, lockable and self-closing;
- Conform to the Building Code of Australia, Australian standards and local laws; and
- Childproofing and public/operator safety shall be assessed and ensured
- Waste and recycling rooms must have their own exhaust ventilation system either;
 - Mechanically - exhausting at a rate of 5L/m² floor area, with a minimum rate of 100L/s minimum. Mechanical exhaust systems shall comply with AS1668.4.2012 and not cause any inconvenience, noise or odour problem; or
 - Naturally - permanent, unobstructed, and opening direct to the external air, not less than one-twentieth (1/20) of the floor area.

17.0 USEFUL CONTACTS

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

LOCAL COUNCIL

Willoughby Council Customer Service	Ph: 02 9777 1000	E: email@willoughby.nsw.gov.au
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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@wasteclear.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
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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
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SOURCE SPERATION BINS

Method Recycling	Ph: 0499 890 455
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BINS AND BIN EQUIPMENT

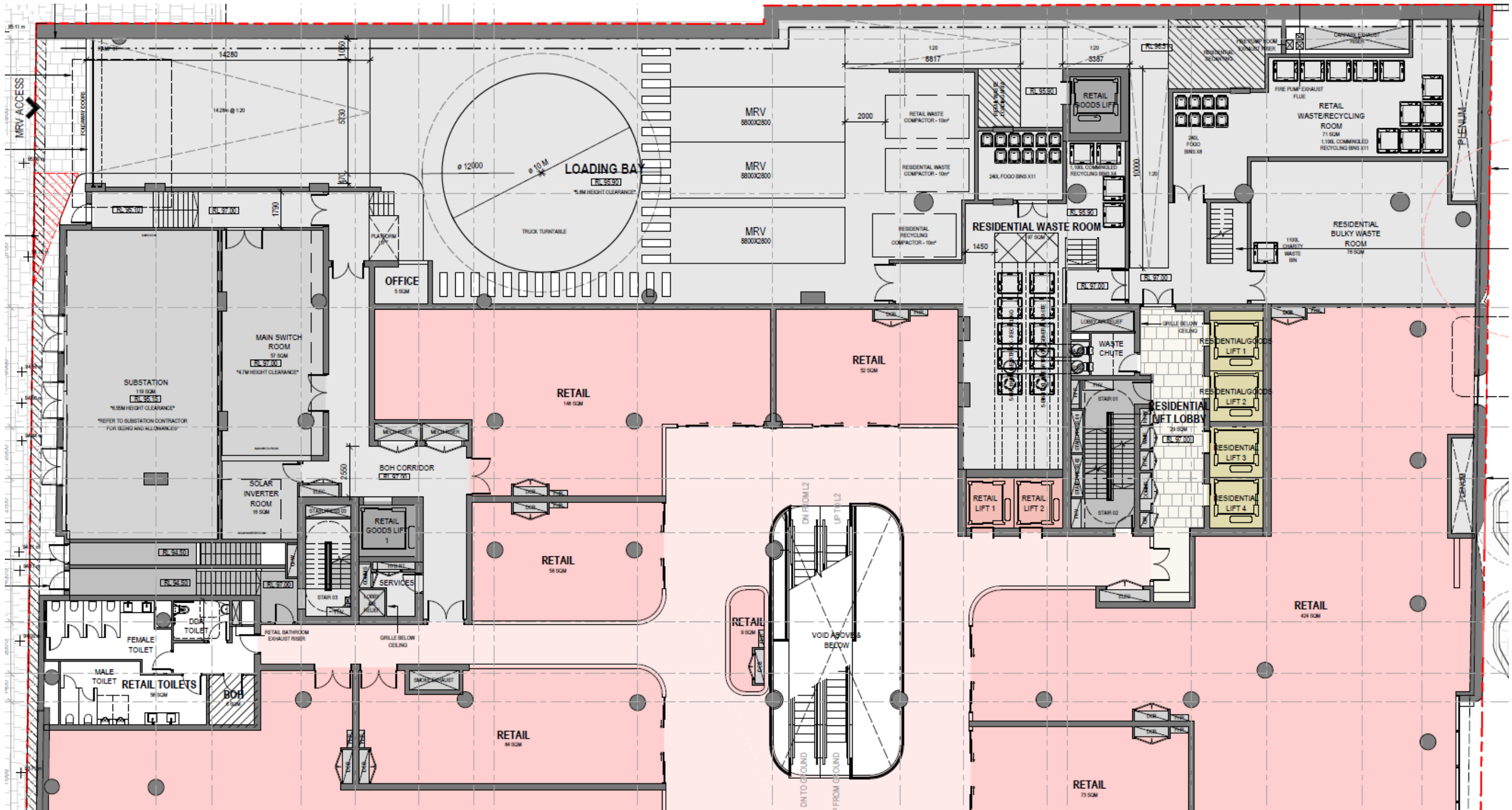
Elephants Foot Equipment	Ph: 1300 435 374	E: equipment@elephantsfoot.com.au
SULO	Ph: 1300 364 388	E: sulosales@pactgroup.com

CHUTES, COMPACTORS AND EDIVERTER SYSTEMS

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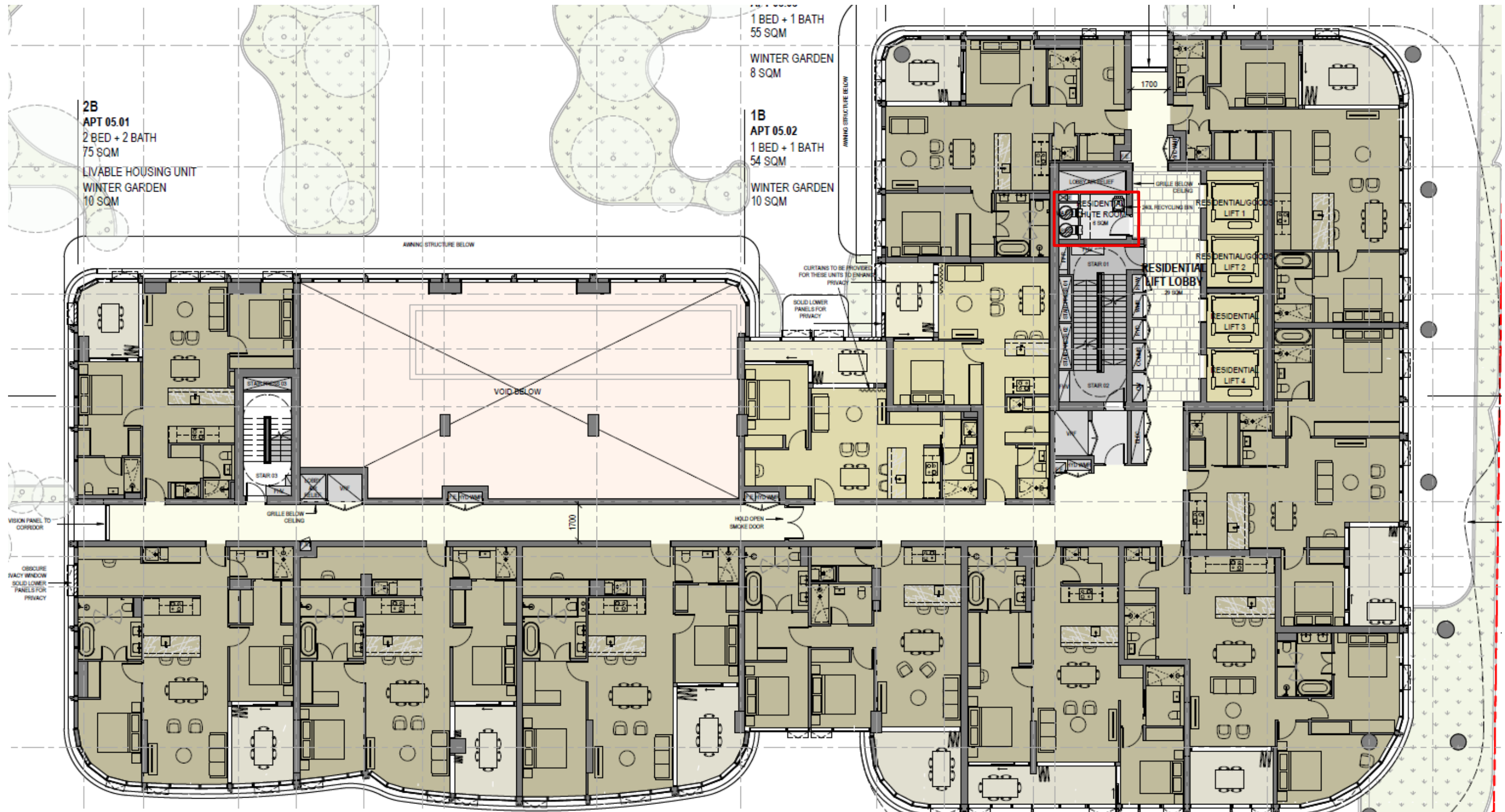
APPENDIX A: ARCHITECTURAL PLANS

APPENDIX: A.1 EXTRACT LEVEL 1 PLAN-WASTE ROOMS



Source: Skidmore, Owings & Merrill Architects, Level 1 Plan, Rev 5, 12/12/2025

APPENDIX: A.2 TYPICAL FLOOR LEVEL- LEVEL 5 PLAN-DUAL CHUTE +240L BIN ON EACH LEVEL



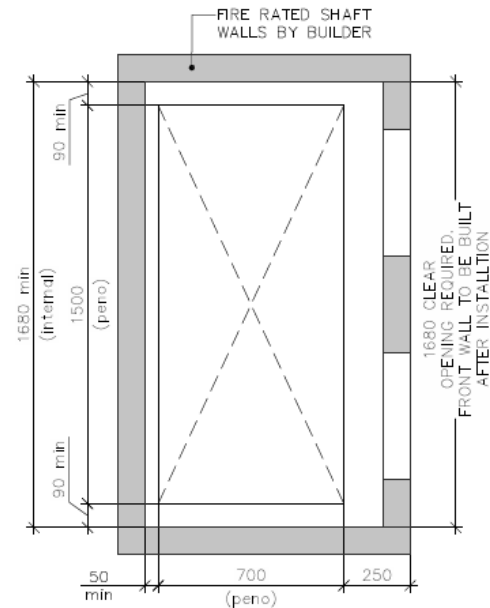
Source: Skidmore, Owings & Merrill Architects, Level 5 Plan, Rev 04, 12/12/2025

APPENDIX B: INSTALLATION EQUIPMENT

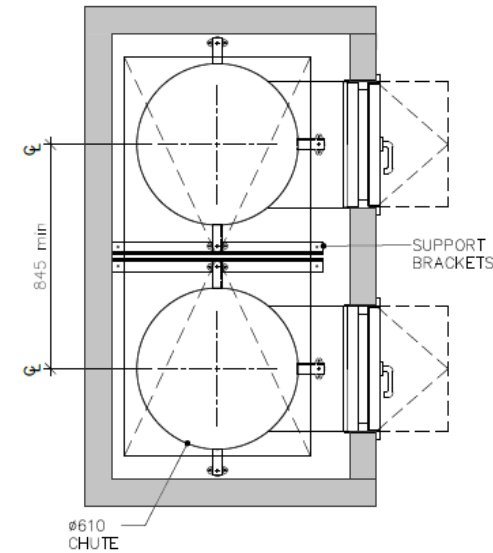


CHUTE SHAFT & PENETRATION SET-OUT

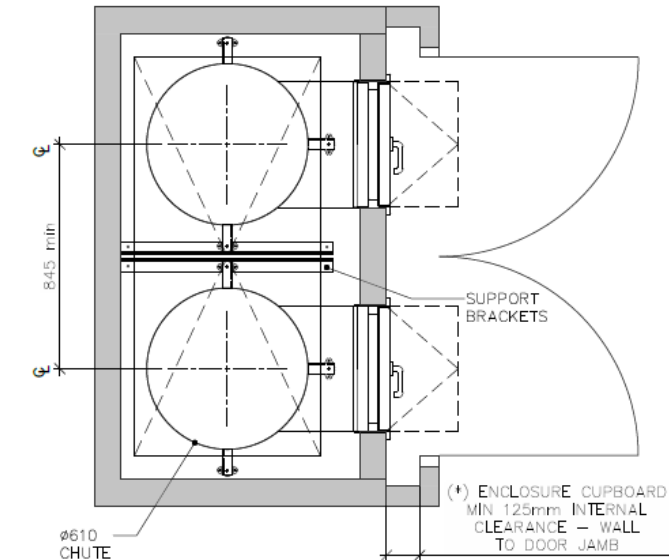
DUAL Ø610 STEEL



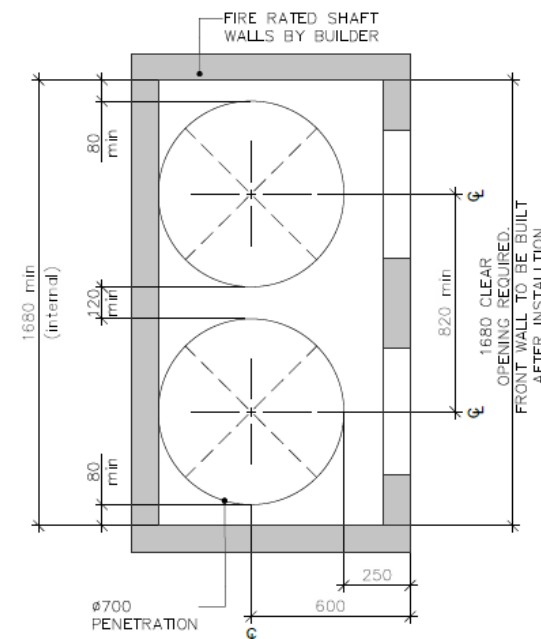
01 DUAL (610Ø) GALV. STEEL CHUTE LAYOUT PENETRATION SET-OUT



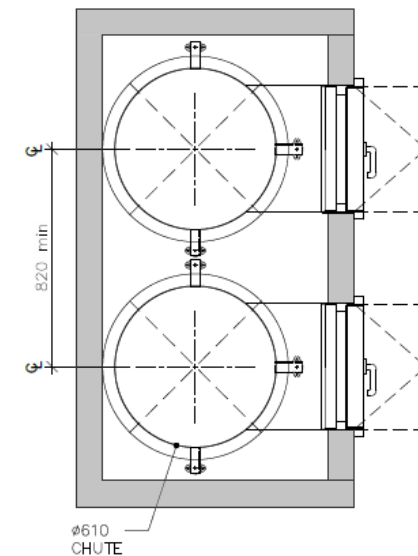
02 DUAL (610Ø) GALV. STEEL CHUTE LAYOUT



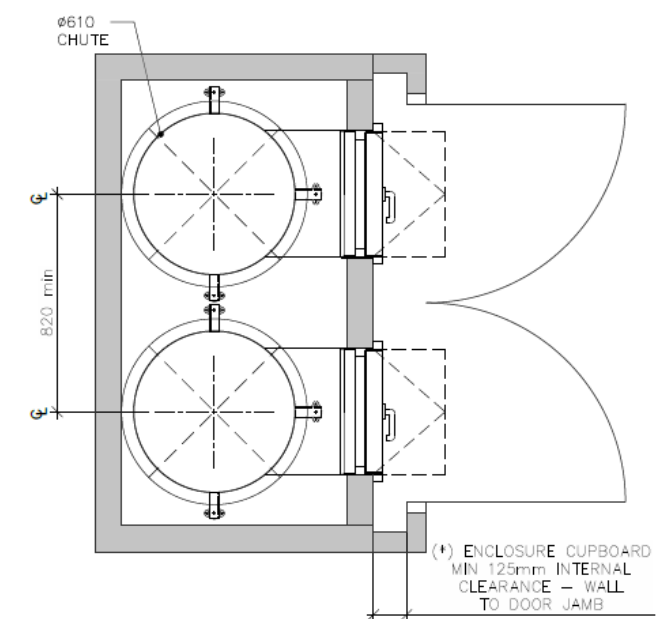
03 DUAL (610Ø) GALV. STEEL CHUTE LAYOUT with ENCLOSURE CUPBOARD (*)



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 BINS



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

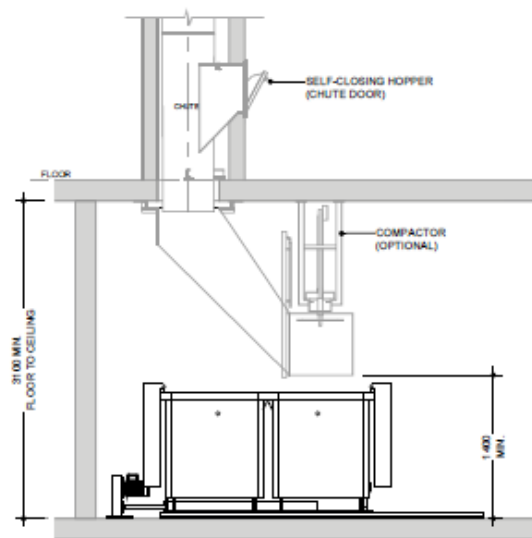
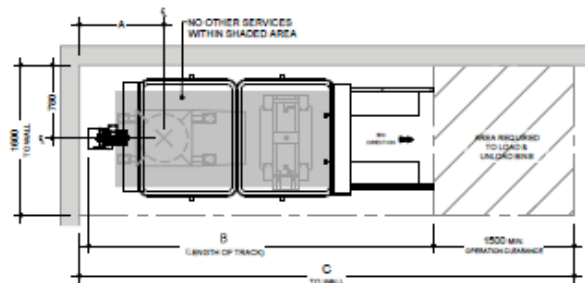


1,100 LITRE LINEAR TRACK SYSTEM



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.

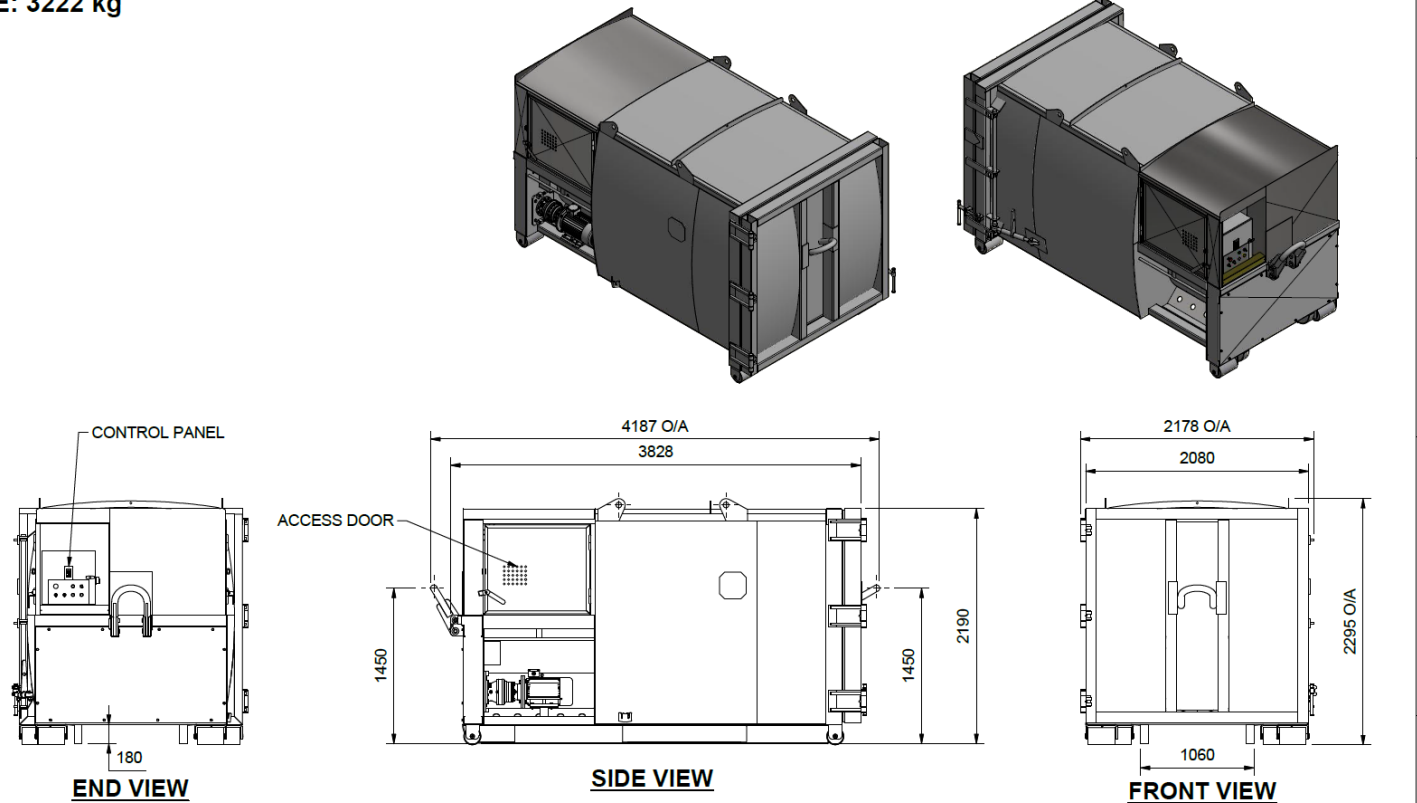
Additional equipment options, systems and configurations are available. For design assessment, information and advice, please contact an Elephants Foot design consultant on 1300 435 374

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

APPENDIX: B.3 EXAMPLE WASTE COMPACTOR UNIT

10m INTEGRATED MOBILE COMPACTOR BIN - AUGER

TARE: 3222 kg



DO NOT SCALE. IF IN DOUBT ASK - DIMENSIONS IN MILLIMETRES U.N.O.					
 TORO WASTE EQUIPMENT TORO Waste Equipment (Aust) Pty Ltd 298 Paramatta Rd, Auburn NSW, 2144 Phone: 1300 55 65 70 Fax: (02) 9475 0257 www.toroeq.com.au THESE SPECIFICATIONS ARE INTENDED SOLELY FOR THE USE OF THE RECIPIENTS & CONTAIN INFORMATION WHICH IS CONFIDENTIAL AND MAY NOT BE REPRODUCED OR DISSEMINATED TO ANY OTHER PERSON WITHOUT WRITTEN CONSENT FROM TORO WASTE EQUIPMENT (AUST) PTY LTD. THIRD ANGLE PROJECTION	DRAWN TO AS1100		CLIENT / PROJECT		
	DRAWN	DY	INTEGRATED MOBILE COMPACTOR BIN		
	DATE	12/09/2017	TITLE		
	CHECKED		GA DRAWING		
APPROVED			DRAWING No. GA		
DESIGN ENG.			REVISION 0		
			SCALE	SHEET No.	A3
			NTS	1 of 1	
			FILENAME CP10-1A_GA.idw		

This equipment is an example only – please refer to supplier for more information

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 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

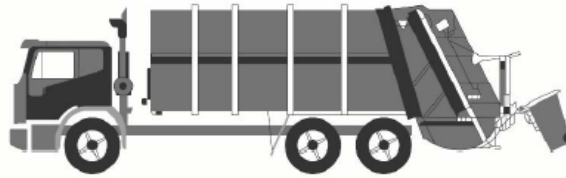
Vehicle type	Rear-loading	Side-loading*	Front-lift-loading	Hook truck	Crane truck
Length overall (m)	10.5	9.6	11.8	10.0	10.0
Width overall (m)	2.5	2.5	2.5	3.0	2.5
Travel height (m)	3.9	3.6	4.8	4.7	3.8
Operational height for loading (m)	3.9	4.2	6.5	3.0	8.75
Vehicle tare weight (t)	13.1	11.8	16.7	13.0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

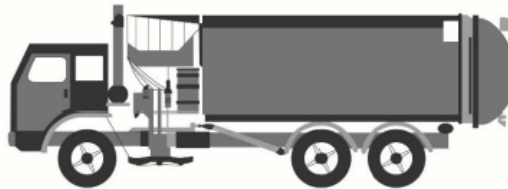
These vehicles are commonly used for domestic waste collections from MUDs and RFBs and sometimes for recycling. They can be used to collect waste stored in mobile bins or bulk bins, particularly where bins are not presented at the kerbside. They are also used for collecting bulky waste.



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

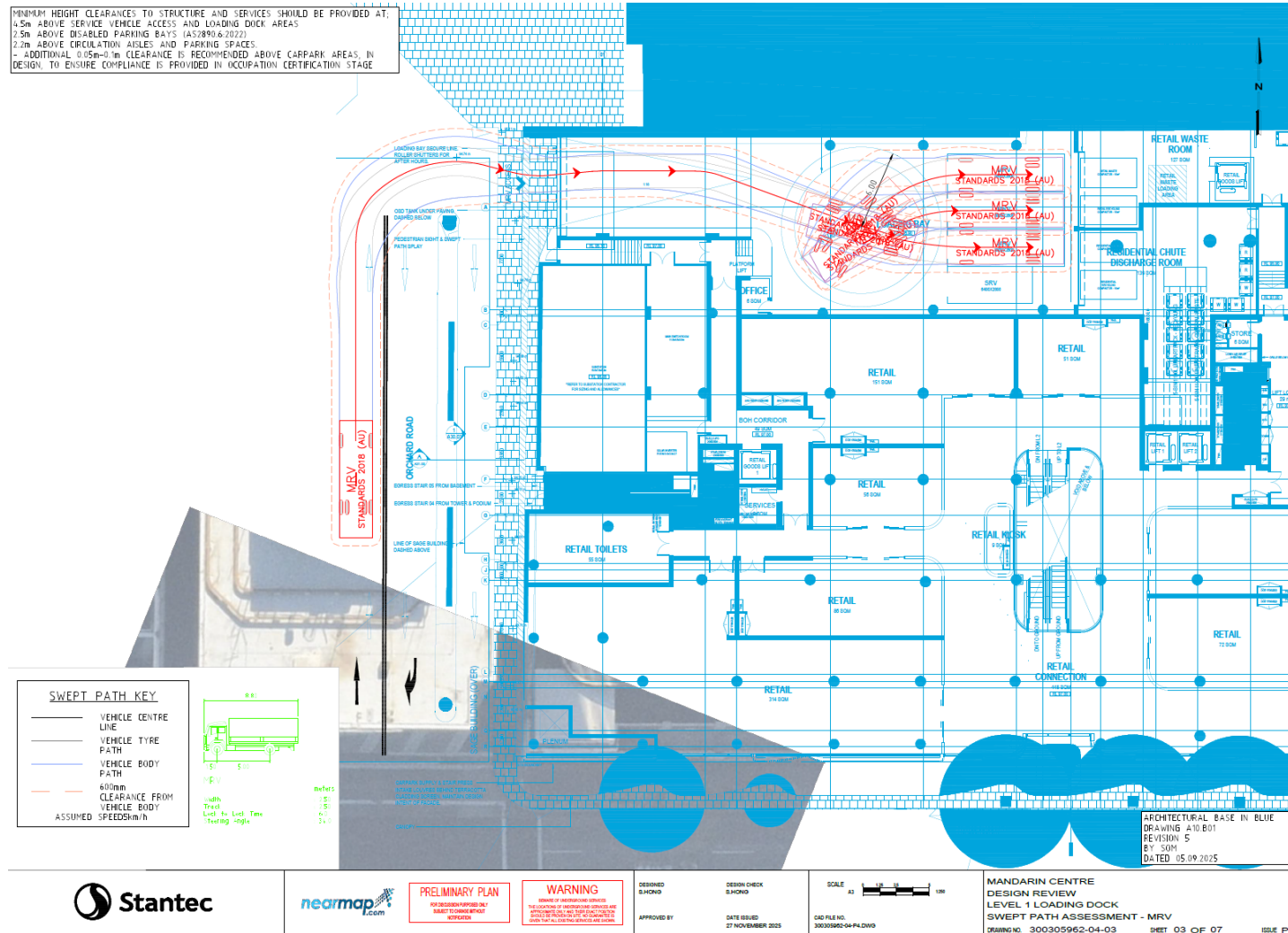
Small collection vehicles

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: C.5 SWEEP PATH ASSESSMENT -MRV



Source: Stantec, Level 1 Loading Dock, Sweep Path Assessment-MRV, 27/11/2025



APPENDIX D: SECONDARY WASTE MANAGEMENT PROVISIONS

APPENDIX: D.1 TYPICAL COOKING OIL CONTAINERS



Drums 205L



Pour in Bulk Tank

[View Brochure](#)



Oil Kaddy System

[View Brochure](#)



Eco System 700L Fixed

Eco System 310L mobile

Eco Systems



Direct-Connect to Fryer

Source: <http://www.auscol.com/services/collection-systems/>

APPENDIX: D.2 TYPICAL SOURCE SEPARATION BINS



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