



90-98 Glenmore Ridge Drive Glenmore Park
Mixed Use Development

OPERATIONAL WASTE MANAGEMENT PLAN

5/06/2020
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Revision L

Client

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SCOPE

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

The waste management of the **construction** and **demolition** phases of the development are not addressed in this report. It is EFRS's understanding that a construction and demolition WMP will be completed by a separate party appointed by the developer, and submitted separately to this report. Typically, the head contractor of the site will be responsible for removing all construction-related waste offsite in a manner that meets all authority requirements.

REVISION REFERENCE

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L	05/06/2020	A Armstrong	E Saidi	Amendment

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GLOSSARY OF TERMS

TERM	DESCRIPTION
<i>Baler</i>	A device that compresses waste into a mould to form bales which may be self-supporting or retained in shape by strapping
<i>Chute</i>	A ventilated, vertical pipe passing from floor to floor of a building with openings as required to connect with hoppers and normally terminating at its lower end at the roof of the central waste room(s)
<i>Chute Discharge</i>	The point at which refuse exits from the refuse chute
<i>Chute Discharge Room</i>	A secure, enclosed area or room housing the discharge and associated equipment for the refuse chute
<i>Collection Area/Point</i>	The identified position or area where garbage or recyclables are actually loaded onto the collection vehicle
<i>Compactor</i>	A machine for compressing waste into disposable or reusable containers
<i>Composter</i>	A container/machine used for composting specific food scraps
<i>Crate</i>	A plastic box used for the collection of recyclable materials
<i>Garbage</i>	All domestic waste (Except recyclables and green waste)
<i>Green Waste</i>	All vegetated organic material such as small branches, leaves and grass clippings, tree and shrub pruning, plants and flowers
<i>Hopper</i>	A fitting into which waste is placed and from which it passes into a chute or directly into a waste container. It consists of a fixed frame and hood unit (the frame) and a hinged or pivoted combined door and receiving unit
<i>L</i>	Litre(s)
<i>Liquid Waste</i>	Non-hazardous liquid waste generated by commercial premises that is supposed to be connected to sewer or collected for treatment and disposal by a liquid waste contractor (including grease trap waste)
<i>LRV</i>	Large rigid vehicle described by AS 2890.2-2002 Parking facilities – Off-street commercial vehicle facilities as heavy rigid vehicle (HRV)
<i>Mobile Garbage Bin(s) (MGB)</i>	A waste container generally constructed of plastic with wheels with a capacity in litres of 120, 240, 360, 660, 1000 or 1100
<i>MRV</i>	Medium rigid vehicle
<i>Putrescible Waste</i>	Component of the waste stream liable to become putrid. Usually breaks down in a landfill to create landfill gases and leachate. Typically applies to food, animal and organic products.
<i>Recycling</i>	Glass bottles and jars – PET, HDPE and PVC plastics; aluminium aerosol and steel cans; milk and juice cartons; soft drink, milk and shampoo containers; paper, cardboard, junk mail, newspapers and magazines
<i>SRV</i>	Small rigid vehicle as in AS 2890.2-2002 Parking facilities – Off-street commercial vehicle facilities, generally incorporating a body width of 2.33

INTRODUCTION

Elephants Foot Recycling Solutions (EFRS) has been engaged to prepare the following waste management plan for Mintus Properties Pty Ltd for the operational management of waste generated by the mixed use development located at 90-98 Glenmore Ridge Dr Glenmore Ridge.

Waste management strategies and auditing are a requirement for new developments to provide support for the building design and promote strong sustainability outcomes for the building. It is EFRS's belief that a successful waste management strategy contains three key objectives:

- i. **Promote responsible source separation** to reduce the amount of waste that goes to landfill, by implementing convenient and efficient waste management systems
- ii. **Ensure adequate waste provisions and robust procedures** that will cater for potential changes during the operational phase of the development
- iii. **Compliance** with all relevant council codes, policies, and guidelines.

To achieve these objectives, this WMP identifies the different waste streams likely to be generated during the operational phase of the development. Associated information includes: how the waste will be handled and disposed of, details of bin sizes/quantities and waste rooms, descriptions of the proposed waste management equipment used and information on waste collection points and frequencies.

It is essential that this waste management plan is integrated into the overall management of the building and clearly communicated to all relevant stakeholders.

REPORT CONDITIONS

The purpose of this report is to document a Waste Management Plan (WMP) as part of a development application and is supplied by EFRS with the following limitations:

- Drawings, estimates and information contained in this waste management plan have been prepared by analysing the information, plans and documents supplied by the client, and third parties including Council and government information. The assumptions based on the information contained in the WMP is outside the control of EFRS;
- The figures presented in the report are an estimate only – the actual amount of waste generated will be dependent on the occupancy rate of the building/s and waste generation intensity as well as the building managements approach to educating residents and tenants regarding waste management operations and responsibilities;
- The building manager will make adjustments as required based on actual waste volumes (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 or representation is made that the WMP reflects the actual outcome and EFRS will not be liable to you for plans or outcomes that are not suitable for your purpose, whether as a result of incorrect or unsuitable information or otherwise;
- EFRS offer no warranty or representation of accuracy or reliability of the WMP unless specifically stated;
- Any manual handling equipment recommended 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.
- EFRS cannot be held accountable for late changes to the design after the WMP has been submitted to Council.
- EFRS will provide specifications and recommendations on bin access and travel paths within the WMP, however it is the architect's responsibility to ensure the architectural drawings meet these provisions.
- EFRS are not required to provide information on collection vehicle head heights, internal manoeuvring and loading requirements. These variables are considered to be within the applicable Traffic Consultants domain.
- Council are subject to changing waste and recycling policies and requirements at their own discretion.

This WMP has only been finalised once the Draft Watermark has been removed. If the Draft Watermark is present, the information in the WMP is not confirmed.

DEVELOPMENT SUMMARY

The proposed development falls under the LGA of Penrith City Council, and consists of:

- Three buildings with 4 levels and 1 basement level
 - 147 residential units in total separated into 5 cores over the 3 buildings
 - 60 units in Block A
 - 21 units in Block B – Core 1
 - 18 units in Block B – Core 2
 - 24 units in Block C – Core 1
 - 24 units in Block C – Core 2
 - 23 retail tenancies with a total GFA of 2246 m²
 - Medical Centre tenancy with a total GFA of 750m²
 - A chemist tenancy with a total GFA of 313m²
 - 1 gym tenancies with a total GFA of 638m²
 - 2 commercial office tenancies with a total GFA of 147m²
 - A childcare with a total indoor GFA of 660m²
 - A swim school with a total GFA of 291m²
 - A Supermarket with a total GFA of 2193m²

The development will be built in 5 stages, as follows

- Stage 1 - Will consist of construction of a display suite and café. The display suite will be converted to a carwash once the development is completed.
- Stage 2. Construction of all ground floor retail and basement carpark.
- Stage 3. Construction of the one residential tower
- Stage 4. Construction of the second residential tower
- Stage 5. Construction of the third residential tower

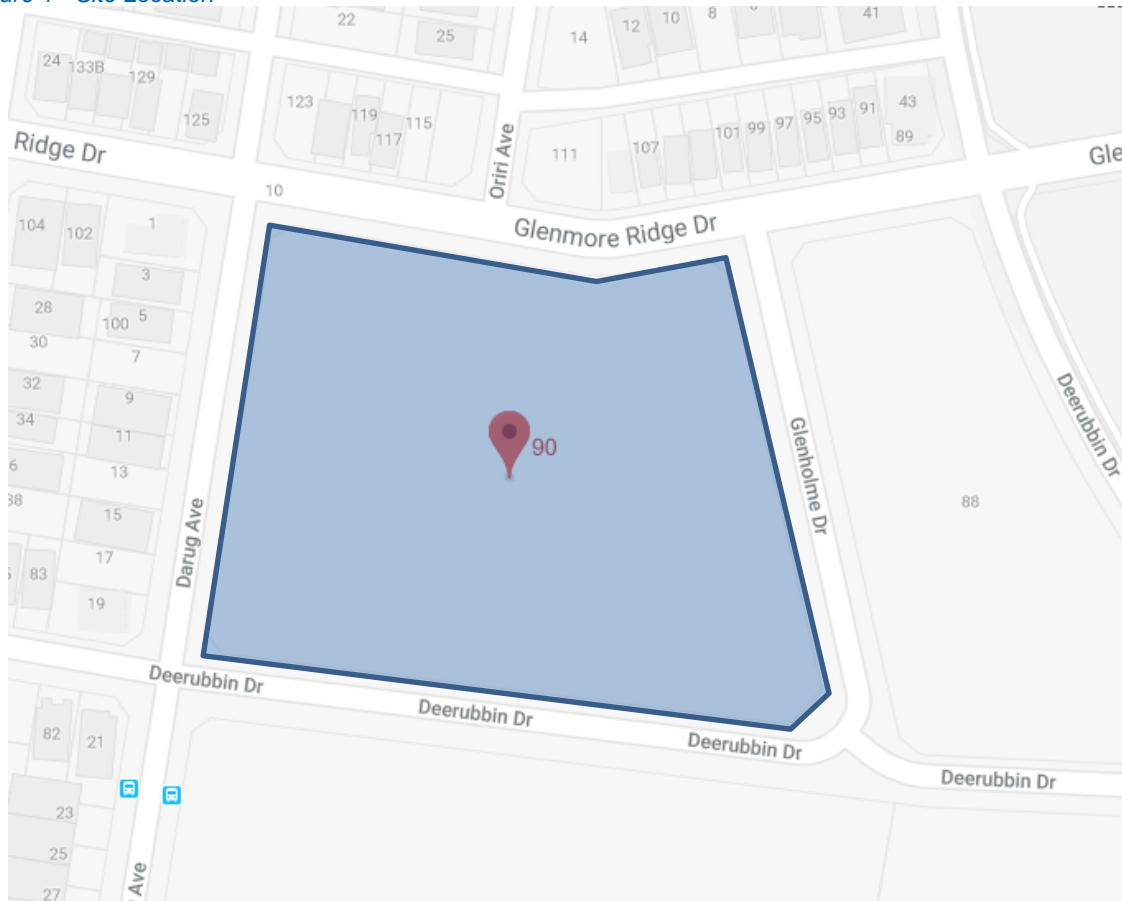
The waste facilities, including the collection areas for the site will be constructed in stage 2 and will be utilised by all ongoing stages. Alternate waste facilities and collection areas will be provided in stage 1 until stage 2 has been completed.

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

SITE LOCATION

The site is located at 90-98 Glenmore Ridge Dr Glenmore as shown in Figure.1. The site has frontages to Darug Ave, Deerubbin Dr, Glenmore Ridges and Glenholme Dr, with vehicle access via Darug Drive.

Figure 1 - Site Location



PENRITH CITY COUNCIL

The garbage and recycling will be guided by the services and acceptance criteria of the Penrith City Council. All waste facilities and equipment are to be designed and constructed to be in compliance with the Penrith Council's *Penrith Development Control Plan 2014, Residential Flat Building Waste Management Guidelines*, Australian Standards and statutory requirements.

COUNCIL OBJECTIVES

- To facilitate sustainable waste management within the City of Penrith in accordance with the principles of Ecologically Sustainable Development;
- To manage waste in accordance with the 'Waste Hierarchy' to:
 - Avoid producing waste in the first place;
 - Minimise the amount of waste produced;
 - Re-use items as many times as possible to minimise waste;
 - Recycle once re-use options have been exhausted; and
 - Dispose of what is left, as a last resort, in a responsible way to appropriate waste disposal facilities;
- To assist in achieving Federal and State Government waste minimisation targets as set out in the *Waste Avoidance and Resource Recovery Act 2001* and *NSW Waste Avoidance and Resource Recovery Strategy 2007*;
- To minimise the overall environmental impacts of waste by:
 - Encouraging development that facilitates ongoing waste avoidance and complements waste services offered by both Council and/or private contractors;
 - Requiring on-site source separation and other design and siting standards which assist waste collection and management services offered by Council and/or the private sector;
 - Encouraging building designs and construction techniques that minimise waste generation;
 - Maximising opportunities to reuse and recycle building and construction materials as well as other wastes in the ongoing use of a premise; and
 - Reducing the demand for waste disposal.

COUNCIL REQUIREMENTS

Access – Ensure waste systems are easy to use and collection vehicles are able to access buildings to safely remove waste and recycling;

Safety – Ensure safe practises for storage, handling and collection of waste and recycling;

Pollution Prevention – Prevent stormwater pollution that may occur as a result of poor waste storage and management practises;

Noise Minimisation – Provide acoustic insulation to the waste service facilities or residential units adjacent to or above chutes, waste storage facilities, chute discharge, waste compaction equipment and waste collection vehicle access points;

Ecologically Sustainable Development (ESD) – Promote the principles of ESD through resource recovery and recycling leading to a reduction in the consumption of finite natural resources;

Hygiene – Ensure health and amenity for residents, visitors and workers in the Penrith City Council.

STAKEHOLDER ROLES AND RESPONSIBILITIES

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

Table 1: Stakeholder Roles and Responsibilities

Roles	Responsibilities
Strata/Management	<ul style="list-style-type: none"> Ensuring that all waste service providers submit monthly reports on all equipment movements and waste quantities/weights; Organising internal waste audits/visual assessments on a regular basis; and Manage any non-compliances/complaints reported through waste audits.
Building Manager or Waste Caretaker	<ul style="list-style-type: none"> Ensuring effective signage, communication and education is provided to occupants, tenants and cleaners; Providing staff/contractors with equipment manuals, training, health and safety procedures, risk assessments, and PPE to control hazards associated with all waste management activities; Ensuring site safety for residents, children, visitors, staff and contractors; Abiding by all relevant OH&S legislation, regulations, and guidelines; Assessing any manual handling risks and prepare a manual handling control plan for waste and bin transfers; Preventing storm water pollution by taking necessary precautions (securing bin rooms, preventing overfilling of bins) General maintenance and cleaning of chute doors on each level; Cleaning and transporting of bins as required; Organising, maintaining and cleaning the general and recycled waste holding area; Organising both garbage and recycled waste pick-ups as required; Organising replacement or maintenance requirements for bins; Organising bulky goods collection when required; and Investigating and ensuring prompt clean-up of illegally dumped waste materials.
Residents/Tenants	<ul style="list-style-type: none"> Dispose of all garbage and recycling in the allocated waste chutes and/or MGBs provided; Ensure adequate separation of garbage and recycling; and Compliance with the provisions of Council and the WMP.
Council or Private Waste Contractor	<ul style="list-style-type: none"> Provide a reliable and appropriate waste collection service; Provide feedback to building managers/residents in regards to contamination of recyclables; and Work with building managers to customise waste systems where possible.
Gardening/Landscaping Contractor	<ul style="list-style-type: none"> Removal of all garden organic waste generated during gardening maintenance activities for recycling at an offsite location.
Building Contractors	<ul style="list-style-type: none"> Removing all construction related waste offsite in a manner that meets all authority requirements.

EDUCATION

Educational material encouraging correct separation of garbage and recycling items must be provided to each resident by building management to ensure correct use of the waste chute. This should include the correct disposal process for bulky goods (old furniture, large discarded items, etc.), and other appropriate materials (electronic, chemical waste, etc.). It is recommended that the building caretaker provides information in multiple languages to support correct practises and minimise the possibility of chute blockages as well as contamination in the collective waste bins.

It is also recommended that the owners' corporation website contain information for residents to refer to regarding use of the chute. Information should include:

- Directions on using the chute doors;
- Recycling and garbage descriptions (council provides comprehensive information);
- How to dispose of bulky goods and any other items that are not garbage or recycling;
- Residents' obligations to health and safety and building management; and
- How to prevent damage or blockages to the chute (example below).

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

It is expected that leasing arrangements with retail and commercial operations contain direction on waste management services and expectations.

SIGNAGE

The building manager is responsible for waste room signage including safety signage (see *APPENDIX B.1*). 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 the bin underneath.

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

RESIDENTIAL WASTE MANAGEMENT

Penrith Council's *Residential Flat Building Waste Management Guidelines* has been referenced to calculate the total number of bins required for the residential units. *Residential Flat Building Waste Management Guidelines* state that bins should be provided in accordance with the rates shown in Figure 2.

Figure 2: Penrith Council - Waste Generation Rates for Respective Bin Allocations

Weekly Waste Generation Volumes (L)	240L Bin Allocation	660L Bin Allocation	1100L Bin Allocation
Residual	2 dwellings per bin	9 dwellings per bin	18 dwellings per bin
Recycling	2 dwellings per bin	9 dwellings per bin	18 dwellings per bin

Source: Section 3.4 Waste Generation Calculations, *Residential Flat Building Waste Management Guidelines*

The site will use 1100L MGBs, therefore the waste generation rate would be as follows:

Garbage: 1100L MGB/18 dwellings = 61.1
=62L/unit/week

Recycling: 1100L MGB/18 dwellings = 61.1
=62L/unit/week

Calculations are based on generic figures; waste generation rates may differ according to the residents' waste management practice.

ESTIMATED WASTE VOLUMES AND PROVISIONS

The following table shows the estimated volume (L) of garbage and recycling generated by the residential component of the development.

Table 2: Calculated Waste Generation – Residential

Building/ Core	# Units	Garbage Generation Rate (L/unit/week)	Generated Garbage (L/w week)	Recycling Generation Rate (L/unit/w week)	Generated Recycling (L/w week)
Block A	60	62	3720	62	3720
Block B - Core 1	21	62	1302	62	1302
Block B - Core 2	18	62	1116	62	1116
Block C - Core 1	24	62	1488	62	1488
Block C - Core 2	24	62	1488	62	1488
TOTAL	147		9114		9114
Collections		Garbage Bin Size (L)	1100	Recycling Bin Size (L)	1100
		Garbage Bins per Week	12	Recycling Bins per Week	12
		Garbage Collections per Week	2	Recycling Collections per Week	1
		Total Garbage Bins Required	6	Total Recycling Bins Required	12
Equipment		Number of Waste Bins Per Day	Block A	Number of Recycling Bins Per Day	Block A
			Block B - Core 1		Block B - Core 1
			Block B - Core 2		Block B - Core 2
			Block C - Core 1		Block C - Core 1
			Block C - Core 2		Block C - Core 2
		Chute Equipment		Dual Chutes	
		Other Equipment		2-bin Linear Tracks For 1100L MGBS	

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

OPERATIONAL WASTE MANAGEMENT PLAN

HOUSEHOLD WASTE

Five garbage chutes and five recycling chutes will be installed with access provided on all residential levels of each core of each building.

Garbage discharges into 1100L MGBs placed on linear tracks and recycling (coming) into 1100L MGBs placed on linear tracks. The discharge is located in the waste discharge rooms for each core. The building manager is responsible for monitoring the fullness of the bins and rotating them with empty bins as required.

Full garbage and recycling bins will be transferred to the collection area on ground level to await for servicing.

COMMON AREAS

The lobbies, amenities and circulation areas will be supplied with suitably branded waste and recycling bins where considered appropriate. These areas generate minimal waste, however garbage and recycling receptacles should be provided and located in convenient locations.

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.

SOURCE SEPARATION

Waste avoidance, recovery and reuse of discarded materials and responsible management of hazardous waste are all crucial elements of sustainable development. Effective waste management practices in residential developments significantly improve environmental, social, and economic outcomes on both a local and regional scale and should be integrated into the waste management processes.

GENERAL WASTE (GARBAGE)

Residents will be supplied with a collection area in each unit to deposit garbage and collect recyclable material suitable for one day's storage. This is typically located generally in the kitchen, under bench or similar alternate area. Residents should wrap or bag their garbage; bagged garbage should not exceed 3kg in weight or 35cm x 35cm x 35cm in dimension.

RECYCLING

Recycling must not be bagged. It is recommended that residents use a crate or dedicated bin for collecting recyclables within the allocated residential space provided to ensure correct separation.

Cardboard furniture boxes or large cardboard containers should not be included in the garbage chute – a cardboard collection bin will be made available to residents to deposit flattened cardboard and will be managed by the waste caretaker. Residents should be advised of the location of these bins by building management.

GREEN WASTE

Green waste is not typically generated from multi-unit dwellings other than from surrounding building landscaped areas and is removed by the designated maintenance contractor. In the event that green waste is produced i.e. trimming of indoor or balcony plants then this may be disposed of via coordination with the building caretaker or cleaner. Very small quantities may be disposed of via the general waste stream.

BULKY GOODS

Penrith Council requires new development to provide a bulky goods room at the following rate shown in

Figure 3: Penrith Council's Bulky Goods Area Rate

$$\text{Bulky Household Waste Area (m}^2\text{)} = \left[\text{Number of Units} \times 8 \right] \div 52$$

Source: Section 3.5.3 Bulky Household Waste Collection Room, Residential Flat Building Waste Management Guidelines

A room or caged area will be made available for the storage of discarded residential bulky items (e.g. whitegoods, furniture, etc.). This room should be located within close proximity of the garbage and recycling bin collection room and must have a minimum doorway width of 1.8m to allow for easy movement of large waste items in and out of the room.

These areas are crucial to prevent residents from illegally dumping bulky waste on the footpath outside Councils scheduled collection times. Regular illegal dumping can attract other dumped waste, generate litter, detract significantly from the quality and appearance of the development and reduce amenity of the street.

Residents will be required to liaise with building management regarding the transportation and disposal of bulky goods. Ideally, bulky waste should be collected on a regular schedule so that the storage area does not become overfull and so that residents know when to place items in there for collection. Councils may arrange for more frequent collections of bulky waste for MUDs, however collection frequencies vary among different local government areas.

E-WASTE

E-waste (electronic waste) refers to any equipment containing printed circuit boards. E-Waste must not be placed in standard garbage or recycling, E-Waste can potentially contaminate soil and surrounding water bodies if not disposed of correctly. The best disposal method for e-waste is recycling through a E-waste service or council.

Disposal or recycling of electronic waste will be organised with the assistance of the building caretaker. Residents and/or the building manager may choose to contact Council to find out about new or existing strategies for the disposal and collection of electronic waste.

CHEMICAL WASTE

Chemical wastes (e.g. cleaning chemicals, paints, oils solvents) pose detrimental effects to human health and the environment if not disposed of correctly. Chemical wastes should be disposed of at a suitable licensed disposal facility. No liquid wastes or wash down waters should be disposed of via the storm water drainage system.

Residents will need to liaise with the building manager when disposing of their chemical wastes. The building manager will be responsible for arranging the correct disposal of chemical waste. Household Chemical CleanOut events are held at various locations throughout NSW on specified dates throughout the year. Locations and dates are subject to change. It is recommended that the building caretaker confirm these details with their local Council.

ORGANIC WASTE AND COMPOSTING

Recycling organic waste, such as food scraps and garden materials, dramatically reduces the quantity of waste being diverted to land fill and thus reduces residents' ecological footprint. Compost material can also be returned to the soil as a rich fertilizer and improve plant growth and the overall health of surrounding vegetation. It is recommended that a space for composting and worm farming is made available for all residents in a communal facility (see *APPENDIX D.1*). Composting facilities are to be sited on an unpaved area with soil depth of at least 300mm. Residents may also choose to purchase and install apartment style compost bin where practical and self-manage these systems (see *APPENDIX D.2 and APPENDIX D.3*).

CLOTHING WASTE

Clothing is becoming an increasingly large waste stream for domestic dwellings. Unwanted clothing that is clean and undamaged can be donated to charities. Building management may choose to provide clothing donation bins for residents to donate their unwanted clothing. Building management can directly contact a charity to supply a donation bin or choose to provide their own nondenominational donation bin. Once a sufficient amount of clothing has been collected, the building management will be responsible for arranging the collection of donated items with the relevant charity.

STAGE 1 - COMMERCIAL AND RETAIL WASTE MANAGEMENT

Penrith Council's *Residential Flat Building Waste Management Guidelines* and *Commercial Waste Generation Rate Guidelines* has been referenced to calculate the total number of bins required for the Stage 1. Calculations are based on generic figures; waste generation rates may differ according to the tenants' waste management practice.

The following table shows the estimated volume (L) of garbage and recycling generated by the stage 1 of the development.

Table 3: Calculated Waste Generation – Stage 1 Retail and Commercial

Type	NLA (m ²)	Garbage Generation Rate (L/100m ² /day)	Generated Garbage (L/week)	Recycling Generation Rate (L/100m ² /day)	Generated Recycling (L/week)
Café	38	300	798	200	532
Display Suite	62	10	43.4	10	43.4
TOTAL	100		841.4		575.4
Collections & Equipment	Bin Size (L)		240	Bin Size (L)	
	Garbage Bins Per Week		4	Recycling Bins Per Week	
	Collections per Week		4	Collections per Week	
	Total Waste Bins Required		1	Total Recycling Bins Required	

STAGE 1 WASTE MANAGEMENT

A temporary bin holding area 1x 240L MGBs for waste and 1x 240L MGBs for recycling will be included in the display suite building for stage 1. At the end of each day or as required the staff of the show room and café will be responsible for placing garbage and recycling into the appropriate collection bins.

A private contractor will be engaged to collect the waste and recycling bins in the bin holding area to an agreed schedule.

Once the waste facilities constructed in stage 2 have commenced operation, the café and display suite will utilise these shared waste facilities for the future operation of the site.

ALL OTHER STAGES - COMMERCIAL AND RETAIL WASTE MANAGEMENT

Penrith Council's *Residential Flat Building Waste Management Guidelines* and *Commercial Waste Generation Rate Guidelines* has been referenced to calculate the total number of bins required for the retail and commercial areas. Calculations are based on generic figures; waste generation rates may differ according to the tenants' waste management practice.

ESTIMATED WASTE VOLUMES AND PROVISIONS

The following table shows the estimated volume (L) of garbage and recycling generated by the commercial and retail component of the completed development. A seven day operating week has been assumed.

It has been assumed that the retail tenants, medical centre, chemist, offices tenants, gym tenants, swim school and childcare will share a waste room and collection services.

OPERATIONAL WASTE MANAGEMENT PLAN

Table 4: Calculated Waste Generation – Retail and Commercial

Type	NLA (m ²)	Garbage Generation Rate (L/100m ² /day)	Generated Garbage (L/week)	Recycling Generation Rate (L/100m ² /day)	Generated Recycling (L/week)	
Resturants Tenancies	509	660	23515.8	200	7126	
Non-Food Retail Tenancies	1439	50	5036.5	50	5036.5	
General Retail - Food Retail	238	150	2499	150	2499	
Kiosk Retail	60	50	210	50	210	
Medical Centre	750	50	2625	50	2625	
Chemist	313	50	1095.5	50	1095.5	
Liquor retail	260	50	910	50	910	
GYMs	638	10	446.6	10	446.6	
Commerical Offices	147	10	102.9	10	102.9	
Childcare	660	80	3696	80	3696	
Car Wash	62	15	65.1	15	65.1	
Café	38	300	798	200	532	
Swim School	291	10	203.7	50	1018.5	
TOTAL	5405		41204.1		25363.1	
Collections & Equipment	Bin Size (L)		1100	Bin Size (L)		1100
	Garbage Bins Per Week		38	Recycling Bins Per Week		24
	Collections per Week		4	Collections per Week		4
	Total Waste Bins Required		10	Total Recycling Bins Required		6

It is the responsibility of the building manager to monitor the number of bins required for the development. Waste volumes may change according to the development's management, customer base and retail tenancy attitudes to waste disposal and recycling. Bin numbers and sizes may need to be altered to suit the building operation. Seasonal peak periods i.e. public and school holidays should also be considered.

RETAIL TENANT WASTE MANAGEMENT

Retail tenants will be responsible for their own storage of garbage and recycling back of house (BOH) during daily operations. On completion of each trading day or as required, nominated retail staff or cleaners will transport their garbage and recycling to the Retail Waste Room and place garbage and recycling into the appropriate collection bins (See APPENDIX A.1 for Travel Paths).

Cardboard is a major component of the waste generated by retail tenancies. All cardboard should be flattened (to save bin space), placed in and collected from bulk bins. Whilst cardboard is bulky, it is generally lightweight however it can be contaminated with food or liquid which makes it unsuitable for recycling.

RESTAURANT AND CAFES TENANT WASTE MANAGEMENT

All food based tenancies, like restaurants, cafes and food retail will be responsible for their own storage of garbage and recycling back of house (BOH) during daily operations. On completion of each trading day or as required, nominated retail staff or cleaners will transport their garbage and recycling to the Retail Waste Room and place garbage and recycling into the appropriate collection bins.

OPERATIONAL WASTE MANAGEMENT PLAN

Food handling for food cooked or prepared, served and 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.

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

- All garbage should be bagged and garbage bins should be plastic lined;
- Bagging of recyclables is not permitted;
- All interim waste storage is located BOH during operations;
- 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 recycling MGB

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.4 for Typical Cooking Oil Collection System).

COMMERCIAL (OFFICE) TENANT WASTE MANAGEMENT

Typically, bins for paper or general waste are positioned next to each workers desk or work station. Bins for general waste and recyclables are also located centrally in each office, generally in the kitchen area and printer room.

At the end of the day, cleaners or office staff will be responsible for transporting of the waste and recycling to the Retail Waste Room and placing it into the appropriate bin.

OTHER WASTE STREAMS

Tenants are required make arrangements for the disposal and recycling of specialised waste (toner cartridges, batteries, etc.). Disposal of hard, electronic, liquid waste and any chemical waste (paint/chemicals) can be organised with the assistance of the building management or cleaners.

CHILDCARE WASTE MANAGEMENT

Throughout the day, the Childcare staff will dispose of their waste and recycling in waste receptacles placed throughout the childcare facility. Bins should be placed out of access of the children.

At the end of the day, the contracted cleaners appointed by the childcare centre will remove bagged waste and separated recycling from the allocated collection points and transport the waste and recycling to the bin in the Retail Waste Room.

NAPPIES AND OTHER ITEMS

At the childcare's discretion, dedicated waste bins can be allocated for sorting and storage of disposable nappies. A recycling service for soiled disposable nappies should be investigated. Relivit offers a recycling service and will call the centre 8 weeks out from the commencement of the service to put in place a formal waste contract and arrange the implementation of the service if desired.

Secure destruction bins will be operated on a wheel in wheel out basis by the appointed contractor if required.

MEDICAL CENTRE TENANCY MANAGEMENT

Medical centre tenancy will be responsible for the storage garbage and recycling back of house (BOH) during daily operation.

On completion of each trading day or as required, nominated staff/cleaners will transport their garbage and recycling to Retail Waste Room and place garbage and co-mingled recycling and cardboard into the appropriate collection bins.

Any medical waste, including controlled and hazardous waste will be the responsibility of the Medical Centre and must be kept separate from standard garbage and recycling.

The medical centre tenancy will have dedicated medical waste bins supplied as per the medical waste contractor's recommendations for the site. Waste from out-of-date and partly used medicines, infectious medical wastes, hazardous wastes and radioactive wastes must be stored and disposed of according to specific industry-based regulations. Correct segregation and containment of all wastes is required under the Waste Act.

Medical waste bins will be placed in each of the consulting waste rooms and are not be moved by any staff or cleaners.

Medical waste bins will be collected by the appointed contractor on a wheel in/wheel out basis directly from the medical centre tenancy and replacement bins provided on a scheduled collection frequency. Compatible key for the Health Services waste storage area may need to be provided to the waste service provider.

Please see Table 5: Storage and Collection Requirements for any Medical Waste storage and collection requirements for any medical waste:

Table 5: Storage and Collection Requirements for any Medical Waste

Area	Location
Storage	An EPA licence may be required to store Hazardous Wastes. Storage areas are to be free from odour and must discourage the harbourage of vermin. Health Care Facilities must provide an enclosed structure such as a shed, garage, cage, fenced area or separate loading bay to store waste. The holding area should be located away from food and clean storage areas, it must not be accessible to the public, have a lockable door and rigid impervious flooring. Clean up facilities, spills kits, appropriate drainage and bunding should be provided. Where wastes are stored in bins the bin must be locked and a specific area, with adequate drainage, for washing equipment should be designated
Containers	All containers of medical waste to be stored in a secure location. Loads contained in MGBs and trolleys should be less than 55kgs and bins must be colour coded and marked in accordance with the Waste Management Guidelines for Health Care Facilities
Spillage	Ensure all necessary equipment required to clean and disinfect the area in case of accidental spillage is easily available and accessible. It is essential that personnel involved in spill management receive education and training in emergency procedures and handling requirements. Spill kits that have been used should be disposed of with the type of waste that has been cleaned up, eg used cytotoxic spill kits should be disposed of with cytotoxic waste
Mixed waste	Any waste mixed with medical waste must be treated as medical waste
Sharps	Needles, syringes and surgical instruments must be handled so the disposal of these items does not incorporate cutting, bending or any other manipulation that could generate aerosols or splatter contaminated fluids. All sharps containers should be assessed for compliance with the current NSW Health Infection Control Policy and the relevant Australian Standard
Collections	Medical waste shall remain within the storage areas and only be moved during collections. Collections will be performed by a transporter licensed by the EPA to collect and transport

SWIM SCHOOL MANAGEMENT

The Swim School staff will be responsible for their own storage of garbage and recycling back of house (BOH) during daily operations. On completion of each trading day or as required, nominated staff or cleaners will transport their garbage and recycling to the Retail Waste Room and place garbage and recycling into the appropriate collection bins.

Pool chemicals can be harmful to human health and the environment if not disposed of correctly. Chemical wastes should be disposed of at a suitable licensed disposal facility. No liquid wastes or wash down waters should be disposed of via the storm water drainage system.

The staff and building manager will be responsible ensuring the pool chemicals are disposed of correctly.

SUPERMARKET WASTE MANAGEMENT

Penrith Council's *Commercial Waste Generation Rate Guidelines* has been referenced to calculate the estimated garbage and recycling generated by the supermarket tenant. Calculations are based on generic figures; waste generation rates may differ according to the tenants' waste management practice.

ESTIMATED WASTE VOLUMES AND PROVISIONS

The following table shows the estimated volume (L) of garbage and recycling generated by the supermarket component of the development. A seven day operating week has been assumed.

Table 6: Calculated Waste Generation – Supermarket

Type	NLA (m ²)	Garbage Generation Rate (L/100m ² /day)	Generated Garbage (L/week)	Recycling Generation Rate (L/100m ² /day)	Generated Recycling (L/week)
Supermarket	2193	660	101316.6	240	36842.4
TOTAL	2193		101316.6		36842.4
Waste Rooms & Equipment			To Be Determined By Supermarket Tenant		

SUPERMARKET WASTE MANAGEMENT

Supermarket retail areas total 2193sqm (including BOH operations). It is expected that the supermarket tenant will be one of the major supermarket retailers.

Waste streams and equipment for the supermarket will be detailed in a separate waste management plan supplied by the tenant to Council for approval. It is envisioned that waste and recycling will be collected by a nationally appointed private waste contractor with cardboard and plastic waste being baled. Any waste management equipment for the supermarket will be located BOH or in the supermarket loading area and operated by appointed supermarket staff.

All waste management for the supermarket will be handled in the loading dock area and removed from the loading dock by their appointed waste services provider.

MOVEMENT AND TRANSPORTATION OF BINS

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

Transfer of waste and all bin movements require minimal manual handling; the operator must assess manual handling risks and provide any relevant documentation to building management.

If required the developer should contact a bin-tug, trailer or tractor consultant to provide equipment recommendations. Examples of motorised bin moving equipment can be found in APPENDIX B.4 and APPENDIX B.5. 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.

COLLECTION OF WASTE

RESIDENTIAL

Council will be engaged to collect the residential garbage and recycling bins. This report assumes that waste is collected twice weekly and recycling is collected weekly.

On collection days, the building manager will be responsible for moving the bins from the Waste Discharge Rooms to the Bin Holding Area for collection. Service bins will remain under the chutes while servicing is occurring.

The waste collection vehicle will enter the site from Darug Drive and park in the designated loading bay on Ground Level. Collection will occur via a collect and return arrangement from the Residential Bin Holding Room located adjacent to the loading bay.

After servicing has been completed, the Building Manager will be responsible for returning the bins to their designated operational location.

STAGE 1 – TEMPORARY WASTE COLLECTION ARRANGEMENT

A private contractor will be engaged to collect the bins for the display suite and the café in stage 1 to an agreed schedule.

The waste collection vehicle will park on Glenmore Ridge Dr adjacent to the temporary bin holding area. The waste collection staff will service the bins via a wheel in wheel out arrangement directly from the waste room.

This service arrangement will cease once the waste facilities and collection areas constructed in stage 2 are operational.

RETAIL TENANTS, CHILDCARE, MEDICAL CENTRE

A private contractor will be engaged to collect the shared retail garbage and recycling bins to an agreed schedule.

The waste collection vehicle will enter the site from Darug Drive and park in the designated loading bay on Ground Level. Collection will occur via a collect and return arrangement from the Retail Waste Room located adjacent to the loading bay.

SUPERMARKET

The supermarket tenant will be responsible for engaging their private contractor to conduct garbage and recycling collections.

The waste collection vehicle will enter the site from Darug Drive and park in the designated loading bay. Servicing will occur directly from the Supermarket Waste Area.

COLLECTION AREA

It is Elephant Foot's understanding that the collection areas have been reviewed by a traffic consultant to confirm the swept paths, load requirements and clearances for waste collections. It must be ensured that the collection vehicle (and other trucks if required) can enter and exit the building in a forward direction. The final number of truck collection will depend on management of waste contract.

WASTE ROOM AREAS

For the Waste Discharge Rooms, all waste discharge points should be caged off to ensure the safety of any personnel accessing the waste room. Access to waste discharge rooms should be provided to the building manager/waste caretaker **only**. Under no circumstances should access be provided to any residents, or waste collection staff. Chute discharge requires a minimum of 3000mm distance from floor to ceiling and needs to be free of service pipes and other overhead obstacles within the immediate space around the chute discharge.

In the Retail Waste Room, all bins should be arranged so that all bins are accessible without moving any other bins. This is to ensure the safety of the staff accessing this room to dispose of waste.

During operation, any requirements for increasing waste and recycling storage capacity can be done by increasing the frequency of bin collections.

The areas allocated for waste storage and collection areas are detailed in Table 7 below. The areas provided are estimates only. Final areas will depend upon room and bin layouts.

Table 7: Waste Room Areas

Level	Waste Room Type	Equipment	Estimated Area (m ²)
G	Temporary Bin Holding Area for Stage 1	1x 240L MGBs (waste) 1x 240L MGBs (recycling)	2
G	Residential Bin Holding Room (collection point)	6x 1100L MGBs (waste) 12x 1100L MGBs (recycling)	>52
G	Block A - Waste Discharge Room	<i>Minimum</i> 2x 2-bin linear tracks 2x 1100L MGBs (service bins)	18
B	Block A – Bin Holding Room	2x 1100L MGBs (waste) 2x 1100L MGBs (recycling)	12
B	Block B – Core 1 Waste Discharge Room	2x 2-bin linear tracks 2x 1100L MGBs (service bins)	18
B	Block B – Core 2 Waste Discharge Room	2x 2-bin linear tracks 2x 1100L MGBs (service bins)	18
B	Block C – Core 1 Waste Discharge Room	2x 2-bin linear tracks 2x 1100L MGBs (service bins)	18
B	Block C – Core 2 Waste Discharge Room	2x 2-bin linear tracks 2x 1100L MGBs (service bins)	18
G	Bulky Goods Waste Storage Room		<i>Minimum</i> 23
G	Retail/Commercial Waste Room	10x 1100L MGBs (garbage) 6x 1100L MGBs (recycling)	60
G	Supermarket Waste Area	To be determined by the supermarket tenant	-

EQUIPMENT SUMMARY

Table 8: Equipment Summary

Component	Part	Qty	Notes
Chutes	Please refer to supplier's information	10	(See APPENDIX C for Typical Chute Section)
Equipment A	Garbage 2-bin 1100L MGB Linear Track System	5	(See APPENDIX C.2 for Typical Linear System)
	Recycling 2-bin 1100L MGB Linear Track System	5	See APPENDIX C.2 for Typical Linear System)
Equipment B	Suitable Bin Moving Equipment	Recommended	(See 0 for Typical Bin Mover)

WASTE ROOMS

CONSTRUCTION REQUIREMENTS

The waste room will be required to contain the following facilities to minimise odours, deter vermin, protect surrounding areas, and make it a user-friendly and safe area:

- Waste room floor to be sealed with a two pack epoxy;
- Waste room walls and floor surface is flat and even;
- All corners coved and sealed 100mm up, this is to eliminate build-up of dirt;
- For residential: a hot and cold water facility with mixing facility and hose cock must be provided for washing the bins;
- For retail/commercial: a cold water facility with hose cock must be provided for washing the bins;
- Any waste water discharge from bin washing must be drained to sewer in accordance with the relevant water board. (Sydney water);
- Tap 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 floor levels;
- The room must be mechanically ventilated;
- Light switch installed at height of 1.6m;
- Waste rooms must be well lit (sensor lighting recommended);
- Optional automatic odour and pest control system installed to eliminate all pest types and assist with odour reduction – this process generally takes place at building handover – building management make the decision to install;
- If 660l or 1100l bins are utilised, 2 x 820mm (minimum) door leafs must be used;
- All personnel doors are hinged, lockable and self-closing;
- Waste collection area must hold all bins – bin movements should be with ease of access;
- Conform to the building code of Australia, Australian standards and local laws; and
- Childproofing and public/operator safety shall be assessed and ensured

VENTILATION

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 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

USEFUL CONTACTS

Elephants Foot Recycling Solutions does not warrant or make representation for goods or services provided by suppliers.

Penrith Council Customer Service

Phone: 02 4732 7777

Email: council@penrithcity.nsw.gov.au

SULO MGB (MGB, Public Place Bins, Tugs and Bin Hitches)

Phone: 1300 364 388

CLOSED LOOP (Organic Dehydrator)

Phone: 02 9339 9801

ELECTRODRIVE (Bin Mover)

Phone: 1800 333 002

Email: sales@electrodrive.com.au

RUD (Public Place Bins, Recycling Bins)

Phone: 07 3712 8000

Email: Info@rud.com.au

CAPITAL CITY WASTE SERVICES (Private Waste Services Provider)

Phone: 02 9359 9999

REMONDIS (Private Waste Services Provider)

Phone: 13 73 73

SITA ENVIRONMENTAL (Private Waste Services Provider)

Phone: 13 13 35

NATIONAL ASSOCIATION OF CHARITABLE RECYCLING ORGANISATIONS INC.
(NACRO)

Phone: 03 9429 9884

Email: information@nacro.org.au

PURIFYING SOLUTIONS (Odour Control)

Phone: 1300 636 877

Email: sales@purifyingsolutions.com.au

MOVEXX (Bin Movers)

Phone: 1300 763 444

AUSCOL (Recycling Oils & Animal Fats)

Phone: 1800 629 476

ELEPHANTS FOOT RECYCLING SOLUTIONS (Chutes, Compactors and eDiverter Systems)

44 – 46 Gibson Avenue

Padstow NSW 2211

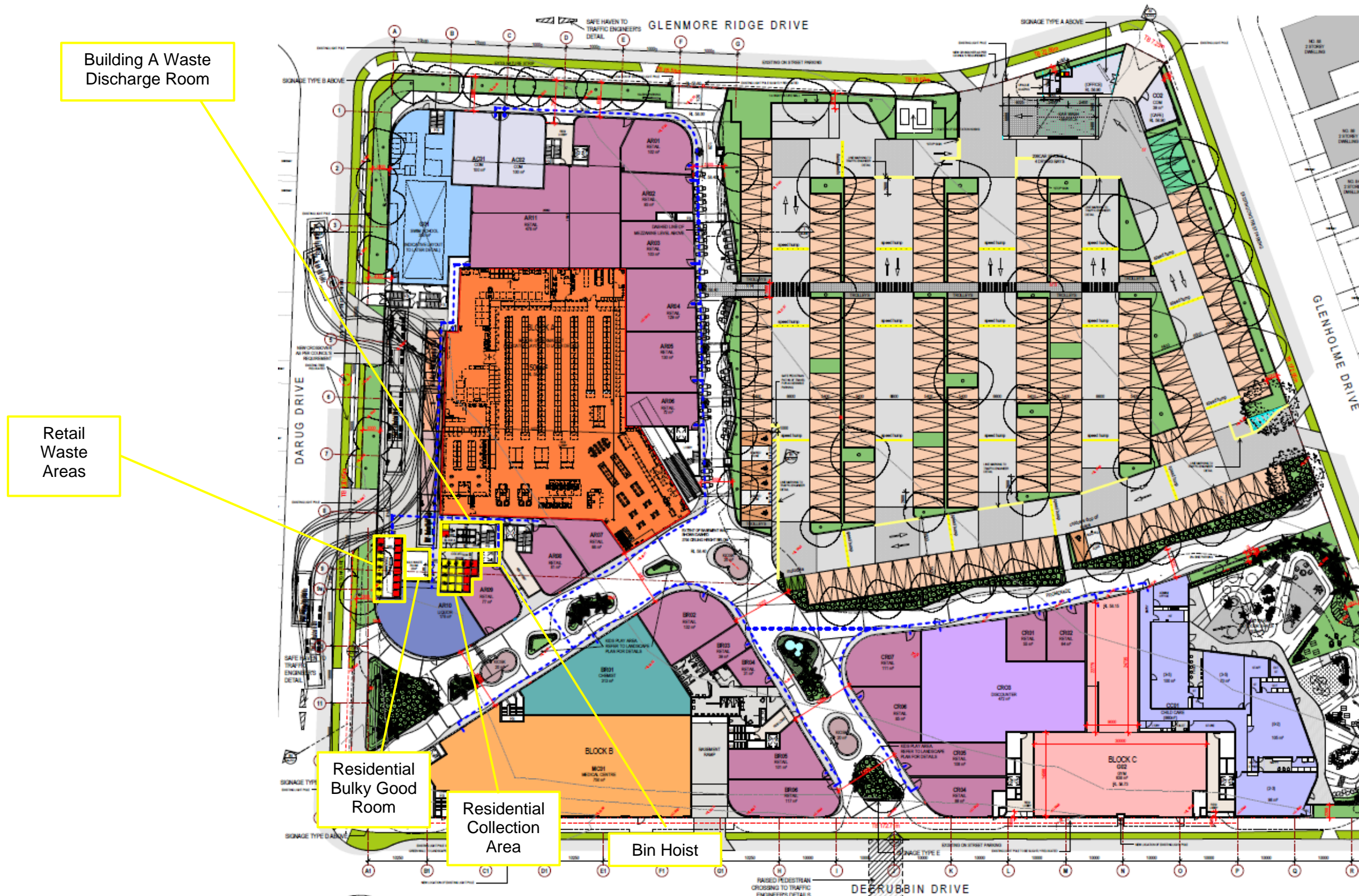
Free call: 1800 025 073

Email: info@elephantsfoot.com.au

APPENDICES

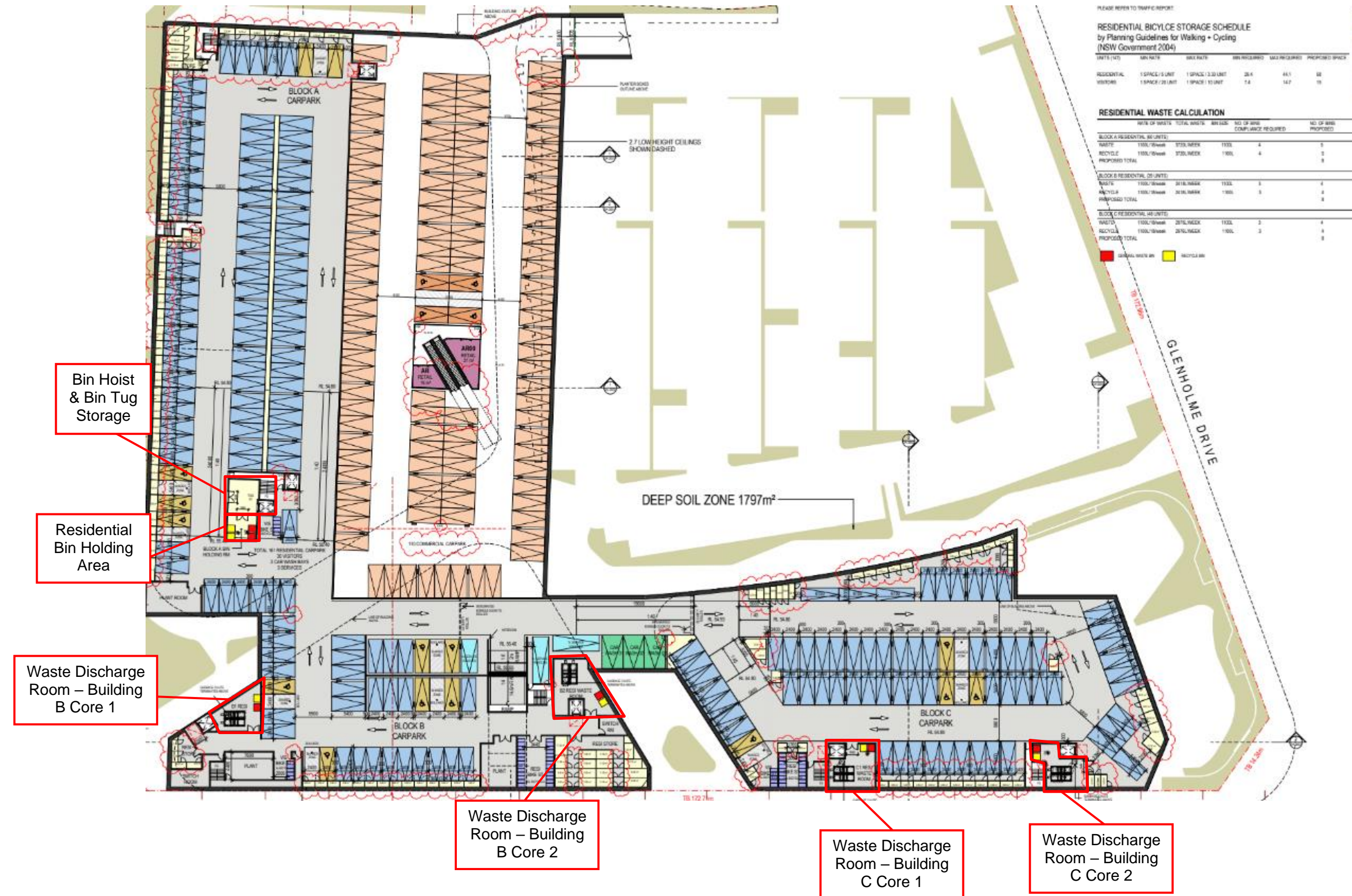
APPENDIX A ARCHITECTURAL DRAWING EXCERPTS

APPENDIX A.1 GROUND LEVEL - WASTE FACILITIES AND COLLECTION AREA DISPLAYING TRAVEL PATHS



Source: CD Architects, 90-98 Glenmore Ridge Dr Glenmore Ridge, Ground Floor Plan, Drawing No7054 Rev A June 2020

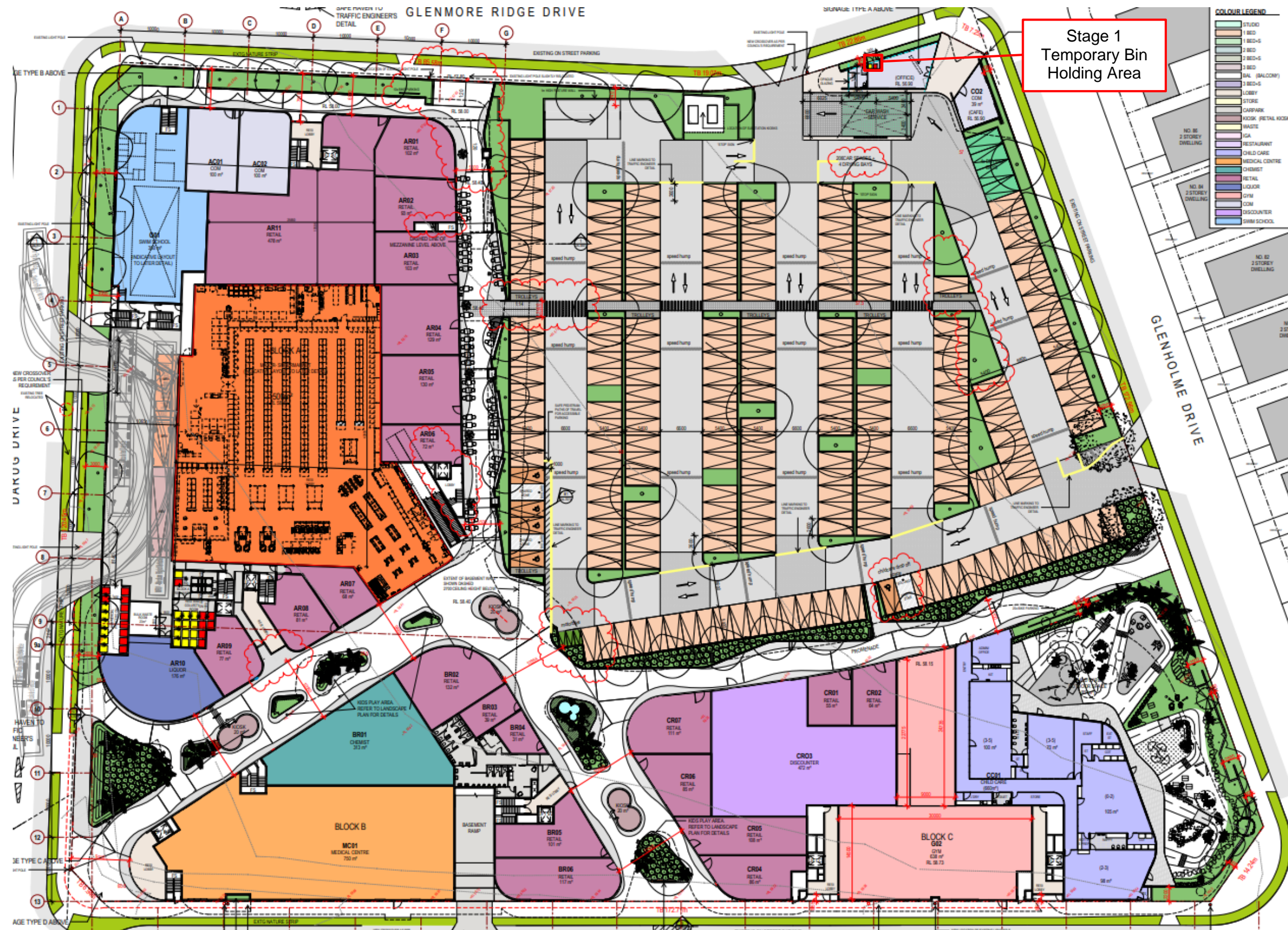
APPENDIX A.2 BASEMENT LEVEL – WASTE FACILITIES



Source: CD Architects, 90-98 Glenmore Ridge Dr Glenmore Ridge, Basement Floor Plan, Drawing 1101 Rev C June 2020

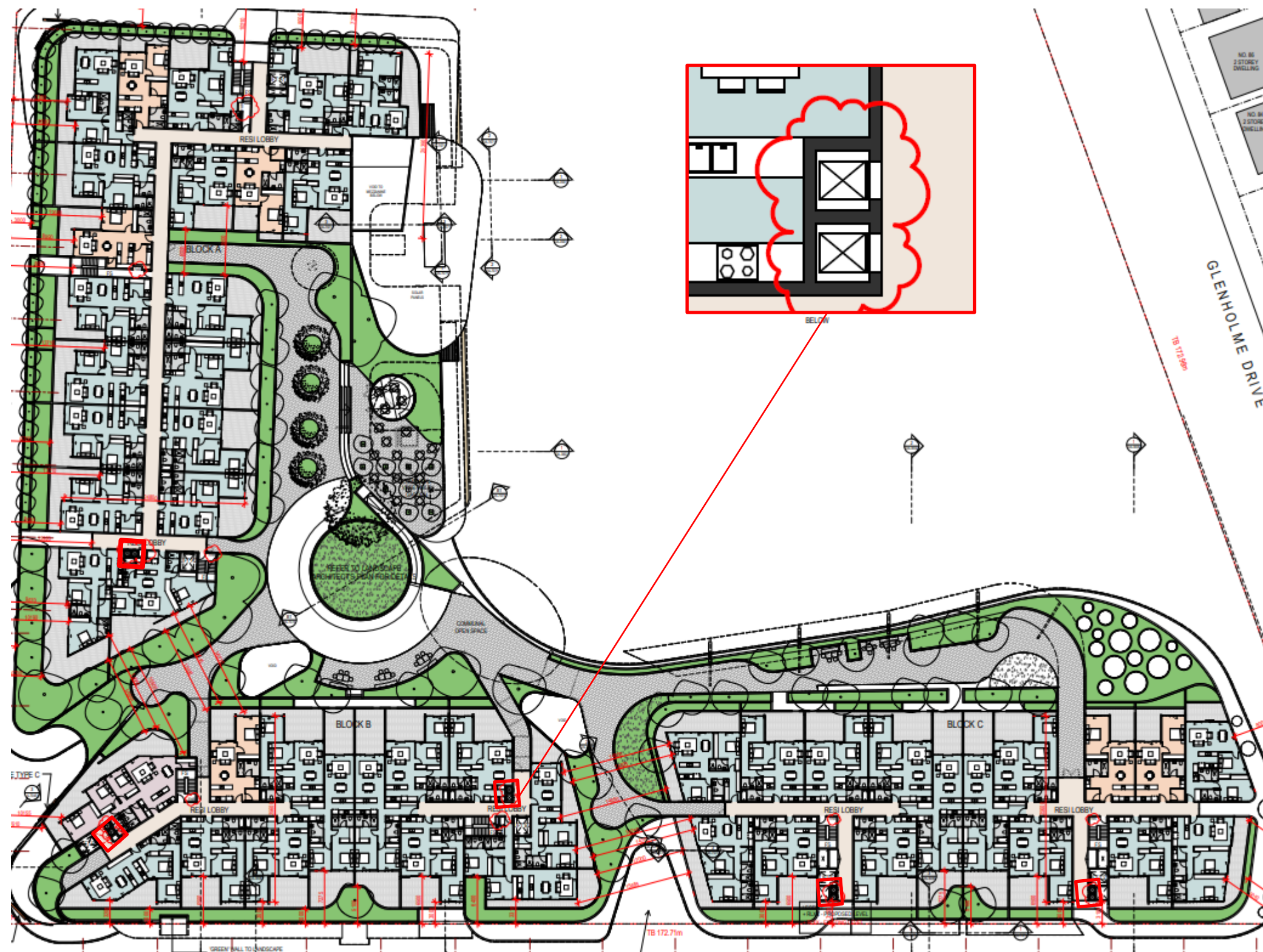
OPERATIONAL WASTE MANAGEMENT PLAN

APPENDIX A.3 STAGE 1 – WASTE FACILITIES



Source: CD Architects, 90-98 Glenmore Ridge Dr Glenmore Ridge, Ground Floor Plan, Drawing No 7054 Rev A June 2020

APPENDIX A.3 TYPICAL RESIDENTIAL LEVEL DISPLAYING DUAL CHUTE LOCATIONS



Source: CD Architects, 90-98 Glenmore Ridge Dr Glenmore Ridge, Level 2 Plan, Drawing 1104 Rev B June 2020

APPENDIX B PRIMARY WASTE MANAGEMENT PROVISIONS

APPENDIX B.1 PENRITH BIN SPECIFICATIONS

3.3 BIN INFRASTRUCTURE

The bin dimensions provided reflect the bins currently used to serve Penrith's residential waste streams:

- Council's standard bin allocations for RFB developments are 660L and 1100L bins for both general and recycling waste.
- Where the development incorporates an interim storage room or a waste chute system, Council may allocate 240L mobile garbage bins for the development to allow safe disposal of cardboard boxes and larger cardboard objects that cannot be placed in the chute system.

Size	Height (mm)	Length (mm)	Width (mm)
240L Bin	1100	740	600
660L Bin	1400	1260	800
1100L Bin	1330	1240	1090

Table 4: Standard Bin Size and Dimensions



Figure 9: Image of a typical 240L, 660L and 1100L waste collection bins

Source: Penrith Council's *Residential Flat Building Waste Management Guidelines*

OPERATIONAL WASTE MANAGEMENT PLAN

APPENDIX B.2 SIGNAGE FOR WASTE & RECYCLING BINS

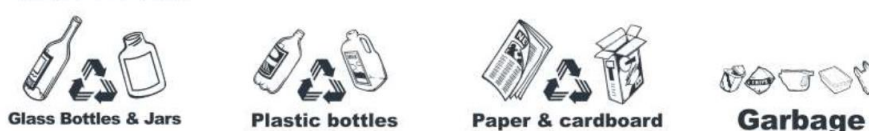
WASTE SIGNS

Signs for garbage, recycling and organics bins should comply with the standard signs promoted by the Department of Environment and Heritage.

Example wall posters



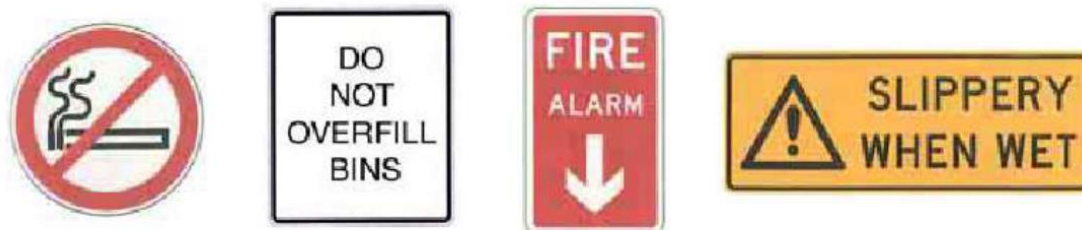
Example bin lid stickers



SAFETY SIGNS

The design and use of safety signs for waste rooms and enclosures should comply with AS1319 Safety Signs for Occupational Environment. Safety signs should be used to regulate and control safety behaviour, warn of hazards and provide emergency information, including fire protection information. Below are some examples. Each development will need to decide which signs are relevant for its set of circumstances and service provided.

Examples of Australian Standards:



Australian Standards are available from the SAI Global Limited website (www.saiglobal.com).

SOURCE: Department of Environment and Climate Change NSW 2008, Better Practice Guide for Waste Management in Multi-Unit Dwellings

APPENDIX B.3 PENRITH COLLECTION VEHICLE INFORMATION

2.3 DESIGN SPECIFICATIONS REAR LOADED WASTE COLLECTION VEHICLES

The following dimensions are provided for a standard heavy rigid vehicle as identified in Australian Standard 2890.2:

Vehicle Classification	Dimensions
Overall Length (m)	10.5
Operational Length (m)	12.5
Design Width (m)	2.8
Design Height (m)	3.7
Swept Circle (m)	22.5
Clearance (travel height) (m)	4.5
Roadway/ramp grade (max)	1:6.5 (15.4%)
Rate of change of grade (max)	1:16 (6.25%) in 7.0m of travel
Weight Fully Loaded (tonnes)	22.5
Capacity (m ³)	24
Front Chassis Clearance	13°
Rear Chassis Clearance	16°

Table 1: Standard dimensions sourced from AS 2890.2 Parking Facilities: Off-Street Commercial Vehicle Facilities

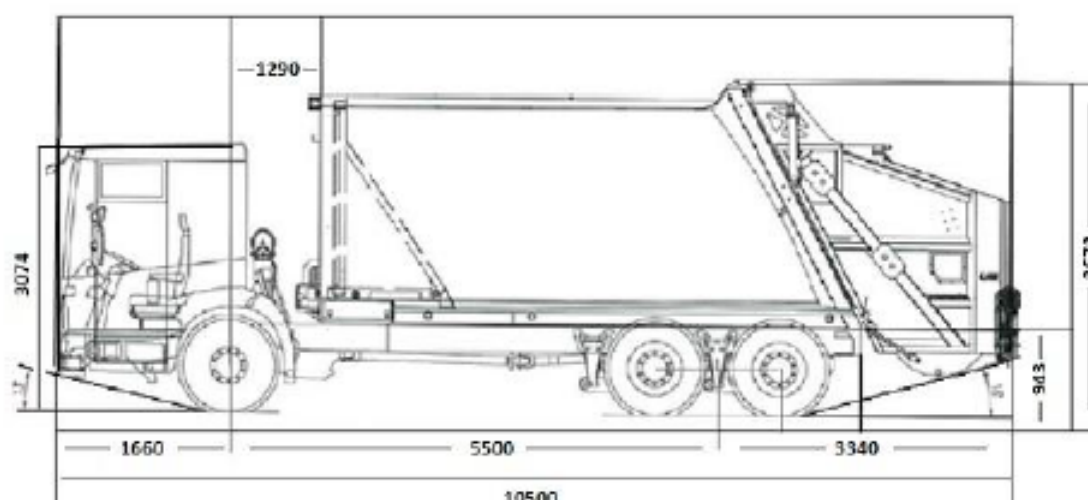


Figure 1: 10.5m Heavy Rigid Waste Collection Vehicle specifications

Source: Penrith Council's *Residential Flat Building Waste Management Guidelines*

APPENDIX B.4 TYPICAL MOTORISED BIN TUG



Typical applications:

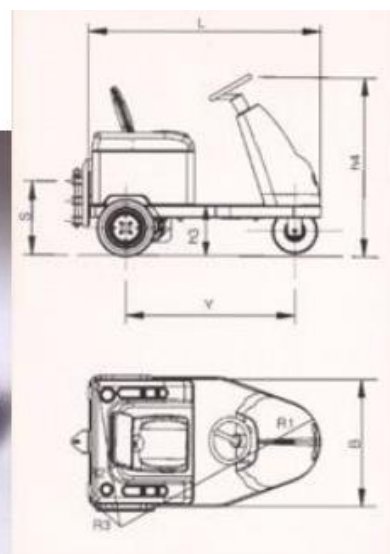
- Move trolleys, waste bin trailers and 660/1100L bins up and down a ramp incline.
- Quiet, smooth operation with zero emissions and simple to use, no driver's licence required
- Suitable for:
 - High rise building & apartment basements
 - Large factories & warehouse with sloped ground
 - Caravan parks & other large outdoor areas

Features:

- 1 tonne tow capacity of inclines up to 8 degrees
- 500kg tow capacity if inclines up to 14 degrees
- CE Compliant
- 4.5 km/h max speed
- 2 x 80amp batteries – includes charger
- Powerful transaxle
- Hitch to suit 660L bins

Safety Features:

- Intuitive paddle lever control
- Stops and repels the unit if activated when reversing.
- Site assessment recommended to assess ramp incline steepness (*See Useful Contacts*)

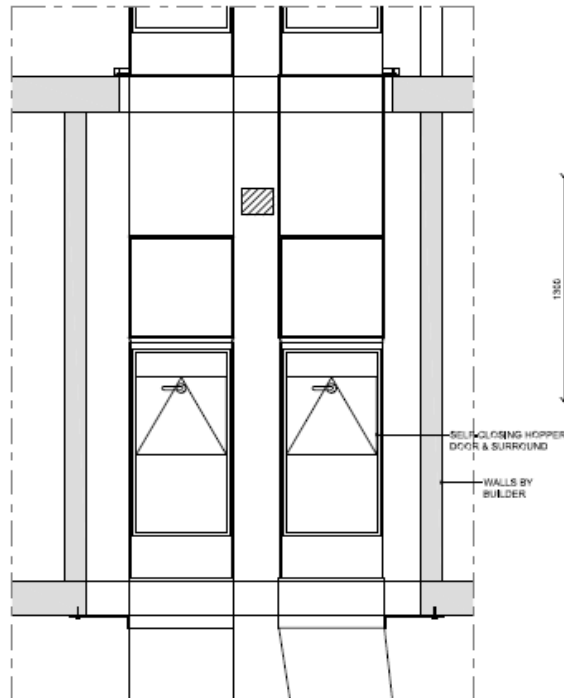
APPENDIX B.5 TYPICAL SEATED BIN MOVER


		UNIT M.	BULL 2	BULL 4
Manufacturer	DEC			
Model	BULL			
Platform loading cap.	Nominal capacity	kg	-----	-----
Pull capacity	Pull nominal capacity	kg	2000	4000
Power type	Electric - endothermic		electric	electric
Control type	Standing / seated thiller / steer		seated / steer	seated / steer
Tyres	Pn=pneum. Se=superelastic		Pn	Pn
Wheels	N. front/rear - x drive	n.	1/2X	1/2X
Platform dimensions	L x B (lengh x width)	mm	-----	-----
Platform hight	h6 = unload clearence	mm	-----	-----
Overall dimensions	L = lenght	mm	1500	1600
	B = width	mm	900	930
	h1 = foot leve	mm	1820	1960
	h3 = Seat height	mm	310	340
	h4 = Steer height	mm	1250	1330
Turning radius	R1 = front min. external	mm	1400	1500
	R2 = rear min. external	mm	1000	1000
	R3 = front min. internal	mm	400	400
Aisle width	A = 180° turn	mm	2200	2300
Tow hook height	s = center from ground	mm	220-350-490	240-380-520

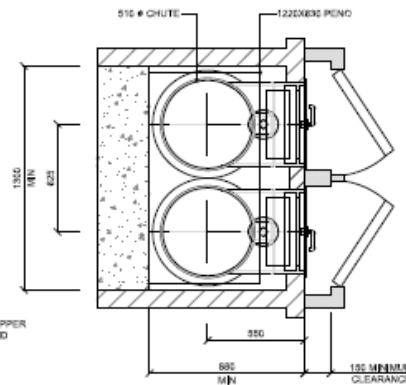
OPERATIONAL WASTE MANAGEMENT PLAN

APPENDIX C INSTALLATION EQUIPMENT

APPENDIX C.1 TYPICAL DUAL WASTE CHUTE SPECIFICATIONS



TYPICAL DUAL CHUTE LAYOUT
(S102)
SCALE 1:20



TYPICAL LLDPE PLASTIC TWIN CHUTE LAYOUT
w/ADDED ENCLOSURE (S160) (STEEL SIMILAR)
SCALE 1:20

NOTE: ENCLOSURES ARE REQUIRED IF THE CHUTE OPENS
DIRECTLY TO A CORRIDOR OR IS NOT LOCATED IN A WASTE ROOM.

VENT

PVC 150MM DIAMETER VENT PIPE WITH
CSWL, DEKITE, FLASHING AND
EXTRACTION CAP FITTED FROM THE TOP
OF THE CHUTES. PIPE EXITS AS PER
REQUIRED BY BUILDER THROUGH PLANT
ROOM ROOF AND CAPPED WITH
GALVANISED STEEL REDUCTION CAP.
ACCESS HATCH TO BE SUPPLIED ON LAST
LEVEL FOR SURVIVING OF THE WASH DOWN
SYSTEM

CHUTE DOORS

SUPPLY AND FIT STAINLESS STEEL TWO
HOUR FIRE-RATED (AS1530/2500) REFUSE
CHUTE DOORS AND THROAT ASSEMBLIES
AT EACH SERVICE LEVEL. ALL DOORS ARE
FITTED WITH A SELF-CLOSING MECHANISM
TO MEET BSA FIRE STANDARDS. DOORS TO
BE BLOCKED IN BY OTHERS INSTALLATION
OF DOORS ON COMPLETION OF THE
BUILDING STRUCTURE. THE CHUTE PIPES
BRICKED IN, RENDERED AND THE WALLS
PAINTED.

OPTIONAL EQUIPMENT

ELEPHANTS FOOT SUPPLY BALERS
SUITABLE FOR BAILING CARDBOARD
PRODUCT IN COMMERCIAL, RETAIL AND
RESIDENTIAL AREAS. BAILED PRODUCT
REDUCES THE REQUIREMENTS FOR
ADDITIONAL COLLECTION EQUIPMENT.
STATE OF THE ART COMPACTORS ARE
ALSO AVAILABLE IN AUGER, BLADE AND
ECO MODELS.

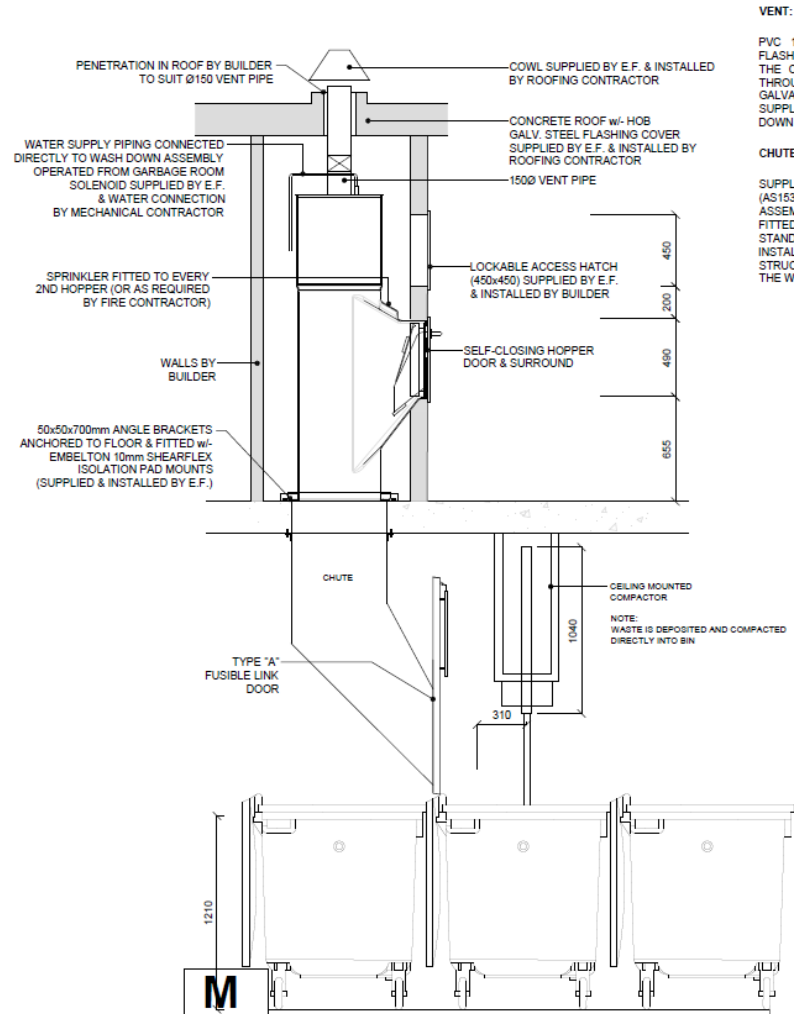
No	Dim	Symbol	Unit
1	Overall	Dimensions	mm
2	Overall	Dimensions	mm
3	Overall	Dimensions	mm
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5	Overall	Dimensions	mm
6	Overall	Dimensions	mm
7	Overall	Dimensions	mm
8	Overall	Dimensions	mm
9	Overall	Dimensions	mm
10	Overall	Dimensions	mm

		ELEPHANTS FOOT RECYCLING SOLUTIONS	
Project Name: TYPICAL DUAL CHUTE LAYOUT Project Number: S102 Project Location: STANDARD DETAILS		Project Name: TYPICAL DUAL CHUTE LAYOUT Project Number: S102 Project Location: STANDARD DETAILS	
Project Name: TYPICAL DUAL CHUTE LAYOUT Project Number: S102 Project Location: STANDARD DETAILS		Project Name: TYPICAL DUAL CHUTE LAYOUT Project Number: S102 Project Location: STANDARD DETAILS	

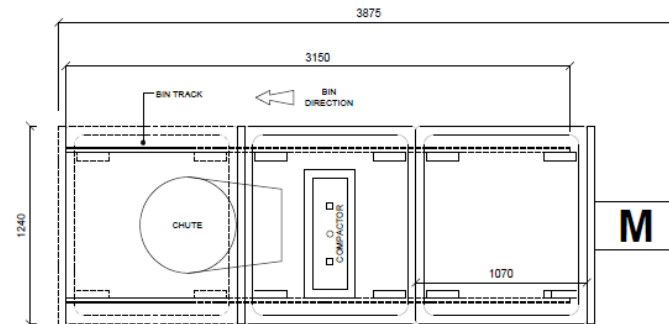
Please note: this is an example only – please refer to supplier's information and specification

OPERATIONAL WASTE MANAGEMENT PLAN

APPENDIX C.2 TYPICAL LINEAR TRACK SYSTEM



TYPICAL 2-BIN 1100L LINEAR WITH COMPACTOR
SCALE NTS



FIRE

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

ELECTRICAL

- YOUR ELECTRICIAN TO PROVIDE:**
- ONE (1) STANDARD 240V GPO IN MAIN GARBAGE ROOM
 - ONE (1) 415VOLTS, 5 PINS, 20AMPS FOR EACH REQUIRED COMPACTOR, CAROUSEL OR LINEAR
 - COORDINATE WITH ELECTRICAL SUBCONTRACTOR

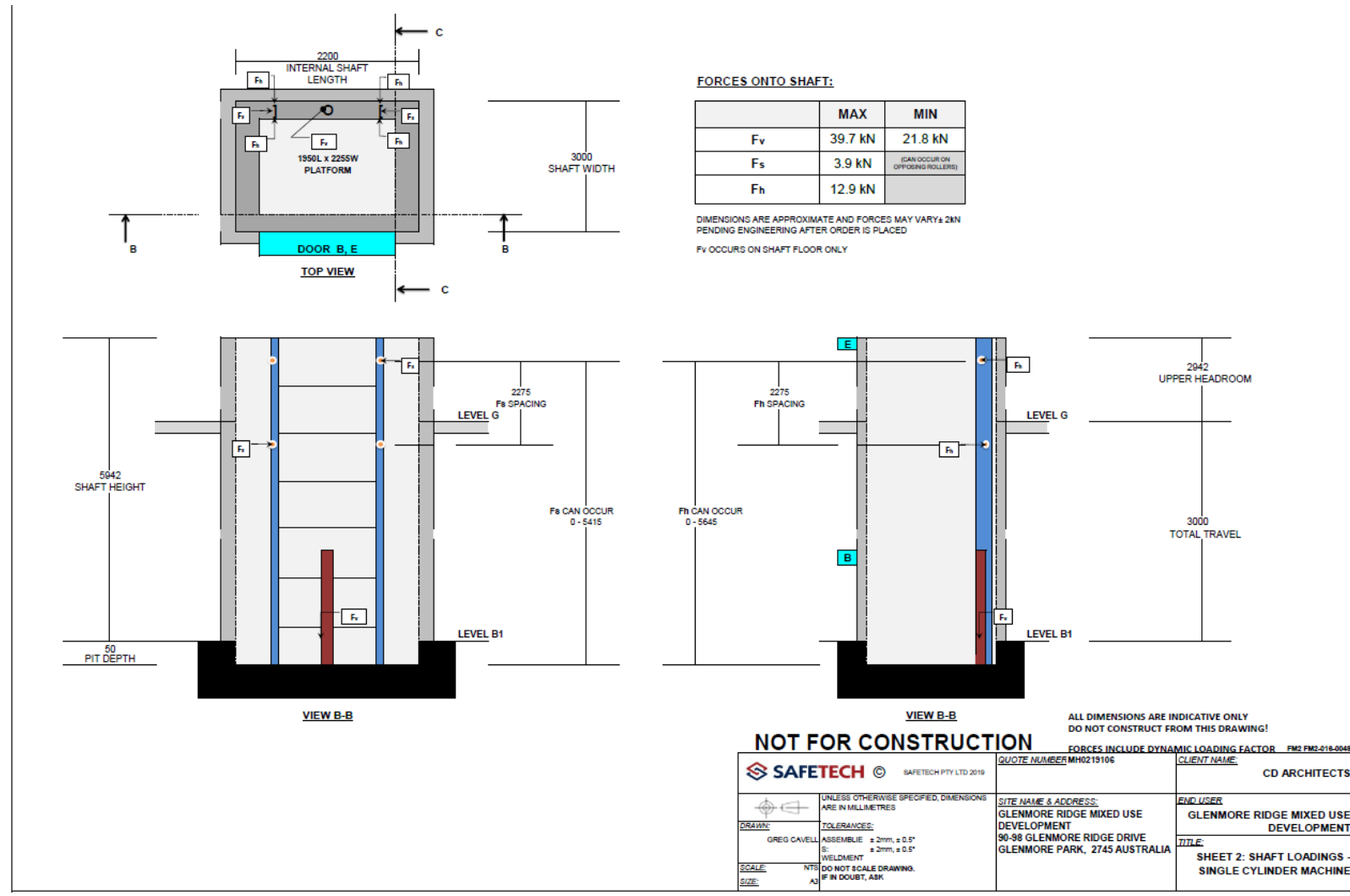
OPTIONAL EQUIPMENT

ELEPHANTS FOOT SUPPLY BALERS SUITABLE FOR BALING CARDBOARD PRODUCT IN COMMERCIAL, RETAIL AND RESIDENTIAL AREAS. BALED PRODUCT REDUCES THE REQUIREMENTS FOR ADDITIONAL COLLECTION EQUIPMENT. STATE OF THE ART COMPACTORS ARE ALSO AVAILABLE IN AUGER, BLADE AND ECO MODELS.

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

OPERATIONAL WASTE MANAGEMENT PLAN

APPENDIX C.3 BIN HOIST



Specifications for the bin hoist have been provided to Elephants Foot by CDArchitects



FREIGHT HOIST SPECIFICATIONS

- 250kg – 8,000kg capacity
- Freestanding or Shaft Mounted
- Ride on or Goods only options
- Services up to 4 levels
- On board power unit
- Range of wall finishes available
- Aluminium roller shutters interlocked with hoist
- Travel Speed 6 to 12 metres per minute
- Cylinder may protrude when travel is over 6000mm

Contact Safetech for additional information regarding shaft, door and power requirements.

TECHNICAL DATA

Description	Min (mm)	Max (mm)
Platform Width	900	4000
Platform Length	1200	6500
Floor to Floor	1000	14000
Internal Car Height	2200	2700
Pit Depth	0	100

February 2017

Freight Hoist

safetech.com.au

Specifications for the bin hoist have been provided to Elephants Foot by CDArchitects



Specifications

Client:	CD Architects	Date of Issue
Prepared for:	Alex Lai	7/05/2019
Project:	Glenmore Ridge Mixed Use Development	

Thank you for the opportunity to provide this Specification.

We are pleased to confirm our preliminary understanding of the project requirements and offer the following specifications for your approval.

Prepared by:	Greg Cavell	Safetech Pty Ltd
Contact:	gregc@safetech.com.au	14A/65 Elizabeth Street
	0417 050 646	Wetherill Park
	02 9725 2699	New South Wales 2164





Specifications

Model:	AFH-1.5-3000-1950x2255 (BE) (FH C-Type SM Split, 2L)
Lifting Capacity:	1500 kg WLL
Clear Platform Size:	1950mm (L) x 2255mm (W) x 2200mm (H)
Travel:	3000mm Overall ± 5mm levelling accuracy
Travel Speed:	12 m/min nominal speed - 16 secs approx. travel time
Type:	Shaft Mounted, Fixed to load-bearing wall (shaft by builder)

Hoist Overall Features:

Attended Freight Hoist:	Hoist designed to carry goods and operator. Includes in-car controls with emergency auto-dial phone, audible alarm. Car-mounted doors with car & shaft openings guarded by light curtains. Car ceiling with isolatable and battery-backed LED down-lighting. Lift-style buttons & phone in integrated control panel
Design Registration:	HST 6-153415/11 (NSW): Attended Hoist 2L to AS1418.8 Certificate provided on request
Power Unit:	11kW 2085(H) x 1000(W) x 800(D) remote power unit with integrated electrical enclosure. 0 Remote electrical enclosure size 1000(H) x 800(W) x 300(D). Customer to confirm location
Ventilation Requirements:	Hydraulic power unit will generate up to 1.1 kW steady-state heat load in normal operation. Plant room (if required) will require ventilation via louvred grills or similar (by builder).
Pit Type:	50mm pit
Cylinder:	2-stage constant-velocity cylinder



Specifications

Finishes

Car Walls:	Full-height painted plywood panel with partial-height alumn. chequerplate lining, 150mm steel kickrail
Car Wall Protection:	1x 140X45 timber bump-rail 1000-high
Car Floor:	Plain plate, mild steel
Car Ceiling:	Aluminium composite panel ceiling
Machine Finish:	Machine in "Surf Mist", floor & door sills in "Deep Ocean"

Operation:

Operation Sequence:	Doors auto-open on landing arrival, momentary-press to open and close. Controls on car and landings, doors and light curtains on car openings
Landing Controls:	Lift-style pushbuttons flush in stainless steel control panel.
Car Controls:	(see general arrangement drawing for layout)
Control Sequence:	Call & Send - Car can be called and sent from any landing.
Emergency phone w/ GSM Module:	Machine car equipped with auto-dial emergency phone and GSM module. Customer to provide post-paid 3G SIM card prior to installation.
Battery-Backed Lowering & Emergency Egress:	During power failure the car will automatically descend to the next landing and open the door. If car is already at a landing the door will open. No further operation is possible until power is restored.

Installation Design:

Mode of Install:	SM - through lower door opening - Machine manufactured in pieces for installation through lower door opening
Two-Piece Mast:	Standard 2-piece split - Machine structure split in two pieces for install.
Multi-Piece Car - Standard:	Car split for installation. Car supplied to site in pieces



Specifications

Landing Equipment - Level 1

Door Type:	1x High Duty (100%) high-speed (3-to-5 second opening time) powered aluminium shutters, natural anodised door shutters, 2100mm (H) x 1950mm (W) CDO, mounted in door frame with integrated controls recessed into shaft
Door Sill Type:	10mm surface-mount door sill with 65mm x 8mm chamfer

Landing Equipment - Level G

Door Type:	1x High Duty (100%) high-speed (3-to-5 second opening time) powered aluminium shutters, natural anodised door shutters, 2100mm (H) x 1950mm (W) CDO, mounted in door frame with integrated controls recessed into shaft
Door Sill Type:	10mm surface-mount door sill with 65mm x 8mm chamfer

Power Requirements

Outlet Information:	Customer to provide 415V 3-phase + neutral, 32-amp 5-pin switched outlet (Clipsal 56C532 or similar)
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Customer to provide 3G-compatible SIM card on active post-paid plan and supply monitored emergency number(s) prior to machine installation.

Please Note:	This hoist incorporates a VF drive. All VF Drives trickle some current to earth and may cause nuisance tripping of the building's earth leakage protection. We recommend you install an earth leakage device specifically designed for use with VF. Drives (Schneider ID-RCCB "Si" series or similar)
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Safetech Installation Requirements

To ensure the installation occurs smoothly and with no additional cost or variation, we provide the following list of site requirements that will allow us to successfully install your Vehicle Hoist. If any of these conditions are not adhered to then the installation may be impeded and Safetech reserves the right to recover additional expenses.

Safetech agrees to install the equipment specified in accordance with the methods prescribed in our offer, for the price as stated, which is based on the following builder/client/customer requirements and obligations. These include, but are not limited to the following:

1. Ensuring site access is clear of obstruction and unrestricted for delivery acceptance, unloading and installation of this equipment;
2. Site access for hours within normal times, from 7:30 am to 3:30 pm Monday to Friday;
3. An allowance of 1 hour per staff member has been allocated for site inductions with attendance for tool box and planning meetings only required days that staff are scheduled to be onsite;
4. The delivery access, equipment movement pathway to and install location needs to be concrete, hard stamped or of otherwise suitable stable firm ground for which the transport, installation and access equipment can suitably travel;
5. Surrounding or integrated building works relative to the installation location need to be in a state of progress or completion that does not inhibit the progression of the intended equipment install;
6. Relative building works such as pits, form work, precast walls, shafts, concrete cut outs, floor and roof heights, landing heights etc. that are the responsibility of the builder/client/customer need to be within tolerances or/and as designed or stated in the General Assembly drawing or other technical documentation provided by Safetech for this equipment;
7. Live Power supply (permanent or temporary), phone lines or other utility services, as stated in the General Assembly drawing for this equipment and required for the equipment to be made functional, must be made available at the time of install;
8. Other site specific services or equipment such as tower cranes, forklifts, access equipment etc. that have been specified by Safetech to be provided by the builder/client/customer as part of this install, need to be made available as and when required and for the duration as required by the installer;
9. There are no weather or other environmental conditions that cause delays in progress. Items such as (but not limited to) delays in crane or access equipment use due high winds, delays in work due to high heat, rain etc.;
10. There are no unscheduled site closures such as safety shutdowns or industrial action by others outside of Safetech's cause or control;
11. Where the builder/client/customer creates adverse conditions or fails to provide an environment under which the installation is able to proceed as quoted or which otherwise creates the need for changes to or additional works to the original scope, variation charges will apply and no work will proceed without prior agreement to such charge.



Terms & Conditions

1. All information provided by Safetech within this quotation is regarded as commercial in confidence;
2. Our quotation is valid for 30 days from the date of issue;
3. The above pricing is based on the attached product specifications along with standard Conditions of Sale;
4. Drawings typically issued 6 weeks from receipt of an official purchase order and payment of deposit;
5. Dispatch or Manufacturing Lead-Time; typically 12-16 weeks from drawing approval;
6. Installation Timing (if applicable); typically 2 weeks on-site if installation is performed on concurrent weekdays days;
7. Builder to provide 415V / 3 Phase / 5 Pin switched outlet at power unit location;
8. Installation methodology to be confirmed in consultation with the client. Full width access to be provided;
9. All pricing is based upon a single order for all items detailed within this quotation; and
10. A final estimate for Delivery and Professional Installation services shall be provided after a site inspection is performed;
11. The occupational Health & Safety Act places the burden of compliance with the owner, employer, manufacture and designer of equipment. Many requirements are not concerned or connected with the manufactured product but are rather associated with the final installation. It is the owner's responsibility and user's responsibility to determine the suitability of a product for any particular use. It is recommended that all applicable industry, trade association, federal, state and local regulations are checked;
12. Safetech's complete terms and conditions of sale and warranty can be found here: <http://www.safetech.com.au/safetech-terms-of-sale/>

Best Regards

Greg Cavell

NSW/ACT Sales Executive

E gregc@safetech.com.au | M 0417 050 646

Safetech Pty Ltd

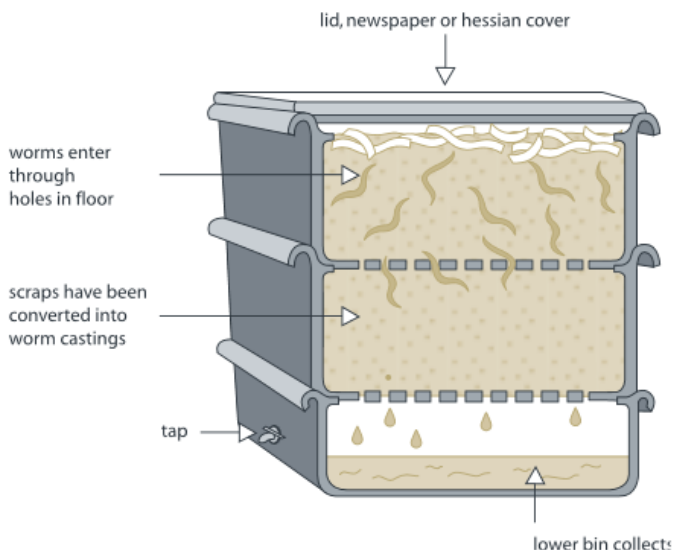
Head Office | 39-45 Della Torre Rd (PO Box 360) | Moe | VIC 3825 | ABN 72 006 349 220 | P +61 3 5127 4566

Specifications for the bin hoist have been provided to Elephants Foot by CDArchitects

APPENDIX D SECONDARY WASTE MANAGEMENT PROVISIONS

APPENDIX D.1 TYPICAL WORM FARM SPECIFICATIONS

Worm farms



Space requirements for a typical worm farm for an average household:

Height – 300mm per level

Width – 600mm

Length – 900mm

There are many worm farm arrangements. The above dimensions are indicative only.

SOURCE: Department of Environment and Climate Change NSW 2008, Better Practice Guide for Waste Management in Multi-Unit Dwellings

APPENDIX D.2 TYPICAL APARTMENT STYLE COMPOST BINS



Apartment Style Compost bin – available from hardware stores

Suitable for:

- Vegetables
- Coffee grounds and filters
- Tea and tea bags
- Crushed eggshells (but not eggs)
- Nutshells
- Houseplants
- Leaves
- Cardboard rolls, cereal
- Boxes, brown paper bags
- Clean paper
- Shredded newspaper
- Fireplace ashes
- Wood chips, sawdust,
- Toothpicks, burnt matches
- Cotton and wool rags
- Dryer and vacuum cleaner lint
- Hair and fur
- Hay and straw

APPENDIX D.3 ELECTRIC ORGANIC COMPOST BIN



Product Specifications

Decomposition Method	Fermentation by microorganisms
Decomposition Capacity	2 metric tonnes per year* (4 kg per day*)
Rating	220–240 V 50/60 Hz – 1.1 A
Decomposition Time	24 hrs
Operating Temperature	0C and 40C.**
Deodorisation Method	Nano-Filter system
Maximum Power	210 W
Power Usage	Average 1 kwh per day
Weight	21 kgs
External Dimensions	w 400 mm d 400 mm h 780 mm

* Food Waste Handling Capacity – based on an optimal operating environment.

** Ambient temperature range of area where unit may be installed.

SOURCE: Closed Loop Domestic Composter – See Useful Contacts

<http://www.closedloop.com.au/domestic-composter>

APPENDIX D.4 COOKING OIL CONTAINERS



Home About **Services** Our Parent Company Contact

The RIGHT WAY for Cooking Oil Collection Systems



Drums 205L



Pour in Bulk Tank

[View Brochure](#)



Oil Kaddy System

[View Brochure](#)

Collection Service

Collection Systems

Recycling & Environment

Safety

Fresh Oil (WA Only)



Eco System 200L fixed Eco System 300L mobile

Eco Systems



Direct-Connect to Fryer

APPENDIX D.5 TYPICAL BACK OF HOUSE BINS FOR RETAIL/COMMERCIAL OPERATIONS

