



754-774 Canterbury Rd Belmore
Residential Development

OPERATIONAL WASTE MANAGEMENT PLAN

14/02/2023
Report No. 17051
Revision I

Client

Statewide Planning Pty Ltd

Architect

Tony Owen Partners

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

ELEPHANTS FOOT RECYCLING SOLUTIONS • ABN 70 001 378 294
44-46 Gibson Ave Padstow NSW 2211
www.elephantsfoot.com.au

T +612 9780 3500 • **F** +612 9707 2588
E info@elephantsfoot.com.au

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

Revision	Date	Prepared by	Description
A	26/02/2018	H Wilkes	Draft
B	6/03/2018	H Wilkes	Amendment – Chutes
C	26/04/2018	H Wilkes	Final
D	13/12/2018	H Wilkes	Amendment
E	16/01/2019	H Wilkes	Updated plans
F	20/06/2019	H Wilkes	Amendment
G	26/06/2019	H Wilkes	Amendment
H	28/06/2022	H Wilkes	Amendment
I	14/02/2023	H Wilkes	Amendment

The information contained in this document produced by Elephants Foot Recycling Solutions (EFRS) is solely for the use of the client identified on the cover sheet for the purpose for which it has been prepared for. EFRS undertakes no duty, nor accepts any responsibility for any third party who may rely upon this document. Reproduction, publication or distribution of this document without written permission from EFRS is strictly prohibited.

TABLE OF CONTENTS

LIST OF TABLES.....	iv
GLOSSARY OF TERMS.....	i
INTRODUCTION	1
DEVELOPMENT SUMMARY	1
SITE LOCATION.....	2
CITY OF CANTERBURY BANKSTOWN COUNCIL (CITY OF CANTERBURY)	3
COUNCIL OBJECTIVES.....	3
COUNCIL REQUIREMENTS.....	3
STAKEHOLDER ROLES AND RESPONSIBILITIES.....	4
EDUCATION.....	5
RESIDENTIAL WASTE MANAGEMENT.....	6
ESTIMATED WASTE VOLUMES AND PROVISIONS	6
HOUSEHOLD WASTE	7
COMMON AREAS	7
SOURCE SEPERATION.....	8
GENERAL WASTE (GARBAGE).....	8
RECYCLING	8
GREEN WASTE.....	8
BULKY GOODS	8
ELECTRONIC WASTE.....	9
CHEMICAL WASTE	9
ORGANIC WASTE AND COMPOSTING	9
CLOTHING WASTE	9
MOVEMENT AND TRANSPORTATION OF BINS	10
COLLECTION OF WASTE.....	10
RESIDENTIAL.....	10
COLLECTION AREA.....	10
INSTALLATION EQUIPMENT AND DESIGN	11
EQUIPMENT SUMMARY.....	11
WASTE ROOM AREAS	11
GARBAGE ROOMS	12
CONSTRUCTION REQUIREMENTS	12
SIGNAGE.....	12
VENTILATION.....	12
REPORT CONDITIONS.....	13
USEFUL CONTACTS	14
APPENDICES.....	15

APPENDIX A	ARCHITECTURAL DRAWING EXCERPTS	15
APPENDIX A.1	LOWER GROUND LEVEL – WASTE FACILITIES AND COLLECTION AREA	15
APPENDIX B	PRIMARY WASTE MANAGEMENT PROVISIONS	16
APPENDIX B.1	TYPICAL BIN SPECIFICATIONS	16
APPENDIX B.2	SIGNAGE FOR WASTE & RECYCLING BINS	17
APPENDIX B.3	TYPICAL COLLECTION VEHICLE INFORMATION	18
APPENDIX B.4	TYPICAL MOTORISED BIN TUG	21
APPENDIX B.5	TYPICAL SEATED BIN MOVER.....	22
APPENDIX C	INSTALLATION EQUIPMENT AND WASTE ROOM LAYOUTS	23
APPENDIX C.1	TYPICAL SINGLE WASTE CHUTE SPECIFICATIONS	23
APPENDIX C.2	TYPICAL LINEAR TRACK SYSTEM	24
APPENDIX D	SECONDARY WASTE MANAGEMENT PROVISIONS	Error! Bookmark not defined.
APPENDIX D.1	TYPICAL WORM FARM SPECIFICATIONS	Error! Bookmark not defined.
APPENDIX D.2	TYPICAL APARTMENT STYLE COMPOST BIN	Error! Bookmark not defined.
APPENDIX D.3	ELECTRIC ORGANIC COMPOST BIN	Error! Bookmark not defined.

LIST OF TABLES

Table 1: Stakeholder Roles and Responsibilities.....	4
Table 2: Calculated Waste Generation – Residential	6
Table 3: Equipment Summary.....	11
Table 4: Waste Room Areas	11

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

EFRS has been tasked to prepare the following waste management plan for Statewide Planning Pty Ltd for the operational management of waste generated by the residential development located at 754-774 Canterbury Rd Belmore.

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 integral to the overall management of the building and clearly communicated to all relevant stakeholders.

DEVELOPMENT SUMMARY

The proposed development falls under the LGA of City of Canterbury Bankstown, and consists of:

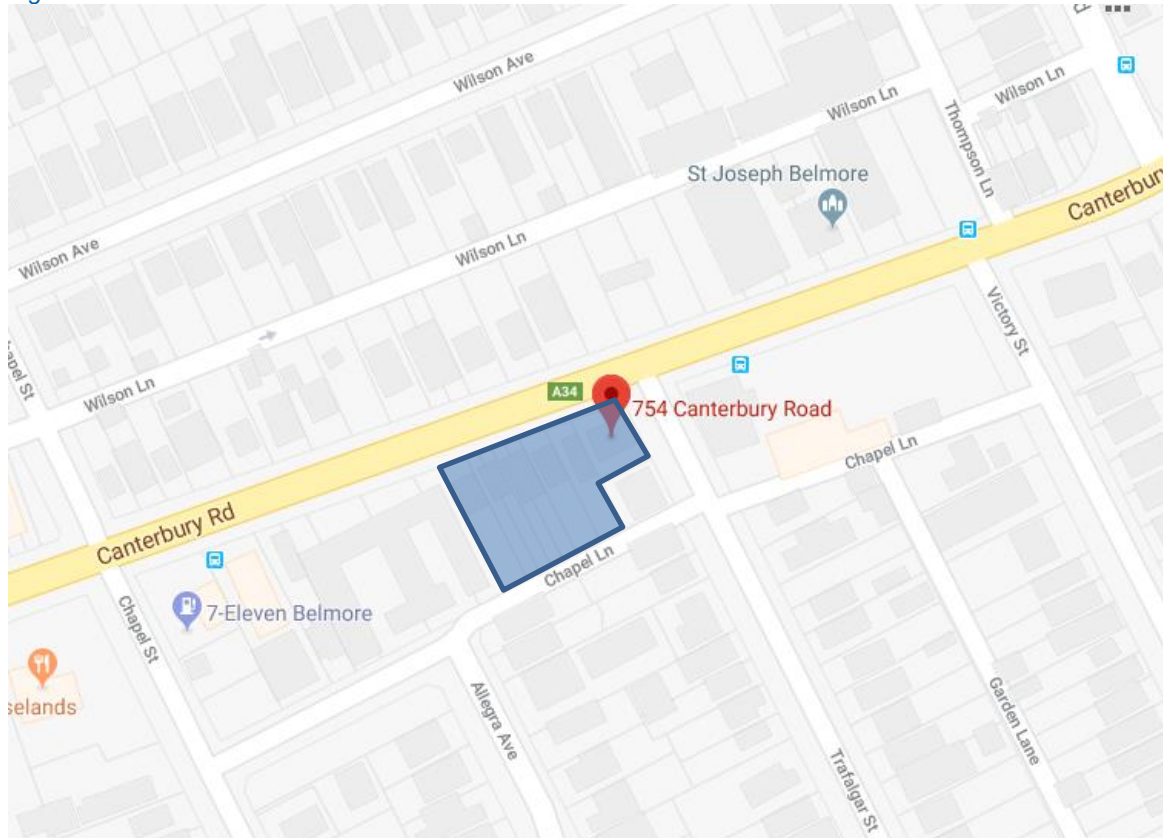
- 2 buildings with 6 Levels
 - 59 residential units in total
 - 40 units in Building 1
 - 19 units in Building 2

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

SITE LOCATION

The site located is at 754-774 Canterbury Rd Belmore, as shown in Figure.1. The site has frontages to Canterbury Rd and Chapel Lane with vehicle access via Chapel Lane.

Figure 1 - Site Location



CITY OF CANTERBURY BANKSTOWN COUNCIL (CITY OF CANTERBURY)

The development is within City of Canterbury Bankstown Council's jurisdiction. City of Canterbury Bankstown Council is the amalgamation of City of Canterbury Council and Bankstown City Council. At time of writing this waste management plan, the waste services and associated policies operate under the original council divisions.

Therefore, the residential garbage and recycling will be guided by the services and acceptance criteria of the City of Canterbury. All waste facilities and equipment are to be designed and constructed to be in compliance with the City of Canterbury's *Canterbury Development Control Plan 2015 – Part B13 Waste Management and Minimisation*, and The City of Canterbury Bankstown's *Waste Management Guide for New Developments*, Australian Standards and statutory requirements.

COUNCIL OBJECTIVES

- To ensure that facilities for handling, storage, collection and disposal of waste are incorporated into all development and are compatible with the design of the development.
- To encourage the reduction in the generation of waste and maximise reuse and recycling of building/construction materials, household generated waste and industrial/commercial waste through:
 - Practical building designs and construction techniques,
 - Design and location of waste facilities, that will assist waste and recycling collection and management services offered by Council and private contractors; and
 - Waste facilities that are easy to use for occupants.

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 City of Canterbury Bankstown

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/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/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 information is provided 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 WHS 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.

RESIDENTIAL WASTE MANAGEMENT

The *Canterbury Development Control Plan 2012* has been referenced to calculate the total number of bins required for the residential units.

As per the *Canterbury Development Control Plan 2012* the waste generation rates are as follows:

For developments with 26 units or more:
 Waste: one 660L MGB per 6 units
 Or 110L/unit/week
 Recycling: one 660L MGB per 8 units
 Or 82.5L/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 development.

Table 2: Calculated Waste Generation – Residential

Building	# Units	Garbage Generation Rate (L/unit/week)		Generated Garbage (L/week)	Recycling Generation Rate (L/unit/week)	Generated Recycling (L/week)
Building 1	40	110		4400	82.5	3300
Building 2	19	110		2090	82.5	1567.5
TOTAL	59			6490		4867.5
Collections		Garbage Bin Size (L)		660	Recycling Bin Size (L)	660
		Garbage Bins per Week		11	Recycling Bins per Week	7.375
		Garbage Collections per Week		1	Recycling Collections per Week	1
		Total Garbage Bins Required		11	Total Recycling Bins Required	8
Equipment		Number of Waste Bins Per Day	Core A	0.95		
			Core B	0.45		
		Chute Discharge Equipment		2x Single Waste Chutes		
		Other Equipment		2x 2-bin linear tracks		

**Note: An additional 660L MGB should be provided for each chute discharge for use during collection periods. These bins are not included in the above figures.*

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

HOUSEHOLD WASTE

2 garbage chutes will be installed with access provided on all residential levels of each building. The chutes are to be used for the disposal of garbage only.

Garbage discharges into 660L MGBs placed on Linear Tracks. The discharge is located in the waste discharge rooms for each building. The building manager will be responsible monitoring the bins under the chute and rotating the bins with empty bins as required.

240L Recycling bins will be situated in the waste compartment on each residential level for collection of recyclable items. The caretaker/cleaner is responsible for monitoring the capacity of recycling bins. Once the 240L MGBs are full, they will be brought down to the bin holding room and will be decanted into 660L MGBs for collection. A bin lifter will be used to decant the 240L MGBs into the 660L MGBs for collection.

The residents of the lower ground level will access building 1 waste discharge room to dispose of their waste and recycling directly into the bins. The chute discharge will be caged off to ensure the safety of the residents accessing this room. A recycling bin and a waste bin will be kept in the open area of the waste discharge room at all times.

The chute discharge in Building 2 waste discharge room will also be caged off to allow personnel to safely walk through this room to access the A/C area.

Throughout the week, full and empty bins awaiting operation will be kept in the bin holding room.

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 SEPERATION

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 – Cardboard can be placed in the recycling bins situated on each residential level.

Full and spare recycling bins will be held in the bin holding room or the waste discharge room on Lower ground level when not in use on the residential levels.

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

Council requires that a bulky goods area of a minimum of 4m² is provided for the storage of bulky waste awaiting collection. Where there are multiple buildings with in the site, each building requires a separate 4m² bulky goods area.

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 1.5m 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.

Donations to charitable organisations should be encouraged. Clean, sound furniture and household goods etc. are highly sought after to provide for the disadvantaged. Donations can be arranged with the assistance of the building manager/waste caretaker.

ELECTRONIC WASTE

Electrical waste (e.g. fluorescent tubing, batteries, laptops etc.) can potentially contaminate soil and surrounding water bodies if not disposed correctly. These items must not be placed in standard garbage and recycling bins. Disposal or recycling of electronic waste will be organised with the assistance of the building caretaker. These items must not be placed in garbage or recycling bins due to safety and environmental factors. Residents and/or the building manager may choose to contact Council to find out about new/existing strategies for the disposal/collection of electronic waste.

CHEMICAL WASTE

Chemical wastes (e.g. cleaning chemicals, paints, oils solvents) pose detrimental effects to human health and the environment and should be disposed of to a suitable licensed disposal facility. No liquid wastes or wash down waters should be disposed of via the storm water drainage system. Household Chemical CleanOut events are held at various locations throughout NSW on specified dates throughout the year. Locations and dates are subject to change; hence 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 or in small private courtyards (see **Error! Reference source not found.**). 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 **Error! Reference source not found.** and **Error! Reference source not found.**).

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.

MOVEMENT AND TRANSPORTATION OF BINS

The building manager/waste caretaker is responsible for the transportation of bins from their designated operational locations to their respective collection areas 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 waste and recycling.

On collection days, the building manager will move the the waste and recycling bins from the waste discharge rooms to the bin holding area. Service bins will remain under the chute while servicing is occurring.

The collection vehicle will park in the designated loading bay on lower ground level accessed via Chapel Lane.

Collection will occur on site on via a wheel in wheel out arrangement from the Bin Collection Area.

After servicing has been completed. The building manager will return the bins to their appropriate operational location.

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 that the collection vehicle (and other trucks if required) can enter and exit the building in a forward direction. The final number of truck collections will depend on management of waste contract.

INSTALLATION EQUIPMENT AND DESIGN

EQUIPMENT SUMMARY

Table 3: Equipment Summary

Component	Part	Qty	Notes
Chutes	Please refer to supplier's information	2	(See APPENDIX C for Typical Chute Section)
Equipment A	Garbage 2-bin 660L MGB Linear Track System with Compactor	2	(See APPENDIX C.2 for Typical Linear System)
Equipment B	Suitable Bin Moving Equipment	Optional	(See Error! Reference source not found. for Typical Bin Mover)

WASTE ROOM AREAS

All waste discharge points should be caged off to ensure the safety of any personnel accessing the waste room. 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.

The areas allocated for residential waste rooms, bulky goods and collection areas are detailed in Table 4 below.

Table 4: Waste Room Areas

Level	Waste Room Type	Equipment	Estimated Area (m ²)
LG	Building 1 Waste Discharge Room	1x 660L MGBs (recycling) 5x 660L MGBs (waste) <i>Caged off – Chute Discharge</i> 1x 2-bin 660L Linear 1x 660L MGB (service bin)	>20
LG	Building 2 Waste Discharge Room	1x 660L MGBs (service bin) <i>Caged off – Chute Discharge</i> 1x 2-bin 660L Linear	>10
LG	Bin Holding Room (collection area)	11x 660L MGBs (waste) 8x 660L MGBs (recycling) Bin decanter	>40
LG	Bulky Goods Waste Storage Room		Minimum 8m ²

GARBAGE ROOMS

CONSTRUCTION REQUIREMENTS

The garbage 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

SIGNAGE

The building manager/caretaker is responsible for waste room signage including safety signage (see *APPENDIX B.2*). 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.

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; or
- Naturally - permanent, unobstructed, and opening direct to the external air, not less than one-twentieth (1/20) of the floor area

Mechanical exhaust systems shall comply with AS1668 and not cause any inconvenience, noise or odour problem.

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.

USEFUL CONTACTS

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

Canterbury Bankstown Council Customer Service

Phone: (02) 9707 9000

Email: council@cbc.city.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: 1300 435 374

Email: info@elephantsfoot.com.au

Kompact Equipment (Waste Handling Equipment Sales, Servicing and Maintenance)

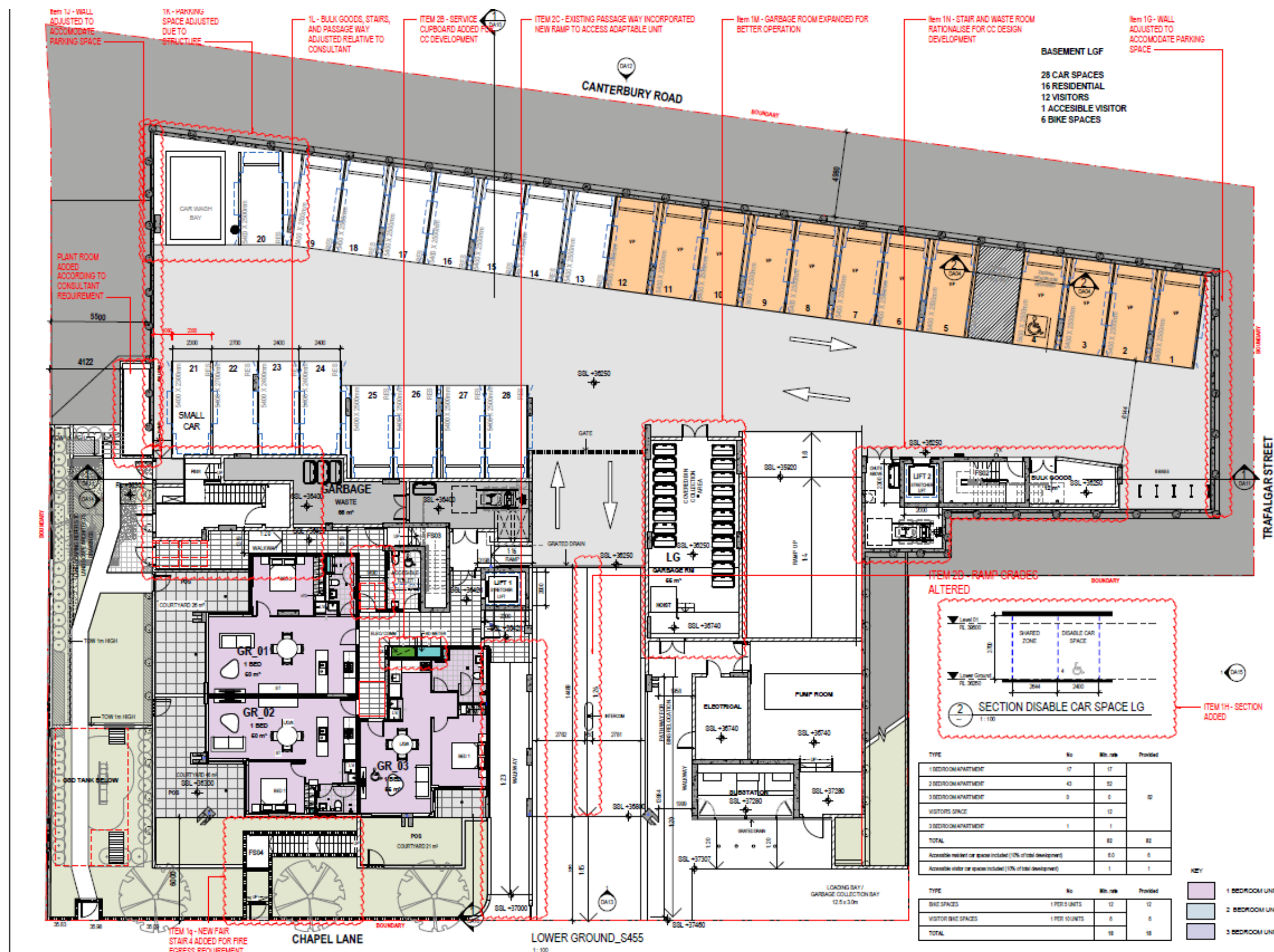
1/81 Governor Macquarie Drive

Chipping Norton NSW 2170

Free call: 1800 566 722

Email: info@kompactequipment.com.au

APPENDIX A.1 LOWER GROUND LEVEL – WASTE FACILITIES AND COLLECTION AREA



Source: Tony Owen Partners, 754-774 Canterbury Rd Belmore, Lower Ground Plans For 4.55, Drawing No DA04 Rev 9/02/2023

APPENDIX B PRIMARY WASTE MANAGEMENT PROVISIONS

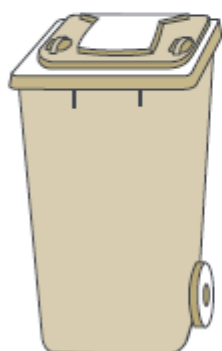
APPENDIX B.1 TYPICAL BIN SPECIFICATIONS

Mobile garbage bins (MGBs)

MGBs with capacities up to 1700L should comply with the Australian Standard for Mobile Waste Containers (AS 4123). AS 4123 specifies standard sizes and sets out the colour designations for bodies and lids of mobile waste containers that relate to the type of materials they will be used for.

Indicative sizes only for common MGB sizes are provided below. Note that not all MGB sizes are shown; the dimensions are only a guide and differ slightly according to manufacturer, if bins have flat or dome lids and are used with different lifting devices. Refer to AS 4123 for further detail.

Mobile containers with a capacity from 80L to 360L with two wheels



Bin Type	80 Litre MGB	120 Litre MGB	140 Litre MGB	240 Litre MGB	360 Litre MGB
Height	870 mm	940 mm	1065 mm	1080 mm	1100 mm
Depth	530 mm	560 mm	540 mm	735 mm	885 mm
Width	450 mm	485 mm	500 mm	580 mm	600 mm

Mobile containers with a capacity from 500L to 1700L with four wheels



Dome or flat lid containers

Bin Type	660 Litre MGB	770 Litre MGB	1100 Litre MGB	1300 Litre MGB	1700 Litre MGB
Height	1250	1425	1470	1480	1470
Depth	850	1100	1245	1250	1250
Width	1370	1370	1370	1770	1770

OPERATIONAL WASTE MANAGEMENT PLAN

APPENDIX B.2 SIGNAGE FOR WASTE & RECYCLING BINS

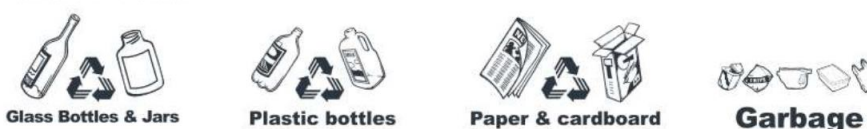
WASTE SIGNS

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

Example wall posters



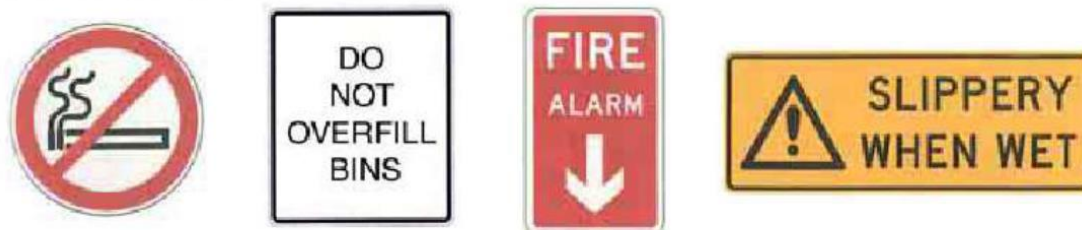
Example bin lid stickers



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

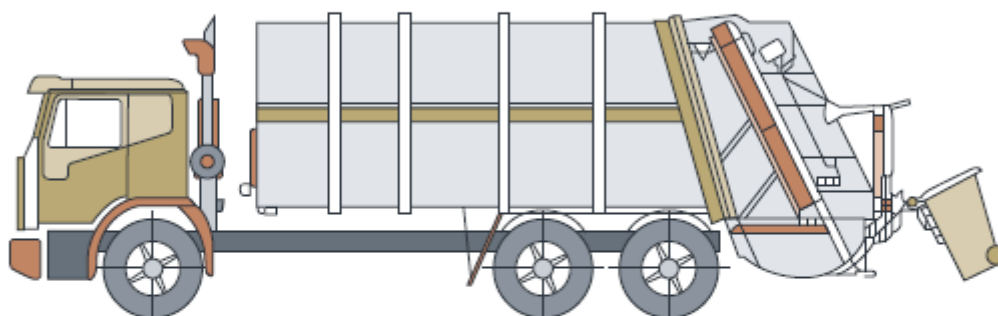
APPENDIX B.3 TYPICAL COLLECTION VEHICLE INFORMATION

Collection vehicles

Waste collection vehicles may be side loading, rear-end loading, front-end loading or crane trucks. The size of vehicle varies according to the collection service. Thus it is impossible to specify what constitutes the definitive garbage vehicle. Developers should consult the local council and/or relevant contractors regarding the type of vehicle used in that area.

The following characteristics represent the typical collection vehicle, however, these are only for guidance.

It may be possible to engage a collection service provider to use smaller collection vehicles to service developments with narrow roadways and laneways, or for on-site collections. However, as the availability of smaller vehicles to make services varies between councils and private contractors, wherever possible the development should be designed to accommodate vehicles of a similar size to that reported below.

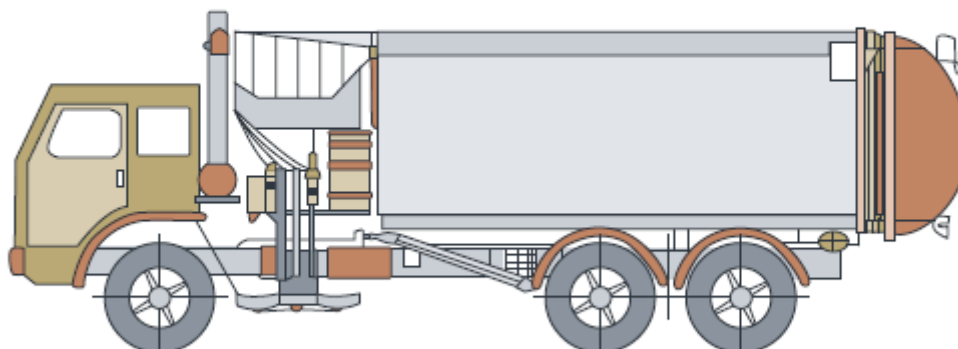


Rear loading collection vehicle

Rear loading collection vehicle	
Length overall	10.24m
Width overall	2.5m
Operational height	3.5m
Travel height	3.5m
Weight (vehicle only)	12.4 tonnes
Weight (payload)	9.5 tonnes
Turning circle	18.0m

This is commonly used for domestic garbage and recycling collections from MUDs. It can be used to collect waste stored in MGBs or bulk bins, particularly where bins are not presented on the kerbside.

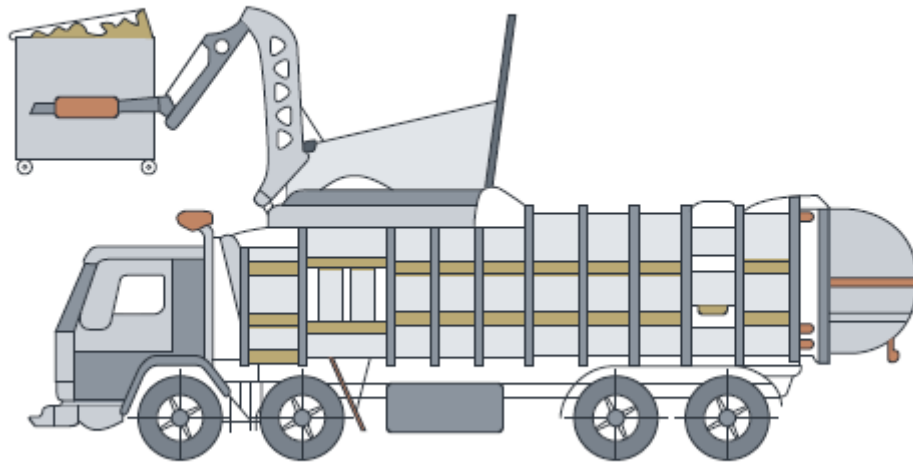
Side-loading collection vehicle



Side-loading collection vehicle	
Length overall	9.64m
Front overhang	1.51m
Wheelbase	5.20m
Rear overhang	2.93m
Turning circle kerb to kerb	17.86m
Turning circle wall to wall	20.56m
Front of vehicle to collection arm	3.8m
Maximum reach of side arm	3.0m
Travel height	3.63m
Clearance height for loading	3.9m

This is the most commonly used vehicle for domestic garbage and recycling collections. It is only suitable for collecting MGBs up to 360 litres in size.

Front-lift loading collection vehicle



Front-lift loading collection vehicle	
Length overall	10.52m
Front overhang	1.51m
Wheelbase	5.84m
Rear overhang	3.17m
Turning circle kerb to kerb	22.10m
Turning circle wall to wall	23.66m
Travel height	3.82m
Clearance height for loading	6.1m

This is mainly used for collecting commercial and industrial waste, and is only suitable for bulk bins with front lift pockets (not MGBs).

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

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

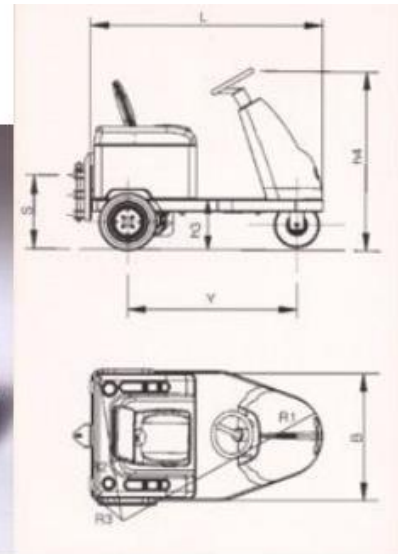
Features:

- 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*)

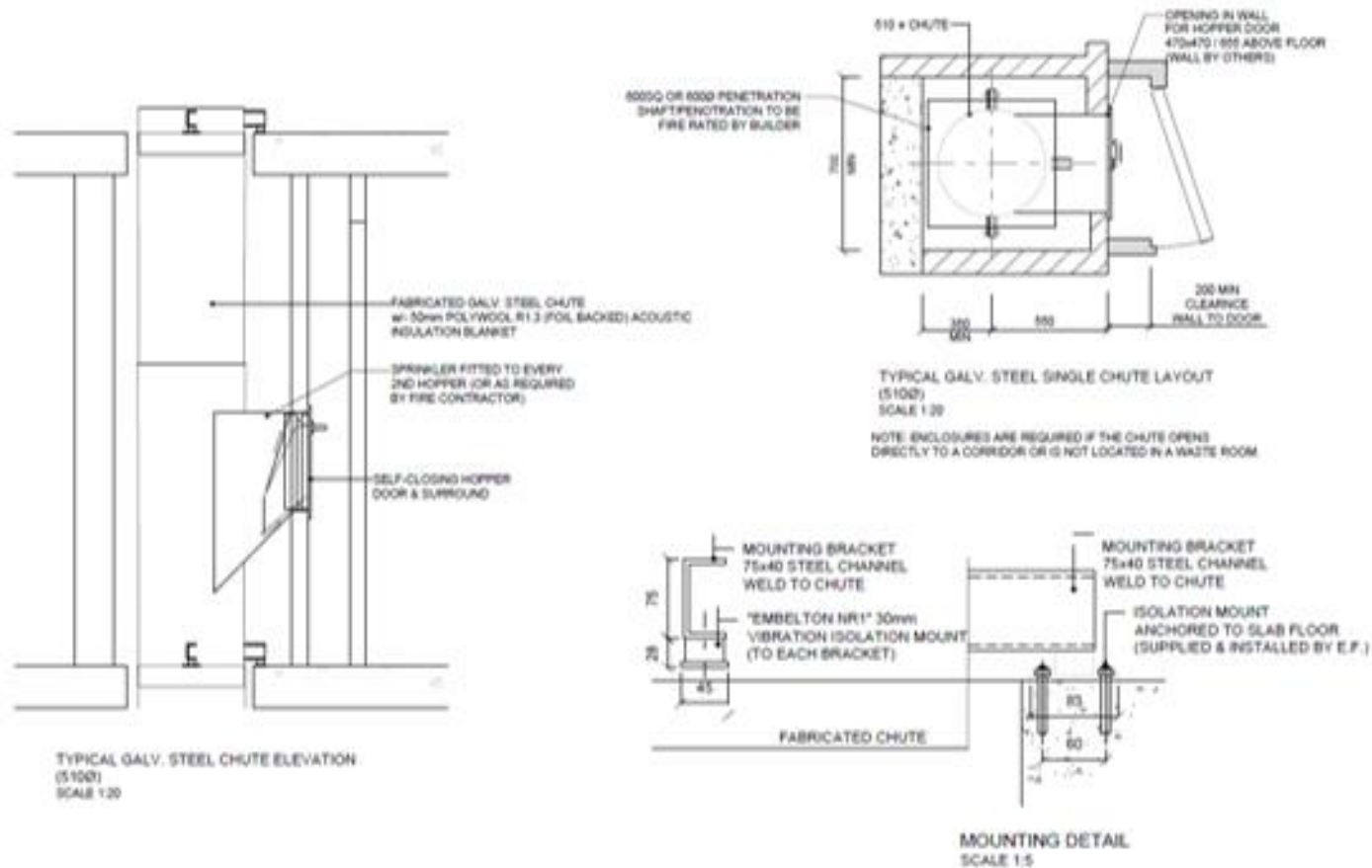
APPENDIX B.5 TYPICAL SEATED BIN MOVER



		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

APPENDIX C INSTALLATION EQUIPMENT AND WASTE ROOM LAYOUTS

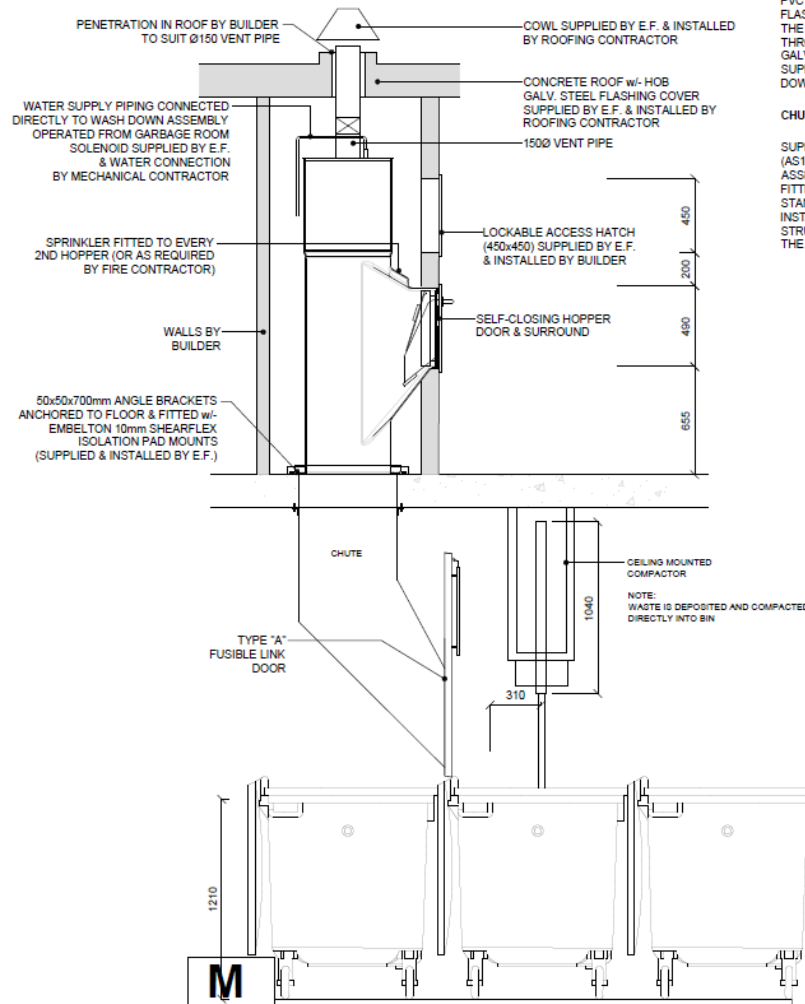
APPENDIX C.1 TYPICAL SINGLE WASTE CHUTE SPECIFICATIONS



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



VENT:

PVC 150MM DIAMETER VENT PIPE WITH COWL, DEKTITE 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 SERVICING OF THE WASH DOWN SYSTEM

CHUTE DOORS

SUPPLY AND FIT STAINLESS STEEL TWO HOUR FIRE-RATED (AS1530.4-2005) 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.

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)

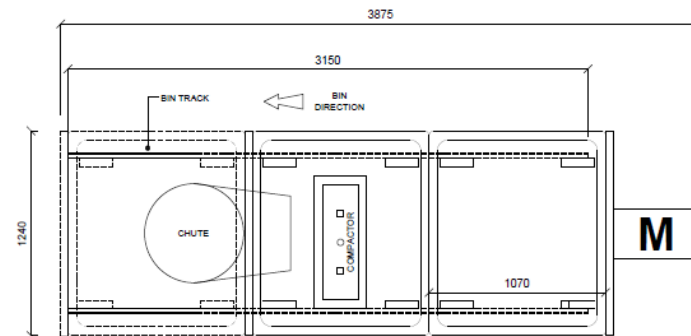
ELECTRICAL

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. BALE PRODUCT REDUCES THE REQUIREMENTS FOR ADDITIONAL COLLECTION EQUIPMENT. STATE OF THE ART COMPACTORS ARE ALSO AVAILABLE IN AUGER, BLADE AND ECO MODELS.



TYPICAL 2-BIN 1100L LINEAR WITH COMPACTOR
SCALE NTS

