



Eastlakes Town Centre – Buildings 1, 1A & 1B Evans Ave
Eastlakes NSW
Mixed Use Development

OPERATIONAL WASTE MANAGEMENT PLAN

30/05/2019
Report No. 17024
Revision F

Client

Crown Group

Architect

FJMT Studio

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	Copy No.	Date	Prepared by	Approved by	Remarks
A	1	7/02/2018	J Elliot	A Armstrong	Draft
B	1	20/02/2018	J Elliot	A Armstrong	Amendment
C	1	17/04/2019	H Wilkes	A Armstrong	Amendment
D	1	9/05/2019	H Wilkes	A Armstrong	Amendment
E	1	27/05/2019	H Wilkes	A Armstrong	Final – With Disclaimer
F	1	30/05/2019	H Wilkes	A Armstrong	Final – Amended

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.....	v
TABLE OF FIGURES.....	v
GLOSSARY OF TERMS.....	i
INTRODUCTION	2
REPORT CONDITIONS.....	3
DEVELOPMENT SUMMARY	4
SITE LOCATION.....	4
BAYSIDE COUNCIL (CITY OF BOTANY BAY).....	5
COUNCIL OBJECTIVES	5
COUNCIL REQUIREMENTS	5
STAKEHOLDER ROLES AND RESPONSIBILITIES.....	6
EDUCATION.....	7
RESIDENTIAL WASTE MANAGEMENT.....	8
ESTIMATED WASTE VOLUMES AND PROVISIONS	8
BUILDING 1 & 1A HOUSEHOLD WASTE MANAGEMENT STRATEGY	8
BUILDING 1B HOUSEHOLD WASTE MANAGEMENT STRATEGY	9
COMMON AREAS	9
SOURCE SEPARATION.....	10
GENERAL WASTE (GARBAGE).....	10
RECYCLING	10
GREEN WASTE.....	10
BULKY GOODS	10
E-WASTE.....	11
CHEMICAL WASTE	11
ORGANIC WASTE AND COMPOSTING	11
RETAIL WASTE MANAGEMENT	12
ESTIMATED WASTE VOLUMES AND PROVISIONS	12
RETAIL WASTE MANAGEMENT.....	12
WASHROOMS	13
WASTE OILS	13
MANAGEMENT OF SPECIALITY WASTE STREAMS.....	13
SUPERMARKET WASTE MANAGEMENT	14
ESTIMATED WASTE VOLUMES AND PROVISIONS	14
SUPERMARKET WASTE MANAGEMENT	14
COLLECTION OF WASTE.....	15
RESIDENTIAL	15
RETAIL	15

SUPERMARKET	15
COLLECTION AREA.....	15
MOVEMENT AND TRANSPORTATION OF BINS	16
EQUIPMENT SUMMARY	16
WASTE ROOM AREAS	17
WASTE ROOMS	19
CONSTRUCTION REQUIREMENTS	19
SIGNAGE	19
VENTILATION.....	19
USEFUL CONTACTS	20
APPENDICES.....	21
APPENDIX A ARCHITECTURAL DRAWING EXCERPTS	21
APPENDIX A.1 BASEMENT 1 – WASTE FACILITIES.....	21
APPENDIX A.2 GROUND LEVEL – WASTE FACILITIES	22
APPENDIX B PRIMARY WASTE MANAGEMENT PROVISIONS	23
APPENDIX B.1 TYPICAL BIN SPECIFICATIONS	23
APPENDIX B.2 SIGNAGE FOR WASTE & RECYCLING BINS	24
APPENDIX B.3 TYPICAL COLLECTION VEHICLE INFORMATION	25
APPENDIX B.4 TYPICAL MOTORISED BIN TUG	27
APPENDIX B.5 TYPICAL SEATED BIN MOVER.....	28
APPENDIX C INSTALLATION EQUIPMENT	29
APPENDIX C.1 TYPICAL SINGLE WASTE CHUTE SPECIFICATIONS	29
APPENDIX C.2 TYPICAL 4-BIN CAROUSEL SYSTEM FOR 660L MGBS.....	30
APPENDIX C.3 TYPICAL LINEAR TRACK SYSTEM FOR 660L MGBS	31
APPENDIX C.4 TYPICAL 3-BIN CAROUSEL SYSTEM FOR 660L MGBS.....	32
APPENDIX C.5 TYPICAL CAROUSEL SYSTEM	33
APPENDIX D SECONDARY WASTE MANAGEMENT PROVISIONS.....	34
APPENDIX D.1 TYPICAL WORM FARM SPECIFICATIONS	34
APPENDIX D.2 TYPICAL APARTMENT STYLE COMPOST BINS	35
APPENDIX D.3 ELECTRIC ORGANIC COMPOST BIN	36
APPENDIX D.4 TYPICAL COOKING OIL CONTAINERS.....	37
APPENDIX D.5 TYPICAL BACK OF HOUSE BINS FOR RETAIL/COMMERCIAL OPERATIONS	38

LIST OF TABLES

Table 1: Stakeholder Roles and Responsibilities.....	6
Table 2: Calculated Waste Generation – Residential Building 1, 1A & 1B.....	8
Table 3: Calculated Waste Generation –Retail.....	12
Table 4: Calculated Waste Generation – Supermarket.....	14
Table 5: Equipment Summary.....	16
Table 6: Waste Room Areas	17

TABLE OF FIGURES

Figure 1 - Site Location	4
--------------------------------	---

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 Crown Group for the operational management of waste generated by the mixed use development located at Eastlakes Town Centre – Buildings 1, 1A & 1B Evans Ave Eastlakes NSW 2018.

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 Bayside Council, and consists of:

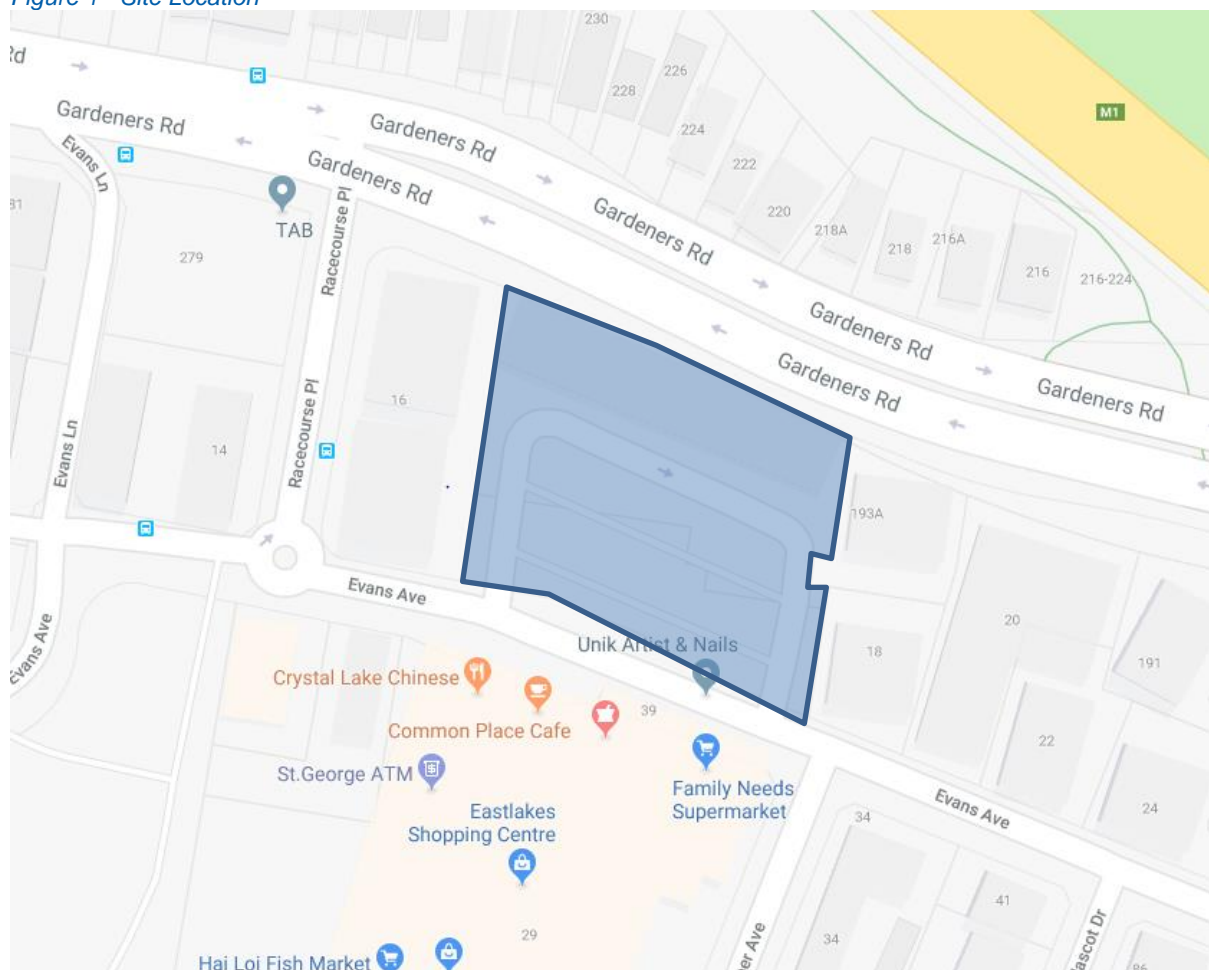
- 3 Buildings with shared ground level retail
 - 133 residential units in total, consisting of;
 - 44 units in Building 1
 - 62 units in Building 1A
 - 27 units in Building 1B
- 11 retail tenancies with a total GFA of 1171.2 m²
- 1 supermarket tenancy with a total GFA of 1625m²

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

SITE LOCATION

The site's location is shown in Figure.1. The site has frontages to Gardeners Rd and Evans Ave with vehicle access via Evans Ave.

Figure 1 - Site Location



BAYSIDE COUNCIL (CITY OF BOTANY BAY)

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

Therefore, the garbage and recycling will be guided by the services and acceptance criteria of the Botany Bay Council. All waste facilities and equipment are to be designed and constructed to be in compliance with the Botany Bay Council's *Botany Bay Development Control Plan 2013 Part 3N – Waste Minimisation and Management*, Australian Standards and statutory requirements.

COUNCIL OBJECTIVES

- To encourage best practice in waste management that minimises waste generation, facilitate waste separation and maximises reuse and recycling;
- To ensure suitable and efficient waste storage, recycling and collection in all development.
- To provide guidelines for the storage, amenity and management of waste;
- To promote safe practices for storage, handling and collection of waste and recycling; and
- To minimise amenity impacts from waste.

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 Bayside 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 as well as building management; and
- How to prevent damage or blockages to the chute (example below).

To prevent damage or blockage to rubbish chute DO NOT dispose of any 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.

RESIDENTIAL WASTE MANAGEMENT

The *Botany Bay Development Control Plan 2013 Part 3N – Waste Minimisation and Management* has been referenced to calculate the total number of bins required for the residential units. 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 1, 1A & 1B

Building	# Units	Garbage Generation Rate (L/unit/week)		Generated Garbage (L/w eek)	Recycling Generation Rate (L/unit/w eek)		Generated Recycling (L/w eek)
Building 1	44	120		5280	120		5280
Building 1A	62	120		7440	120		7440
Building 1B	27	120		3240	120		3240
TOTAL	133			15960			15960
Collections		Garbage Bin Size (L)		660	Recycling Bin Size (L)		660
		Garbage Bins per Week		24.2	Recycling Bins per Week		24.2
		Garbage Collections per Week		2	Recycling Collections per Week		2
		Total Garbage Bins Required		13	Total Recycling Bins Required		13
Equipment		Number of Waste Bins Per Day	Core A	1.14	Number of Recycling Bins Per Day	Core A	1.14
			Core B	1.61		Core B	1.61
			Core C	0.70		Core C	0.70
		Chute Equipment		Building 1 & 1A: single waste chute Building 1B: eDiverter			

**Recycling bin numbers are for Option A only. Please refer to Building 1 & 1A Household Waste Management Strategy Pg 8-9 for the bins required for each option.*

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.

BUILDING 1 & 1A HOUSEHOLD WASTE MANAGEMENT STRATEGY

Buildings 1 & 1A will be supplied with a single waste chute and a compartment on each level to hold 240L recycling bins adjacent to each hopper door on each residential level. The residents of Building 1 & 1A will walk their waste and recycling to the disposal point on their level and place the waste into the chute and recycling into the 240L MGB.

The waste chute discharges into 660L MGBs sitting on carousel tracks. The building manager will monitor the bins under the chute and rotate them with empty bins as required. Full bins and empty bins awaiting use will be held in the chute discharge rooms throughout the week.

OPERATIONAL WASTE MANAGEMENT PLAN

One 240L recycling bin will be provided per each residential level for collection of recyclable items and will be situated in the waste compartment on each residential level. The building manager or cleaner is responsible for monitoring the capacity of the recycling bins.

Two options are proposed for the collection of the recycling bins for Building 1 & Building 1A:

Option 1 – Council collects recycling in 660L MGB

Once the 240L MGBs are full, they will be brought down to the Building 1 waste discharge room on the basement level. The 240L MGBs are decanted into 660L MGBs for collection. The 660L MGBs are stored in the Building 1 & Building 1A waste discharge rooms until collection time. The emptied 240L MGBs are returned to the residential levels to resume operation.

Option 2 – Council collect recycling in 240L MGBs

Once the 240L MGBs are full the building manager will replace the full bins with empty bins. The full and empty bins awaiting use will be kept in the Building 1 and Building 1A waste discharge rooms on the basement level.

The following 240L MGBs would be required:

- Building 1: 11x 240L collected twice weekly
- Building 1A: 16x 240L collected twice weekly

Please note: number of 240L bins above are based on total volume of recycling generated. More 240L MGBs maybe require if some residential levels generate more recycling than others.

One bin is placed on each residential level of Building 1 and Building 1A and all other bins are kept in the corresponding chute discharge rooms until collection times.

BUILDING 1B HOUSEHOLD WASTE MANAGEMENT STRATEGY

Building 1B will be supplied with an eDiverter system which comprises of a single waste chute fitted with a recycling diversion. The residents of Building 1B will walk their waste and recycling to the disposal point on their level and select either waste or recycling on the eDiverter system. The resident will then place their waste or recycling down the chute.

The waste chute discharges into 660L MGBs sitting on linear tracks and the recycling discharges into 660L MGBs sitting on linear tracks. The building manager will monitor the bins under the chute and rotate them with empty bins as required.

The full and spare bins awaiting use will be kept in the building 1B chute discharge room until collection day.

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 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

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.

For multi-storey developments that include 10 or more dwellings, a room or caged area must be allocated for the storage of bulky items, such as old furniture, awaiting Council pickup.

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.

OPERATIONAL WASTE MANAGEMENT PLAN

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.

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 or in small private courtyards (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*).

RETAIL WASTE MANAGEMENT

The Department of Environment and Climate Change NSW's *Better Practice Guide for Waste Management in Multi-Unit Dwellings* has been referenced to calculate the total number of bins required for the retail 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 retail component. A seven day operating week has been assumed.

Table 3: Calculated Waste Generation –Retail

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)	
Butcher/ Greengrocer	348.3	240	5851.4	120	2925.7	
Optomestrist	61.2	50	214.2	25	107.1	
Bakery	72.9	80	408.2	135	688.9	
Deli	84.3	80	472.1	135	796.6	
Hair/nails	65.9	50	230.7	25	115.3	
Pharmacy	199.1	50	696.9	50	696.9	
Café	60.8	667	2838.8	134	570.3	
Café	65.5	667	3058.2	134	614.4	
General retail	63.5	50	222.3	25	111.1	
General retail	74.6	50	261.1	25	130.6	
Post Office	75.1	50	262.9	25	131.4	
TOTAL	1171.2		14516.6		6888.3	
Collections & Equipment	Bin Size (L)		1100	Bin Size (L)		1100
	Garbage Bins Per Week		14	Recycling Bins Per Week		7
	Collections per Week		3	Collections per Week		3
	Total Waste Bins Required		5	Total Recycling Bins Required		3

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. The 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 WASTE MANAGEMENT

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 area on the ground level and place garbage and recycling into the appropriate waste equipment.

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.

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.

OPERATIONAL WASTE MANAGEMENT PLAN

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

WASHROOMS

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.

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)

MANAGEMENT OF SPECIALITY WASTE STREAMS

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

Specialised waste streams include:

- | | |
|--------------------|--------------|
| ○ Chemical Waste | ○ Lightbulbs |
| ○ Liquid wastes | ○ eWaste |
| ○ Toner cartridges | ○ Batteries |

SUPERMARKET WASTE MANAGEMENT

Department of Environment and Climate Change NSW 2008, Better Practice Guide for Waste Management in Multi-Unit Dwellings 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 4: 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	1625	660	75075	240	27300
TOTAL	1625		75075		27300
Waste Rooms & Equipment			<i>To Be Determined By Supermarket Tenant</i>		

SUPERMARKET WASTE MANAGEMENT

Supermarket retail areas total 1625m² (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.

COLLECTION OF WASTE

RESIDENTIAL

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

On collection days residential bins will be presented in the temporary bin holding areas within the loading dock. Bins will be moved using a tug and bin trailer, via the car. The building manager must wear high visibility clothing for safety while moving the bins.

The loading dock is shared with the other residential components of the site and the retail component.

The collection vehicle will enter the site from Evans Ave and park in the designated loading dock. The waste collectors will then wheel the bins from residential collection area to the vehicle and then return them upon completion.

It is the responsibility of the building manager the return the empty bins to the designated waste rooms as soon as possible after servicing has been completed.

RETAIL

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

The private contractor will enter the site from Evans Ave and park in the loading bay on ground level. The private contractor will collect the retail waste and recycling from their storage location.

SUPERMARKET

The supermarket tenant will engage their own private contractor to collect the supermarket waste and recycling to an agreed schedule.

The supermarket contractor will enter the site from Evan Ave and collect the supermarket waste and recycling from the loading bay on ground level.

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 site in a forward direction. The final number of truck collection will depend on management of waste contract.

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.

EQUIPMENT SUMMARY

Table 5: Equipment Summary

Component	Part	Qty	Notes
Chutes	Please refer to supplier's information	3	(See APPENDIX C for Typical Chute Section)
Equipment A	Garbage – Building 1 3-bin 660L MGB Carousel	1	(See APPENDIX C.4 for Typical Carousel)
	Garbage – Building 1A 4-bin 660L MGB Carousel	1	(See APPENDIX C.2 for Typical Carousel)
	Garbage & Recycling – Building 1B 2-bin 660L MGB Linear Track System	2	(See APPENDIX C.3 for Typical Linear System)
Equipment B	Suitable Bin Moving Equipment	Recommended	(See 0 for Typical Bin Mover)
Building 1 & 1A Recycling Option 1	Bin Lifter	If Option 1 is implemented	

WASTE ROOM AREAS

In the chute discharge rooms, the 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. 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.

In the retail waste room, the bins should be arranged so that all bins can be accessed without moving any other bins. This is to ensure the safety of the staff accessing this room to dispose of waste and recycling.

Two options for equipment have been proposed based on the Buildings 1 & Building 1A recycling collection bin options proposed. Each option has differing equipment requirements.

The areas allocated for waste storage and collection areas for Buildings 1 & Building 1A recycling collection option 1 are detailed in Table 6.

The areas allocated for waste storage and collection areas for Buildings 1 & Building 1A recycling collection option 2 are detailed in Table 7.

Table 6: Waste Room Areas – Option 1

Level	Waste Room Type	Equipment	Area (m ²)
B1	Building 1 - Chute Discharge Room (single waste chute)	1x 3-bin carousel for 660L MGBs (waste) 4x 660L MGBs (waste) 4x 660L MGBs (recycling) 1x 660L MGBs (service bin) Bin Lifter	40.6
B1	Building 1A – Chute Discharge Room (single waste chute)	1x 4-bin carousel for 660L MGBs (waste) 6x 660L MGBs (waste) 6x 660L MGBs (recycling) 1x 660L MGB (service bin)	44.7
B1	Building 1B – Chute Discharge Room (eDiverter)	1x 2-bin linear for 660L MGBs (waste) 1x 2-bin linear for 660L MGBs (recycling) 3x 660L MGBs (waste) 3x 660L MGBs (recycling) 2x 660L MGBs (service bins)	47.8
B1	Bulky Goods Waste Storage Room		25.6
G	Residential Bin Holding Areas (collection area)	13x 660L MGBs (waste) 13x 660L MGBs (recycling)	29.5 & 10.7
G	Retail Waste Room	5 x 1100L MGBs (waste) 3 x 1100L MGBs (recycling)	20.9
G	Supermarket Waste Area	To Be Determined by Supermarket Tenant	Located in Supermarket loading dock

Table 7: Waste Room Areas – Option 2

Level	Waste Room Type	Equipment	Area (m ²)
B1	Building 1 - Chute Discharge Room (single waste chute)	1x 3-bin carousel for 660L MGBs (waste) 4x 660L MGBs (waste) Up to 11x 240L MGBs (recycling) 1x 660L MGBs (service bin)	40.6
B1	Building 1A – Chute Discharge Room (single waste chute)	1x 4-bin carousel for 660L MGBs (waste) 6x 660L MGBs (waste) Up to 16x 240L MGBs (recycling) 1x 660L MGB (service bin)	44.7
B1	Building 1B – Chute Discharge Room (eDiverter)	1x 2-bin linear for 660L MGBs (waste) 1x 2-bin linear for 660L MGBs (recycling) 3x 660L MGBs (waste) 3x 660L MGBs (recycling) 2x 660L MGBs (service bins)	47.8
B1	Bulky Goods Waste Storage Room		25.6
G	Residential Bin Holding Areas (collection area)	13x 660L MGBs (waste) 54x 240L MGBs (recycling – Building 1 & Building 1A) 4x 660L MGBs (recycling – Building 1B)	29.5 & 10.7
G	Retail Waste Area	5 x 1100L MGBs (waste) 3 x 1100L MGBs (recycling)	20.9
G	Supermarket Waste Area	To Be Determined by Supermarket Tenant	Located in Supermarket loading dock

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

SIGNAGE

The building manager 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.

USEFUL CONTACTS

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

BAYSIDE COUNCIL CUSTOMER SERVICE

Phone: 1300 581 299

Email: council@bayside.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 9399 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

KOMPACT EQUIPMENT (Waste Handling Equipment Sales, Servicing and Maintenance)

1/81 Governor Macquarie Drive

Chipping Norton NSW 2170

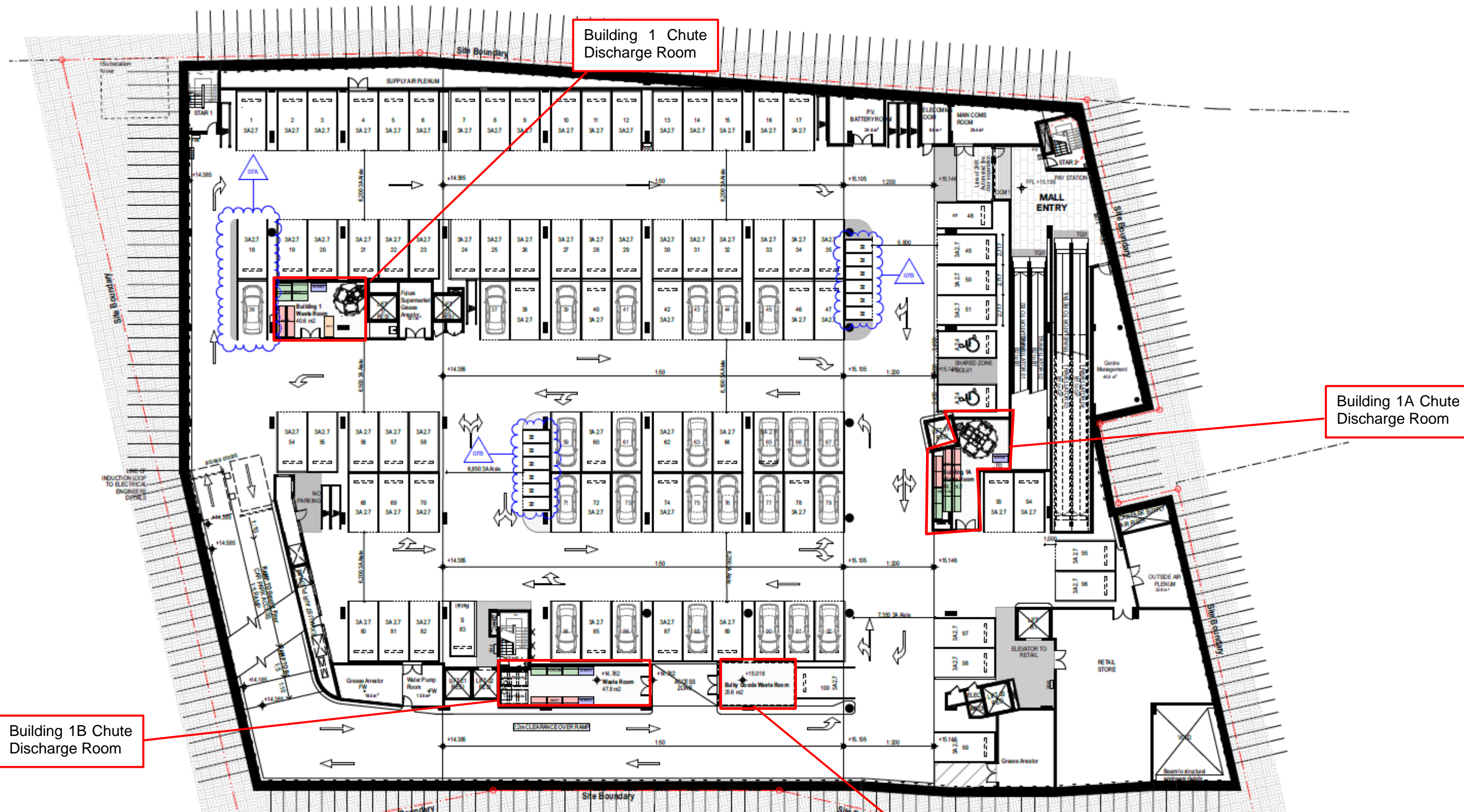
Free call: 1800 566 722

Email: info@kompactequipment.com.au

APPENDICES

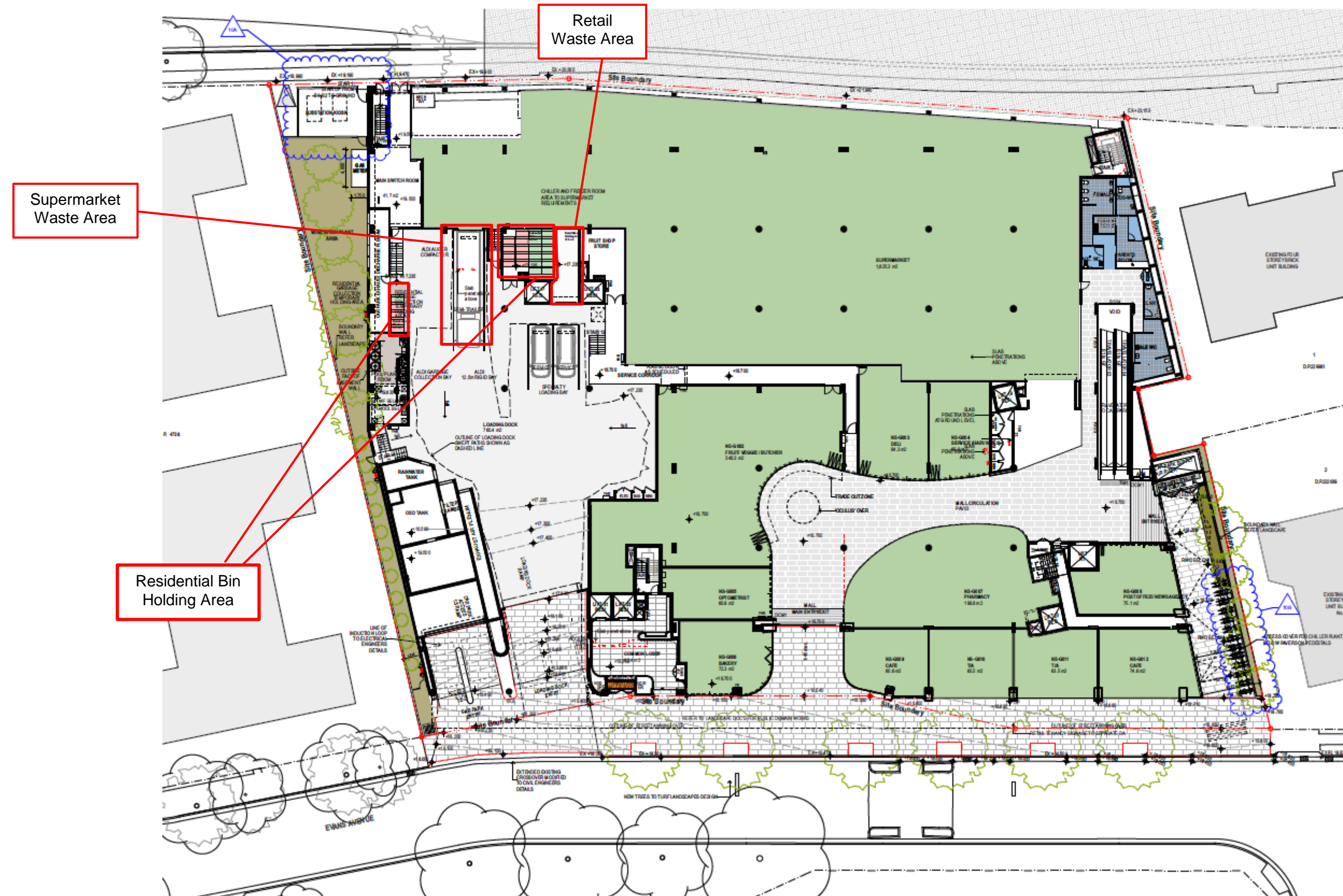
APPENDIX A ARCHITECTURAL DRAWING EXCERPTS

APPENDIX A.1 BASEMENT 1 – WASTE FACILITIES



Source: FJMT, Eastlakes Town Centre – North Site, Sheet No, S75120006, Rev 07, May2019 – B01 Basement 1

APPENDIX A.2 GROUND LEVEL – WASTE FACILITIES



Source: FJMT, Eastlakes Town Centre – North Site, Sheet No, S75W130002, Rev 10, May2019 –Ground Floor

APPENDIX B PRIMARY WASTE MANAGEMENT PROVISIONS

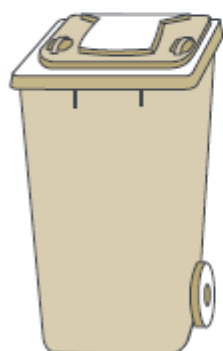
APPENDIX B.1 TYPICAL BIN SPECIFICATIONS

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

APPENDIX B.2 SIGNAGE FOR WASTE & RECYCLING BINS

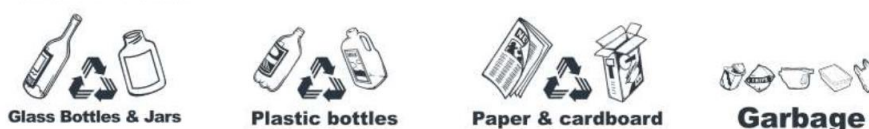
WASTE SIGNS

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

Example wall posters



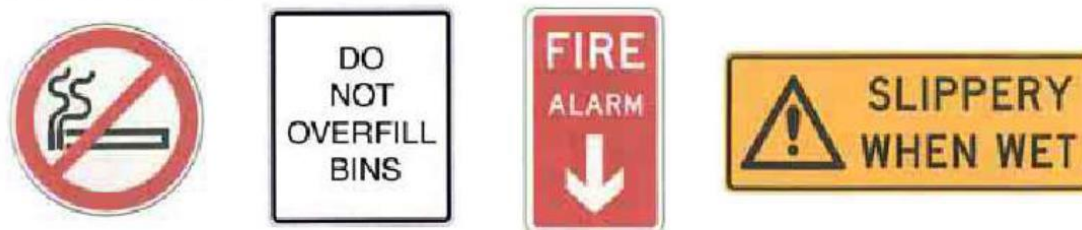
Example bin lid stickers



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

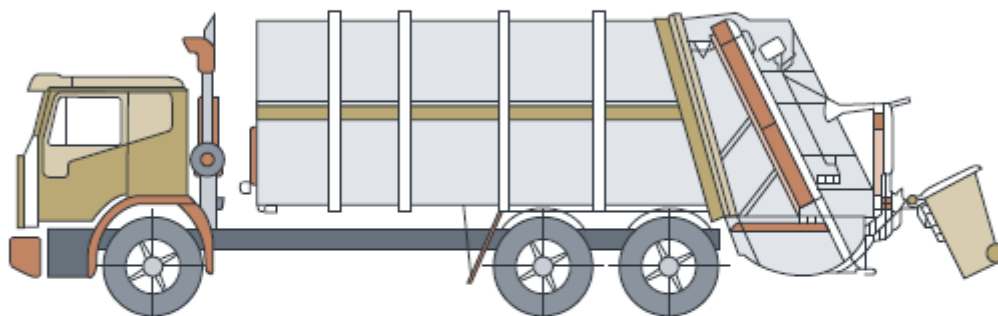
APPENDIX B.3 TYPICAL COLLECTION VEHICLE INFORMATION

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.

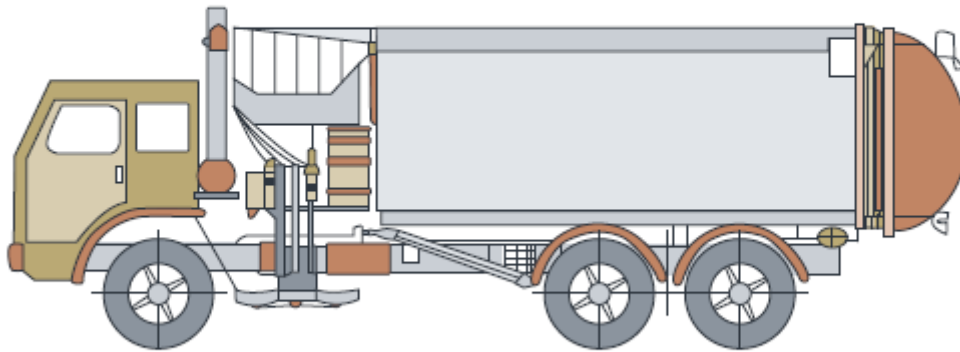


Rear loading collection vehicle

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.

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

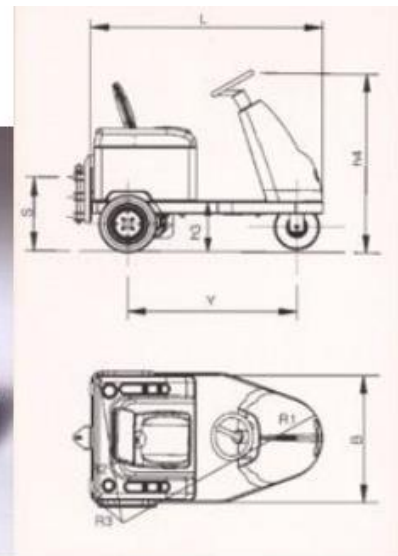
Features:

- 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

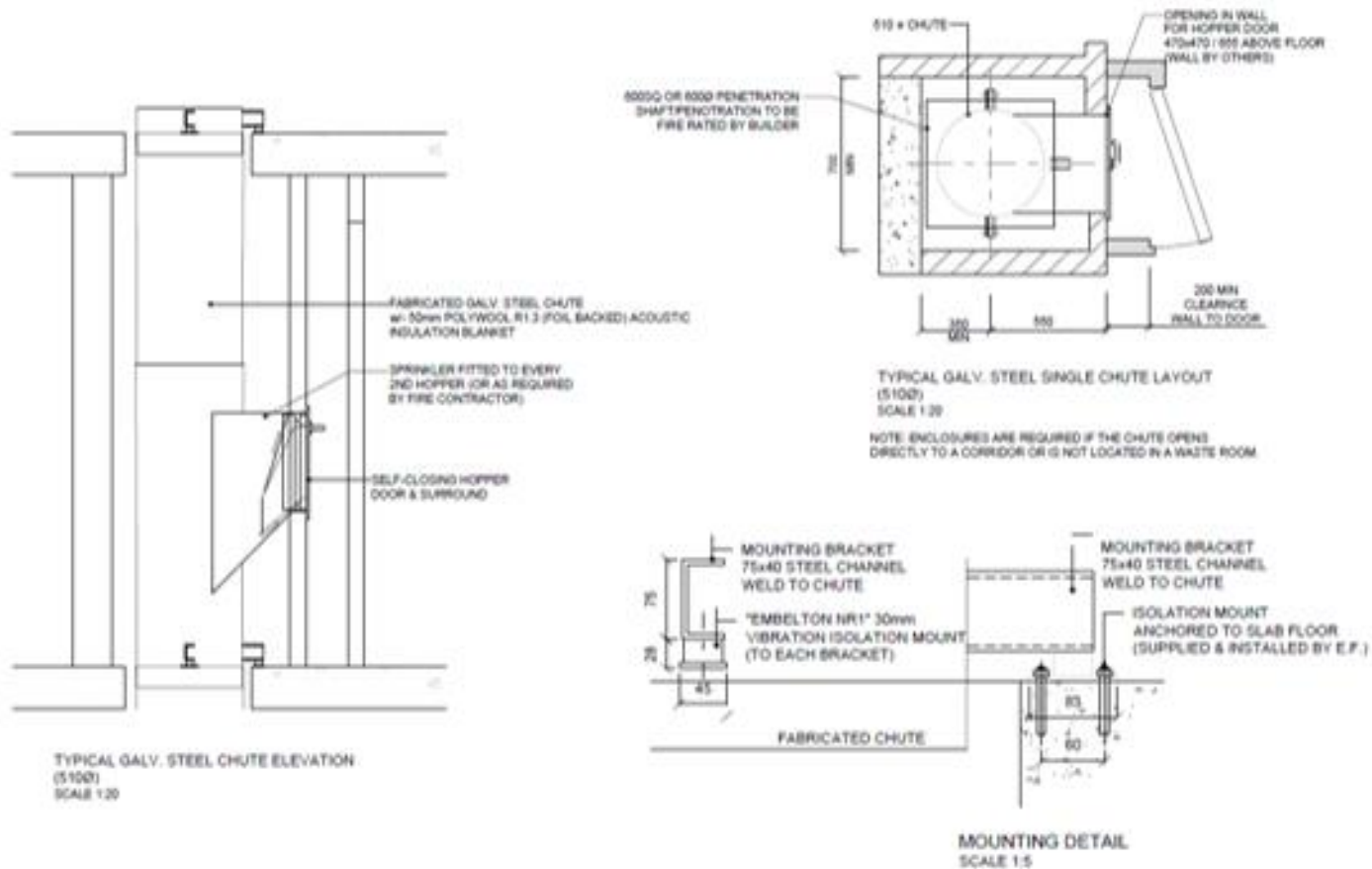


		UNIT M.	BULL 2	BULL 4
Manufacturer	DEC			
Model	BULL			
Platform loading cap.	Nominal capacity	kg	-----	-----
Pull capacity	Pull nominal capacity	kg	2000	4000
Power type	Electric - endothermic		electric	electric
Control type	Standing / seated thiller / steer		seated / steer	seated / steer
Tyres	Pn=pneum. 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

OPERATIONAL WASTE MANAGEMENT PLAN

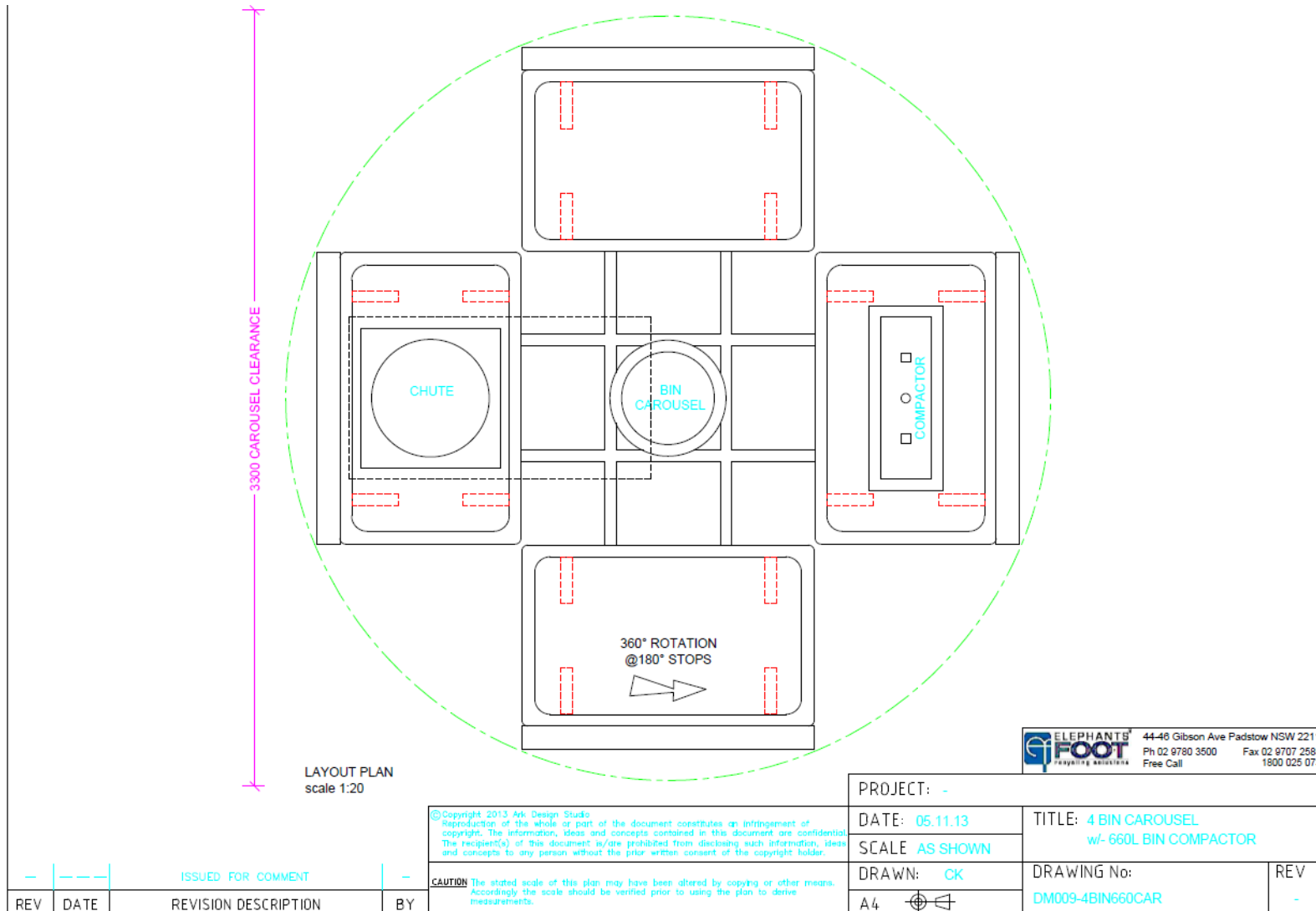
APPENDIX C INSTALLATION EQUIPMENT

APPENDIX C.1 TYPICAL SINGLE WASTE CHUTE SPECIFICATIONS



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

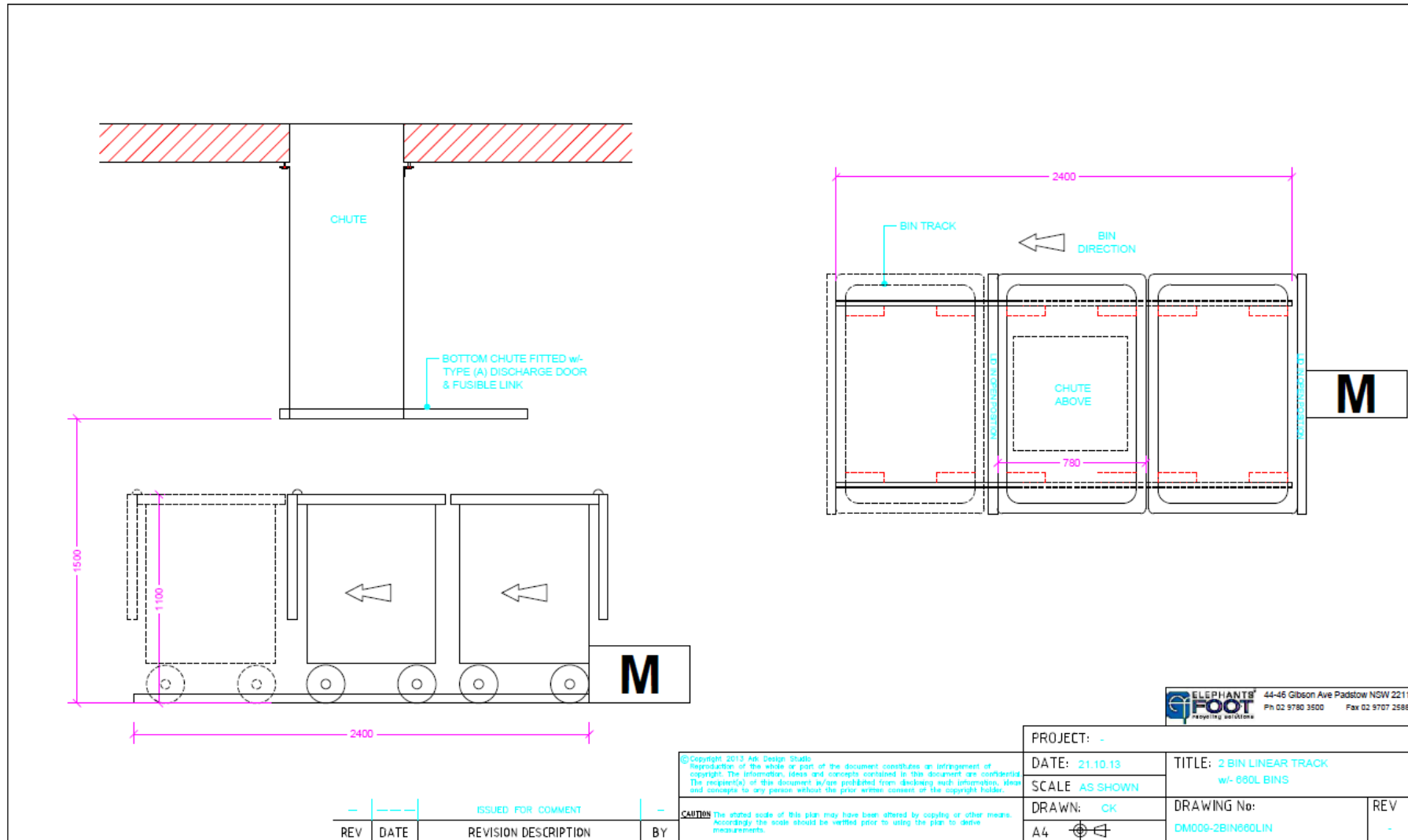
APPENDIX C.2 TYPICAL 4-BIN CAROUSEL SYSTEM FOR 660L MGBS



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

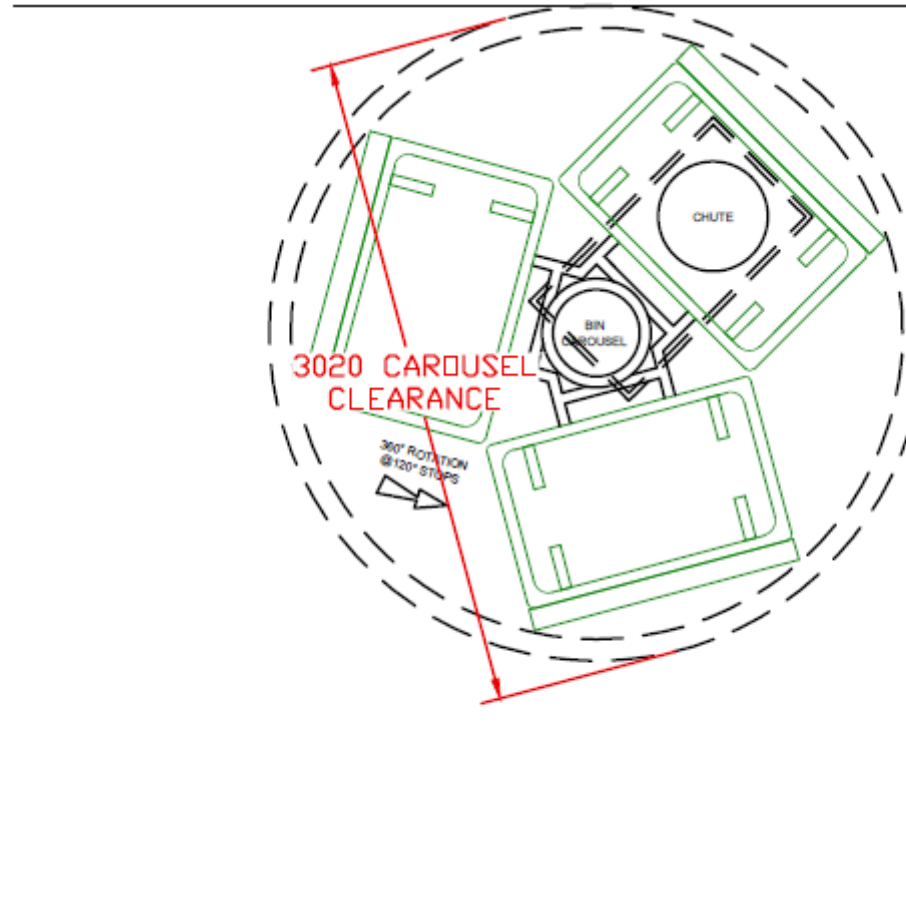
OPERATIONAL WASTE MANAGEMENT PLAN

APPENDIX C.3 TYPICAL LINEAR TRACK SYSTEM FOR 660L MGBS



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

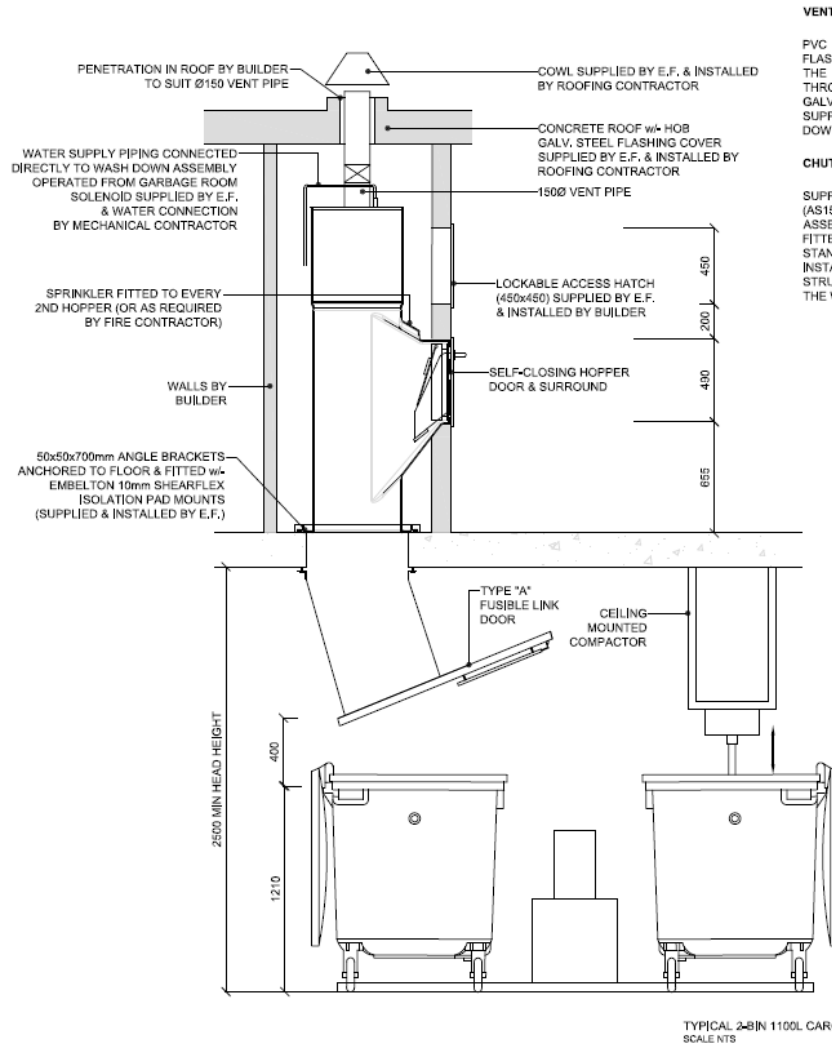
APPENDIX C.4 TYPICAL 3-BIN CAROUSEL SYSTEM FOR 660L MGBS



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

OPERATIONAL WASTE MANAGEMENT PLAN

APPENDIX C.5 TYPICAL CAROUSEL SYSTEM



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)

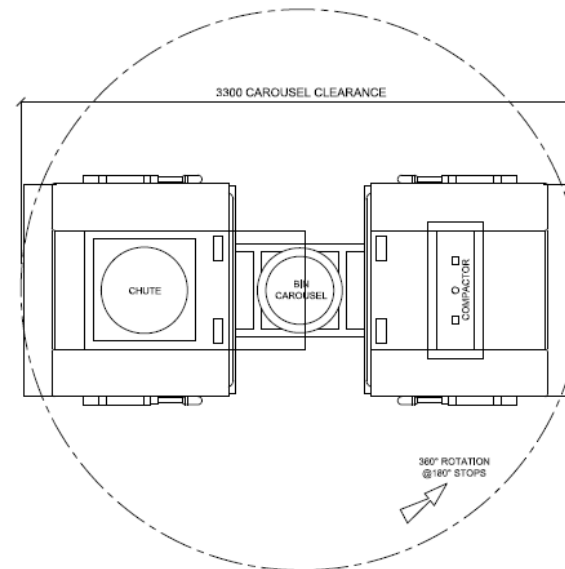
ELECTRICAL

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.

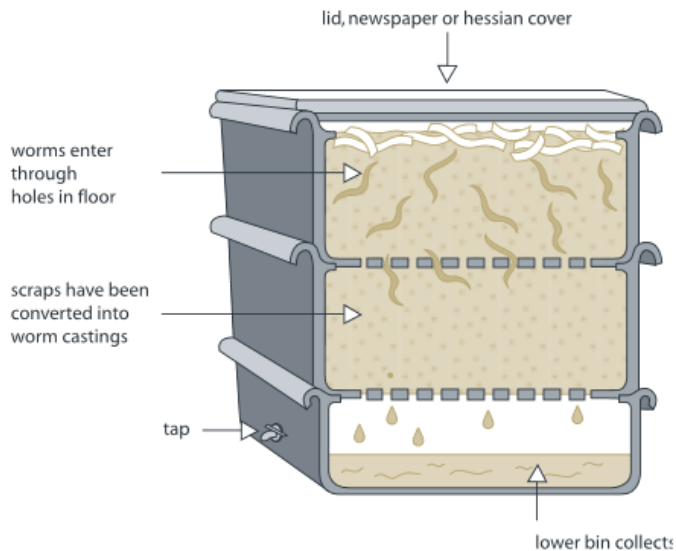


Please note: this is an example only – please refer to supplier's information and specification.

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 TYPICAL COOKING OIL CONTAINERS




A GrainCorp business

[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 Systems



Direct-Connect to Fryer

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

