WASTE MANAGEMENT PLAN

One Circular Quay
1 Alfred St, Sydney, NSW, 2000
Mixed Use Development

PREPARED FOR
Yuhu - AWH Investment Group Pty Ltd

17/01/2019

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EXECUTIVE SUMMARY

This waste management plan covers the ongoing management of waste generated by the mixed use development located at 1 Alfred St, Sydney, 2000.

Waste audit and management strategies are recommended for new developments to provide support for the building design and promote strong sustainability outcomes for the building. All recommended waste management plans will comply with council codes and any statutory requirements. The waste management plan has three key objectives:

i. ***Ensure waste is managed to reduce the amount of waste and recyclables to land fill*** by assisting residents to segregate appropriate materials that can be recycled; displaying signage to remind and encourage recycling practices; and through placement of recycling and waste bins in the retail precinct to reinforce these messages.

ii. ***Recover, reuse and recycle*** generated waste wherever possible.

iii. ***Compliance*** with all relevant codes and policies.

To assist in providing clean and well-segregated waste material, it is essential that this waste management plan is integral to the overall management of the building and clearly communicated to residents and tenants.

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GLOSSARY OF TERMS

TERM	DESCRIPTION
Baler	A device that compresses waste into a mould to form bales which may be self-supporting or retained in shape by wire ties and strapping
Chute	A ventilated, essentially 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)
Collection Area/Point	The position or area where waste or recyclables are actually loaded onto the collection vehicle
Compactor	A Machine for compressing waste into disposable or reusable containers
Composter	A container/machine used for composting specific food scraps
Crate	A plastic box used for the collection of recyclable materials
Garbage	All domestic waste (Except recyclables and green waste)
Hopper	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
Recycling	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
Green	Garden organics such as small branches, leaves and grass clippings, tree and shrub pruning, plants and flowers, and weeds
L	Litre(s)
Liquid Waste	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)
Mobile Garbage Bin(s) (MGB)	A waste container generally constructed of plastic with wheels with a capacity in litres of 120, 240, 660, 1000 or 1100, 1500 or 2000
Putrescible Waste	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.

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INTRODUCTION

The following waste management plan pertains to the mixed use development located at 1 Alfred St, Sydney, 2000. This waste management plan is an operational waste management plan and will address the phases of the completed development.

The proposed development will consist of:

- 2 towers with a shared basement (*see APPENDIX A.1 For Site Plan*)
- Tower A
  - 165 residential units (see Table 1 for Unit Breakdown Matrix)
  - 4 retail units with a total GFA of 171m^2
- Tower B
  - Hotel of 220 rooms.
  - Retail and commercial units with a total GFA of 3,601m^2

Table 1: Unit Breakdown Matrix

Core	# Units
A	68
B	97
	165

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

CITY OF SYDNEY COUNCIL

The residential waste and recycling will be guided by the services and acceptance criteria of the City of Sydney Council. The residential waste and recycling will be collected by council. The retail and commercial waste will be collected by private contractor.

All waste facilities and equipment are to be designed and constructed to be in compliance with the City of Sydney Council's *Policy for Waste Minimisation in New Developments 2005, Council Advices,* Australian Standards and statutory requirements.

COUNCIL OBJECTIVES

- Ensure that each dwelling has adequate space to manage waste.
- Ensure that buildings provide appropriate facilities to manage waste.
- Ensure that residential amenity is not impacted by waste systems and collection services.

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 Sydney.

GENERATED WASTE VOLUMES

The assessment of projected waste volumes is a calculated estimate only and will be influenced by the development's management and occupant's waste disposal and recycling practices.

CONSTRUCTION AND DEVELOPMENT WASTE

The head contractor will be responsible for removing all construction-related waste offsite in a manner that meets all authority requirements. Please refer to the separate waste management plan submitted for construction waste as part of the Development Application.

BUILDING MANAGER/WASTE CARETAKER

All waste equipment movements are to be managed by the building manager/cleaners at all times. No tenants or residents will be allowed to transport waste or recyclables from the waste room; tenants and residents will only transport their waste to the allocated bin room.

The building manager/cleaner duties include, but are not limited to, the following:

- general maintenance and cleaning of the chute doors on each level (Frequency dependent on waste generation and will be determined based upon building operation);
- organising, maintaining and cleaning the general and recycled waste holding areas (Frequency will depend on waste generation and will be determined based upon building operation);
- transporting of bins as required;
- organising both garbage and recycled waste pick-ups as required;
- cleaning and exchanging all bins;
- ensure site safety for residents, children, visitors, staff and contractors;
- abide by all relevant OH&S legislation, regulations, and guidelines;
- assess any manual handling risks and prepare a manual handling control plan for waste and bin transfers; and
- provide to staff/contractors equipment manuals, training, health and safety procedures, risk assessments, and PPE to control hazards associated with all waste management activities

NOTE: It is the responsibility of the building manager to monitor the number of bins required for the development. As waste volumes may change according to the development's management and occupants' attitudes to waste disposal and recycling, bin numbers and sizes may need to be altered to suit the building operation.

REPORTING

It is recommended that building management ensure that all waste service providers submit monthly reports on all equipment movements and weights of any waste and recycling products removed from the development. Regular reviews of servicing should take place to ensure operational and economic best practise and to assist with sustainability reporting.

EDUCATION

Building management is responsible for creating and managing the waste management education process.

Educational material encouraging correct separation of garbage and recycling items must be provided to each resident to ensure correct use of the waste and recycling chute. This should include the correct disposal process for bulky goods (old furniture, large discarded items, 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.

Training videos are available to assist in educating residents to use the eDiverter chute doors correctly and the can be found in the links as follows:

eDIVERTER VIDEOS	TENANT VIDEO
https://vimeo.com/98294003	https://vimeo.com/98294002
http://youtu.be/kGBGXOe6P0I	http://youtu.be/kGBGXOe6P0I

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.

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

RESIDENTIAL WASTE PLAN

The Council of the City of Sydney's Policy for Waste Minimisation in New Developments (2005) has been referenced to calculate the total number of bins required for the residential units. Please note that calculations are based on generic figures; waste generation rates may differ according to the residents' waste management practice.

Table 2: *Calculated Waste Generation – Residential*

Core	# Units	Waste Calculation (L/unit/week)	Generated Waste (L/week)	Compacted Waste (2:1) (L/week)	Recycling Calculation (L/unit/week)	Generated Recycling (L/week)
A	68	110	7480	3740	60	4080
B	97	110	10670	5335	60	5820
TOTAL	**165**		**18150**	**9075**		**9900**

BIN SUMMARY

The following assumptions have been taken into consideration:

- garbage is compacted 2:1 at the base of each chute;
- number of bins have been rounded up for best operational outcome.

Using the assumptions stated, the required capacity and quantity of garbage and recycling bins have been calculated and tabulated respectively in the following tables:

Garbage

- 5 x 1100L Garbage MGBs collected **twice weekly**
  - 2 x 1100L Garbage MGBs for **Core A**
  - 3 x 1100L Garbage MGBs for **Core B**

Recycling

- 5 x 1100L Recycling MGBs collected **twice weekly**
  - 2 x 1100L Recycling MGBs for **Core A**
  - 3 x 1100L Recycling MGBs for **Core B**

NOTE: Subject to the stakeholders preference/capability (and as built constraints), bin sizes and quantities may be changed. As waste volumes may change according to the development's type, bin numbers and collection frequencies may be altered to suit the building operation.

WASTE MANAGEMENT

RESIDENTIAL

A waste chute with be installed in each core with access provided on all residential levels (*see APPENDIX A.2*). The waste chute will be installed with a diversion system to allow for the separate disposal of both garbage and recycling down the single chute.

Diversion systems allow for the installation of a single-use chute door for both a garbage and recycling disposal. Providing building owners with significant savings in cost due to the following reasons:

- no recycling areas required on each level – costs savings for developers;
- no recycling bin movement via lifts – energy cost savings;
- reduced bin cleaning time – labour cost savings;
- overall reduced labour for building operators; and
- reduced ongoing building maintenance (may assist in strata fee reduction) – labour cost savings

Garbage discharges into 1100L MGBs which is compacted 2:1, and recycling (comingle) into 660L MGBs which is not compacted. The discharge is located in the waste rooms on basement level 01. Full bins will be serviced from the basement loading area.

WASTE HANDLING

All residents of each core will be supplied with a collection area in each unit (generally in the kitchen, under bench or similar alternate area) to deposit garbage and collect recyclable material suitable for one days storage. Residents should wrap or bag their waste. Bagged waste should not exceed 3kg in weight or 35cm x 35cm x 35cm in dimension.

Recycling must not be bagged. It is recommend that residents use a crate or dedicated bin for collecting recyclables within the allocated residential space provided to ensure correct separation before using the chute system. It is expected that residents will place clean and empty recycling items into the chute when using the recycling function.

Cardboard furniture boxes or large cardboard containers should not be included in the waste chute – a cardboard collection bin will be made available to residents to deposit flattened cardboard and will be managed by the waste caretaker. Bins will be located in the garbage and bulky goods area,

Each residential level will be supplied with a chute outlet behind an air lock door that provides the opportunity to dispose of garbage and recyclable items.

Once putrescible and recyclable waste streams are separated, the resident will carry these to the chute door and deposit bagged waste and loose recyclables using the buttons on the chute door.

Residents will select a recycling or waste function button located on each chute door. Direction on using the diversion system will be prominently displayed on each chute door.

The selection button moves a mechanism that guides either the waste or recycling into the correct collection bin, located in the waste room below. If residents on other levels select the same disposal function, they are able to deposit the same waste at the same time (i.e. waste system – all doors will open).

If commingled recycling is chosen during a waste disposal operation, the resident will be required to wait for the diverter to move from the waste bin to the recycling bin function. A wait time of three to ten seconds is the maximum time delay. The chute door will open but will not close until the diverter has returned to accept the correct waste stream.

NOTE: The operation will default to garbage in the case of a power outage.

BIN SUPPLY

The City will provide the first set of garbage bins the property, however ongoing costs associated with any bin repairs/replacements will be borne by the building owner and/or owner's corporation given the City's garbage bins are not rated for compaction systems.

TEMPORARY STORAGE OF BULKY GOODS

A room has been allocated for the storage of discarded bulky items and recyclable electronic goods and sign marked appropriately. The allocated space satisfies Council's requirement for a minimum of 8m³. The storage area shall be sheltered, readily accessible to all residents and must be located close to the main waste storage room or area.

It is recommended that donations to charitable organisations be encouraged. Clean, sound furniture and household goods etc. are highly sought after to provide for the disadvantaged. Donations will be arranged with the assistance of the building manager/caretaker.

OTHER WASTE STREAMS

Disposal or recycling of electronic, liquid waste and home detox (paint/chemicals etc.) will be organised with the assistance of the building caretaker. These items must not be placed in waste or recycling bins due to safety and environmental factors.

Residents should be directed to Council's comprehensive website for further information.

COMPOSTING

Consideration should be made to provide a space for composting and worm farming is to be available for all residents in a communal facility or in small private courtyards (*see APPENDIX C.8, APPENDIX C.9 and APPENDIX C.10)*. Two systems have been included for consideration however there are a variety of compost systems available at hardware stores.

COMMON AREAS

The lobbies, amenities and circulation areas will be supplied with suitably branded waste and recycling bins, where considered appropriate. Building management will monitor use and ensure bins are exchanged and cleaned. These areas generate negligible waste however garbage and recycling receptacles should be placed in convenient locations.

WASHROOM FACILITIES

Washroom facilities in staff areas should be supplied with collection bins for paper towels (if used). Sanitary bins for female restrooms must be arranged with an appropriate contractor.

Building management will monitor use and ensure waste bins are exchanged and cleaned.

GREEN WASTE

Any green waste will be collected and removed from site by the maintenance contractor during scheduled or arranged servicing of these areas.

EQUIPMENT SUMMARY

Table 3: *Equipment Summary*

Component	Part	Quantity	Notes
Chutes	Galvanised Steel / LLDPE Polyethylene Plastic	2	(*See APPENDIX C.2 for Typical Chute Section*)
Equipment A	eDiverter Discharge Systems	2	(See APPENDIX C.1 for Typical eDiverter)
	Garbage **Core A –** Single 1100L MGB with ceiling mounted compactor **Core B –** 2-bin Linear Track System for 1100L MGBs *Recycling* **Core B –** 2-bin Linear Track System for 1100L MGBs	N/A	(*See APPENDIX C.3 for Typical Linear System*)
Equipment B	Suitable Bin Moving Equipment	N/A	Optional (*See APPENDIX C.5 for Typical Bin Mover*)

RETAIL WASTE PLAN

The *Better Practice Guide for Waste Management and Recycling in Multi-unit Dwellings* has been referenced to calculate the total number of bins required for the retail areas. Please note that calculations are based on generic figures; waste generation rates may differ according to the tenants' waste management practice. Please note that if food tenants are placed, the waste generation rates will require adjustment. A seven day operating week has been assumed.

Table 4: *Calculated Waste Generation - Retail*

Tower	Premises	GFA	Waste Calculation (L/100m2/day)	Generated Waste (L/week)	Recycling Calculation (L/100m2/day)	Generated Recycling (L/week)
A	(G) Retail 01	85	670	3986.5	135	803.25
	(G) Retail 02	26	670	1219.4	135	245.7
	(G) Retail 03	31	670	1453.9	135	292.95
	(G) Retail 04	29	670	1360.1	135	274.05
	TOTAL	**171**		**8019.9**		**1615.95**
B	(B2) Offices	345	10	241.5	10	241.5
	(B1) Staff Canteen	100	210	1470	135	945
	(G) Retail 01	42	670	1969.8	135	396.9
	(G) Retail 02	48	670	2251.2	135	453.6
	(G) Retail 03	89	670	4174.1	135	841.05
	(G) Retail 04	42	670	1969.8	135	396.9
	(G) Retail 05	110	670	5159	135	1039.5
	(G) Retail 06	30	670	1407	135	283.5
	(G) Retail 07	36	670	1688.4	135	340.2
	(L01) Fitness Café	170	210	2499	135	1606.5
	(L01) Salon	36	40	100.8	40	100.8
	(L02) Kitchen	197	670	9239.3	135	1861.65
	(L02) Ballroom & Pre-Function	543	40	1520.4	10	380.1
	(L03) Kitchen	180	670	8442	135	1701
	(L03) All Day Dining	610	40	1708	10	427
	(L24) Speciality Restaurant	558	660	25779.6	135	5273.1
	(L25) Bar	465	80	2604	35	1139.25
	TOTAL	**3601**		**72223.9**		**17427.55**
	OVERALL TOTAL	**3772**		**80243.8**		**19043.5**

NOTE: Function Room rates have been taken from that of *Showrooms* as this was considered the most similar use.

BIN SUMMARY

Tower A
Garbage

- 2 x 1100L Garbage MGBs collected **five times weekly**

Recycling

- 1 x 1100L Recycling MGBs collected **three times weekly**

Tower B
Garbage

- 14 x 1100L Garbage MGBs collected **five times weekly**

Recycling

- 6 x 1100L Recycling MGBs collected **three times weekly**

NOTE: Subject to the stakeholders preference/capability (and as built constraints), bin sizes and quantities may be changed. As waste volumes may change according to the development's type, bin numbers and collection frequencies may be altered to suit the building operation.

WASTE MANAGEMENT

RETAIL

The tenants will be required to be responsible for their own storage of waste and recycling back of house (BOH). On completion of each trading day or as required, nominated staff/cleaners will transport their waste and recycling to the allocated retail waste area and place waste and recycling into the appropriate collection bins.

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 waste management.

Cardboard is a major component of the waste generated by cafes/restaurants. 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.

It is recommended that:

- all waste should be bagged and waste bins should be plastic lined;
- bagging of recyclables is not permitted;
- all waste collections located BOH during operations;
- individual recycling programs are recommended for retailers to ensure commingled recycling is separated correctly;
- 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 affectively bunded for chemicals, pesticides and cleaning products;
- dry basket arresters need to be provided to the floor wastes in the food preparation and waste storage areas;
- washroom facilities should be supplied with collection bins for paper towels (if used); and
- all flattened cardboard will be collected and removed to the waste room recycling MGB

NOTE: Subject to the stakeholders preference/capability (and as built constraints), bin sizes and quantities may be changed.

WASHROOM FACILITIES

Washroom facilities in retail and staff areas should be supplied with collection bins for paper towels (if used). Sanitary bins for female restrooms must be arranged with an appropriate contractor.

Building management will monitor use and ensure waste bins are exchanged and cleaned.

HOTEL WASTE PLAN

The NSW EPA's *Better Practice Guide for Waste Management and Recycling in Commercial and Industrial Facilities* has been referenced to calculate the total number of bins required for the hotel.

Waste: 5L/bed/day
Recycling: 1L/bed/day

Table: *Calculated Waste Generation - Hotel*

# Keys (Beds)	**Waste Calculation** (L/bed/day)	**Generated Waste** (L/week)	**Recycling Calculation** (L/bed/day)	**Generated Recycling** (L/week)
220	5	7700	1	1540

BIN SUMMARY

The following assumptions have been taken into consideration:

- garbage and recycling is not compacted; and
- the number of bins have been rounded up for best operational with outcome.

Using the assumptions stated, the required capacity and quantity of garbage and recycling bins is as follows:

Garbage

- 4 x 1100L Garbage MGBs collected **twice weekly**

Recycling

- 2 x 660L Recycling MGBs collected **twice weekly**

NOTE: The choice of bin sizes are subject to the stakeholders preference/capability (and as built constraints), bin sizes and quantities may be changed. As waste volumes may change according to the development's type, bin numbers and collection frequencies may be altered to suit the building operation.

WASTE MANAGEMENT - HOTEL ROOMS

The majority of people using hotel facilities spend a relatively short time at the facility therefore the waste generated in each unit is managed by the staff.

Cleaning staff will service rooms on a daily basis and remove garbage and recycling items which are stored on the cleaning trolley/s. Cleaning staff will then transport garbage and recyclable items, via the service lifts, to the relevant waste rooms on Basement Level 1. Garbage will be decanted into 1100L MGBs and recycling into 660L MGBs. Recycling must not be bagged.

Full bins will be serviced from the hotel receiving area by the appointed waste services collector according to the agreed collection schedule negotiated at the time of signing the service agreement.

WASTE HANDLING

All guests of each hotel suite will be supplied with a collection receptacle in each unit (generally in the main room and bathroom, under bench or similar alternate area) to deposit garbage and collect recyclable material suitable for one days storage. Garbage receptacles must be supplied with bin liners. Recycling must not be bagged. It is recommend that hotel guests use a crate or dedicated bin for collecting recyclables within the allocated hotel space provided to ensure correct separation before recyclables are transferred by cleaning staff to the garbage room. It is expected that hotel guests will place clean and empty recycling items into the collection bins.

WASTE MANAGEMENT - HOTEL BOH

Waste management at the hotel will primarily be the responsibility of hotel management and associated staff. Most waste generated is from goods received at the loading dock in the form of packaging (cardboard and plastic film), food waste, recyclables (mixed containers), newspapers and magazines (recycling). Office paper (recycling) may also be generated however this is generally a minimal quantity.

The hotel restaurant will dispose of waste via the service lift, decanting into 1100L MGBs and 660L MGBs for garbage and recycling respectively in the relevant waste rooms on Basement Level 1. Recycling must not be bagged.

Conference meeting areas, staff rooms and hotel offices will require a receptacle for collecting waste and recycling however these areas generate minimal waste, usually paper product. Cleaners/hotel staff will monitor bin requirements.

All staff will be responsible for separation of waste streams and disposal into the correct waste or recycling bin.

Any appointed cleaning contractors or cleaning staff should demonstrate sustainable practises in order to ensure that segregated materials are disposed of in the correct bins. A training process for all cleaners should be implemented to ensure all cleaners have a full understanding of their requirements

Key performance indicators for recycling performance should be included in the cleaning contract and cleaners should be required to provide feedback to building management regarding any non-compliance issues observed during their daily cleaning activities such as contamination, non-participation or missing/damaged bins. This will allow hotel management to act promptly to rectify these issues.

WASTE HANDLING

FOOD WASTE (FOOD PREPARATION AREAS)

Hotel management may employ the services of a food consultant who may recommend the use of an organic waste dehydrator or commercial composting system. An organic waste dehydrator has the ability to treat all wet waste including food, paper and cardboard for the hotel operational areas. The system will also treat all organic waste (vegetation) and the treated waste can be disposed of as a reduced waste.

Alternately, organic waste can be disposed of in wheeled collection bins. It is noted that untreated organic waste is generally wet and therefore heavy and smaller bins should be utilised for ease of movement and to meet manual handling requirements.

GLASS RECYCLING

Glass bottles are likely to account for the highest composition of recycling waste generated at the hotel. It is recommended that use of bottle crusher/s be investigated (*See APPENDIX C.7 - GLASS CRUSHER*). The glass crusher should reduce and recycle all glass bottles generated by the hotel bar and restaurant.

The glass generation rate is unknown and it is recommended that a supplier be contacted and a free trial period be negotiated with a crusher to ascertain volume.

Glass crushers may be located in key generation points with the machine depositing crushed glass into 60L MGB (capacity 20 – 25kg to meet manual handling requirements).

Each machine should be capable of crushing 100 bottles per minute. The glass crusher should be low noise, with no need to sort glass types or remove corks, caps, straws or lemon slices.

Collection of crushed glass product on a scheduled basis should be included in the service agreement with the glass crusher equipment provider.

Alternately, glass items should be deposited in recycling bins.

CARDBOARD

Cardboard packaging is likely to be a high proportion of the waste composition generated at the hotel. Hotel management may consider the use of a cardboard baler (*See APPENDIX C.6 - VERTICAL BALER*); alternately staff will dispose of flattened cardboard product in the recycling bins.

COMMINGLED RECYCLING

Comingled recycling waste such as plastic bottles, steel and aluminium cans are disposed in 660L MGB's. These bins will be stored in the hotel recycling room on basement level 1 and collected from the hotel BOH loading area.

USED COOKING OIL

Hotel management will make arrangements for the storage and collection of used cooking oil in a collection container which will be serviced by the appointed contractor on an as required basis. Hotel management will make arrangements for storing used cooking oil prior to collection or pumping by the appropriate recycler and arrange for oil recycling services generated by the site to be serviced on a monthly basis or as required. Nominated hotel staff will be responsible for draining oil and safely transporting to the recycling storage area. The nominated oil recycler will provide the necessary training to hotel management and nominated staff.

OTHER WASTE STREAMS

Empty milk/bread plastic crates will be transported BOH for storage prior to collection by the supplier. All agreements with milk/bread vendors must include regular removal of redundant plastic crates to prevent build-up of material on site. Stacked crates can cause a safety hazard.

Area	Recommendation
Overall	• all waste should be bagged and waste bins should be plastic lined; • bagging of recyclables is not permitted; • all waste collections located BOH during operations; • dry basket arresters need to be provided to the floor wastes in the food preparation and waste storage areas; • restaurant and bar are supplied with waste and recycling collection receptacles back of house (BOH) to be transported by restaurant/bar staff, building management/ cleaners to the collection area daily
Waste	• Stored in appropriate containers located within BOH • Transfer to waste storage area as required
Recycling	• individual recycling programs are recommended for retailers to ensure commingled recycling is separated correctly; • 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.
Grease trap	Building management responsible for the servicing of grease traps
Hazardous waste	• a suitable storage area needs to be provided and affectively bunded for chemicals, pesticides and cleaning products;

WASTE ROOM AREAS

The recommended areas to be allocated for residential waste room, bulky goods, retail bin stores, and hotel waste rooms are detailed in Table 5 below. The architectural drawings should reflect the recommended waste room sizes and bin numbers below:

Table 5: *Waste Room Areas*

Location	Waste Room Type	Equipment	Allocated Area (m^2)
Tower A	Residential Waste/Chute Discharge Room	1 x 1100L MGB with ceiling mounted compactor – Garbage (A) 1 x 2-bin Linear Track System for 1100L MGBs with ceiling mounted compactor – Garbage (B) 1 x 1100L MGB – Recycling (A) 1 x 2-bin Linear Track System for 1100L MGBs – Recycling (B) 5 x 1100L MGB (Garbage) 5 x 1100L MGB (Recycling)	>63
	Tower A Retail Waste Room	3 x 1100L MGB	>10
	Bulk Goods Storage	N/A	>8m^3
Tower B	Hotel/Retail Garbage Waste Room	18 x 1100L MGB	>40
	Hotel/Retail Recycling Waste Room	2 x 660L MGB 6 x 1100L MGB	>25

COLLECTION OF WASTE

All garbage and recycling generated within this development will be collected by a private contractor, with the intention being for a single contractor to carry out the collections. This will take place at the loading area located on basement level 1.

Waste from the two units in Tower A without basement assess will be deposited into two 240L MGBs located in the adjacent compartment on the lower ground floor. The building manager/waste caretaker will then transport these bins to the collection area for servicing.

The building manager/waste caretaker is responsible for the movement and transportation of all bins. It is recommended that the transportation of 1100L MGBs is carried out with the aid of a bin mover to reduce the requirement of manual handling.

RESIDENTIAL

Residential garbage and recycling will be collected twice a week.

All full garbage and recycling bins are to be neatly arranged and separated for the ease of servicing.

Upon completion of emptying, the bins are to be returned to their respective locations to resume operational use.

RETAIL

Retail waste streams will be collected at least three times a week from each tower.

Prior to collection times, the building manager/waste caretaker must ensure that all bins are neatly arranged within the retail bin room for the ease of servicing.

COLLECTION AREA

Where collection vehicles are required to enter a building (to collect waste and recycling), the following access controls apply:

- Maximum grade 1:20 for first 6 metres from street, the 1:8 or 1:6.5 with a transition of 1:12 for 4 metres at lower end
- Minimum vertical clearance height required is 4 metres (note: clearances must take into account service ducts, pipe works, etc.)
- Minimum width of driveway required is 3.6 metres
- Minimum radius of the turning circle required is 10.5 metres
- Collection vehicles shall enter and exit in a forward direction
- Collection point for waste shall comply with relevant Australian Standards for loading bays.

It is Elephant Foot's understanding that the collection areas have been reviewed by a traffic consultant (or equivalent) to confirm the swept paths for waste collections, access and egress, internal manoeuvring to assume parked position for loading and to exit, load requirements as well as collection vehicle. 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 movements will depend on management of waste contract; final configuration of waste and recycling arrangements therefore number of bin lifts and additional irregular truck movements for hard waste.

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;
- all personnel doors are hinged 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 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.

STORM WATER PREVENTION & LITTER REDUCTION

Building management shall be responsible for the following to minimise dispersion of site litter and prevent stormwater pollution to avoid impact to the environment and local amenity:

- promote adequate waste disposal into the bins;
- secure all bin rooms (whilst affording access to staff/contractors);
- prevent overfilling of bins, keep all bin lids closed and bungs leak-free;
- take action to prevent dumping or unauthorised use of waste areas; and
- ensure collection contractors clean-up any spillage that may occur when clearing bins

ADDITIONAL INFORMATION

Transfer of waste and all bin movements require minimal manual handling therefore the operator must assess manual handling risks and provide any relevant documentation to building management. If required, a bin-tug, trailer or tractor consultant should be contacted to provide equipment recommendations. Hitches may require installation to move multiple bins to the collection area. Council must be informed of any hitch attachments required to be installed on bins.

LIMITATIONS

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

- Drawings, estimates and information contained in this waste management plan have been prepared by analysing the information, plans and documents supplied by you 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.

USEFUL CONTACTS

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

City of Sydney Council Customer Service
Phone: 02 9265 9333 Email: council@cityofsydney.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

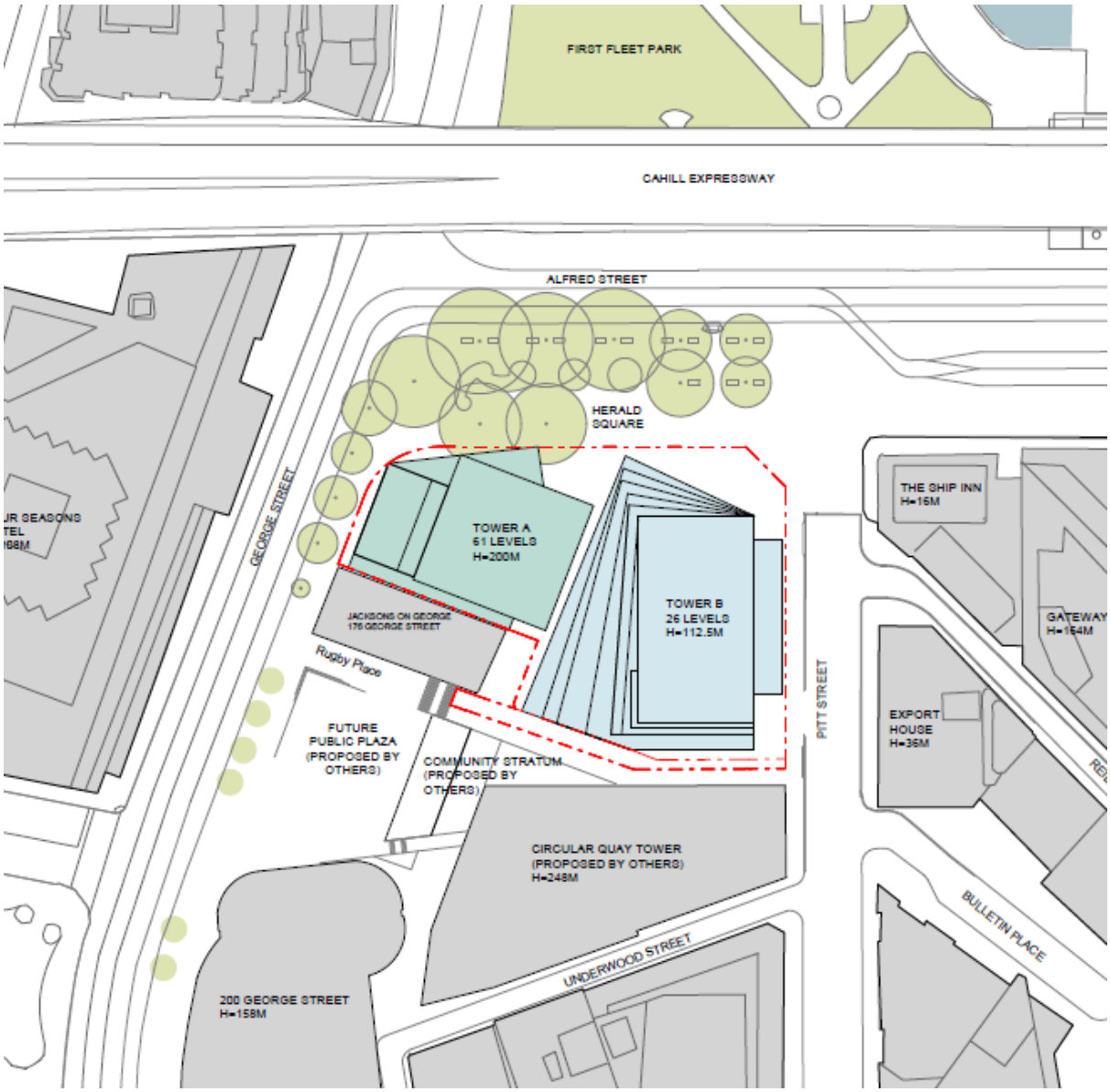
PURIFYING SOLUTIONS (Odour Control)
Phone: 1300 636 877 Email: sales@purifyingsolutions.com.au

Elephants Foot Recycling Solutions (Chutes, Compactors and eDiverter Systems)
44 – 46 Gibson Avenue
Padstow NSW 2211
Free call: 1800 025 073 Email: natalie@elephantsfoot.com.au

APPENDICES

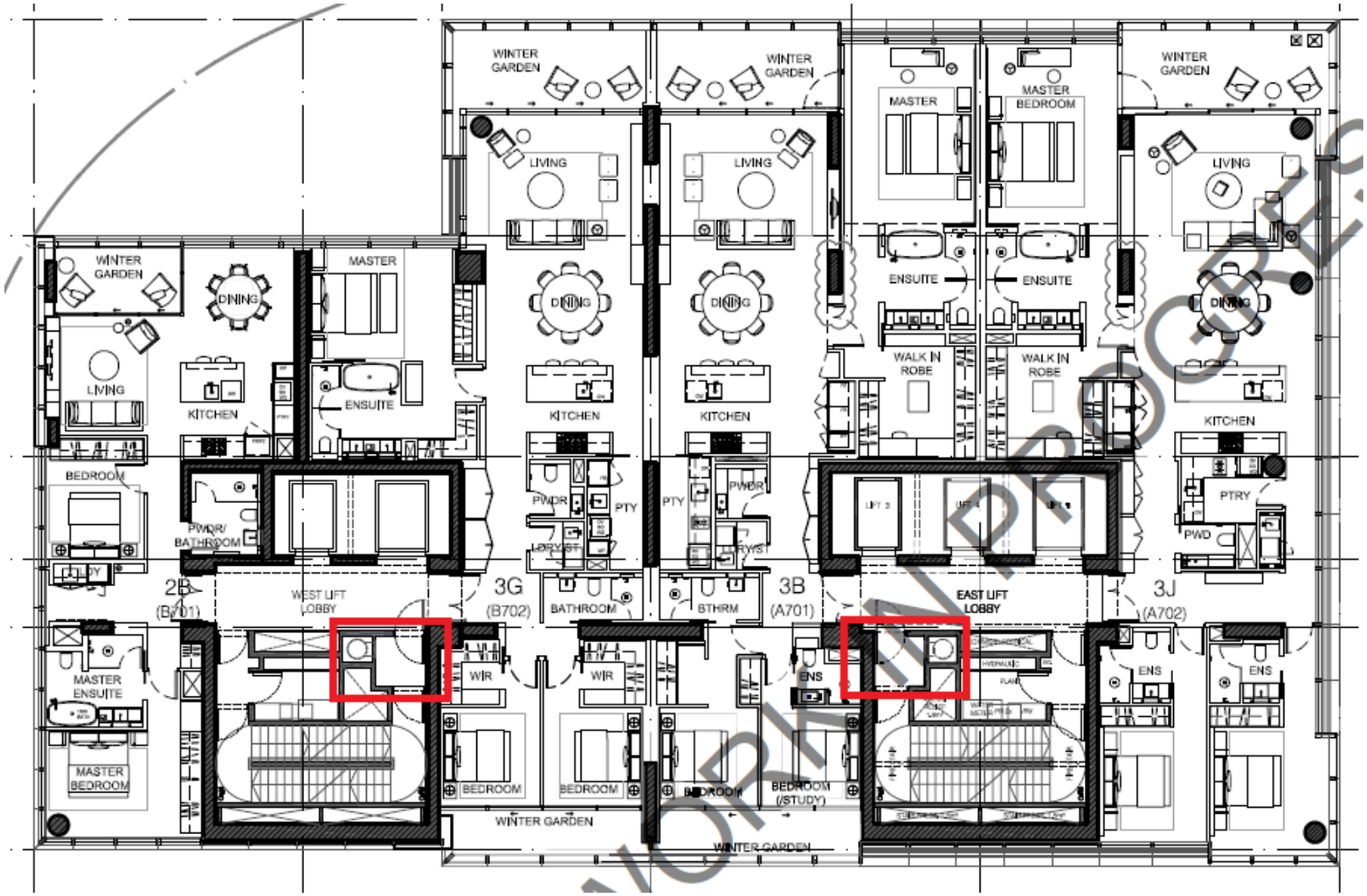
APPENDIX A DRAWING EXERPTS

APPENDIX A.1 SITE PLAN

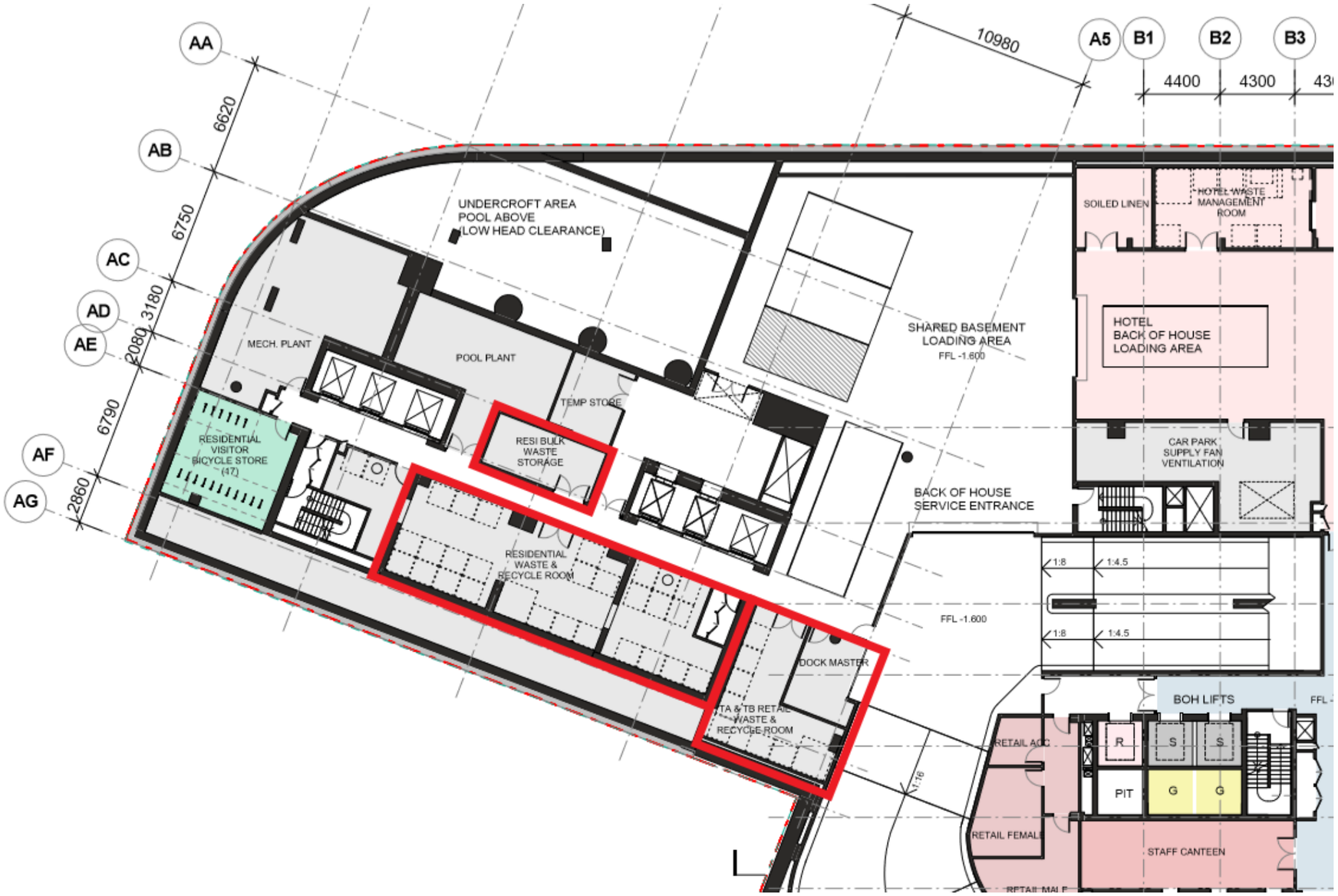


SOURCE: Crone Architects, Drawing No. 0101, Rev E – Site Plan

APPENDIX A.2 TYPICAL CHUTE ACCESS LOCATION

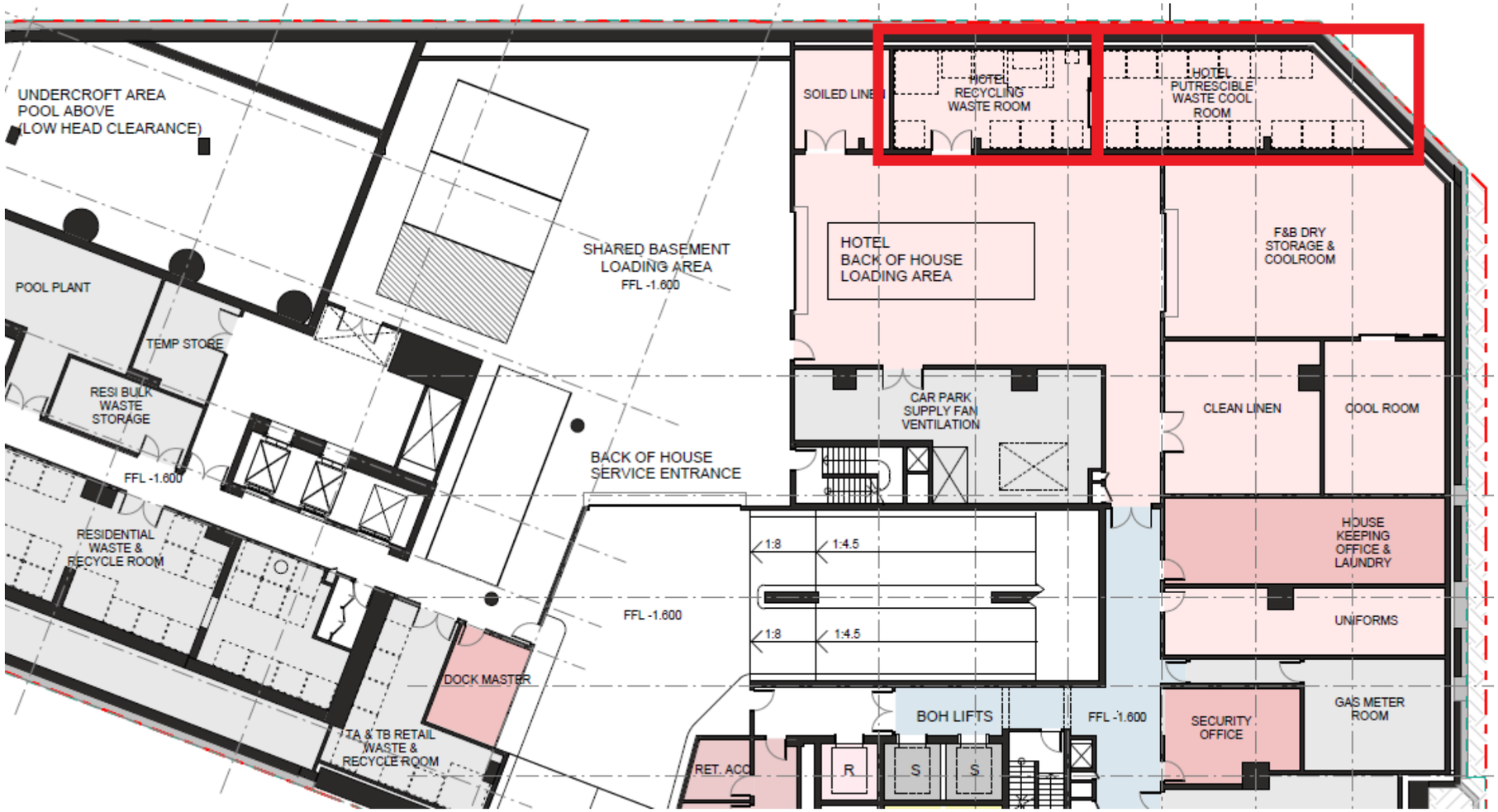


SOURCE: Kerry Hill Architects, Drawing No. A1070, Iss.E – Level 7-11 Plan (Tower A)



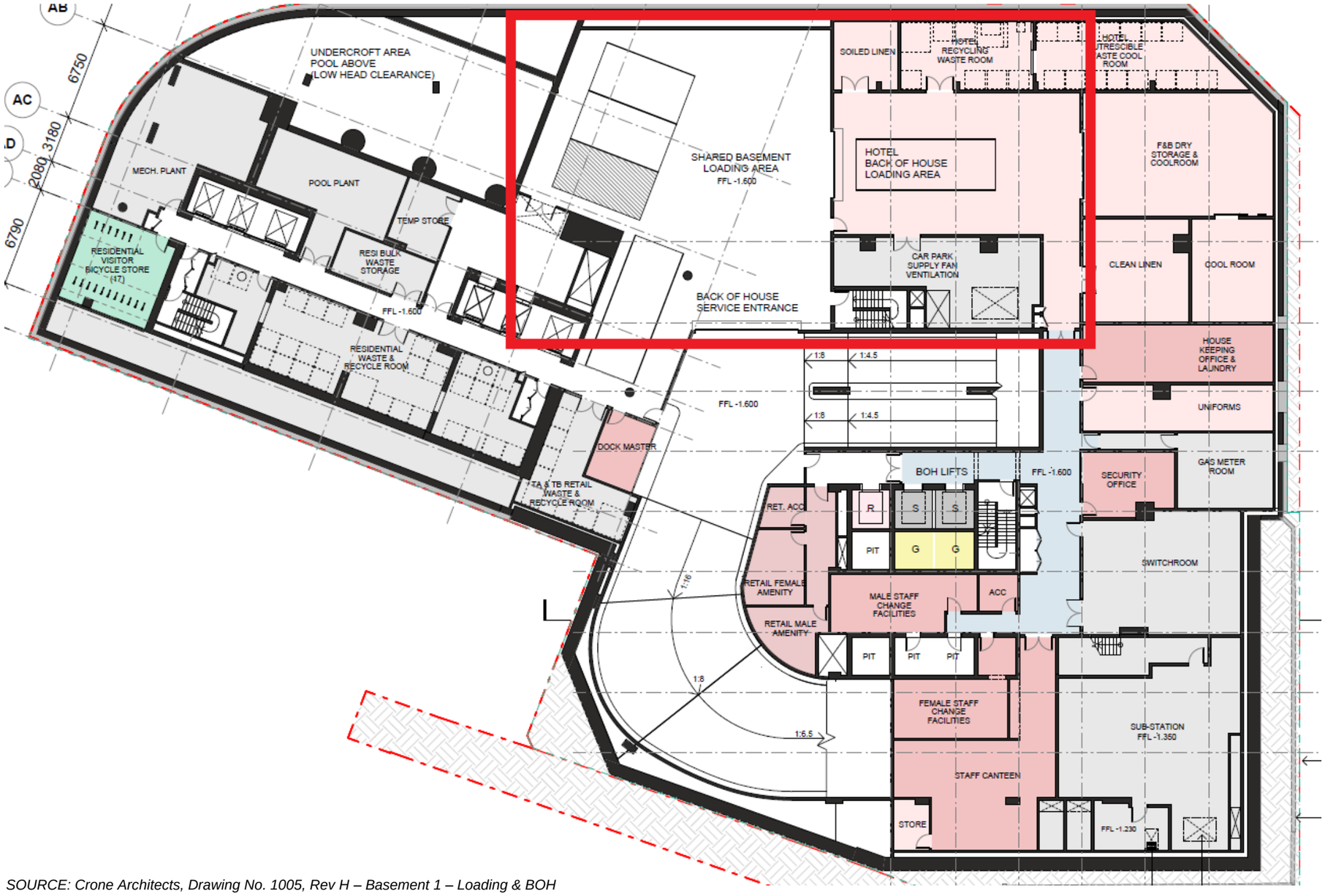
SOURCE: Crone Architects, Drawing No. 1005, Rev H – Basement 1 – Loading & BOH

APPENDIX A.4 TOWER B WASTE ROOMS



SOURCE: Crone Architects, Drawing No. 1005, Rev H – Basement 1 – Loading & BOH

APPENDIX A.5 LOADING AREA



SOURCE: Crone Architects, Drawing No. 1005, Rev H – Basement 1 – Loading & BOH

APPENDIX B EQUIPMENT SPECIFICATIONS

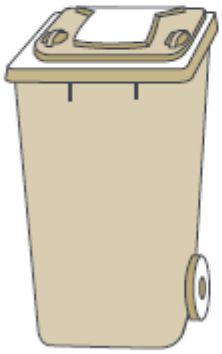
APPENDIX B.1 BIN DIMENSIONS

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

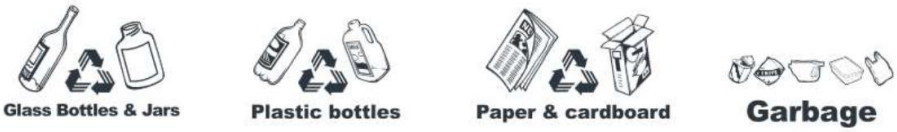
APPENDIX B.2 SIGNAGE FOR WASTE & RECYCLING BINS

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

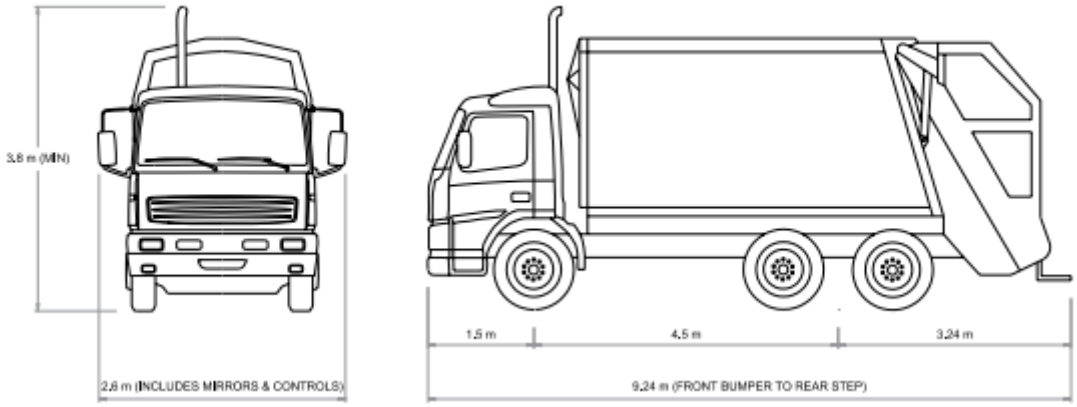
The design and use of safety signs for waste rooms and enclosures should comply with AS1319 Safety Signs for Occupational Environment. Safety signs should be used to regulate and control safety behaviour, warn of hazards and provide emergency information, including fire protection information. Below 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: Better Practice Guide to Waste Management in Multi-Unit Dwellings, 2008, DECC

APPENDIX B.3 TYPICAL COLLECTION VEHICLE INFORMATION

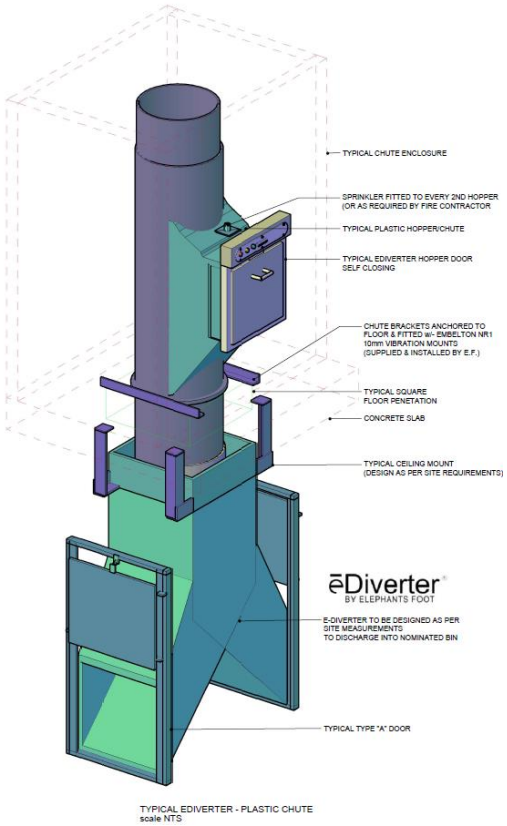


Rear loading collection vehicle for MGBs	
Length overall	9.54 m
Width overall	2.6 m
Operational height	4 m
Travel height	3.8 m
Weight (payload)	26 tonnes

Source: City of Sydney Council Policy for Waste Minimisation in New Developments (2005)

APPENDIX C WASTE MANAGEMENT EQUIPMENT SPECIFICATIONS

APPENDIX C.1 TYPICAL eDIVERTER



TYPICAL EDIVERTER - PLASTIC CHUTE
scale NTS

eDiverter® BY ELEPHANTS FOOT

eDiverter specifications:

- split system body 5mm plate with two bottom out lets;
- steel impact hopper for garbage and recycling products;
- hopper bin feeds and containments which flow waste and recyclables directly into collection bins;
- shut out door with manual over ride to close off chute fitted with fusible link;
- internal diverter plate 5mm activated by a hydraulic cylinder;
- hydraulic power pack with single phase 0.55kW motor and all associated connections;
- PLC control box in garbage room, programmed to operate diverter and lock out doors;
- 12 core 24 volt cables mounted to the external of chute pipes;
- doors fitted with electronic lock out normally closed solenoid;
- at each level above every chute door, four bottom operating switch board;
- electric connections at each station; and
- system connections and operation from every level - test and commission

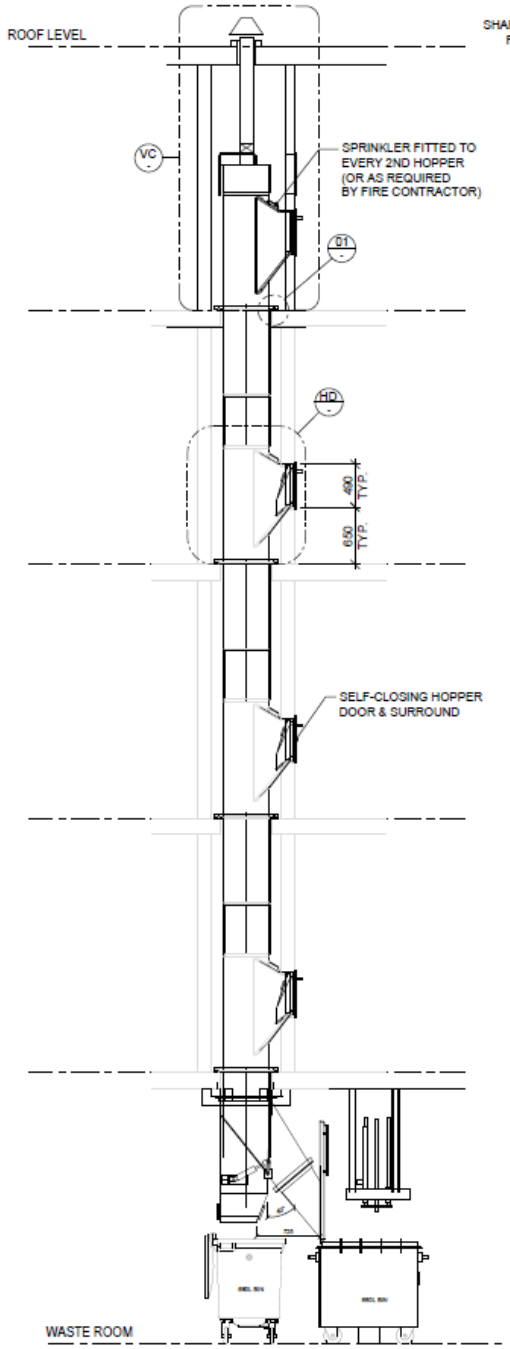
ACOUSTICS

It is recommended that the walls of the shaft area surrounding the chutes and the chute hopper system construction be built to an Rw 50 construction. This is required to ensure acoustic compliance with typically recommended noise levels. Please note that noise from garbage chutes is not regulated by the BCA.

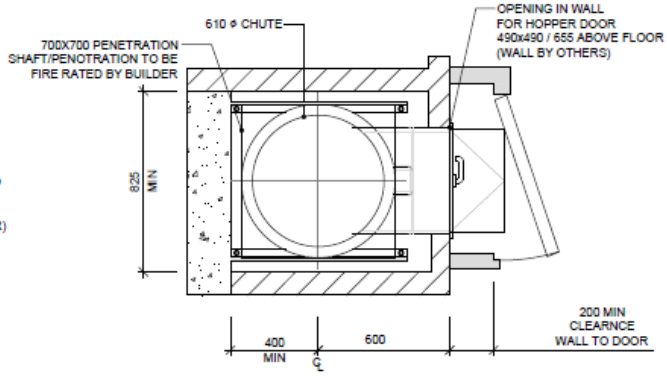
The following table supplies acoustic criteria that are typically recommended as a satisfactory internal noise level in apartments during the use of chute systems.

Space Type	**Allowable Maximum Level** (dB(A)L max)
Bedrooms	30
Living Room	35

APPENDIX C.2 TYPICAL CHUTE PLAN & ELEVATION

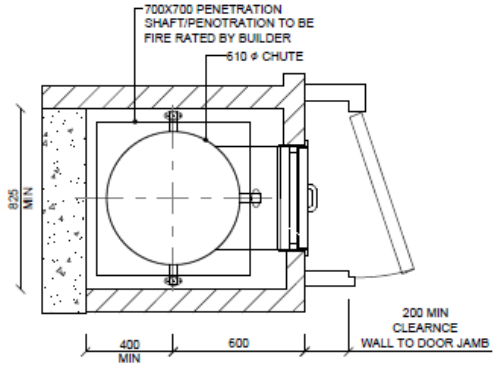


TYPICAL PLASTIC CHUTE ELEVATION
WITH EDIVERTER
SCALE 1:50



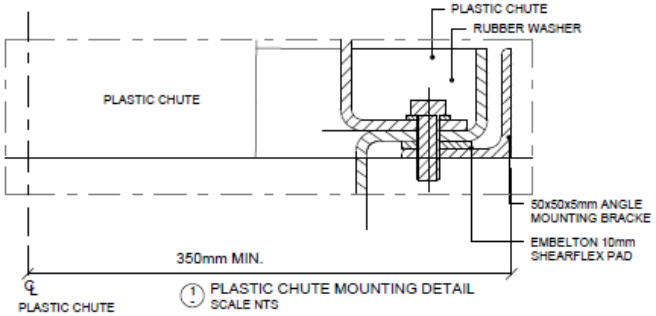
TYPICAL LLDPE PLASTIC SINGLE CHUTE LAYOUT
w/ADDED ENCLOSURE (610Ø)
SCALE 1:20

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



TYPICAL GALV. STEEL SINGLE CHUTE LAYOUT
w/ADDED ENCLOSURE (610Ø)
SCALE 1:20

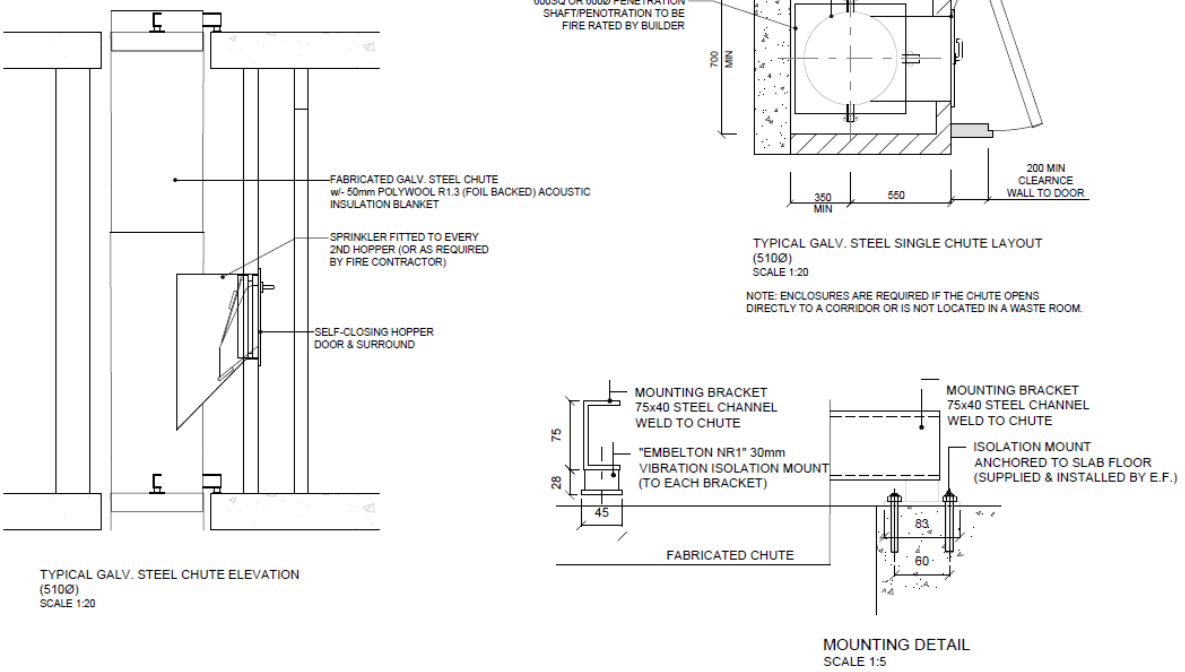
NOTE: ENCLOSURES ARE REQUIRED IF THE CHUTE OPENS DIRECTLY TO A CORRIDOR OR IS NOT LOCATED IN A WASTE ROOM.



1 PLASTIC CHUTE MOUNTING DETAIL
SCALE NTS

NOTES:

NO SERVICES ARE TO BE INSTALLED WITHIN A MINIMUM OF 200mm OFFSET AROUND ANY ELEPHANTS FOOTS CEILING MOUNTED EQUIPMENT AND PENETRATIONS.

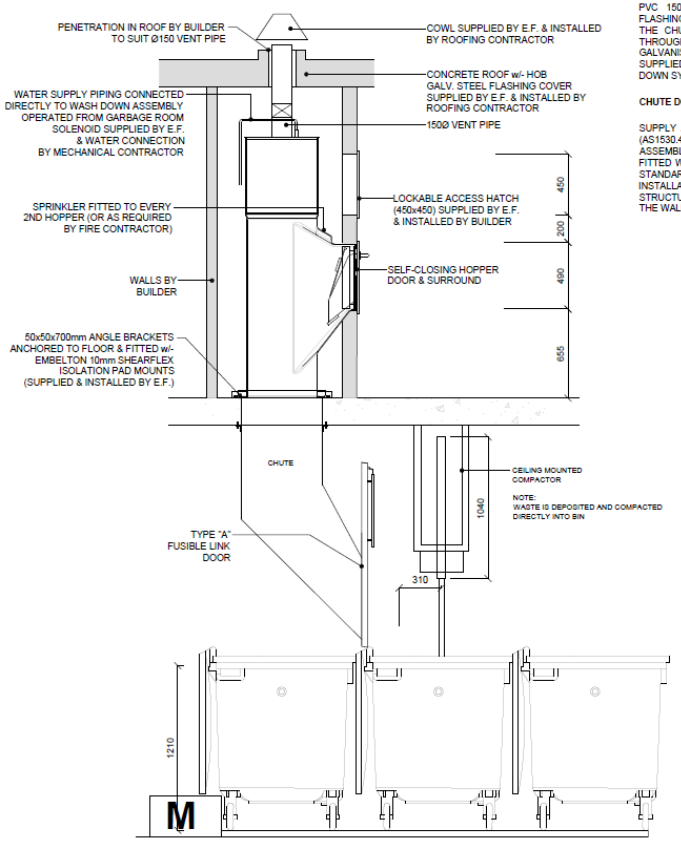


Waste chutes are supplied per the following specifications:

- either 510mm galvanised steel or 510mm recycled LLDPE polyethylene plastic;
- galvanised steel chute hoppers are wrapped with 50mm poly-wool R1.3 noise insulation foil to assist in noise reduction;
- penetrations on each building level at vertically perpendicular points with minimum penetration dimensions of 600mm x 600mm (square or round) are required to accommodate the chute installation;
- a wash down system and vent should also be included as part of the chute system;
- council and supplier require that all chutes are installed without offsets to achieve best practise operationally for the building; and
- two hour fire-rated (AS1530.4-2005) stainless steel refuse chute doors at each service level. All doors are to be fitted with a self-closing mechanism to meet BSA fire standards.

NOTE: Chute doors are installed after walls rendered, painted or when required. Information stickers will be placed on each chute door at each residential level

APPENDIX C.3 TYPICAL LINEAR SYSTEM TO SUIT 1100L MGB



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)

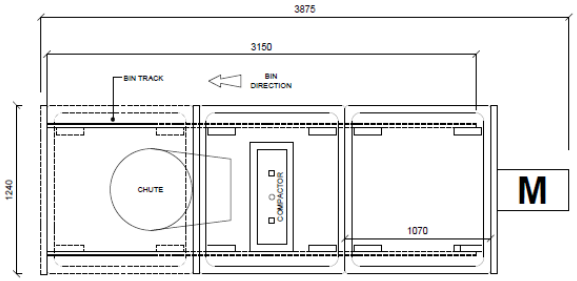
ELECTRICAL

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

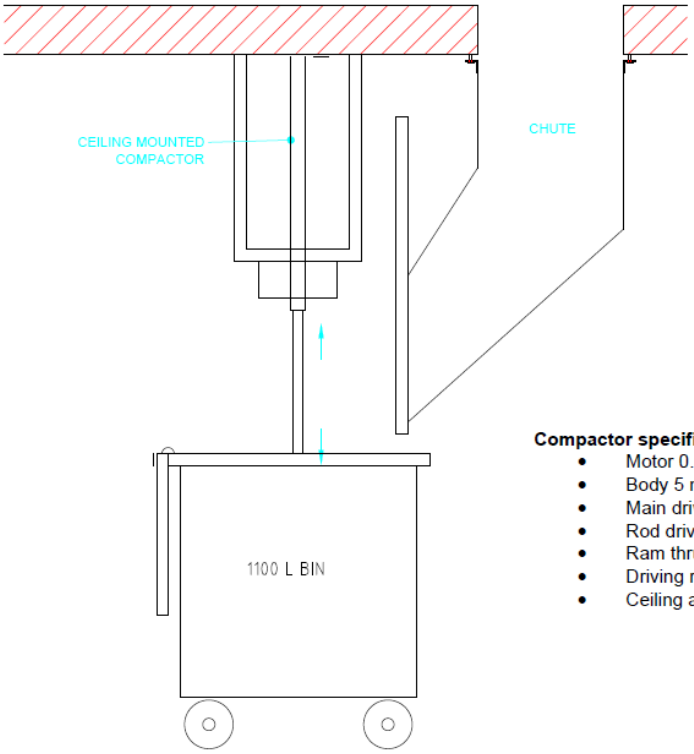
ELEPHANTS FOOT SUPPLY BALERS SUITABLE FOR BALING CARDBOARD PRODUCT IN COMMERCIAL, RETAIL AND RESIDENTIAL AREAS. BALED PRODUCT REDUCES THE REQUIREMENTS FOR ADDITIONAL COLLECTION EQUIPMENT. STATE OF THE ART COMPACTORS ARE ALSO AVAILABLE IN AUGER, BLADE AND ECO MODELS.



TYPICAL 2-BIN 1100L LINEAR WITH COMPACTOR
SCALE NTS

ELEPHANTS FOOT WASTE COMPACTORS PTY LTD **ABN** 70 001 378 294
Sydney Head Office 44-46 Gibson Ave Padstow NSW 2211 | **PH**: +612 9780 3500 | **Fax**: +612 9707 2588
Website: www.elephantsfoot.com.au | **Email**: info@elephantsfoot.com.au
Offices in Victoria & Queensland – **Toll Free**: 1800 025 073

APPENDIX C.4 SINGLE 1100L MGB WITH COMPACTOR



SIDE ELEVATION
scale 1:20

Compactor specification:

- Motor 0.55 kw, 415 volts, 6 poles
- Body 5 mm EFWC design.
- Main drive sprocket 17 teeth x 3/8 pitch
- Rod drive sprocket 57 teeth 3/8 pitch
- Ram thrust force 1 tonnes
- Driving rod 1 1/8 UNC threaded bar
- Ceiling and floor mounting (subject to design of room)

APPENDIX C.5 TYPICAL BIN MOVER

Typical applications:

- Move trolleys, waste bin trailers and 660litre/1100 litre bins up and down a ramp incline. Ideal for Apartment Buildings (to move waste bins located at a basement level to road level).
- Quiet, smooth operation with zero emissions and simple to use, no driver's licence required

Features:

- Up to 1 Tonne on a ramp surface (depending on ballast and incline)
- Anti-rollback system on slopes
- Foot print: 1548L x 795W x 1104H (handle in the drive position)
- Pin Hitch is standard however alternate hitching options may be available to suit your specific application (e.g. tow ball)

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 C.6 VERTICAL BALER

EF100VX Vertical Baler

The EF100VX ia a low height baler making it easy to install with no onsite assembly required. It is a low noise baler with a fast cycle time and front loading ropes. This unit requires 3 phase power.

EF100VX produces bales of cardboard up to 90kg. It can be used to bale a range of materials including plastic film, shredded paper, PET and cardboard.

Description	Specification
Machine Dimensions H x W x D (mm)	1945x1265x835
Machine Weight (kg):	650
Feed Opening H x W (mm):	670×800
Bale Size H x W x D (mm):	800x600x600
Bale Weight (cardboard):	Up to 90 kg
Compaction Force:	10 Tonnes
Motor:	4kW
Electric Supply:	400/230 volt
Cycle Time (sec):	18
Type of Tie/No. of ties:	9mm Tape/ 2 off
Type/No. of Retaining Claws Front:	Serrated edge / 2 off
Type/No. of Retaining Claws Rear:	Serrated edge / 2 off
Method of Removing Bales:	Mechanical Ejection
Depth of Chamber Below Feed Opening (mm):	700
Access for Forklift/Pallet Truck:	Yes, Side
Electric Rating Standard:	IP55
Electric Rating Optional:	IP65
Sound Level:	60 dBA

APPENDIX C.7 GLASS CRUSHER

Bottle Buster

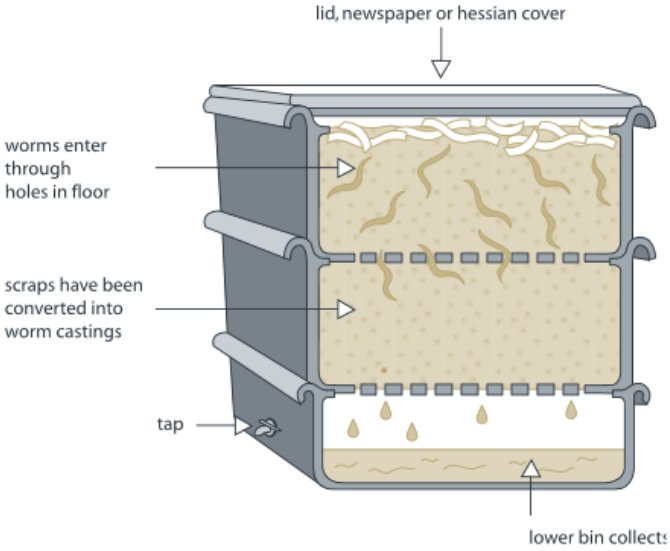
The bottle buster has a capacity of reducing 80 bottles to approximately a 20 litre container.

The unit can be modified to have the glass fall onto any size container.

Features & Benefits
Machine size: W600 x D600 x H1200mm
Feed bottles continuosly
Can be fitted over 20 – 240 liter bin *
Power supply: 240 volt standard power point required
Fully automatic operations
No installation required
12 months warranty – reliable after sales service

APPENDIX C.8 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 C.9 TYPICAL APARTMENT STYLE COMPOST BINS

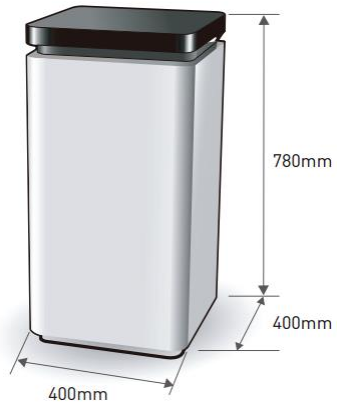
Apartment Style Compost bin – available from hardware stores

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 C.10 ELECTRIC ORGANIC COMPOST BIN

CLOSED LOOP
LOVE WHAT YOU DO
CLO'ey



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*

APPENDIX C.11 TYPICAL PUBLIC PLACE WASTE BINS

** Products and specifications may change according to manufacturer.*

SOURCE: *SULO Environmental Technology*