WASTE MANAGEMENT PLAN

PREPARED FOR

KAPAU HOLDINGS PTY LYD

ON BEHALF OF

KANNFINCH

Mixed Use Development

BELMORE STREET, CONDER STREET & WYNE AVENUE
BURWOOD

29/05/2018

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

REVISIONS

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EXECUTIVE SUMMARY

This waste management plan covers the ongoing management of waste generated by the mixed use development called Burwood Grand located at Belmore Street, Conder Street & Wyne Avenue, Burwood.

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
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 Belmore Street, Conder Street & Wyne Avenue, Burwood. This waste management plan is an operational waste management plan and will address the phases of the completed development.

For the purpose of this report the proposed development will consist of:

- 3 buildings
  - 498 residential units (see Table 1 for Unit Breakdown Matrix)
  - 1,697 m^2 for retail outlets
  - 3730 m^2 for commercial offices
  - 168 m^2 for Masonic Temple

Table 1: Unit Breakdown Matrix

Building	# Units	% Mix
Building A	88	17.67
Building B	226	45.38
Building C	184	36.95
Total	**498**	**100**

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

BURWOOD CITY COUNCIL

The assessment of waste volumes is an estimate only and will be influenced by the development's management and occupant's attitude to waste disposal and recycling.

The residential waste and recycling will be guided by the services and acceptance criteria of the Burwood City 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 *Burwood Development Control Plan* (amended 4 March 2014), Australian Standards and statutory requirements.

OBJECTIVES

- To reduce the demand for waste disposal through waste separation and resource recovery in demolition, design, construction and operation of buildings and land use activities.
- To achieve the design of waste and recycling storage systems in buildings and land use activities which are hygienic, accessible, quiet to operate, adequate size and visually compatible with their surroundings.

REQUIREMENTS IN MULTI DWELLING HOUSING AND RESIDENTIAL FLAT BUILDINGS

- Development application must include a competed copy of Part 1 of the waste management plan.
- Location of each dwelling's indoor waste/recycling cupboard (or other appropriate space).
- Location of individual waste/recycling storage areas (e.g. for townhouses) or a communal waste/recycling storage room'/s for Council's waste, recycling and greenwaste bins.
- Location of any waste chute/s.
- Location of any service rooms (for accessing a waste chute) on each floor of the building.
- Location of any compaction equipment.
- A nominated kerbside collection point for the collection of the waste, recycling and greenwaste bins.
- The access way for moving bins from the storage area to the collection point (if storage is way from collection point).
- The on-site path of travel for collection vehicles (if collection is occurring on site).

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.

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

Using council's waste generation rates, the total waste generated by the development can be calculated as follows:

Waste: 1 x 240L per 2 dwellings (or 660L)
Recycling: 1 x 240L per 2 dwellings
Green Waste: up to 3 x 240L bins per unit block

For the purposes of this waste management plan the following simplified waste generation calculations have been used.

Waste: 120L per Unit per Week
Recycling: 60L per Unit per Week

Building/ Core	**# Units**	**Generated Waste** (L/week)	**Compacted Waste** (2:1) (L/week)	**Generated Recycling** (L/week)
Building A	88	10560	5280	5280
Building B	226	27120	13560	13560
Building C	184	22080	11040	11040
TOTAL	**498**	**59760**	**29880**	**29880**

BIN SUMMARY

The following assumptions have been taken into consideration:

- Garbage is compacted at the base of each chute;
- Recycling bins are located in the wast compartment on each level; and
- 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 have been calculated and tabulated respectively in the following tables:

Table 2: *Bin Summary – Residential*

	Garbage			**Recycling**		
Building/Waste Rooms	**Bin Capacity** (L)	**Quantity**	**Collection Rate** (times/week)	**Bin Capacity** (L)	**Quantity**	**Collection Rate** (times/week)
Building A Residential Waste Room	660	4	2	240	22	1
Building B Residential Waste Room	660	11	2	240	57	1
Building C Residential Waste Room	660	9	2	240	47	1
Total	**660**	**24**	**2**	240	**126**	**1**

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

3 waste chutes will be supplied by Elephants Foot and installed. Breakdown is as follows:

Building 1: single waste chute
Building 1: single waste chute
Building 1: single waste chute

Garbage discharges into 660L MGBs which is compacted. The discharge is located in the waste rooms for each building. Recycling bins will be situated in the waste compartment on each residential level for collection of recyclable items. Full waste and recycling bins will be transferred to the collection area on Level B1 / Lower Ground (see *Appendix A.3)* for servicing by Council.

WASTE HANDLING

WASTE

All residents of each building 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.

The caretaker/cleaner will be required to check the 240L MGB collecting waste from each chute, rotate full bins to the storage and collection area, and replace empty 240L MGB under each chute operation.

RECYCLING

Cardboard furniture boxes or large cardboard containers should not be included in the waste chute.

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.

The caretaker/cleaner's duty is responsible for exchanging or emptying recyclable bins and storing them in the main bin storage room located on lower ground level, ready for collection.

TEMPORARY STORAGE OF BULKY GOODS

Developments which include at least 10 dwellings will need a dedicated storage area of at least 15m² for the temporary storage of bulky items to be removed. Additional dwellings (that is every 10 dwellings) will require extra storage space again. The storage area must be easily accessible to all residents, located close to the main waste/recycling room/s, and sign marked appropriately.

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.

It is further noted that building management will be required to implement a booking system for all bulky goods movements. Residents will be required to liaise with building management to book a collection and no goods will be moved to the temporary holding area until the booking is approved by building management and a collection booked for removal of goods. Building management and residents will work together regarding movement of goods according to size and type of item to be moved. Each movement will be on a case by case basis with building management overseeing all movements. No goods will be allowed to be transported without a booking.

Once a collection is arranged, the bulky goods will be transported from the temporary holding area, via a service or goods lift, to the B1/Lower Ground floor loading dock, to be collected.

OTHER WASTE STREAMS

Disposal or recycling of electronic, liquid waste and home detox (paint/chemicals) etc. shall be organised with the assistance of the building caretaker, where required. Recyclable electronic goods include batteries, equipment containing printed circuit boards, computers, televisions, fluorescent tubes and smoke detectors. These items may not be disposed in waste or recycling bins for safety and environmental reasons. Residents should be directed to Councils comprehensive website for further information.

COMPOSTING

Each dwelling (townhouse or villa developments) must be provided with an on-site compost container storage area (although current residents may not want to operate a compost container, there is a space for future residents) (*see APPENDIX C.6 and APPENDIX C.7 for Typical Compost Bins)*. Two systems have been included for consideration however there are a variety of compost systems available at hardware stores.

COMMON AREAS

The lobbies, retail 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 retail and staff areas 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.

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

GREEN WASTE

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

WASTE CHUTES

Waste chutes for each level of the residential building 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.

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

EQUIPMENT SUMMARY

Table 3: *Equipment Summary*

Component	Part	Quantity	Notes
Chutes	Galvanised Steel / LLDPE Polyethylene Plastic	3	Chute Diameter (*See APPENDIX C.1 for Typical Chute Section*)
Equipment A	*Garbage* Carousel for 660L MGB with compactor	2	(*See APPENDIX C.3 for Typical Carousel*)
	Garbage Linear for 660L MGB with compactor	1	(*See APPENDIX C.2 for Typical Linear System*)
Equipment B	Suitable Bin Moving Equipment	1	Optional (*See APPENDIX C.4 for Typical Bin Mover*)

RETAIL WASTE PLAN

The Burwood City Council's *Development Control Plan* 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*

Type	NLA (m^2)	Waste Calculation ($L/100m^2$/day)	Generated Waste (L/week)	Recycling Calculation ($L/100m^2$/day)	Generated Recycling (L/week)
Food	848.5	80	4751.6	135	8018.325
Non-Food (>100m^2)	848.5	50	2969.75	50	2969.75
TOTAL	**1697**		**7721.35**		**10988.075**

BIN SUMMARY

Table 5: *Bin Summary – Retail*

Garbage			Recycling		
Bin Capacity (L)	**Quantity**	**Collection Rate** (times/week)	**Bin Capacity** (L)	**Quantity**	**Collection Rate** (times/week)
660	6	2	660	9	2

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

The retail 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.

On completion of each trading day or as required, nominated retail staff/cleaners will transport their waste and recycling, using the access corridor, to the retail waste room on lower ground level and place waste and recycling into the appropriate collection bins (s*ee Appendix A.1*).

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.

COMMERCIAL WASTE PLAN

The Burwood City Council's *Development Control Plan* has been referenced to calculate the total number of bins required for the commercial areas. Please note that calculations are based on generic figures; waste generation rates may differ according to office practice. A seven day operating week has been assumed.

Table 6: *Calculated Waste Generation – Commercial*

Type	NLA (m^2)	Waste Calculation ($L/100m^2/day$)	Generated Waste (L/week)	Recycling Calculation ($L/100m^2/day$)	Generated Recycling (L/week)
Office	3730	50	13055	10	2611
Masonic Temple	168	50	588	10	117.6
TOTAL	**3898**		**13643**		**2728.6**

BIN SUMMARY

Table 7: *Bin Summary – Commercial*

Garbage			Recycling		
Bin Capacity (L)	**Quantity**	**Collection Rate** (times/week)	**Bin Capacity** (L)	**Quantity**	**Collection Rate** (times/week)
660	11	2	660	3	2

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

Typically, one or more bins for paper or waste are positioned next to each workers desk or work station. One or both of these bins are emptied by contract cleaners. The cleaners circulate around the workplace after normal office hours and also perform other cleaning tasks. Generally vacuuming and cleaning toilets. Bins for general waste and recyclables are also located centrally in each office, generally in the kitchen area and printer room.

Bins for garbage and recycling will also be positioned throughout any other commercial facilities within the development. These bins are also typically emptied by contract cleaners, after business hours.

Cleaners empty the bins into bags which they transport around the offices/commercial facilities in a cart which is also used to store cleaning products, spare bags, PPE and consumables.

Bags of waste and/or recycling are placed in a central location by the cleaners (often outside the goods lift/s) and transported to the collection bins by another cleaner.

COMINGLE RECYCLING

Any staff tea points will be supplied with a dedicated commingled MGB for the collection of all recyclable glass, aluminium, steel and plastic items. Staff will be responsible for sorting this material and allocating recyclables into the correct collection facility.

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.

Please note that all collection receptacles and bins should be branded with the appropriate stickers and the use of the Mobius loop or similar identifying recycling equipment.

OTHER RETAIL/COMMERCIAL WASTE

Tenants usually make their own arrangements for the disposal and recycling of toner cartridges and batteries. Disposal of hard, electronic, liquid waste and any detox (paint/chemicals) shall be organised with the assistance of the building management/cleaners.

WASTE ROOM AREAS

The areas allocated for residential waste rooms, commercial/retail bin store, bulky goods and collection areas are detailed in Table 8 below. The areas provided are considered suitable for purpose.

Table 8: *Waste Room Areas*

Location	Waste Room Type	Allocated Area (m^2)
B1/Lower Ground	Residential Waste Room A	40
B1/Lower Ground	Residential Waste Room B	100
B1/Lower Ground	Residential Waste Room C	110
B1/Lower Ground	Retail Waste Room	40
B1/Lower Ground	Commercial Waste Room	70
B2	Bulky Goods Storage	50
B1/Lower Ground	Collection Area	60

COLLECTION OF WASTE

RESIDENTIAL

Residential waste will be collected from the loading dock, located on the B1/Lower Ground level.

All residential waste will be collected by council, with general waste collections happening twice-a-week and recycling collections occurring weekly.

The building manager will be present throughout the period of collection and will be responsible for transporting bins from Waste Room A and Waste Room B, to the loading area, using appropriate bin moving equipment. Waste Room C will be accessible from the loading dock.

The building manager will also be responsible for exchanging the emptied bins during the period of collection, to ensure that the number of bins within the loading area is kept to a minimum and that an acceptable turning circle and access path for the council's waste collection vehicle can be maintained.

The Building manager will need liaise with council to ascertain the collection times for both recycling and general waste.

RETAIL

The retail general waste and recycling will be collected from the loading dock, twice-a-week, by a private contractor.

The bins will be collected from their respective waste rooms on a wheel-in, wheel-out basis, by the contractor.

COMMERCIAL

The commercial general waste and recycling will be collected from the loading dock, twice-a-week, by a private contractor.

The bins will be collected from their respective waste rooms on a wheel-in, wheel-out basis, by the contractor.

COLLECTION AREA

The collection areas will need to be reviewed by a traffic consultant to confirm that these (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.

There must be an unobstructed and uninterrupted access way (as per Australian Standard 1428) from the waste/recycling room/s or storage areas to:

- Entry to any adaptable housing (refer to Australian Standard 4299)
- Main entrance to each residential flat building
- Point at which the bins are collected

Bins are able to be collected from kerbside, where number of bins and length of street frontage allow. However, in instances where kerbside collection is not possible bins are to be collected on site. Bins to be collected onsite are to be collected either from their usual storage area or onsite in a temporary holding area located immediately inside the property boundary and close to a property entrance.

It is our understanding that a traffic consultant is preparing drawings 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 dimensions. This information and supporting drawings will be provided separate to this report.

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 as part of a development application and is supplied 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.

Burwood Council Customer Service
Phone: 02 9911 9911 Email: council@burwood.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
Phone: 02 9359 9999

RELIVIT
Phone: 1300 247 732 Email: mailto:info@relivit.com.au

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

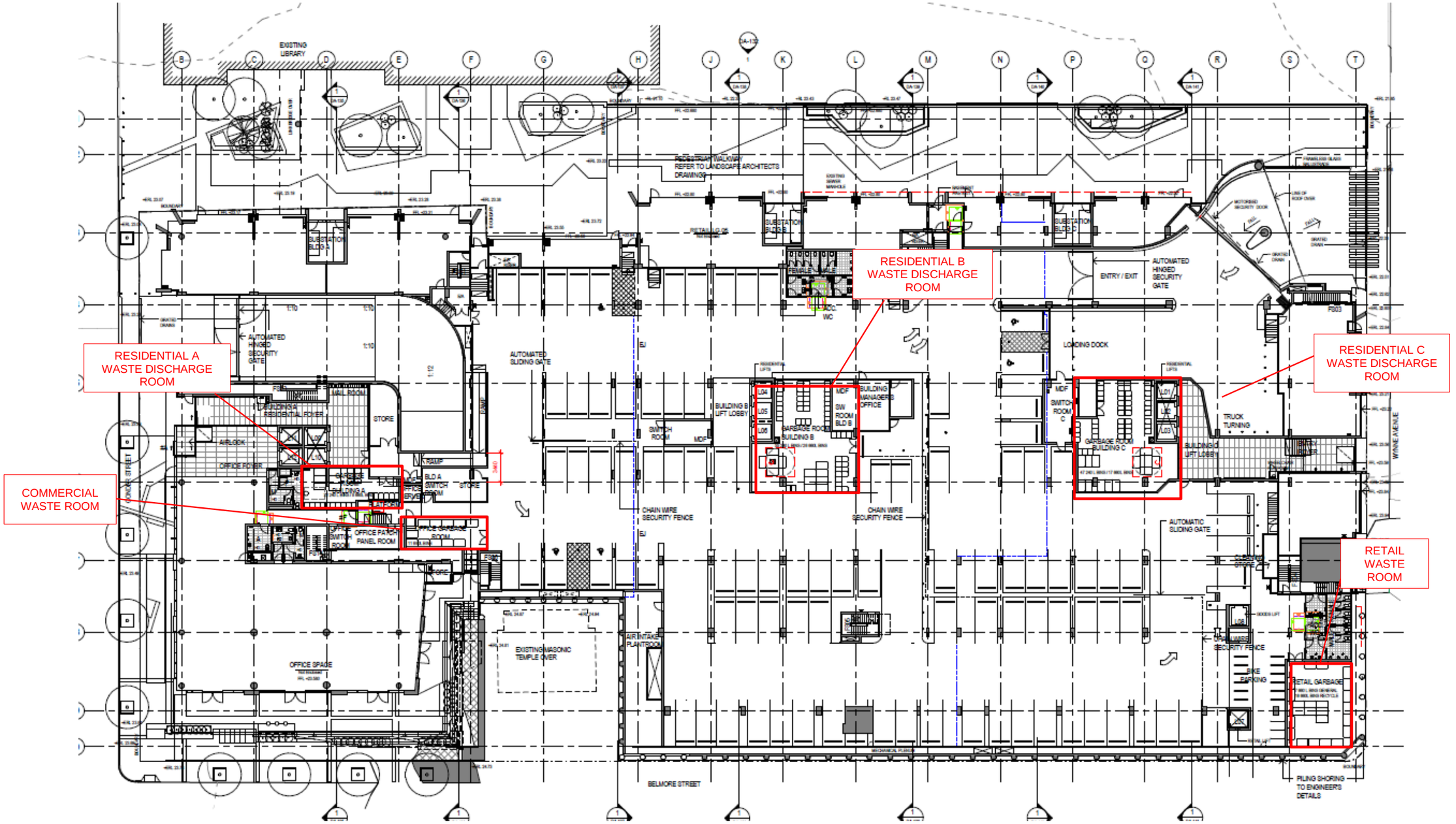
PURIFYING SOLUTIONS (Odour Control)
Phone: 1300 636 877 Email: sales@purifyingsolutions.com.au

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

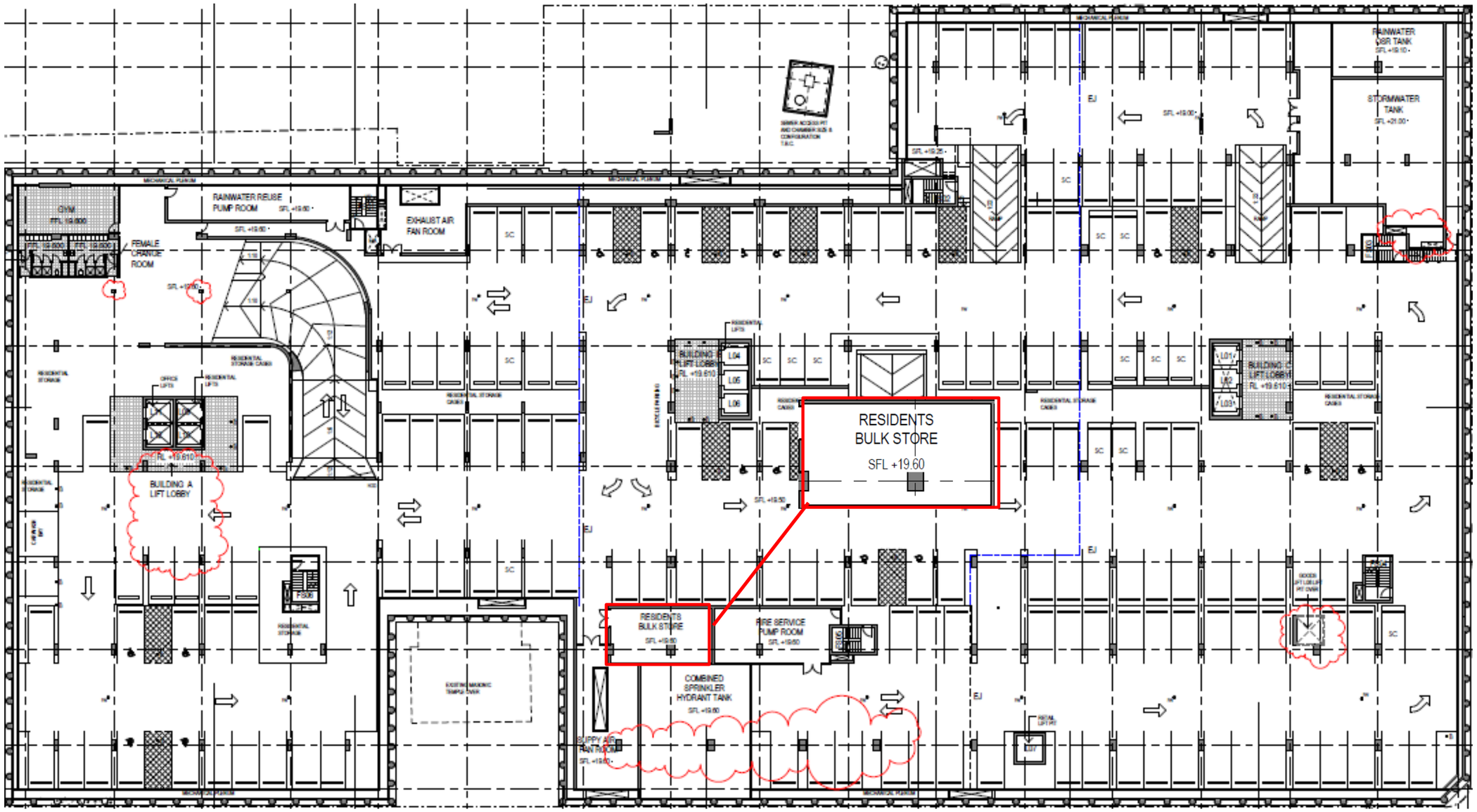
APPENDIX A DRAWING EXERPTS

APPENDIX A.1 B1 / LOWER GROUND WASTE ROOMS



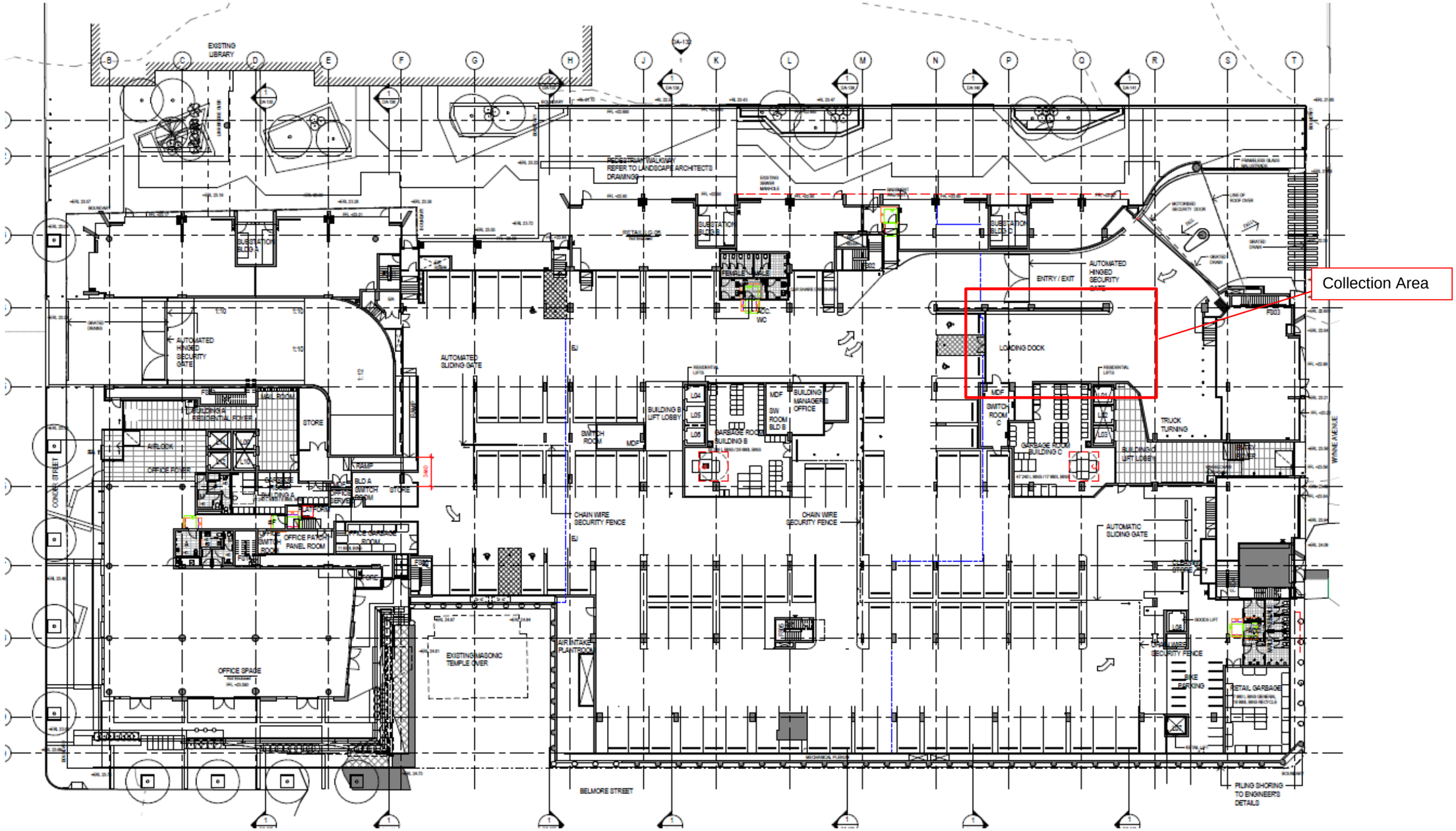
Source: Kannfinch, Burwood Grand, Level B1 / Lower Ground, DA-109

APPENDIX A.2 B2 BULKY GOODS AREA



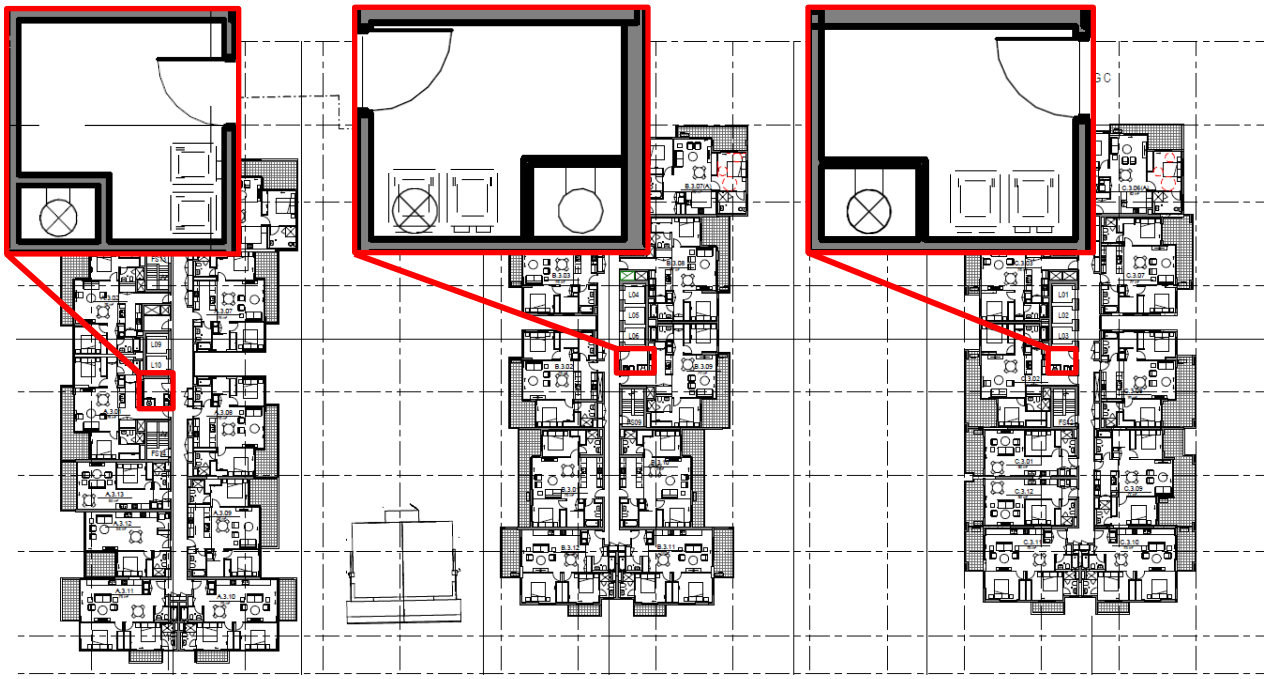
Source: Kannfinch, Burwood Grand, Level B2, DA-108

APPENDIX A.3 B1 / LOWER GROUND LOADING AND COLLECTION AREA



Source: Kannfinch, Burwood Grand, Level B1 / Lower Ground, DA-109

APPENDIX A.4 TYPICAL CHUTE LOCATION



Source: Kannfinch, Burwood Grand, Level 03-06, DA-113

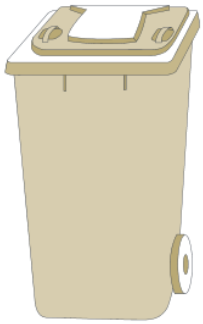
APPENDIX B BURWOOD CITY COUNCIL EQUIPMENT SPECIFICATIONS

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.



Bin Type	Height (mm)	Depth (mm)	Width (mm)
120L	945	620	535
240L	1100	740	580
660L	1220	640	1340

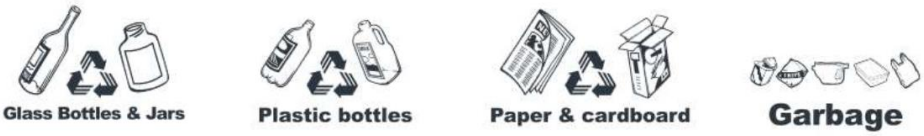
APPENDIX B.2 SIGNAGE FOR WASTE & RECYCLING BINS

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

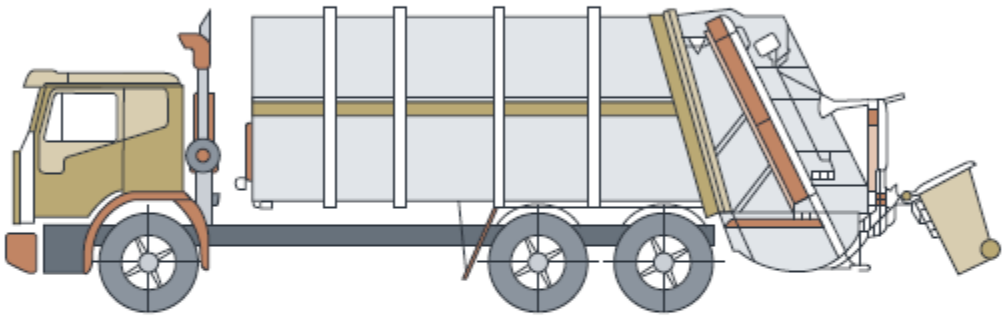
APPENDIX B.3 TYPICAL COLLECTION VEHICLE INFORMATION

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.

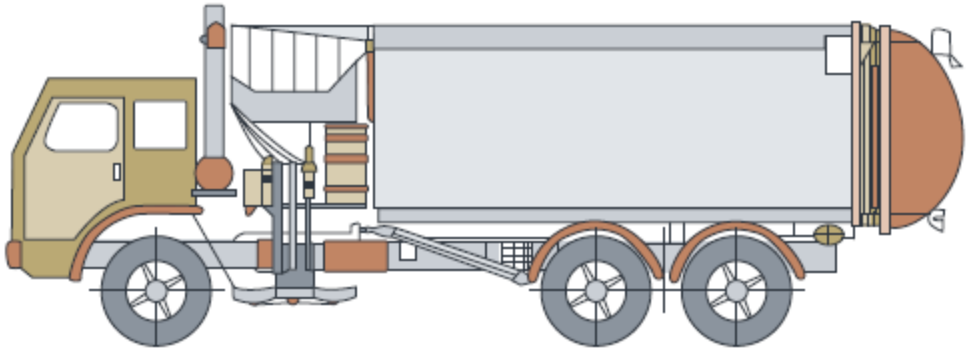


Rear loading collection vehicle

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.

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

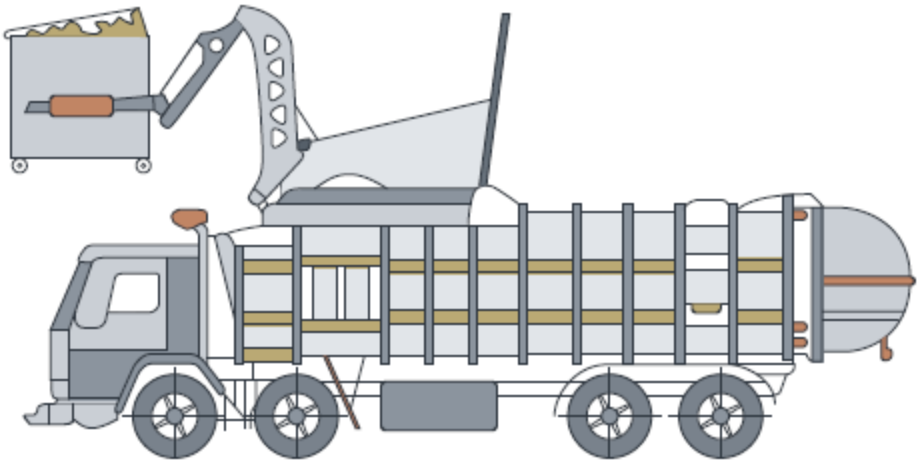
Side-loading collection vehicle



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

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

Front-lift loading collection vehicle

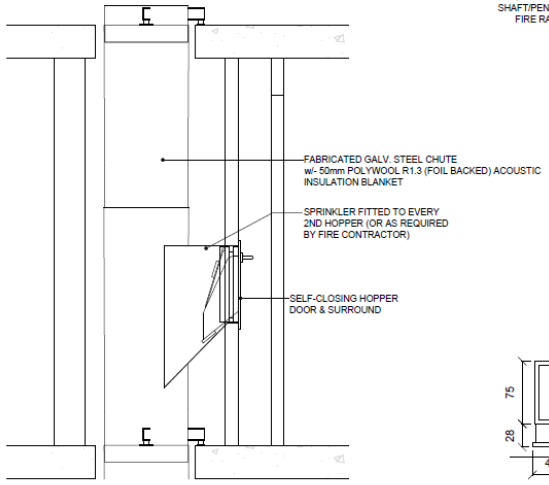


Front-lift loading collection vehicle	
Length overall	10.52m
Front overhang	1.51m
Wheelbase	5.84m
Rear overhang	3.17m
Turning circle kerb to kerb	22.10m
Turning circle wall to wall	23.66m
Travel height	3.82m
Clearance height for loading	6.1m

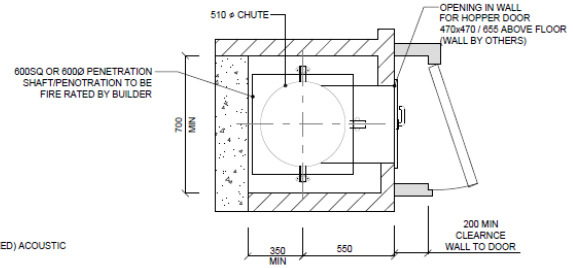
This is mainly used for collecting commercial and industrial waste, and is only suitable for bulk bins with front lift pockets (not MGBs).

APPENDIX C WASTE MANAGEMENT EQUIPMENT SPECIFICATIONS

APPENDIX C.1 TYPICAL CHUTE PLAN & ELEVATION

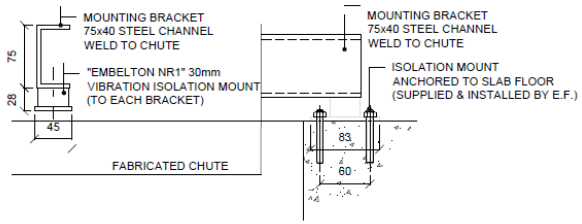


TYPICAL GALV. STEEL CHUTE ELEVATION
(510Ø)
SCALE 1:20

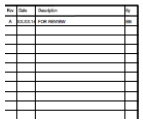


TYPICAL GALV. STEEL SINGLE CHUTE LAYOUT
(510Ø)
SCALE 1:20

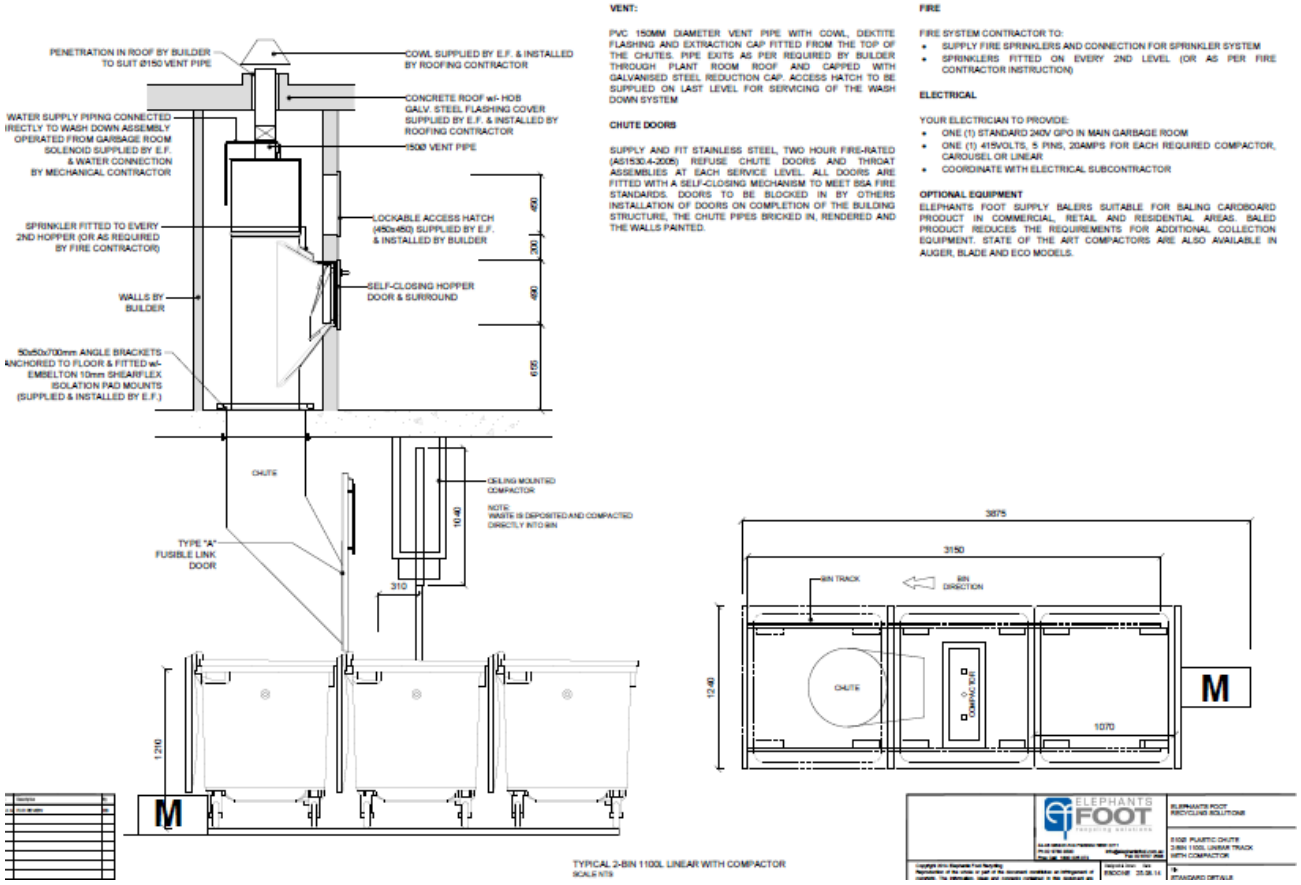
NOTE: ENCLOSURES ARE REQUIRED IF THE CHUTE OPENS
DIRECTLY TO A CORRIDOR OR IS NOT LOCATED IN A WASTE ROOM.



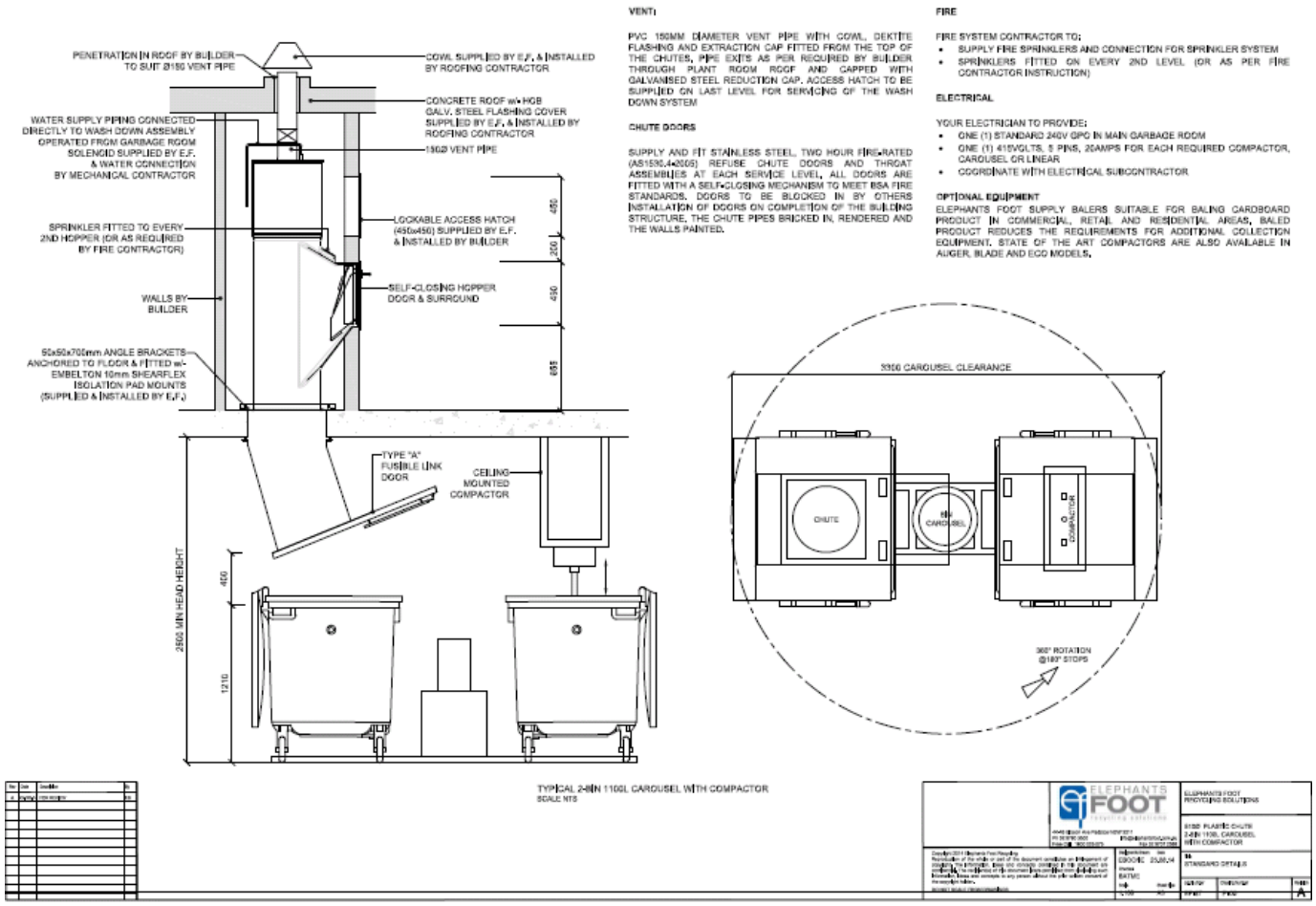
MOUNTING DETAIL
SCALE 1:5



APPENDIX C.2 TYPICAL LINEAR SYSTEM TO SUIT 1100L MGB



APPENDIX C.3 TYPICAL CAROUSEL TO SUIT 1100L MGB



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 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:

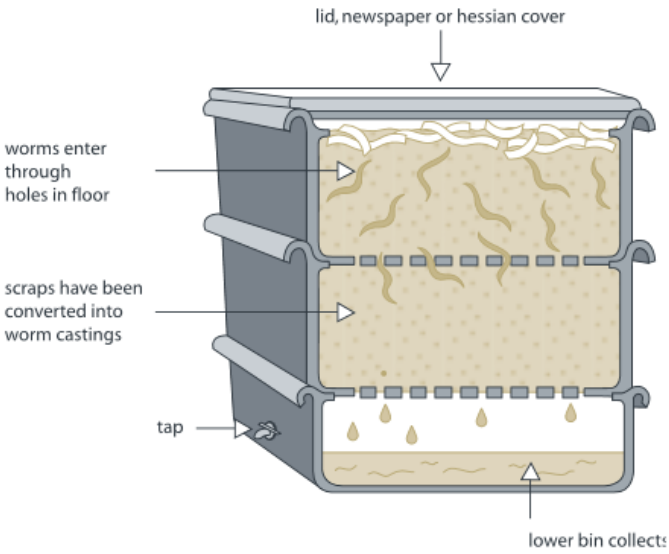
- Up to 1 Tonne on a ramp surface (depending on ballast and incline)
- Anti-rollback system on slopes
- Foot print: 1548L x 795W x 1104H (handle in the drive position)
- Pin Hitch is standard however alternate hitching options may be available to suit your specific application (e.g. tow ball)

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.5 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.6 TYPICAL APARTMENT STYLE COMPOST BINS

Apartment Style Compost bin – available from hardware stores

Suitable for:

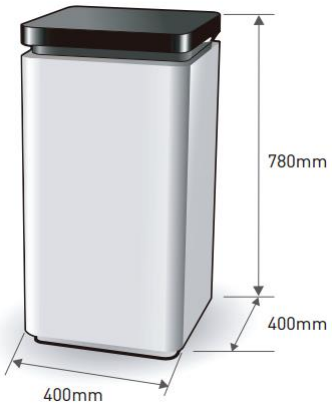
- Vegetables
- Coffee grounds and filters
- Tea and tea bags
- Crushed eggshells (but not eggs)
- Nutshells
- Houseplants
- Leaves
- Cardboard rolls, cereal
- Boxes, brown paper bags
- Clean paper
- Shredded newspaper
- Fireplace ashes
- Wood chips, sawdust,
- Toothpicks, burnt matches
- Cotton and wool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

APPENDIX C.7 ELECTRIC ORGANIC COMPOST BIN

Product Specifications

CLOSED LOOP
LOVE WHAT YOU DO

CLO'ey



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*