



PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL



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6 Edmonstone Road, Bowen Hills

Mixed Use Development

OPERATIONAL WASTE MANAGEMENT PLAN

22/11/2018

Project No. 18025

Revision D

Client

Pellicano Group Property Developments P/L
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SCOPE

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

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

REVISION REFERENCE

Revision	Date	Prepared by	Reviewed by	Description
A	2/08/2018	J Elliot	A Armstrong	Draft
B	3/10/2018	H Wilkes	A Armstrong	Draft
C	17/10/2018	H Wilkes	A Armstrong	Final Draft
D	22/11/2018	H Wilkes	A Armstrong	Final

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GLOSSARY OF TERMS

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

INTRODUCTION

EFRS has been tasked to prepare the following waste management plan for Pellicano Group Property Developments P/L for the operational management of waste generated by the mixed use development located at 6 Edmonstone St, Bowen Hills.

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

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

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

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

REPORT CONDITIONS

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

- Drawings, estimates and information contained in this waste management plan have been prepared by analysing the information, plans and documents supplied by the client, and third parties including Council and government information. The assumptions based on the information contained in the WMP is outside the control of EFRS;
- The figures presented in the report are an estimate only – the actual amount of waste generated will be dependent on the occupancy rate of the building/s and waste generation intensity as well as the building managements approach to educating residents and tenants regarding waste management operations and responsibilities;
- The building manager will make adjustments as required based on actual waste volumes (if waste is greater than estimated) and increase the number of bins and collections accordingly;
- The report will not be used to determine or forecast operational costs or prepare any feasibility study or to document any safety or operational procedures;
- The report has been prepared with all due care however no assurance or representation is made that the WMP reflects the actual outcome and EFRS will not be liable to you for plans or outcomes that are not suitable for your purpose, whether as a result of incorrect or unsuitable information or otherwise;
- EFRS offer no warranty or representation of accuracy or reliability of the WMP unless specifically stated;
- Any manual handling equipment recommended should be provided at the recommendation of the appropriate equipment provider who will assess the correct equipment for supply;
- Design of waste management chute equipment and systems must be approved by the supplier.
- EFRS cannot be held accountable for late changes to the design after the WMP has been submitted to Council.
- EFRS will provide specifications and recommendations on bin access and travel paths within the WMP, however it is the architect's responsibility to ensure the architectural drawings meet these provisions.
- EFRS are not required to provide information on collection vehicle head heights, internal manoeuvring and loading requirements. These variables are considered to be within the applicable Traffic Consultants domain.
- Council are subject to changing waste and recycling policies and requirements at their own discretion.

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

DEVELOPMENT SUMMARY

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

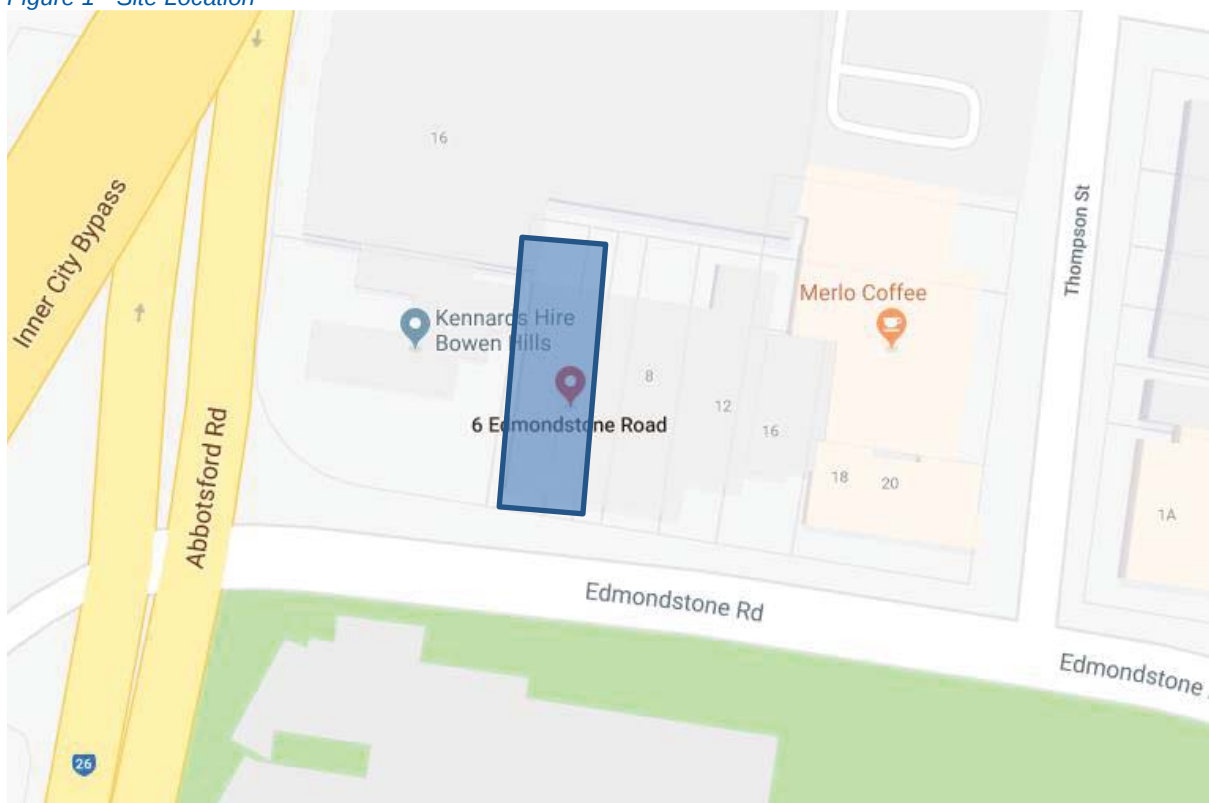
- 1 building with 8 levels and 2 basement levels, with:
 - o 77 residential units in total
 - o 1 retail units with a total NLA of 215 m²

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

SITE LOCATION

The site is located at 6 Edmondstone Rd Bowen Hills, as shown in Figure.1. The site has frontages to Edmondstone Rd , with vehicle access via Edmondstone Rd.

Figure 1 - Site Location



BRISBANE CITY COUNCIL

The garbage and recycling will be guided by the services and acceptance criteria of the Brisbane City Council. All waste facilities and equipment are to be designed and constructed to be in compliance with the Brisbane City Council's *Brisbane City Plan 2014 – SC6.26 Refuse Planning Scheme Policy*, Australian Standards and statutory requirements.

COUNCIL OBJECTIVES

- Ensure the storage and service of solid waste in the city is undertaken in a manner to minimise the risk to public health and the environment.
- Reduce the number of wheelie bin/s left kerbside for collection to ensure convenient and safe storage and collection.
- Allow residents and tenants the opportunity to recycle as much of their waste as possible and to have access to dispose of their waste as efficiently as possible.
- Encourage building design that accommodates efficient waste management systems for the storage and collection of the type and volume of waste generated.
- Provide waste contractors with adequate access to buildings or site to ensure bin/s are serviced conveniently and safely and without nuisance to occupants or adjoining properties.
- Provide for waste services to be carried on within the property boundaries and reduce the storage of bin/s on the footpath.
- Ensure waste can be safely collection with minimum disruption to traffic.
- Encourage developments to incorporate best practice technologies and install waste infrastructure that is beyond the minimum recommendation.
- Contribute to Brisbane being a clean and green city, while considering Brisbane City Council's Towards Zero Waste Targets.

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 Brisbane City Council

STAKEHOLDER ROLES AND RESPONSIBILITIES

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

Table 1: Stakeholder Roles and Responsibilities

Roles	Responsibilities
Strata/Management	- Ensuring that all waste service providers submit monthly reports on all equipment movements and waste quantities/weights; - Organising internal waste audits/visual assessments on a regular basis; and - Manage any non-compliances/complaints reported through waste audits.
Building Manager/Waste Caretaker	- Ensuring effective signage, communication and education is provided to occupants, tenants and cleaners; - Providing staff/contractors with equipment manuals, training, health and safety procedures, risk assessments, and PPE to control hazards associated with all waste management activities; - Ensuring site safety for residents, children, visitors, staff and contractors; - Abiding by all relevant OH&S legislation, regulations, and guidelines; - Assessing any manual handling risks and prepare a manual handling control plan for waste and bin transfers; - Preventing storm water pollution by taking necessary precautions (securing bin rooms, preventing overfilling of bins) - If a blockage is evident, building management or cleaning staff must immediately take steps to identify the level concerned and clear the blockage - General maintenance and cleaning of chute doors on each level; - Cleaning and transporting of bins as required; - Organising, maintaining and cleaning the general and recycled waste holding area; - Organising both garbage and recycled waste pick-ups as required; - Organising replacement or maintenance requirements for bins; - Organising bulky goods collection when required; and - Investigating and ensuring prompt clean-up of illegally dumped waste materials.
Residents/Tenants	- Dispose of all garbage and recycling in the allocated waste chutes and/or MGBs provided; - Ensure adequate separation of garbage and recycling; and - Compliance with the provisions of Council and the WMP.
Council/Private Waste Contractor	- Provide a reliable and appropriate waste collection service; - Provide feedback to building managers/residents in regards to contamination of recyclables; and - Work with building managers to customise waste systems where possible.
Gardening/Landscaping Contractor	Removal of all garden organic waste generated during gardening maintenance activities for recycling at an offsite location.
Building Contractors	Removing all construction related waste offsite in a manner that meets all authority requirements.

EDUCATION

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

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

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

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

RESIDENTIAL WASTE MANAGEMENT

The *Brisbane City Plan 2014 – SC6.26 Refuse Planning Scheme Policy* has been referenced to calculate the total number of bins required for the residential units. Calculations are based on generic figures; waste generation rates may differ according to the residents' waste management practice.

Brisbane City Councils residential waste generation rates are as follows:

1 & 2 Bedroom Units:

- Waste - 100L /dwelling/week
- Recycling – 50/dwelling/week

3 or more Bedroom Units:

- Waste - 150L /dwelling/week
- Recycling – 50/dwelling/week

ESTIMATED WASTE VOLUMES AND PROVISIONS

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

Table 2: Calculated Waste Generation – Residential

Unit Type	# Units	Garbage Generation Rate (L/unit/week)	Generated Garbage (L/week)	Recycling Generation Rate (L/unit/week)	Generated Recycling (L/week)
2 bed	77	100	7700	50	3850
TOTAL	77		7700		3850
Collections & Equipment		Garbage Bin Size (L)	1100	Recycling Bin Size (L)	1100
		Garbage Bins Per Week	7	Recycling Bins per Week	3.5
		Garbage Collections Per Week	1	Recycling Collections per Week	1
		Total Garbage Bins Required	7	Total Recycling Bins Required	4

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

HOUSEHOLD WASTE

1 garbage chute and 1 recycling chute will be installed with access provided on all residential levels of each core.

Garbage discharges into 1100L MGBs and recycling (comingle) into 1100L MGBs. This garbage is not compacted and recycling is not compacted.

COMMON AREAS

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

Washroom facilities should be supplied with collection bins for paper towels (if used). Sanitary bins for female restroom facilities must also be arranged with an appropriate contractor.

SOURCE SEPERATION

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

GENERAL WASTE (GARBAGE)

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

RECYCLING

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

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

GREEN WASTE

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

E-WASTE

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

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

CHEMICAL WASTE

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

Residents will need to liaise with the building manager when disposing of their chemical wastes. The building manager will be responsible for arranging the correct disposal of chemical waste. Household Chemical CleanOut events are held at various locations throughout Queensland on specified dates throughout the year. Locations and dates are

subject to change. It is recommended that the building caretaker confirm these details with their local Council.

ORGANIC WASTE AND COMPOSTING

Recycling organic waste, such as food scraps and garden materials, dramatically reduces the quantity of waste being diverted to land fill and thus reduces residents' ecological footprint. Compost material can also be returned to the soil as a rich fertilizer and improve plant growth and the overall health of surrounding vegetation.

It is recommended that a space for composting and worm farming is made available for all residents in a communal facility or in small private courtyards (*see APPENDIX D.1*). Composting facilities are to be sited on an unpaved area with soil depth of at least 300mm. Residents may also choose to purchase and install apartment style compost bin where practical and self-manage these systems (*see APPENDIX D.2 and APPENDIX D.3*).

CLOTHING WASTE

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

COMMERCIAL AND RETAIL WASTE MANAGEMENT

The NSW EPA's *Better Practice Guide for Waste Management Multi Unit Dwellings* has been referenced to calculate the total number of bins required for the retail and commercial areas. Calculations are based on generic figures; waste generation rates may differ according to the tenants' waste management practice.

ESTIMATED WASTE VOLUMES AND PROVISIONS

The following table shows the estimated volume (L) of garbage and recycling generated by the commercial/retail component of the development. The total GFA of the retail component has been divided into thirds to take into account the waste generation of future possible tenancies. A seven day operating week has been assumed.

Table 3: Calculated Waste Generation – Commercial/Retail

Type	NLA (m ²)	Garbage Generation Rate (L/100m ² /day)	Generated Garbage (L/week)	Recycling Generation Rate (L/100m ² /day)	Generated Recycling (L/week)
Commercial (offices)	71.7	10	50.19	10	50.19
Restaurant	71.7	670	3362.73	135	677.565
Non-Food Retail	71.6	50	250.6	50	250.6
TOTAL	215		3664		978
Collections & Equipment	Bin Size (L)		660	Bin Size (L)	
	Garbage Bins Per Week		5.55	Recycling Bins Per Week	
	Collections per Week		3	Collections per Week	
	Garbage Bins Required		2	Recycling Bins Required	

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, customer base and retail tenancy attitudes to waste disposal and recycling, bin numbers and sizes may need to be altered to suit the building operation. Seasonal peak periods i.e. public and school holidays should also be considered.

RETAIL WASTE MANAGEMENT

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

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

If a food based tenancy is placed, 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.

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

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

OPERATIONAL WASTE MANAGEMENT PLAN

- Individual recycling programs are recommended for retailers to ensure commingled recycling is correctly separated;
- Any food and beverage tenant will make arrangements for storing used and unused cooking oil in a bunded storage area;
- The operator will organise grease interceptor trap servicing;
- A suitable storage area needs to be provided and effectively bunded for chemicals, pesticides and cleaning products;
- Dry basket arrestors need to be provided to the floor wastes in the food preparation and waste storage areas; and
- All flattened cardboard will be collected and removed to the waste room recycling mgb

WASTE OILS

Consideration should be given to the use of cooking oil collection systems. A single service provider may be used to reduce the amount of commercial traffic into the loading bay or around the precinct area. This should be measured against bulk delivery of oils where the same vehicle is used to remove containers of waste cooking oils (see APPENDIX x for Typical Cooking Oil Collection System)

OTHER WASTE STREAMS

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

MOVEMENT AND TRANSPORTATION OF BINS

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

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

If required the developer should contact a bin-tug, trailer or tractor consultant to provide equipment recommendations.

COLLECTION OF WASTE

RESIDENTIAL

Residential garbage and recycling will be collected by Council as per Council's collection schedule.

On collection days, the building manager will be responsible for ensuring all full bins are located in the collection area of the Waste Room. Service bins will remain under the chutes while servicing is occurring.

The collection vehicle will park on Edmonstone st. The waste collection staff will then service the bins via a wheel-in, wheel-out arrangement from the residential waste room.

RETAIL

Retail waste will be collected by a private contractor to an agreed schedule.

The collection vehicle will park on Edmonstone st. The waste collection staff will then service the bins via a wheel-in, wheel-out arrangement from the retail waste room.

COLLECTION AREA

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

INSTALLATION EQUIPMENT AND DESIGN

EQUIPMENT SUMMARY

Table 4: Equipment Summary

Component	Part	Qty	Notes
Chutes	Please refer to supplier's information	2	(See APPENDIX C for Typical Chute Section)
Equipment A	Suitable Bin Moving Equipment	Optional	(See APPENDIX D for Typical Bin Mover)

WASTE ROOM AREAS

For the Chute Discharge Room, Chute discharge requires a minimum of 3000mm distance from floor to ceiling and needs to be free of service pipes and other overhead obstacles within the immediate space around the chute discharge. All waste discharge points should be caged off to ensure the safety of any personnel accessing the waste room.

For the Retail Waste Room, all bins will need to be arranged so that they are accessible at all times. This is because allocated personnel will be directly accessing this waste room to place the waste directly into the bins.

During operation, any requirement for increasing storage capacity can be done by increasing the frequency of collections for all waste.

The areas allocated for waste storage and collection areas are detailed in Table 5 below. The areas provided are estimates only. Final areas will depend upon room and bin layouts.

Table 5: Waste Room Areas

Level	Waste Room Type	Equipment	Estimated Area (m ²)	Layout Ref
G	Residential Waste Room	7 x 1100L MGBs (garbage) 4 x 1100L MGBs (recycling) Caged off Chute discharge 2x 1100L MGBs	35	APPENDIX A.2
G	Retail Waste Room	2 x 660L MGBs (garbage) 1x 660L MGBs (recycling)	10	APPENDIX A.2

GARBAGE ROOMS

CONSTRUCTION REQUIREMENTS

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

- Waste room floor to be sealed with a two pack epoxy;
- Waste room walls and floor surface is flat and even;
- All corners coved and sealed 100mm up, this is to eliminate build-up of dirt;
- For residential: a hot and cold water facility with mixing facility and hose cock must be provided for washing the bins;
- For retail/commercial: a cold water facility with hose cock must be provided for washing the bins;
- Any waste water discharge from bin washing must be drained to sewer in accordance with the relevant water board. (Sydney water);
- Tap height of 1.6m;
- Storm water access preventatives (grate);
- All walls painted with light colour and washable paint;
- Equipment electric outlets to be installed 1700mm above floor levels;
- The room must be mechanically ventilated;
- Light switch installed at height of 1.6m;
- Waste rooms must be well lit (sensor lighting recommended);
- Optional automatic odour and pest control system installed to eliminate all pest types and assist with odour reduction – this process generally takes place at building handover – building management make the decision to install;
- If 660l or 1100l bins are utilised, 2 x 820mm (minimum) door leafs must be used;
- All personnel doors are hinged, lockable and self-closing;
- Waste collection area must hold all bins – bin movements should be with ease of access;
- Conform to the building code of Australia, Australian standards and local laws; and
- Childproofing and public/operator safety shall be assessed and ensured

SIGNAGE

The building manager/caretaker is responsible for waste room signage including safety signage (see *APPENDIX B.2*). Appropriate signage must be prominently displayed on doors, walls and above all bins, clearly stating what type of waste or recyclables is to be placed in the bin underneath.

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

VENTILATION

Waste and recycling rooms must have their own exhaust ventilation system either;

- Mechanically - exhausting at a rate of 5L/m² floor area, with a minimum rate of 100L/s minimum; or
- Naturally - permanent, unobstructed, and opening direct to the external air, not less than one-twentieth (1/20) of the floor area

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

USEFUL CONTACTS

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

Brisbane City Council Customer Service

Phone: (07) 3403 8888

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

Phone: 1300 364 388

CLOSED LOOP (Organic Dehydrator)

Phone: 02 9339 9801

ELECTRODRIVE (Bin Mover)

Phone: 1800 333 002

Email: sales@electrodrive.com.au

RUD (Public Place Bins, Recycling Bins)

Phone: 07 3712 8000

Email: Info@rud.com.au

CAPITAL CITY WASTE SERVICES (Private Waste Services Provider)

Phone: 02 9359 9999

REMONDIS (Private Waste Services Provider)

Phone: 13 73 73

SITA ENVIRONMENTAL (Private Waste Services Provider)

Phone: 13 13 35

NATIONAL ASSOCIATION OF CHARITABLE RECYCLING ORGANISATIONS INC.
(NACRO)

Phone: 03 9429 9884

Email: information@nacro.org.au

PURIFYING SOLUTIONS (Odour Control)

Phone: 1300 636 877

Email: sales@purifyingsolutions.com.au

MOVEXX (Bin Movers)

Phone: 1300 763 444

AUSCOL (Recycling Oils & Animal Fats)

Phone: 1800 629 476

Elephants Foot Recycling Solutions (Chutes, Compactors and eDiverter Systems)

44 – 46 Gibson Avenue

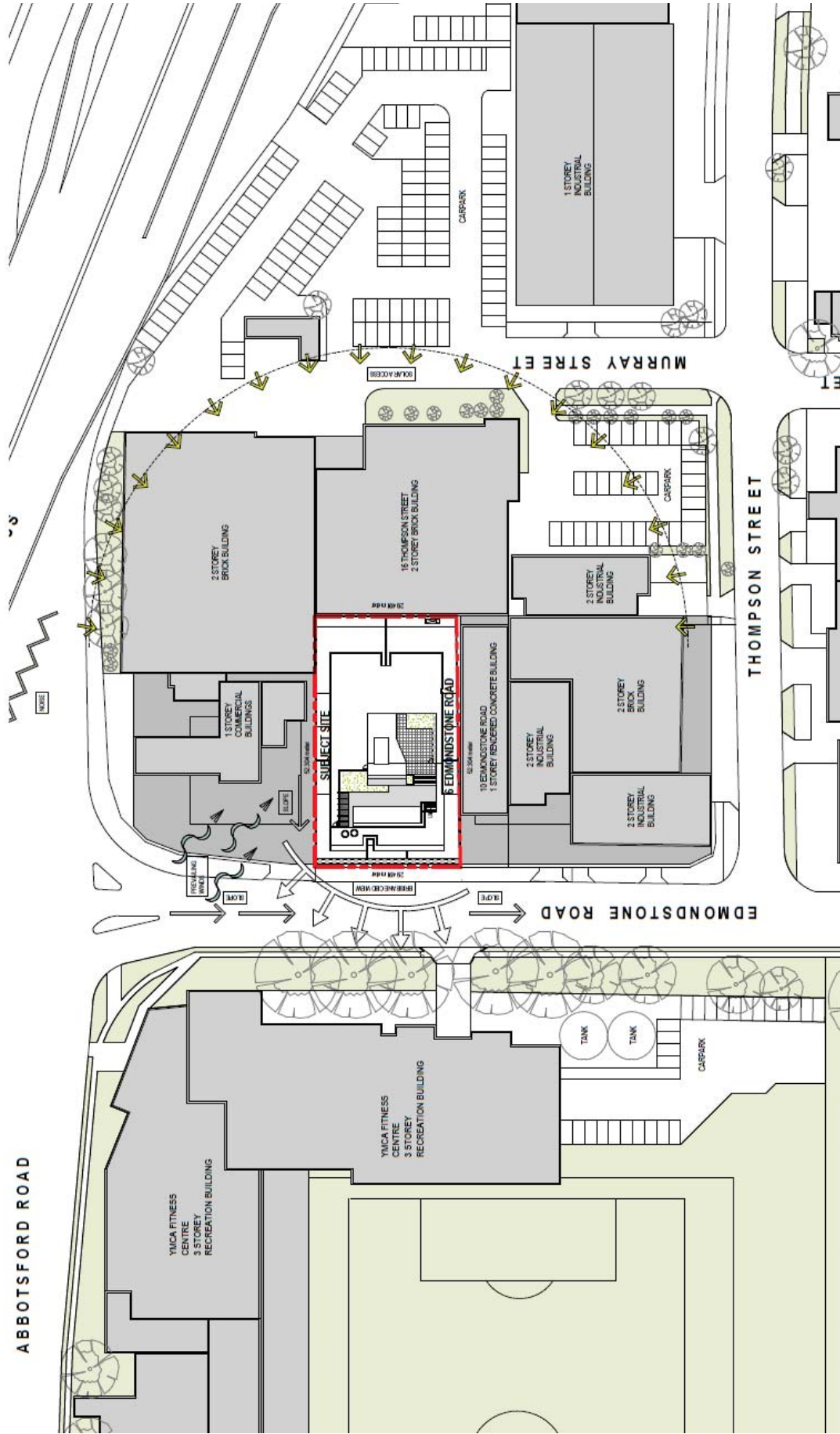
Padstow NSW 2211

Free call: 1800 025 073

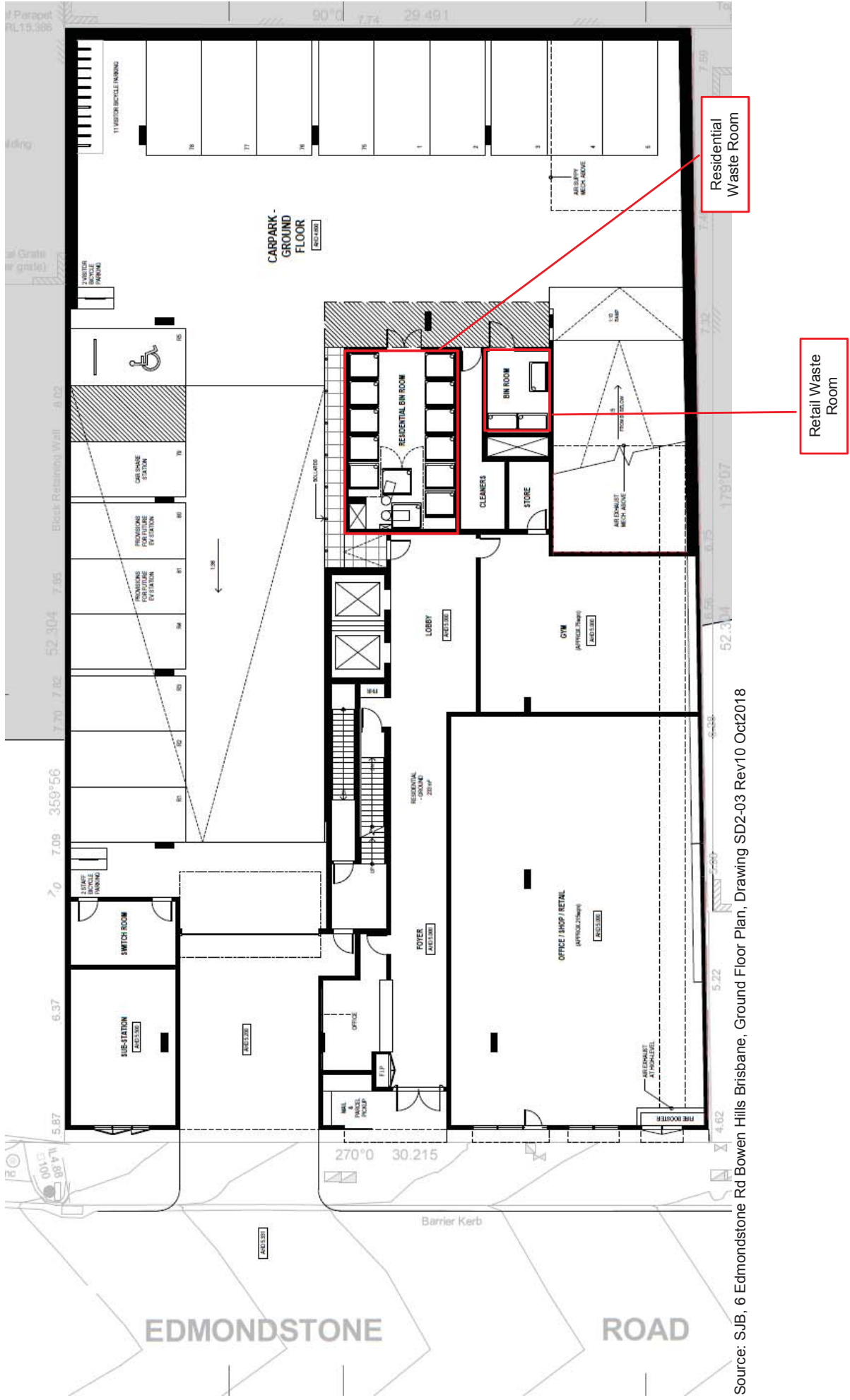
APPENDICES

APPENDIX A ARCHITECTURAL DRAWING EXERPTS

APPENDIX A.1 SITE PLAN



APPENDIX A.2 GROUND LEVEL - WASTE ROOMS



Source: S.J.B, 6 Edmondstone Rd Bowen Hills Brisbane, Ground Floor Plan, Drawing SD2-03 Rev10 Oct2018

APPENDIX B PRIMARY WASTE MANAGEMENT PROVISIONS

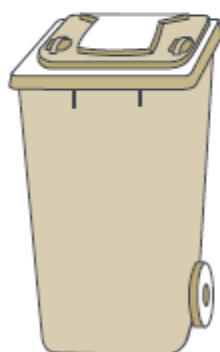
APPENDIX B.1 TYPICAL BIN SPECIFICATIONS

Mobile garbage bins (MGBs)

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

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

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



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

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



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

Dome or flat lid containers

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

APPENDIX B.2 SIGNAGE FOR WASTE & RECYCLING BINS

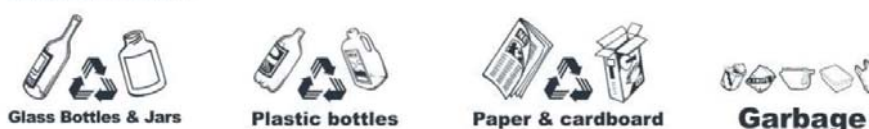
WASTE SIGNS

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

Example wall posters



Example bin lid stickers



SAFETY SIGNS

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

Examples of Australian Standards:



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

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

APPENDIX B.3 BRISBANE CITY COUNCIL COLLECTION VEHICLE INFORMATION

Vehicle type	Description	Specifications	Measurements
Rear loading collection vehicle	Commonly used for domestic garbage and recycling collections from multiple dwellings, Rear loading collection vehicles can be used to collect waste stored in mobile garbage bins or bulk bins, particularly where bins are not presented on the kerbside	Length overall	10.24m
		Width overall	2.5m
		Operational height	3.6m
		Travel height	3.6m
		Turning circle kerb to kerb	R9.5m
Side-loading collection vehicle	The most commonly used vehicle for domestic garbage and recycling collections. It is only suitable for collection mobile garbage bins up to 360L.	Length overall	10.3m
		Wheelbase	5.5m
		Rear overhang	3.3m
		Turning circle kerb to kerb	R9m
		Turning circle wall to wall	R10.5m
		Front of vehicle to collection arm	3.8m
		Maximum reach of side arm	3.0m
		Travel height	4m
		Operational height	4.5m
Front-lift loading collection vehicle	Mainly used for collecting commercial and industrial waste, and is only suitable for bulk bins with front-lift pockets (not mobile garbage bins)	Length overall	10.52m
		Wheelbase	5m
		Turning circle kerb to kerb	R11m
		Turning circle wall to wall	R12m
		Travel height	4.2m
		Operational height	6.0m

SOURCE: Brisbane City Council DCP 2014

APPENDIX B.4 TYPICAL MOTORISED BIN TUG



Typical applications:

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

Features:

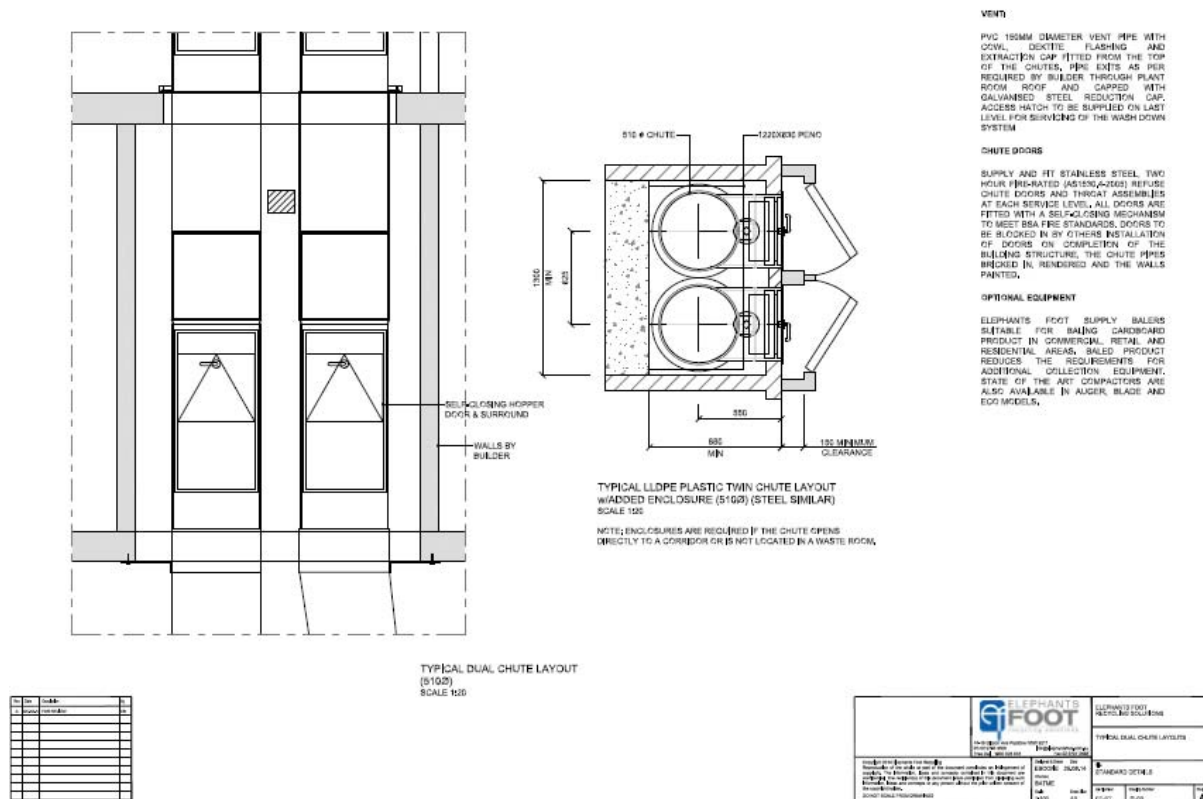
- 1 tonne tow capacity of inclines up to 8 degrees
- 500kg tow capacity if inclines up to 14 degrees
- CE Compliant
- 4.5 km/h max speed
- 2 x 80amp batteries – includes charger
- Powerful transaxle
- Hitch to suit 660L bins

Safety Features:

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

APPENDIX C INSTALLATION EQUIPMENT AND WASTE ROOM LAYOUTS

APPENDIX C.1 TYPICAL DUAL WASTE CHUTE SPECIFICATIONS



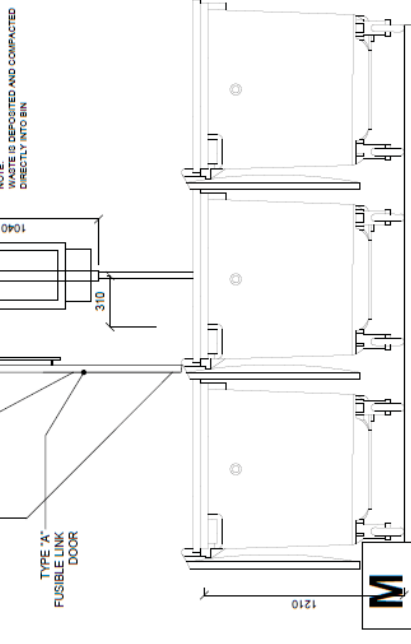
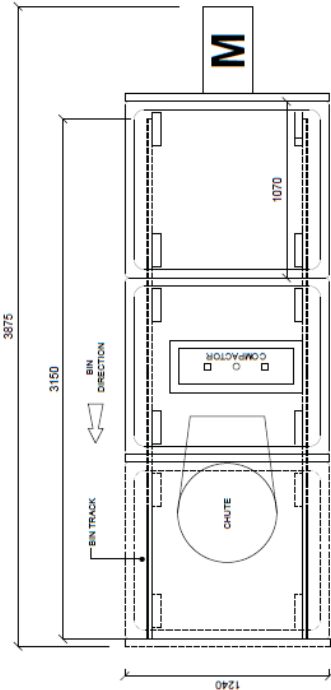
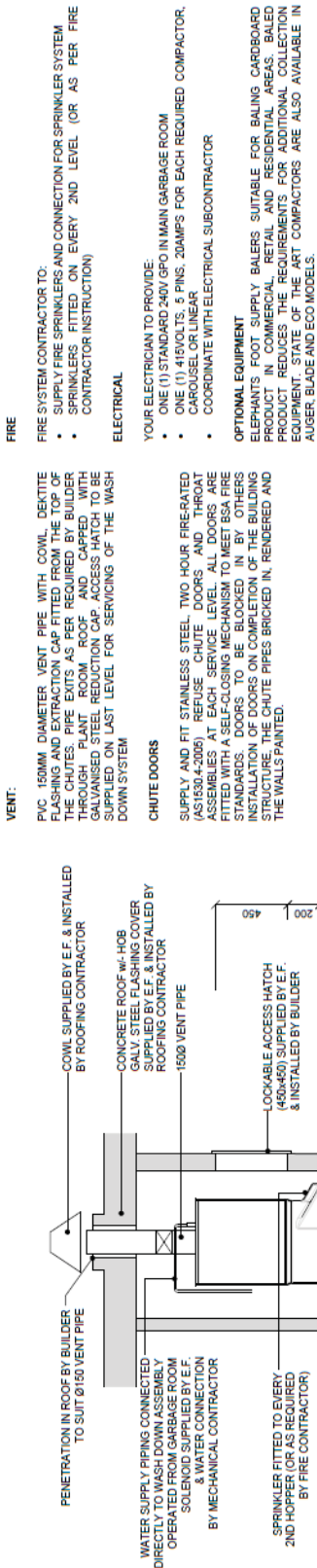
Waste chutes are supplied per the following specifications:

- either 510mm or 610mm (for 20+ levels) galvanised steel or recycled LLDPE polyethylene plastic;
- galvanised steel chute hoppers are wrapped with 50mm poly-wool R1.3 noise insulation foil to assist in noise reduction (or equivalent);
- penetrations on each building level at vertically perpendicular points with minimum penetration dimensions of either 600x600/700x700mm (square) or 650/750mm diameter (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.

OPERATIONAL WASTE MANAGEMENT PLAN

APPENDIX C.2 TYPICAL LINEAR TRACK SYSTEM

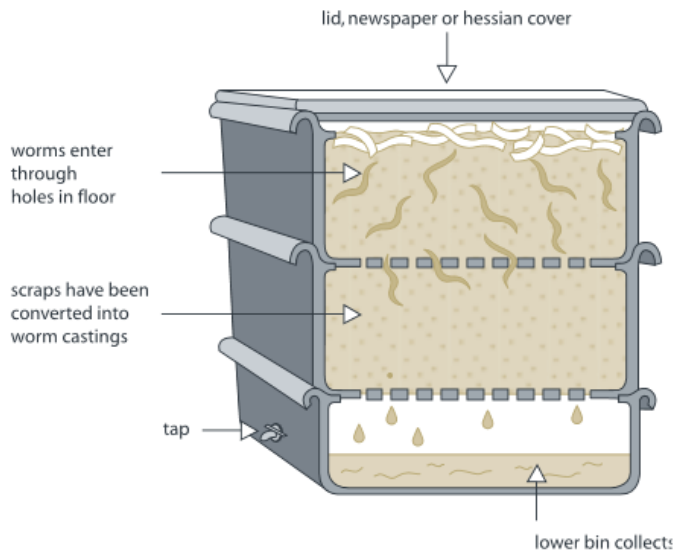


TYPICAL 2-BIN 1100L LINEAR WITH COMPACTOR
SCALE: 1/2"

APPENDIX D SECONDARY WASTE MANAGEMENT PROVISIONS

APPENDIX D.1 TYPICAL WORM FARM SPECIFICATIONS

Worm farms



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

Height – 300mm per level

Width – 600mm

Length – 900mm

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

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

APPENDIX D.2 TYPICAL APARTMENT STYLE COMPOST BINS



Apartment Style Compost bin – available from hardware stores

Suitable for:

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

APPENDIX D.3 ELECTRIC ORGANIC COMPOST BIN



Product Specifications

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

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

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

SOURCE: Closed Loop Domestic Composter – See Useful Contacts

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