Attachment C

Waste Management Plan

39a Elizabeth Bay Road, Potts Point

Hotel Development

OPERATIONAL WASTE MANAGEMENT PLAN

26/03/2018
Report No. 17072
Revision C

Client

Veriu Hotels & Suites

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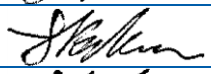
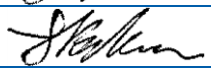
SCOPE

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	Signed
A	14/03/2018	J Parker	A Armstrong	Draft	
B	26/03/2018	J Parker	A Armstrong	Final	
C	26/03/2018	J Parker	A Armstrong	Amendment	

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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 strapping
Collection Area/Point	The identified position or area where garbage 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)
Green Waste	All vegetated organic material such as small branches, leaves and grass clippings, tree and shrub pruning, plants and flowers
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
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)
LRV	Large rigid vehicle described by AS 2890.2-2002 Parking facilities – Off-street commercial vehicle facilities as heavy rigid vehicle (HRV)
Mobile Garbage Bin(s) (MGB)	A waste container generally constructed of plastic with wheels with a capacity in litres of 120, 240, 360, 660, 1000 or 1100
MRV	Medium rigid vehicle
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.
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
Refuse	Material generated and discarded from residential and commercial buildings including general waste, recyclables, green waste and bulky items
SRV	Small rigid vehicle as in AS 2890.2-2002 Parking facilities – Off-street commercial vehicle facilities, generally incorporating a body width of 2.33

LIST OF TABLES

INTRODUCTION

EFRS has been tasked to prepare the following waste management plan for Veriu Hotels for the operational management of waste generated by the hotel development located at 39a Elizabeth Bay Road, Potts Point.

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

i. ***Promote responsible source separation*** to reduce the amount of waste that goes to landfill, by implementing convenient and efficient waste management systems

ii. ***Ensure adequate waste provisions and robust procedures*** that will cater for potential changes during the operational phase of the development

iii. ***Compliance*** with all relevant council codes, policies, and guidelines.

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

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

DEVELOPMENT SUMMARY

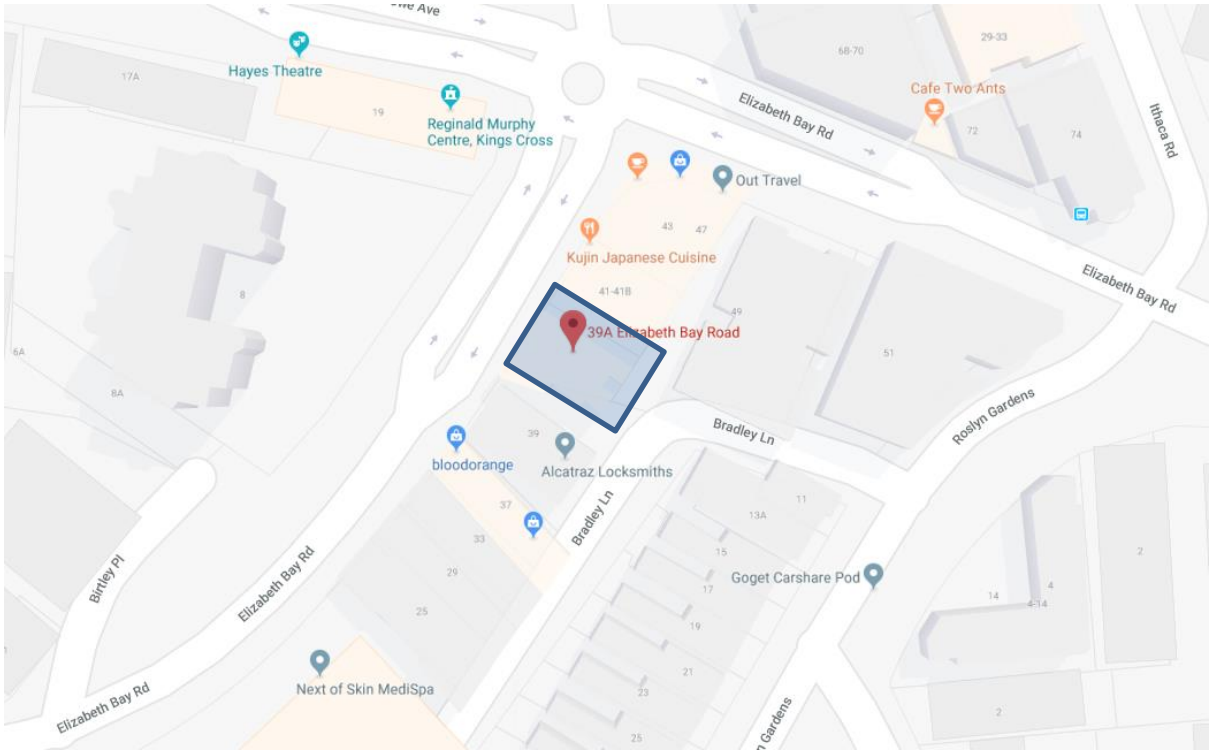
The proposed development falls under the LGA of Council of City of Sydney, and consists of:

- 1 building
  - 33 hotel rooms in total
  - 48 seat restaurant with a total NLA of 112.6 m^2

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 39a Elizabeth Bay Road, Potts Point as shown in Figure.1. The site has frontages to Elizabeth Bay Road and Bradley Lane, with access for waste collections via Elizabeth Bay Road.



Source: Google Maps

COUNCIL OF CITY OF SYDNEY

Garbage and recycling generated by this development will be guided by the services and acceptance criteria of the City of Sydney Council. 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 premises has adequate space to manage waste.
- Ensure that buildings provide appropriate facilities to manage waste.
- Ensure that 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

http://www.cityofsydney.nsw.gov.au/__data/assets/pdf_file/0018/120384/WasteCodeForNewDevelopments.pdf

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/Contract Cleaners	• 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 tenants, 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) • 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.
Guests/Tenants	• Dispose of all garbage and recycling in the receptacles provided; • Ensure adequate separation of garbage and recycling where required.
Private Waste Contractor	• Provide a reliable and appropriate waste collection service; • Provide feedback to building managers/tenants 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

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

Educational material encouraging the correct separation of garbage and recycling items must be provided to each tenant to ensure the correct disposal of waste, including 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 contamination in the collective waste bins.

It is also recommended that the facility website contain information for guests and tenants to refer to. Information should include:

- recycling and garbage descriptions (Council provides comprehensive information);
- how to dispose of bulky goods and any other items that are not garbage or recycling;
- tenants' obligations to WHS and building management; and

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 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 guests, staff 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 equipment and systems must be approved by the supplier.

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 2: Calculated Waste Generation - Hotel

Hotel Accomodation	Unit #	Waste Calculation (L/bed/day)	Generated Waste (L/week)	Recycling Calculation (L/bed/day)	Generated Recycling (L/week)
Hotel - 1 Bedroom	33	5	1155	1	231

WASTE MANAGEMENT

The vast majority of people who stay in hotels generally spend a relatively short time at the facility, therefore the waste generated in each unit is managed by the 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. Office paper may also be generated however this is generally a minimal quantity.

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 to the garbage room. It is expected that hotel guests will place clean and empty recycling items into the collection bins.

Nominated staff or cleaners will transport sorted garbage and recyclable items to the hotel garbage room on the ground level and place bagged garbage into the relevant 240L bins. Collections will be undertaken by a private waste contractor to an agreed schedule.

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

RESTAURANT WASTE PLAN

The *Better Practice Guide for Waste Management and Recycling* has been referenced to calculate the total number of bins required for the restaurant 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 restaurant component of the development. A seven day operating week has been assumed.

Table 3: Calculated Waste Generation – Restaurant

Tenancy	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)
Restaurant	112.6	670	5280.94	135	1064.07

WASTE MANAGEMENT

Tenants will be responsible for their own storage of garbage and recycling back of house (BOH).

Food handling for food cooked or prepared, served and consumed on site will produce a typical waste composition of food scraps from plates, packaging waste and some plastics. Café or restaurant staff will be responsible for their own BOH waste management.

Cardboard is a major component of the waste generated by 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 staff/cleaners will transport their garbage and recycling to the waste room on the ground level and place garbage and recycling into the appropriate collection bins.

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

- all garbage should be bagged and garbage bins should be plastic lined;
- bagging of recyclables is not permitted;
- all interim waste storage is located BOH during operations;
- individual recycling programs are recommended for premises 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

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, customer base and 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.

COMMON AREAS

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.

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

WASTE OILS

Consideration should be given to the use of cooking oil collection systems. A single service provider may be used to reduce the amount of commercial traffic around the area. This should be measured against bulk delivery of oils where the same vehicle is used to remove containers of waste cooking oils (see APPENDIX D.4 for Typical Cooking Oil Collection System)

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.

OVERALL BIN SUMMARY

The following table shows the total estimated volume (L) of garbage and recycling generated by the development. A seven day operating week has been assumed.

Table 4: Calculated Waste Generation - Total

Land Use		Generated Garbage (L/week)	Generated Recycling (L/week)
Hotel		1155	231
Restaurant		5280.94	1064.07
TOTAL		6435.94	1295.07
Collections & Equipment	Bin Size (L)	240	240
	Collections per Week	7	7
	No. Bins Required	4	1
Waste Rooms	Equipment	None	
	Storage Room	6sqm	

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 room/areas prior to scheduled collection times, and returning them once emptied to resume operational use.

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

If required the developer should contact a bin-tug, trailer or tractor consultant to provide equipment recommendations. Examples of motorised bin moving equipment can be found in APPENDIX B.4 and APPENDIX B.5.

Bins may have to be fitted with hitches to enable the simultaneous transportation of multiple bins to the collection area. Council must be informed of any hitch attachments required to be installed on bins.

COLLECTION OF WASTE

All waste generated by this development will be collected by private contractor to an agreed schedule (this report assumes that collections will occur on a daily basis). Collections will be required to occur after 7am.

The contractor's waste vehicle will pull up on Elizabeth Bay Road, with collection staff servicing the bins directly from the waste room via a wheel-in/wheel-out scenario.

The building manager will be responsible for ensuring that all bins are neatly arranged within the waste room for ease of use and servicing.

COLLECTION AREA

It is Elephant Foot's understanding that the collection areas have been reviewed by a traffic consultant to confirm the swept paths for waste collections, access and egress.

INSTALLATION EQUIPMENT AND DESIGN

EQUIPMENT SUMMARY

Table 5: Equipment Summary

Component	Part	Qty	Notes
Equipment A	Ceiling Mounted/Standalone Compactor	N/A	Optional (See APPENDIX D for Typical Compactor)
Equipment B	Suitable Bin Moving Equipment	N/A	Optional (See APPENDIX D for Typical Bin Mover)

WASTE ROOM AREAS

Any compaction units should be caged off to ensure the safety of any personnel accessing the waste room.

The areas allocated for the waste room are detailed in Table 6 below. The areas provided are estimates only. Final areas will depend upon room and bin layouts.

Table 6: Waste Room Areas

Level	Waste Room Type	Equipment	Allocated Area (m^2)
B1	Waste Room	4 x Red 240L MGBs (Garbage) 1 x Yellow 240L MGBs (Recycling)	>6

Note: Any requirement for increasing storage capacity can be met by increasing the frequency of collections for all 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 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 walls and above all bins, clearly stating what type of waste or recyclables is to be placed in the bin underneath.

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.

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

MOVEXX (Bin Movers)
Phone: 1300 763 444

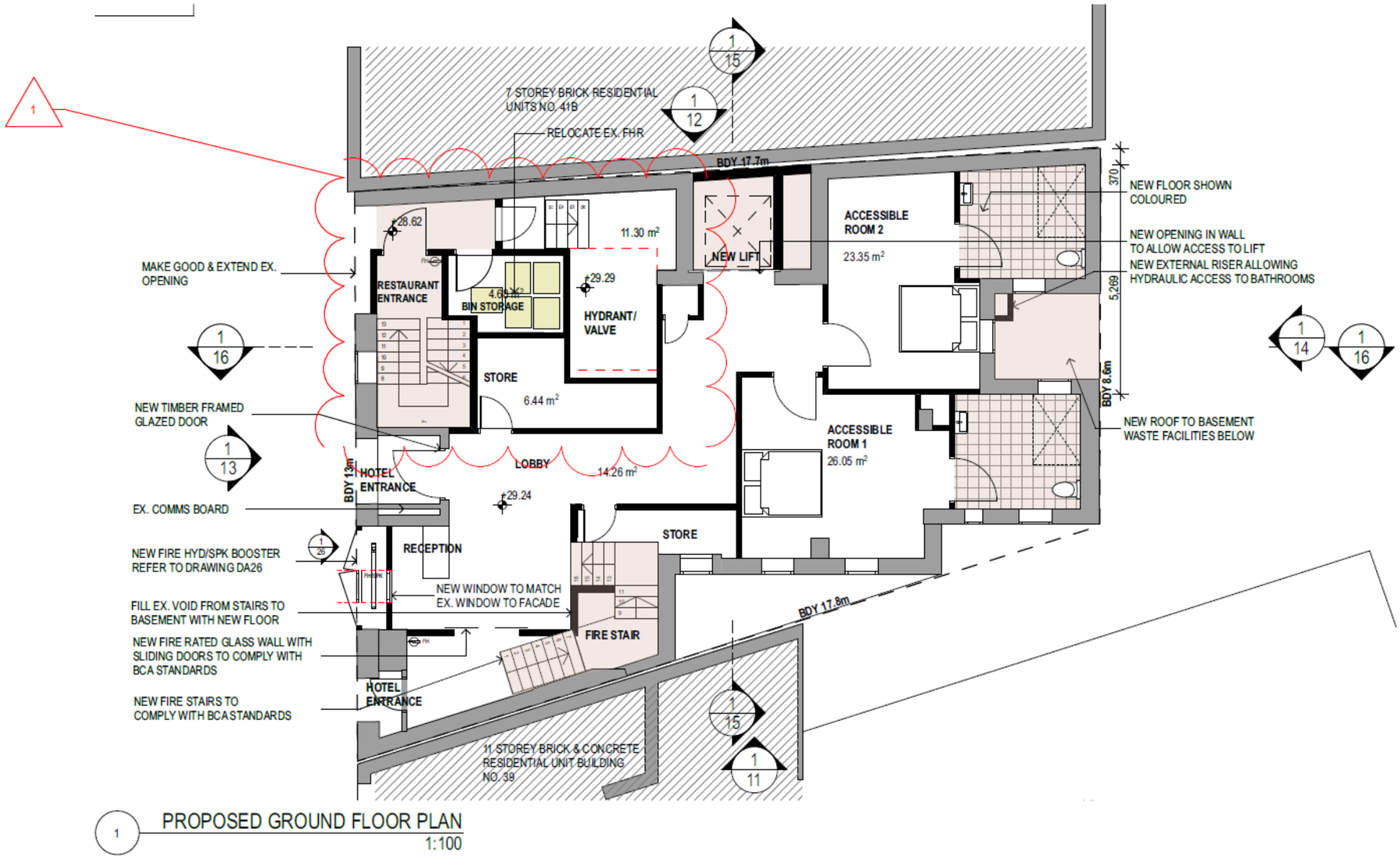
AUSCOL (Recyling Oils & Animal Fats)
Phone: 1800 629 476

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

APPENDICES

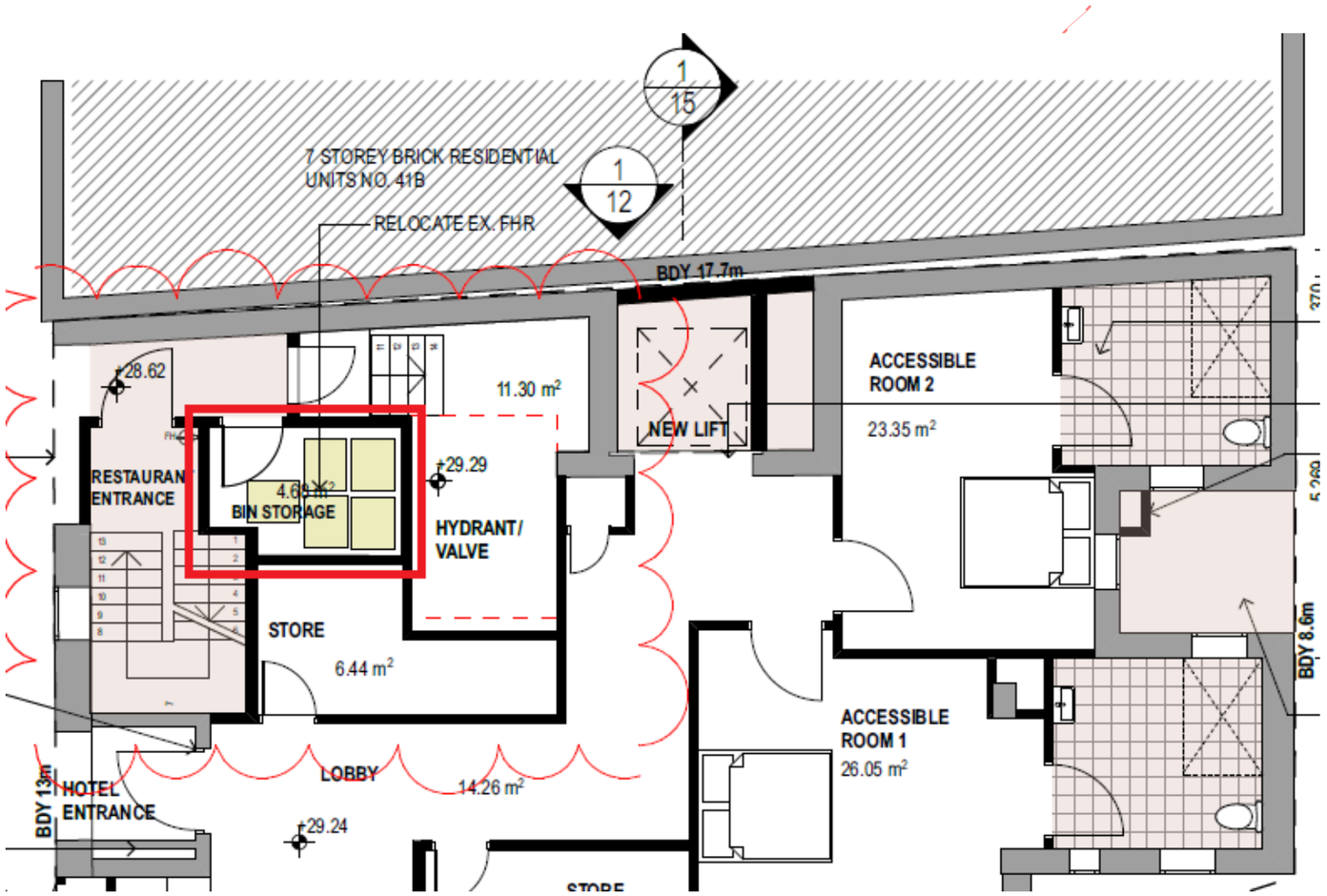
APPENDIX A ARCHITECTURAL DRAWING EXERPTS

APPENDIX A.1 SITE PLAN



Source: Mostaghim & Associates, Drawing No. 06, RevD(P1) – Proposed Ground Floor Plan

APPENDIX A.2 WASTE ROOM



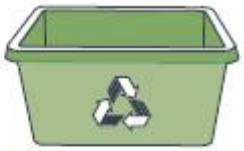
Source: Mostaghim & Associates, Drawing No. 06, RevD(P1) – Proposed Ground Floor Plan

APPENDIX B PRIMARY WASTE MANAGEMENT PROVISIONS

APPENDIX B.1 CITY OF SYNDEY BIN SPECIFICATIONS

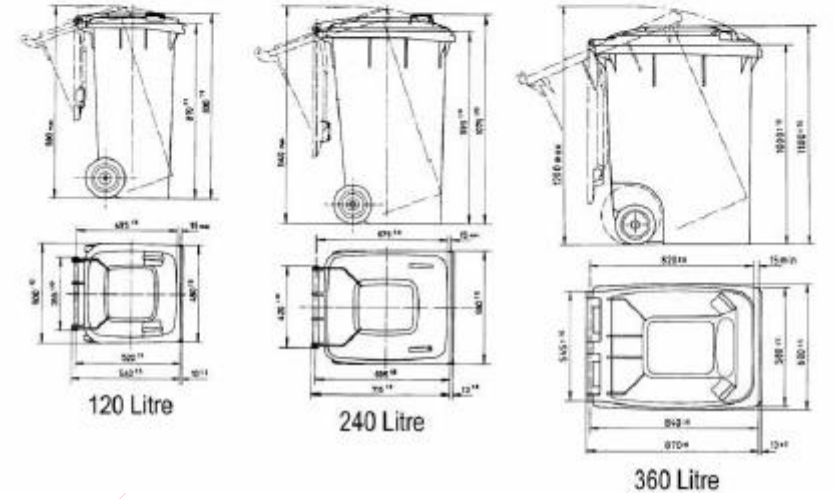
Crates

Bin Type	50L Crate	70L Crate	90L Crate
Height	320 mm	395 mm	420 mm
Length	575 mm	575 mm	450 mm
Width	445 mm	445 mm	450 mm



Mobile Garbage Bins (MGBs)

Bin Type	120L MGB	140L MGB	240L MGB	1000L MGB
Height	940 mm	1065 mm	1080 mm	1350 mm
Length	560 mm	540 mm	735 mm	1160 mm
Width	485 mm	500 mm	580 mm	1360 mm



SOURCE: City of Syndey Polciy for Waste Minisation in New Development 2005

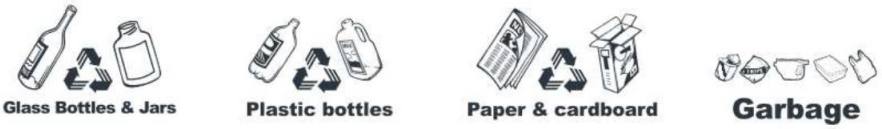
APPENDIX B.2 SIGNAGE FOR WASTE & RECYCLING BINS

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).

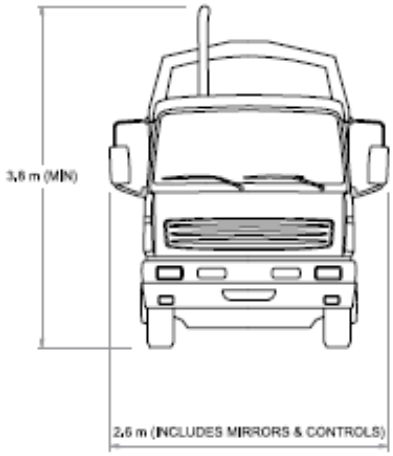
SOURCE: Department of Environment and Climate Change NSW 2008, Better Practice Guide for Waste Management in Multi-Unit Dwellings

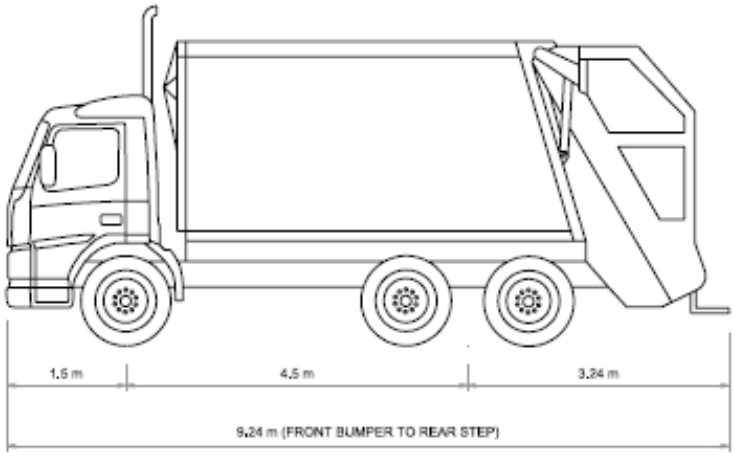
APPENDIX B.3 CITY OF SYDNEY COLLECTION VEHICLE INFORMATION

Waste collection vehicles may be side loading, rear end loading or front end loading. The size of vehicle varies according to the collection service. Thus it is impossible to specify what constitutes the definitive waste truck. Developers must consult with Council regarding the type of vehicle used in that area.

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

Any turning circle considerations must also include allowances for driver steering error and overhangs. The steering error allowance must be at least 0.6 metres (absolute minimum) on both sides of the theoretical wheel path and 1m as a desirable minimum.





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

Access and turning provisions

Best design practice for access and egress from a development calls for a separate entrance and exit to allow the collection vehicle to travel in a forward direction at all times. Where there is a requirement for collection vehicles to turn at a cul-de-sac head within a development, the design must incorporate either a bowl, 'T' or 'Y' shaped arrangement.

The design aspects that must be taken into account include the following:

- Placement of waste and recycling bins outside each home, or in a common collection area;
- The presence of parked cars on access roads;
- Trucks must only be expected to make a three-point turn to complete a U-turn; and
- Allow for collection vehicle overhang and possible interference with bins and road furniture.

Road geometry

The design parameters that must be complied with are:

- A maximum desirable gradient of 10% for turning heads;
- A maximum longitudinal road gradient of 15%;
- A minimum kerb radius of 8.5m at the outside of turn where there is to be no kerbside collection;
- A minimum kerb radius of 10.0m at outside of turn if there is to be kerbside collection;
- A minimum pavement width of 5.0m if less than 24 car-parking spaces are required;
- A minimum pavement width of 6.5m if 25 or more car-parking spaces are required; (use of passing bays is acceptable); and
- An industrial-type strength pavement designed for a maximum wheel loading of 7 tonnes per axle in order to accommodate waste and recycling collection trucks (The standard road pavement design specifications for an industrial driveway entry on public land is 150mm thick concrete, 20MPa concrete with F82 mesh).

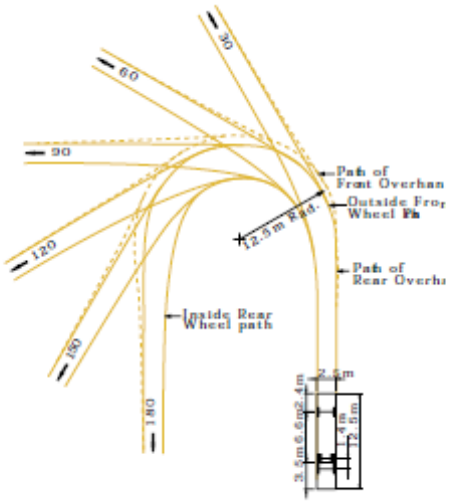
Collection from enclosures

Collection vehicles may enter building basements for the collection of waste and/or recyclables provided the following requirements are met:

- The gradient of the ramp access to basement must not exceed 1:8;
- The height to the structural members and upper floor ceiling must allow for a typical collection vehicle travel height / operational height consistent with type of vehicle employed;
- The provision of space clear of structural members or vehicle parking spaces adequate to allow typical three-point turn of collection vehicles; and
- The basement floor must be of industrial-type strength pavement and designed for a maximum wheel loading of 7 tonnes per axle in order to accommodate waste and recycling collection trucks. (The standard road pavement design specifications for an industrial driveway entry on public land is 150mm thick concrete, 20MPa concrete with F82 mesh).

Sample turning circle design

source: AUSTROADS design single unit truck / BUS (12.5m)
scale 1 : 200 radius 12.5m
ABSOLUTE MINIMUM RADIUS
For use at mandatory stop only. Turning speed up to 5km/h.

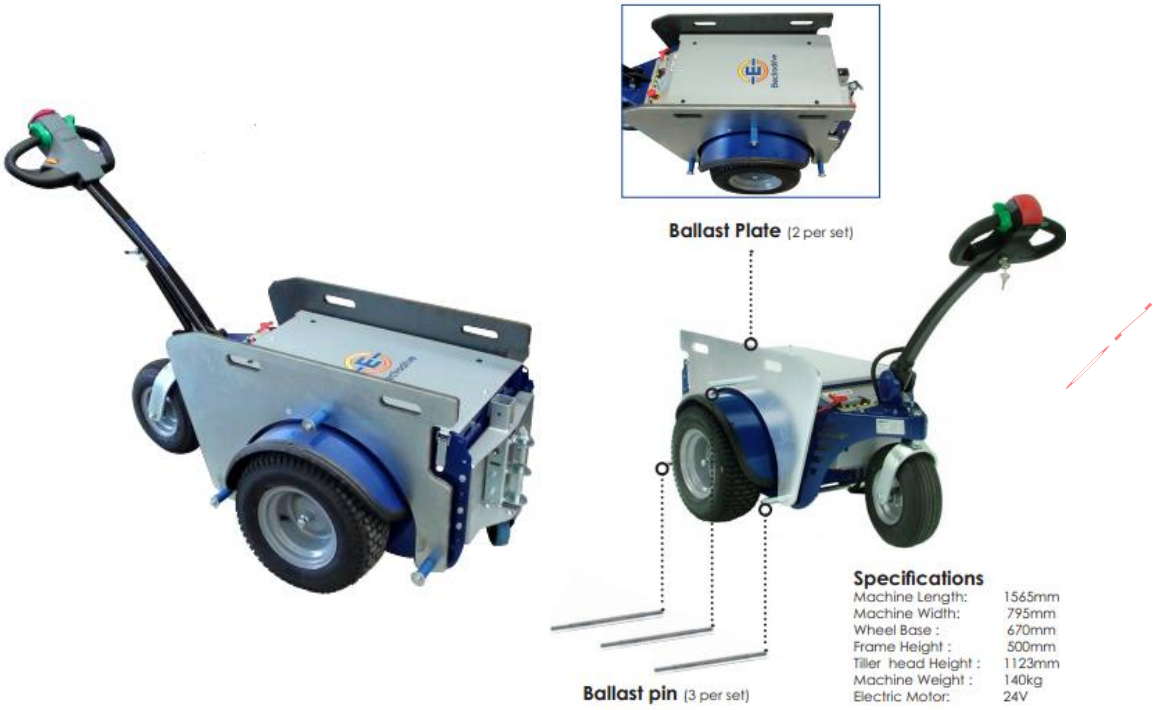


Notes:- 1. Locate face of kerbs at least 0.6m clear of wheel paths.

2. Allow 0.6m clearance outside path of overhang and ensure that this area is kept free of road furniture.

SOURCE: City of Syndey Polciy for Waste Minisation in New Development 2005

APPENDIX B.4 TYPICAL MOTORISED BIN TUG



Typical applications:

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

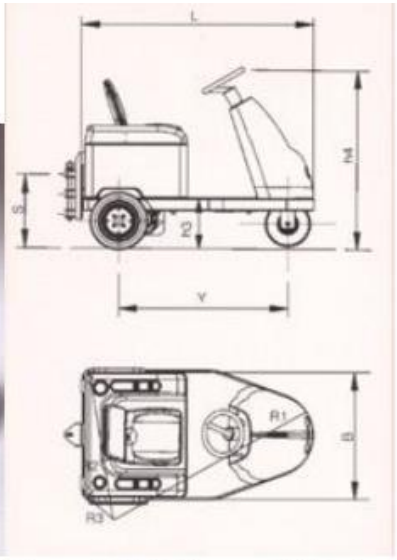
Features:

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

Safety Features:

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

APPENDIX B.5 TYPICAL SEATED BIN MOVER



		UNIT M.	BULL 2	BULL 4
Manufacturer	DEC			
Model	BULL			
Platform loading cap.	Nominal capacity	kg	-----	-----
Pull capacity	Pull nominal capacity	kg	2000	4000
Power type	Electric - endotermic		electric	electric
Controltype	Standing / seated thiller / steer		seated / steer	seated / steer
Tyres	Pn=pneum. Se=superelastic		Pn	Pn
Wheels	N. front/rear - x drive	n.	1/2X	1/2X
Platform dimensions	L x B (lengh x width)	mm	-----	-----
Platform hight	h6 = unload clearence	mm	-----	-----
Overal dimensions	L = lenght B = width h1 = foot leve h3 = Seat height h4 = Steer height	mm mm mm mm mm	1500 900 1820 310 1250	1600 930 1960 340 1330
Turning radius	R1 = front min. external R2 = rear min. external R3 = front min. internal	mm mm mm	1400 1000 400	1500 1000 400
Aisle width	A = 180° turn	mm	2200	2300
Tow hook height	s = center from ground	mm	220-350-490	240-380-520

APPENDIX C INSTALLATION EQUIPMENT

APPENDIX C.1 TYPICAL WHEELIE BIN COMPACTOR

120 - 240 LITRE
BIN COMPACTOR

SPECIFICATIONS

- Machine Size: 120/240 Litre bins **W900 x D860 x H2400mm**
  660 Litre bins **W1500 x D1100 x H2850mm**
- Compaction Ratio: **2:1 up to 5:1**

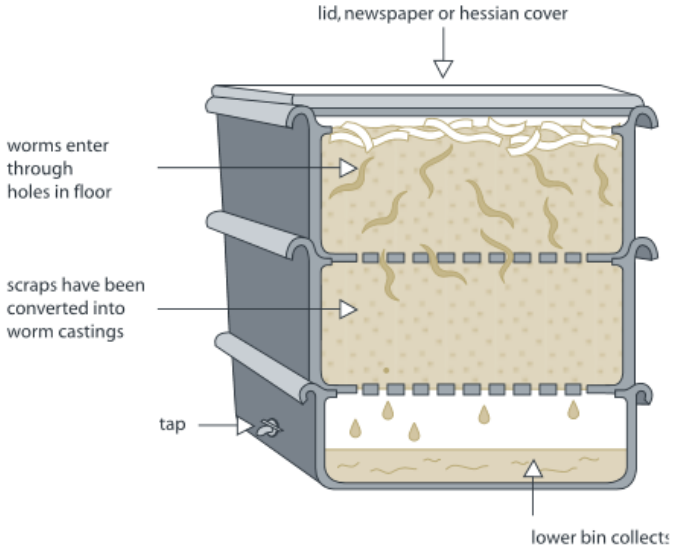
FEATURES & BENEFITS

- 240 Volt power, standard power point required with a "D" type circuit breaker
- 12 Months warranty with reliable after sale service
- Fully automatic compaction
- 40 Second cycle time
- Manufactured in Australia using quality local parts
- All Elephants Foot equipment complies with Australian Safety Standards

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

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

APPENDIX D.4 COOKING OIL CONTAINERS

AUSCOL
A GrainCorp business

Home | About | Services | Our Parent Company | Contact

The RIGHT WAY for Cooking Oil Collection Systems

Drums 205L

Pour in Bulk Tank

View Brochure

Oil Kaddy System

View Brochure

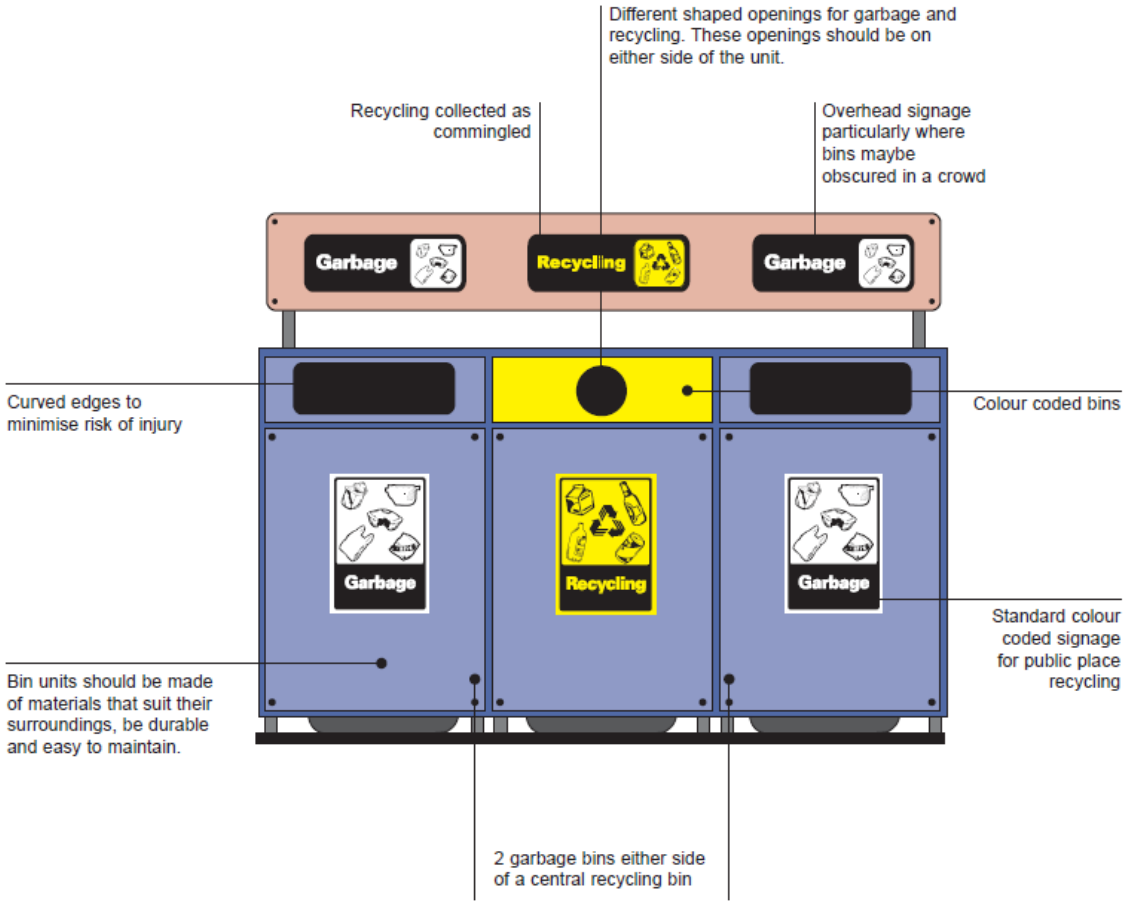
- Collection Service
- Collection Systems
- Recycling & Environment
- Safety
- Fresh Oil *(WA Only)*

Eco Systems

Direct-Connect to Fryer

APPENDIX D.5 TYPICAL BACK OF HOUSE BINS

APPENDIX D.6 TYPICAL PUBLIC PLACE WASTE BINS



Source: *Department of Environment and Conservation (NSW) Better Practice Guide for Public Place Recycling 2005*