# 247 Jamboree Avenue, Denham Court

Residential Aged Care Development

# OPERATIONAL WASTE MANAGEMENT PLAN

10/12/2018
Report No. 18054
Revision B

Client

## RSL Care RDNS Ltd. (Bolton Clarke)

Level 3, 44 Musk Avenue, Kelvin Grove, Brisbane QLD 4059

Architect

## Conrad Gargett

Level 26, 240 Queen Street, Brisbane QLD 4000
www.conradgargett.com.au
**T** 07 3229 3555 • **E** Email

**ELEPHANTS FOOT RECYCLING SOLUTIONS • ABN** 70 001 378 294
44-46 Gibson Ave Padstow NSW 2211
www.elephantsfoot.com.au

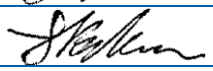
**T** +612 9780 3500 • **F** +612 9707 2588
**E** info@elephantsfoot.com.au

# SCOPE

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

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

# REVISION REFERENCE

| Revision | Date | Prepared by | Reviewed by | Description | Signed |
|---|---|---|---|---|---|
| A | 10/09/2018 | J Parker | A Armstrong | Draft |  |
| B | 10/12/2018 | J Parker | A Armstrong | Final |  |
| | | | | | |
| | | | | | |
| | | | | | |

# TABLE OF CONTENTS

# 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 Bolton Clarke for the operational management of waste generated by the residential aged care development located at 247 Jamboree Avenue, Denham Court.

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 Campbelltown City Council, and consists of:

- 144 dependent living units over 2 levels
- Kitchen area with a total GFA of 158m²

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 247 Jamboree Avenue, Denham Court, as shown below. The site has frontages to Jamboree Avenue and Denham Court Road, with vehicle access via Jamboree Avenue.


*Source: Conrad Gargett – Ground Floor*

# CAMPBELLTOWN CITY COUNCIL

The residential garbage and recycling will be guided by the services and acceptance criteria of the Campbelltown City Council. All waste facilities and equipment are to be designed and constructed to be in compliance with the Campbelltown City Council's *Development Control Plan 2015,* Australian Standards and statutory requirements.

## COUNCIL OBJECTIVES

- Ensure waste systems are easy to use and that, where necessary, collection vehicles are able to access buildings to remove waste.
- Ensure healthy and safe practices for the storage, handling and collection of waste and recycling materials.
- Prevent stormwater pollution that may occur as a result of poor waste storage and management arrangements.
- Promote the principles of ESD through appropriate resource recovery and recycling, leading to a reduction in the consumption of finite natural resources.
- Minimise the creation of noise during the collection of waste and recyclables.

## 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 Campbelltown 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;<br>• Organising internal waste audits/visual assessments on a regular basis; and<br>• 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;<br>• Providing staff/contractors with equipment manuals, training, health and safety procedures, risk assessments, and PPE to control hazards associated with all waste management activities;<br>• Ensuring site safety for residents, children, visitors, staff and contractors;<br>• Abiding by all relevant OH&S legislation, regulations, and guidelines;<br>• Assessing any manual handling risks and prepare a manual handling control plan for waste and bin transfers;<br>• Preventing storm water pollution by taking necessary precautions (securing bin rooms, preventing overfilling of bins)<br>• Cleaning and transporting of bins as required;<br>• Organising, maintaining and cleaning the general and recycled waste holding area;<br>• Organising both garbage and recycled waste pick-ups as required;<br>• Organising replacement or maintenance requirements for bins;<br>• Organising bulky goods collection when required; and<br>• Investigating and ensuring prompt clean-up of illegally dumped waste materials. |
| Residents/Tenants | • Dispose of all garbage and recycling in the allocated MGBs provided;<br>• Ensure adequate separation of garbage and recycling; and<br>• Compliance with the provisions of Council and the WMP. |
| Council/Private Waste Contractor | • Provide a reliable and appropriate waste collection service;<br>• Provide feedback to building managers/residents in regards to contamination of recyclables; and<br>• 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 resident 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 owners' corporation website contain information for residents 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;
- residents' 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 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 equipment and systems must be approved by the supplier.

# AGED CARE WASTE PLAN

The *Campbelltown DCP 2016* has been referenced to calculate the total number of bins required for the residential units.

All residential rooms within the development are considered as assisted living rooms.

*Table 2: Calculated Waste Generation – Residential Aged Care*

| Type | # Occupants | Garbage Generation Rate (L/Occupant/week) | Generated Garbage (L/week) | Recycling Generation Rate (L/Occupant/week) | Generated Recycling (L/week) |
|---|---|---|---|---|---|
| Residential Aged Care - Assisted Living | 144 | 60 | 8640 | 60 | 8640 |

| Area | 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) |
|---|---|---|---|---|---|---|
| Kitchen | Restaurant | 158 | 670 | 7410 | 135 | 1493 |

| | | |
|---|---|---|
| Aged Care Units | 8640 | 8640 |
| Kitchen | 7410 | 1493 |
| **TOTAL** | **16050** | **10133** |

## BIN SUMMARY

The following assumptions have been taken into consideration:

- Recycling and waste bins are held in a shared bin room
- Number of bins have been rounded up for best operational outcome

Using the assumptions stated, the required capacity and quantity of garbage and recycling bins have been calculated and tabulated below:

Waste

**Standard**: 15 x 1100L MGBs Collected **weekly**
**Proposed**: 5 x 1100L MGBs Collected **three times weekly**

Recycling

**Standard:** 10 x 1100L MGBs Collected **weekly**
**Proposed:** 3 x 1100L MGBs Collected **three times weekly**

*NOTE*: As the premises are likely to generate more that 50L of putrescible waste a day, Council requires waste to be either collected daily or to be stored in a refrigerated waste storage area. The proposed scenario caters for a refrigerated storage area.

*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

Waste and recycling bins will be placed in key area around the facility, such as the kitchen, residents' rooms, staff rooms and common areas.

Cleaners and staff will empty the waste and recycling into bags or a cart as required and then take the waste to the bin holding room on the ground floor where it will be emptied into the designated bin.

## RESIDENTS WASTE

Each resident's room will be supplied with bins to collect garbage and recyclable materials.

The bins are emptied by contract cleaners. The cleaners circulate around each resident's room and also perform other cleaning tasks.

Cleaners empty the bins into bags which they transport around the building 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 refrigerated waste room, located on the ground level.

Residents will not have access to the bin holding area.

## MEDICAL WASTE

The management of medical waste (as used in aged care facilities) is a highly specialised field. If not stored and treated appropriately, some materials can cause infections or injuries, while others can be highly toxic. As such the correct and safe handling of generated medical waste will be required at all times with all medical waste being removed off site by a specialist waste removal contractor.

The residential aged care facility will have dedicated medical waste bins supplied as per the medical waste contractor's recommendations for the site. Waste from out-of-date and partly used medicines, infectious medical wastes, hazardous wastes and radioactive wastes must be stored and disposed of according to specific industry-based regulations. Correct segregation and containment of all wastes is required under the Waste Act.

Medical waste bins will be kept in the garbage room on the basement level. Chutes **MUST NOT** be used for the transport of medical waste.

Medical waste bins will be collected by the appointed contractor on a wheel in/wheel out basis and replacement bins provided to an agreed collection scheduled.

Please refer to Table 3 for the storage and collection requirements for any medical waste.

*Table 3: Storage and collection requirement for medical waste*

| Area | Location |
|---|---|
| Storage | An EPA license may be required to store Hazardous Wastes. Storage areas are to be free from odour and must discourage the harbourage of vermin. Health Care Facilities must provide an enclosed structure such as a shed, garage, cage, fenced area or separate loading bay to store waste. The holding area should be located away from food and clean storage areas, it must not be accessible to the public, have a lockable door and rigid impervious flooring. Clean up facilities, spills kits, appropriate drainage and bunding should be provided. Where wastes are stored in bins the bin must be locked and a specific area, with adequate drainage, for washing equipment should be designated |
| Containers | All containers of medical waste to be stored in a secure location. Loads contained in MGBs and trolleys should be less than 55kgs and bins must be colour coded and marked in accordance with the Waste Management Guidelines for Health Care Facilities |
| Spillage | Ensure all necessary equipment required to clean and disinfect the area in case of accidental spillage is easily available and accessible. It is essential that personnel involved in spill management receive education and training in emergency procedures and handling requirements. Spill kits that have been used should be disposed of with the type of waste that has been cleaned up, eg used cytotoxic spill kits should be disposed of with cytotoxic waste |
| Mixed waste | Any waste mixed with medical waste must be treated as medical waste |
| Sharps | Needles, syringes and surgical instruments must be handled so the disposal of these items does not incorporate cutting, bending or any other manipulation that could generate aerosols or splatter contaminated fluids. All sharps containers should be assessed for compliance with the current NSW Health Infection Control Policy and the relevant Australian Standard |
| Collections | Medical waste shall remain within the storage areas and only be moved during collections. Collections will be performed by a transporter licensed by the EPA to collect and transport |

## KITCHEN WASTE

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.

Waste, cardboard recycling and co-mingled recycling bins will be place back of house in the kitchen for the disposal of kitchen waste. It is the staff's responsibility to ensure that waste and recycling is separated and is disposed of in the appropriate bin.

Cardboard is a major component of the waste generated by kitchens. 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.

At the end of each day or when required, the bins in the kitchen will be emptied into the bins in the bin holding area.

Waste will be collected frequently to minimise the impacts from large amount of organic waste.

## RECYCLING

***Recycling must not be bagged***. It is recommended that staff use a crate or dedicated bin for collecting recyclables to ensure correct separation.

Recycling bins will be placed alongside any general waste bins.

## COMMINGLED RECYCLING

Any staff tea points and kitchens 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.

## COMMON AREAS

The lobbies, recreational areas, offices, dining area, function rooms and circulation areas will be supplied with suitably branded waste and recycling bins, where considered appropriate. Cleaners will monitor use and ensure bins are exchanged and cleaned.

## WASHROOMS

Staff 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.

## ADMINISTRATION, OFFICE AND FUNCTION ROOM WASTE

The cleaners will exchange or empty any waste and recycling bins situated in the administration areas, offices and function room. The cleaners will transport the waste to the bin storage room on the ground level and deposit the waste into the appropriate bin.

## OTHER WASTE STREAMS

Electronic goods or hazardous waste must not be placed in garbage or recycling bins for safety and environmental reasons. Building management should contact Council for further information.

## GREEN WASTE

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

# 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

## AGED CARE

Waste generated by the aged care facility will be collected by private contractor to an agreed schedule (this report assumes collections will three times per week).

The contractor's waste vehicle will access the site from Jamboree Avenue and pull into the loading dock from where the bins are to be serviced.

Once all bins have been serviced, the vehicle will leave the site in a forward-facing direction.

Medical waste bins will be collected by an appointed contractor on a wheel in/wheel out basis to an agreed collection schedule. Medical waste shall remain within the storage area and only be moved during collections. Collections will be performed by a transporter licensed by the EPA to collect and transport

## 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, internal manoeuvring to assume parked position for loading and to exit, load requirements as well as collection vehicle. It must be ensured that that the collection vehicle (and other trucks if required) can enter and exit the building in a forward direction. The final number of truck movements will depend on management of waste contract; final configuration of waste and recycling arrangements therefore number of bin lifts and additional irregular truck movements for hard waste.

# INSTALLATION EQUIPMENT AND DESIGN

## EQUIPMENT SUMMARY

*Table 4: Equipment Summary*

| Component | Part | Qty | Notes |
|---|---|---|---|
| Equipment | Suitable Bin Moving Equipment | N/A | Optional<br>(See APPENDIX B.4 for Typical Bin Mover) |

## WASTE ROOM AREAS

The areas allocated for waste storage 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 | Allocated Area ($m^2$) |
|---|---|---|---|
| G | Aged Care Refrigerated Waste Room | 5 x 1100L MGBs (Garbage)<br>3 x 1100L MGBs (Recycling) | 20 |
| | Medical Waste Room | As defined by the contractor | N/A |

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 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

### CONSTRUCTION REQUIREMENTS FOR REFRIGERATED GARBAGE ROOMS

- The floor shall be constructed of concrete at least 75 mm thick or other approved material, graded and drained to an approved drainage outlet connected to the sewer and shall be finished to a smooth even surface coved at the intersection of walls and plinths;
- The walls shall be constructed of approved solid impervious material and shall be cement rendered internally to a smooth even surface coved at all intersections;
- The ceilings shall be finished with a rigid smooth faced non-absorbent material capable of being easily cleaned;
- A close-fitting robust door with internal face smooth and impervious shall be provided. Doors shall also be capable of being easily opened;
- Where bulk bins are housed in a Refrigerated Garbage Room; a bump rail constructed of galvanised metal or other approved durable impervious material shall be installed around and at least 50 mm clear of walls, or flat sheet iron shall be installed flush with walls, and galvanised angle iron shall be installed around door openings.
- Refrigerated Garbage Rooms and enclosures shall be constructed in such a manner as to prevent the entry of vermin.

## 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.

**CAMPBELLTOWN COUNCIL CUSTOMER SERVICE**
Phone: (02) 4645 4000 Email: council@campbelltown.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

**KOMPACT EQUIPMENT** (Equipment & Servicing Provider)
Phone: 1300 566 722 Email: info@kompactequipment.com.au

**ELEPHANTS FOOT RECYCLING SOLUTIONS** (Chutes, Compactors & eDiverter Systems)
44 – 46 Gibson Avenue
Padstow NSW 2211
Phone: 1300 434 374 Email: wmp@elephantsfoot.com.au

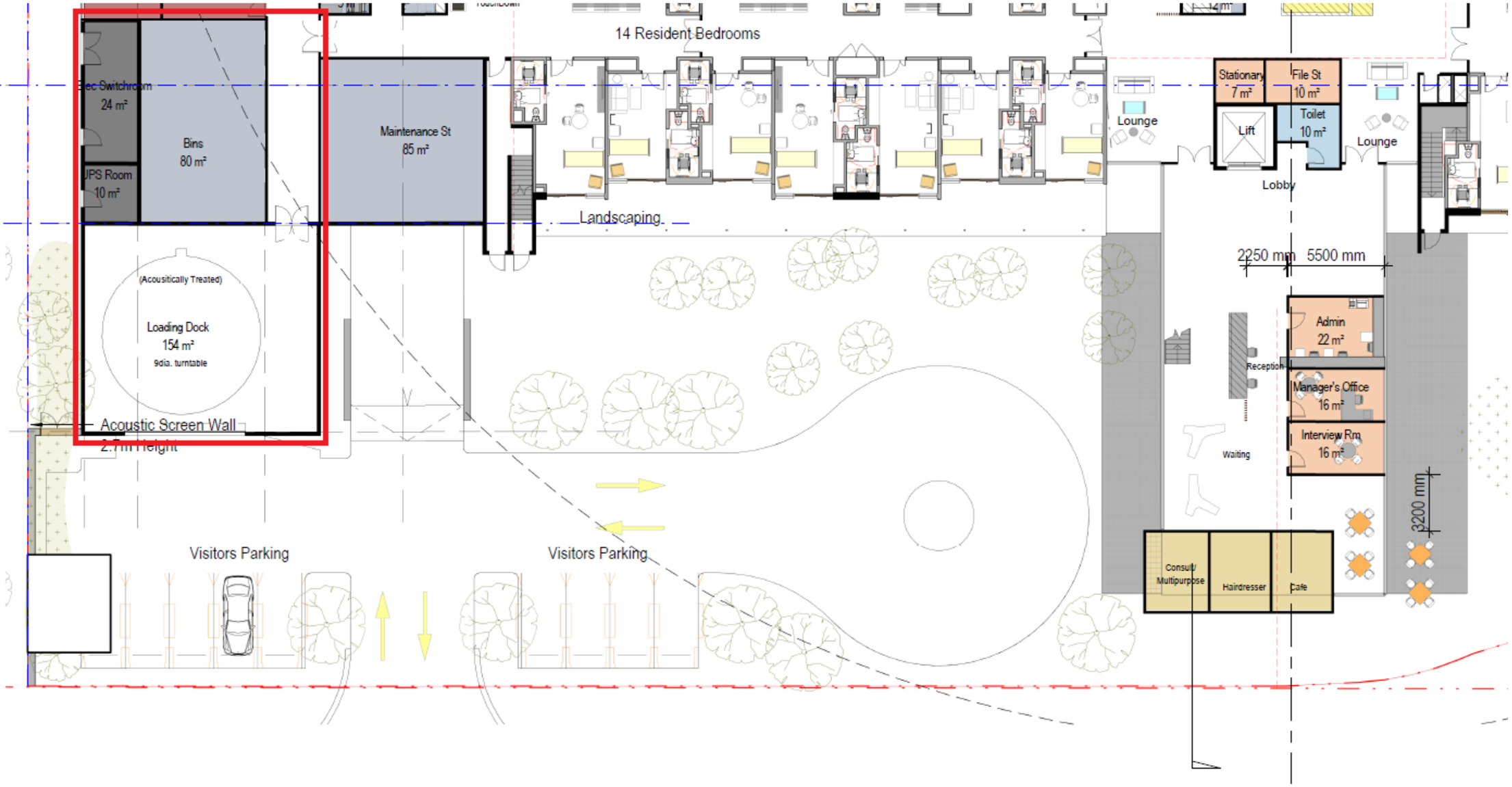
# APPENDICES

## APPENDIX A ARCHITECTURAL DRAWING EXCERPTS

### APPENDIX A.1 SITE PLAN


*Source: Conrad Gargett, Drawing No. SK1002, Iss.2 – Ground Floor*

## APPENDIX A.2 WASTE ROOM/COLLECTION AREA




*Source: Conrad Gargett, Drawing No. SK1002, Iss.2 – Ground Floor*

# APPENDIX B PRIMARY WASTE MANAGEMENT PROVISIONS

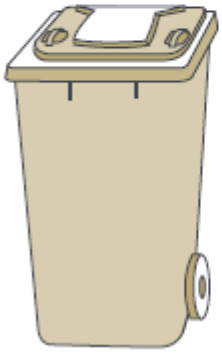
## APPENDIX B.1 TYPICAL BIN SPECIFICATIONS

### Mobile garbage bins (MGBs)

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

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

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



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

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

**Dome or flat lid containers**

| Bin Type | 660 Litre MGB | 770 Litre MGB | 1100 Litre MGB | 1300 Litre MGB | 1700 Litre MGB |
|---|---|---|---|---|---|
| Height | 1250 | 1425 | 1470 | 1480 | 1470 |
| Depth | 850 | 1100 | 1245 | 1250 | 1250 |
| Width | 1370 | 1370 | 1370 | 1770 | 1770 |

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

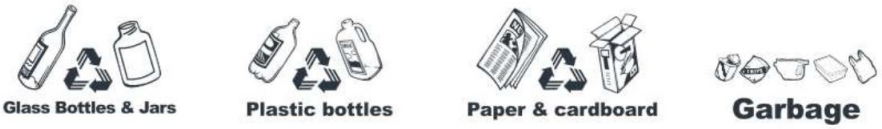
## APPENDIX B.2 SIGNAGE FOR WASTE & RECYCLING BINS

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*

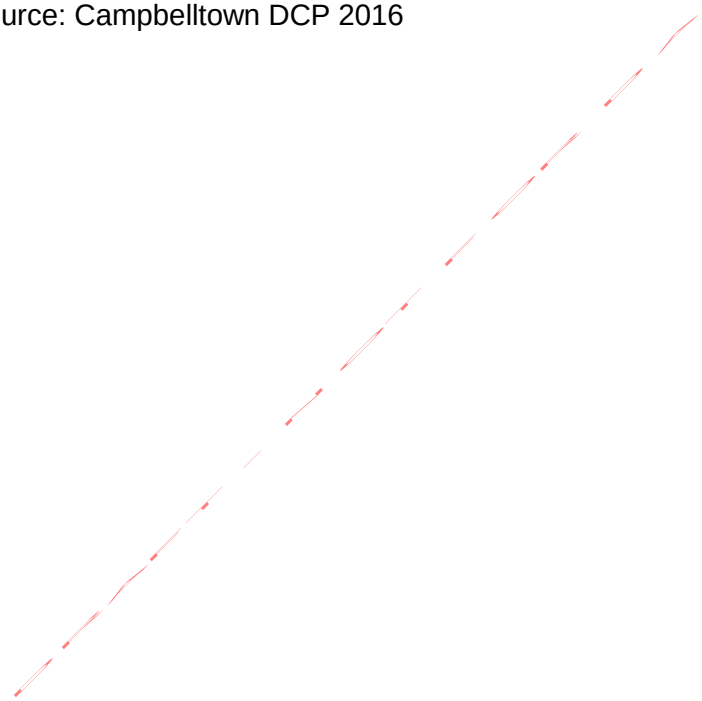
## APPENDIX B.3 CAMPBELLTOWN CITY COUNCIL COLLECTION VEHICLE INFORMATION

Table 2.15.2 - Indicative dimensions of waste collection vehicles

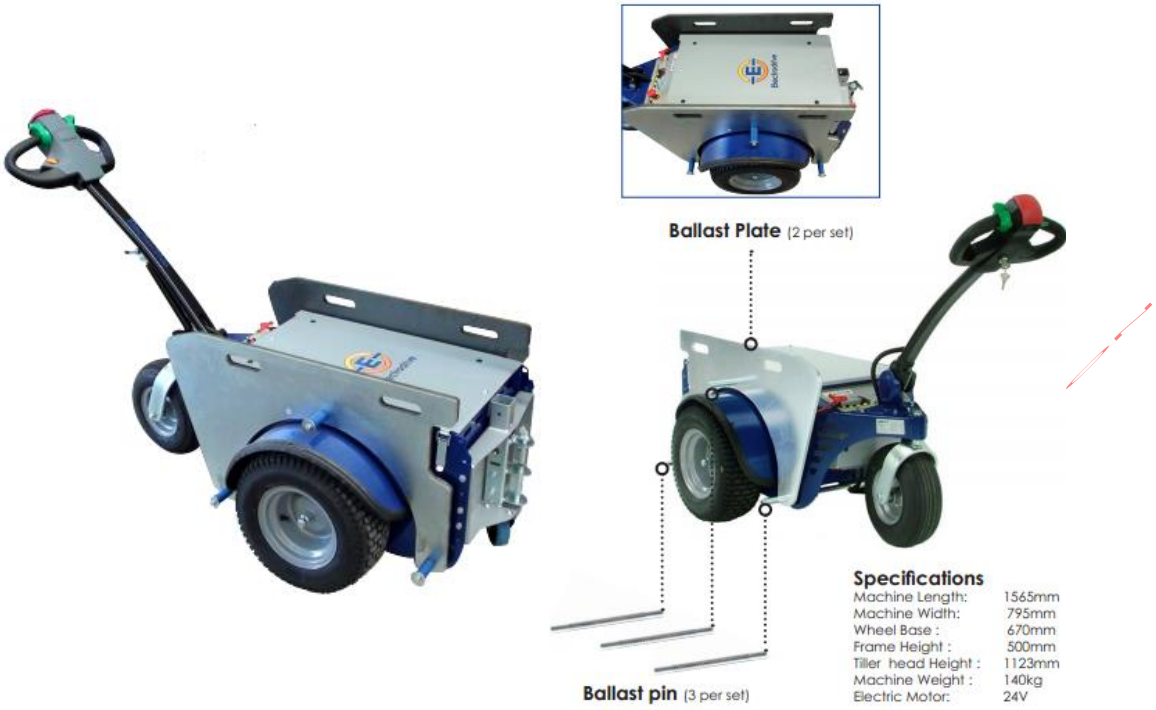
| | Side loading collection vehicle | Front loading collection vehicle | Rear loading collection vehicle |
|---|---|---|---|
| Overall length | 9.9 metres | 9.2 metres | 8 metres |
| Overall width | 2.5 metres | 2.5 metres | 2.5 metres |
| Operational height | 4 metres | 6 metres | 4 metres |
| Travel height | 4 metres | 4 metres | 4 metres |
| Weight (vehicle only) | 13 tonnes | 16.5 tonnes | 13 tonnes |
| Weight (payload) | 9.5 tonnes | 11 tonnes | 9.5 tonnes |
| Turning circle radius | 12.5 metres | 12.5 metres | 12.5 metres |

*Note: These specifications are indicative only and may vary depending on vehicle brand, model, axle configuration etc.*

Source: Campbelltown DCP 2016



## 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

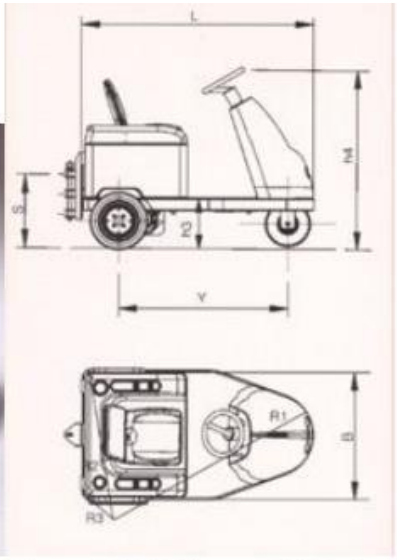
Features:

- 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

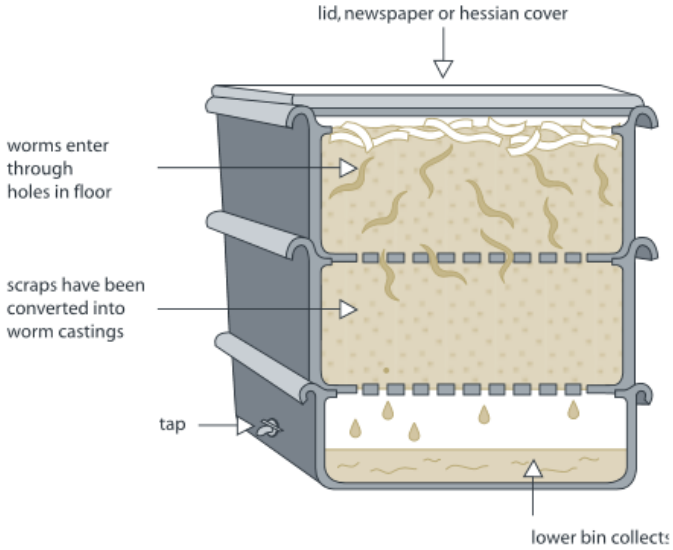




| | | UNIT M. | BULL 2 | BULL 4 |
|---|---|---|---|---|
| Manufacturer | DEC | | | |
| Model | BULL | | | |
| Platform loading cap. | Nominal capacity | kg | ----- | ----- |
| Pull capacity | Pull nominal capacity | kg | 2000 | 4000 |
| Power type | Electric - endotermic | | electric | electric |
| Controltype | 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<br>B = width<br>h1 = foot leve<br>h3 = Seat height<br>h4 = Steer height | mm<br>mm<br>mm<br>mm<br>mm | 1500<br>900<br>1820<br>310<br>1250 | 1600<br>930<br>1960<br>340<br>1330 |
| Turning radius | R1 = front min. external<br>R2 = rear min. external<br>R3 = front min. internal | mm<br>mm<br>mm | 1400<br>1000<br>400 | 1500<br>1000<br>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 SECONDARY WASTE MANAGEMENT PROVISIONS

## APPENDIX C.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 C.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 C.3 ELECTRIC ORGANIC COMPOST BIN

CLOSED LOOP
LOVE WHAT YOU DO
CLO'ey


### Product Specifications

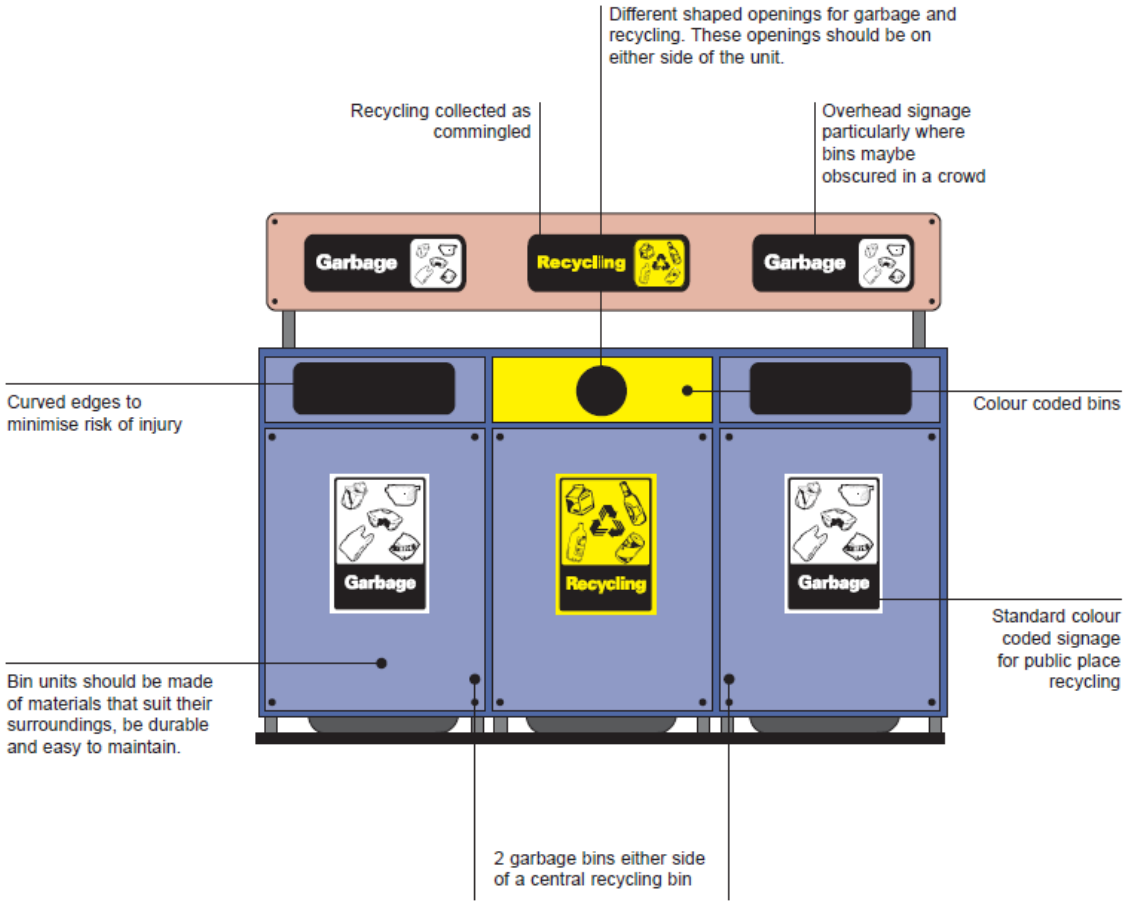
| | |
|---|---|
| Decomposition Method | Fermentation by microorganisms |
| Decomposition Capacity | 2 metric tonnes per year* (4 kg per day*) |
| Rating | 220–240 V 50/60 Hz – 1.1 A |
| Decomposition Time | 24 hrs |
| Operating Temperature | 0C and 40C.** |
| Deodorisation Method | Nano-Filter system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


## APPENDIX C.5 TYPICAL PUBLIC PLACE WASTE BINS




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