# 2-18 Station Street, Marrickville

Mixed Use Development

# OPERATIONAL WASTE MANAGEMENT PLAN

19/01/2021
Report No. SO608
Revision M

Client

EMAG Apartments

Architect

Tier Architects

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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 | March - 15 | N Beattie | E Saidi | Draft |
| B | May - 15 | N Beattie | E Saidi | Amendment |
| C | June - 15 | N Beattie | E Saidi | Amendment |
| D | June - 15 | N Beattie | E Saidi | Amendment |
| E | December - 16 | J Parker | A Armstrong | Amendment |
| F | December - 15 | J Parker | A Armstrong | Final |
| G | February – 17 | J Parker | A Armstrong | Amendment |
| H | December – 18 | J Parker | A Armstrong | Amendment |
| I | January – 19 | J Parker | A Armstrong | Amendment |
| J | June - 20 | J Parker | A Armstrong | Amendment |
| K | June - 20 | J Parker | A Armstrong | Amendment |
| L | June - 20 | J Parker | A Armstrong | Amendment |
| M | Jan - 21 | 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 |
| *Chute* | 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) |
| *Chute Discharge* | The point at which refuse exits from the refuse chute |
| *Chute Discharge Room* | A secure, enclosed area or room housing the discharge and associated equipment for the refuse chute |
| *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 |

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# INTRODUCTION

EFRS has been tasked to prepare the following waste management plan for EMAG Apartments for the operational management of waste generated by the mixed use development located at 2-18 Station Street, Marrickville.

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

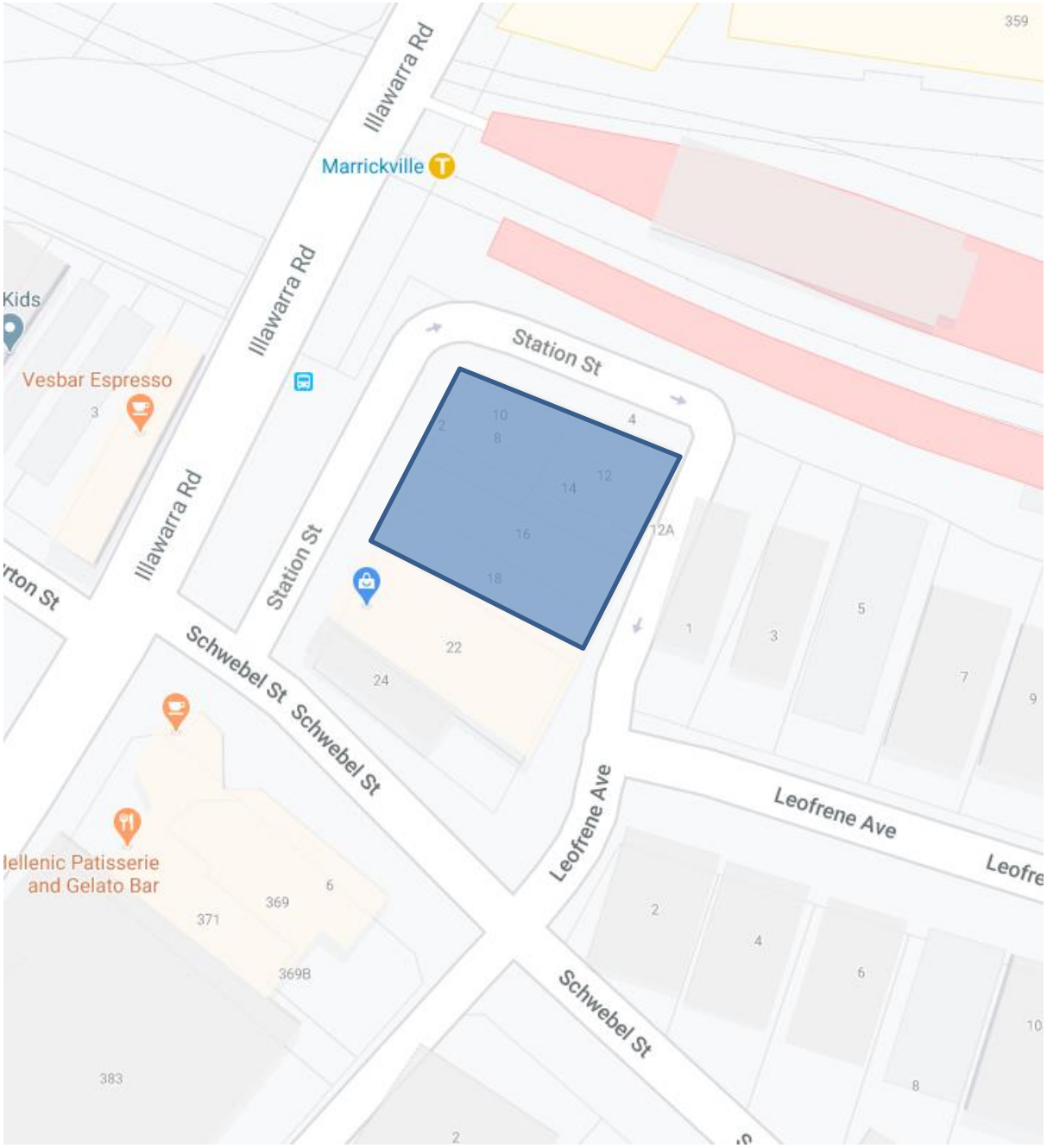
The proposed development falls under the LGA of Inner West Council, and consists of:

- 1 building of 10 levels
    - 131 affordable housing units in total
    - Ground level commercial premises with a total GFA of 266m$^2$

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 2-18 Station Street, Marrickville, as shown below. The site fronts onto Station Street on three sides, with vehicular access to the basement on the Eastern boundary.




*Source: Google Maps*

# INNER WEST COUNCIL (MARRICKVILLE MUNICIPAL COUNCIL)

The development is within Inner West Council's juristiction. Inner West Council is the amalgamation of Ashfield Council, Leichhardt Municipal Council and Marrickville Council. At time of writing this waste management plan, the waste services and associated policies operate under the original council divisions.

Therefore, the garbage and recycling will be guided by the services and acceptance criteria of the Marrickville Council. All waste facilities and equipment are to be designed and constructed to be in compliance with the Marrickville Council's *Marrickville Development Control Plan 2011,* Council Advice, Australian Standards and statutory requirements.

## COUNCIL OBJECTIVES

- To ensure adequate provision is made for site facilities.
- To ensure site facilities are accessible to all residents and easy to maintain.
- To ensure site facilities are thoughtfully and sensitively integrated into the development so as not to be obtrusive or unsightly.
- To ensure the design of waste and recycling storage/collection systems in buildings and land use activities are of an adequate size and are hygienic, accessible, safe to operate, quiet to operate, and visually compatible with their surroundings.
- To achieve waste reduction, waste separation and resource recovery in the demolition, design, construction and operation of buildings and land use activities.
- To promote the principles of ecologically sustainable development (ESD) through waste avoidance, resource recovery, recycling and alternate waste treatment methods.
- To minimise the volume of waste that is directed to landfill sites.
- To reduce stormwater and windblown pollution that may result from the poor design of waste and recycling storage areas or from the poor management of such areas.

## 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 Inner West 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>• General maintenance and cleaning of chute doors on each level;<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 waste chutes and/or MGBs provided;<br>• Ensure adequate separation of garbage and recycling; and<br>• Compliance with the provisions of Council and the WMP. |
| 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

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.

## 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.

# RESIDENTIAL WASTE MANAGEMENT

The *Marrickville Development Control Plan 2011* has been referenced to calculate the total number of bins required for the affordable housing units. Calculations are based on generic figures; waste generation rates may differ according to the residents' waste management practice.

## 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*

| # Units | Garbage Generation Rate (L/unit/week) | Generated Garbage (L/week) | Recycling Generation Rate (L/unit/week) | Generated Recycling (L/week) |
|---|---|---|---|---|
| 131 | 40 | 5240 | 40 | 5240 |
| Collections & Equipment | Garbage Bin Size (L) | 660 | Recycling Bin Size (L) | 240 |
| | Garbage Bins per Day | 2 | Recycling Bins per Day | 4 |
| | Garbage Collections per Week | 2 | Recycling Collections per Week | 2 |
| | Total Garbage Bins Required | 4 | Total Recycling Bins Required | 11 |

## HOUSEHOLD WASTE

A singe garbage chute will be installed with access provided on all residential levels. The chute is to be used for the disposal of garbage only.

Garbage discharges into 660L bins placed on a linear track system in the residential waste room on the ground level.

Residents will be required to dispose of recyclable items directly into the corresponding 240L bins located in the residential waste room on the ground level. Neither waste stream is intended to be compacted.

Full bins will be collected directly from the waste room by a private waste contractor. The site will be required to use a private waste contractor as Station Street cannot be accessed by Council's waste collection vehicle. A private contractor with an SRV will be required.

## COMMON AREAS

The lobbies and communal 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.

Waste generated in any communal cooking facilities will be combined with residential waste streams. With units having individual kitchenettes, the amount of waste generated will be covered by the waste generation rates used for the units.

# 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.

## BULKY GOODS

A caged area will be made available within the waste room for the storage of discarded residential bulky items (e.g. whitegoods, furniture, etc.). This area must have a minimum doorway width of 1.5m to allow for easy movement of large waste items.

These areas are crucial to prevent residents from illegally dumping bulky waste on the footpath outside Councils scheduled collection times. Regular illegal dumping can attract other dumped waste, generate litter, detract significantly from the quality and appearance of the development and reduce amenity of the street.

Residents will be required to liaise with building management regarding the transportation and disposal of bulky goods. Ideally, bulky waste should be collected on a regular schedule so that the storage area does not become overfull and so that residents know when to place items in there for collection. Councils may arrange for more frequent collections of bulky waste for MUDs, however collection frequencies vary among different local government areas.

Donations to charitable organisations should be encouraged. Clean, sound furniture and household goods etc. are highly sought after to provide for the disadvantaged. Donations can be arranged with the assistance of the building manager/waste caretaker.

## ELECTRONIC WASTE

Electrical waste (e.g. fluorescent tubing, batteries, laptops etc.) can potentially contaminate soil and surrounding water bodies if not disposed correctly. These items must not be placed in standard garbage and recycling bins. Disposal or recycling of electronic waste will be organised with the assistance of the building caretaker. These items must not be placed in garbage or recycling bins due to safety and environmental factors. Residents and/or the building manager may choose to contact Council to find out about new/existing strategies for the disposal/collection of electronic waste.

## CHEMICAL WASTE

Chemical wastes (e.g. cleaning chemicals, paints, oils solvents) pose detrimental effects to human health and the environment and should be disposed of to a suitable licensed disposal facility. No liquid wastes or wash down waters should be disposed of via the storm water drainage system. Household Chemical CleanOut events are held at various locations throughout NSW on specified dates throughout the year. Locations and dates are subject to change; hence 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 C and APPENDIX D.3)*.

# COMMERCIAL WASTE MANAGEMENT

The New South Wales Environmental Protection Authority *Better Practice Guide for Resource Recovery* (2019) has been referenced to calculate the total number of bins required for the 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. A five-day operating week has been assumed.

*Table 3: Calculated Waste Generation – Commercial/Retail*

| Tenancy | Type | GFA ($m^2$) | Garbage Generation Rate (L/100$m^2$/day) | Generated Garbage (L/week) | Recycling Generation Rate (L/100$m^2$/day) | Generated Recycling (L/week) |
|---|---|---|---|---|---|---|
| Offices | Commercial | 266 | 10 | 133 | 15 | 199.5 |
| Collections & Equipment | | Bin Size (L) | | 240 | Bin Size (L) | 240 |
| | | Collections per Week | | 1 | Collections per Week | 1 |
| | | No. Bins Required | | 1 | No. Bins Required | 1 |

## COMMERCIAL WASTE MANAGEMENT

Typically, bins for paper or general waste are positioned next to each workers desk or workstation. Cleaners circulate around the workplace after normal office hours and empty the bins. Communal bins for general waste and recyclables are also located centrally in each office, generally in the kitchen area and printer room.

Cleaners empty the bins into bags which they transport around the office/s in a cart which is also used to store cleaning products, spare bags, PPE and consumables. Bags of garbage and recycling are deposited into collection bins in the commercial waste room by the cleaners.

### 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.

### 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

Minimal transportation of bins is required at this development. The building manager/waste caretaker is responsible for any movement of bins that does take place.

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

## RESIDENTIAL

All residential waste generated by the development will be collected by private contractor to an agreed schedule (this report assumes collections will occur twice weekly for both garbage and recycling). The site will be required to use a private waste contractor for the boarding house waste as Station Street cannot be accessed by Council's waste collection vehicle. A private contractor with a 6.4m SRV will be required (see APPENDIX B.3 for example vehicle).

Prior to collections, the building manager/waste caretaker will be responsible for ensuring bins are neatly arranged within the waste room for ease of servicing.

Collections will be carried out during off-peak hours (prior to 7am) in order to minimise traffic disruption on Station Street.

On collection days, the contractor's collection vehicle will pull-up on Station Street adjacent to the residential waste room. Collection staff will then access the waste room and service bins via a wheel-in/wheel-out strategy.

Once servicing is complete, the building manager/waste caretaker will be responsible for ensuring that all bins are neatly arranged within the waste room, ready to resume operational use.

## COMMERCIAL

All waste generated by the commercial premises will be collected by a private waste contractor to an agreed schedule, (this report assumes that both garbage and recycling will be collected on a weekly basis).

Collections will be carried out during off-peak hours (prior to 7am) in order to minimise traffic disruption on Station Street.

On collection days, the contractor's collection vehicle will pull-up on Station Street adjacent to the commercial waste room. Collection staff will then access the waste room and service bins via a wheel-in/wheel-out strategy.

## 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.

# INSTALLATION EQUIPMENT AND DESIGN

## EQUIPMENT SUMMARY

*Table 4: Equipment Summary*

| Component | Part | Qty | Notes |
|---|---|---|---|
| Chute | Galvanised Steel / LLDPE Polyethylene Plastic<br>610mm | 1 | 610mm diameter<br>(See APPENDIX C.1 for Typical Chute Section) |
| Equipment A | Garbage<br>2-bin 1100L MGB Linear Track System | 1 | (See APPENDIX C.2 for Typical Linear System) |
| Equipment B | Suitable Bin Moving Equipment | N/A | Optional<br>(See APPENDIX B.4 & APPENDIX B.5 for Typical Bin Movers) |

## WASTE ROOM AREAS

All waste discharge points should be caged off to ensure the safety of any personnel accessing the waste room. Access to waste discharge rooms should be provided to the building manager/waste caretaker **only**. Under no circumstances should access be provided to any residents, or waste collection staff.

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.

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 | Estimated Area ($m^2$) |
|---|---|---|---|
| G | Residential Waste Room | 4 x 660L MGBs (**Garbage**)<br>11 x 240L MGBs (**Recycling**)<br>1 x 3-Bin 660L Linear Track System | 50 |
| | Commercial Waste Room | 1 x 240L MGB (**Garbage**)<br>1 x 240L MGB (**Recycling**) | 2 |
| | Bulky Goods Storage Room | N/A | 6 |

## 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 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.

**INNER WEST COUNCIL CUSTOMER SERVICE**
Phone: (02) 9392 5000 Email: council@innerwest.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

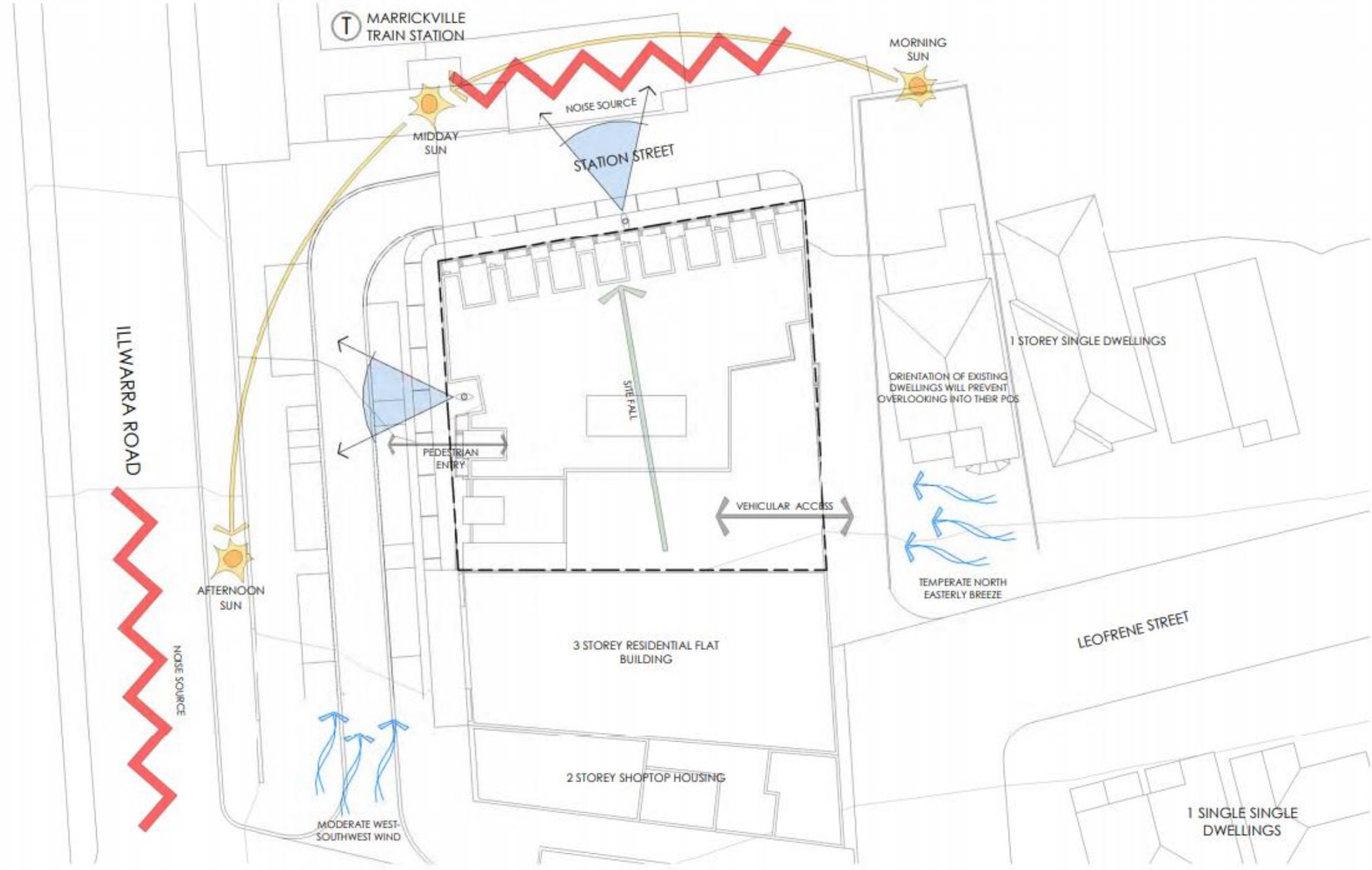
**KOMPACT EQUIPMENT** (Equipment & Servicing Provider)
Phone: 1300 566 722 Email: info@kompactequipment.com.au

**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

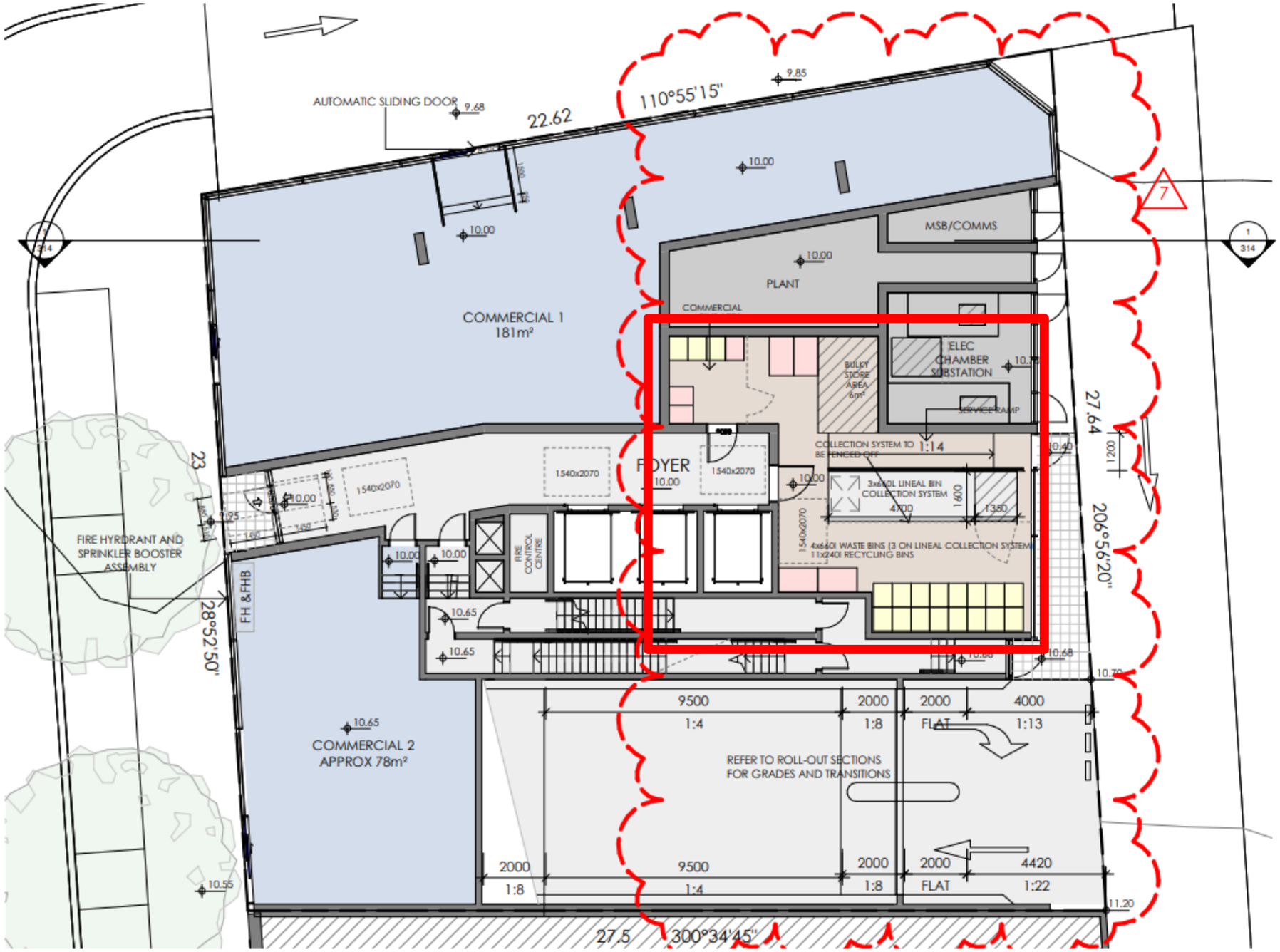
## APPENDIX A ARCHITECTURAL DRAWING EXCERPTS

### APPENDIX A.1 SITE PLAN




*Source: Tier Architects, Drawing No. 202A, Iss.B, 07/01/21 – Site Analysis*

## APPENDIX A.2 WASTE ROOMS




*Source: Tier Architects, Drawing No. 304, Iss.B, 07/01/21 – Basement 1 & Ground Floor Plans*

# APPENDIX B PRIMARY WASTE MANAGEMENT PROVISIONS

## APPENDIX B.1 MARRICKVILLE RESIDIENTAL BIN SPECIFICATIONS

| Bin type | Height | Depth | Width |
|---|---|---|---|
| 140 litre bin | 915mm | 615mm | 535mm |
| 240 litre bin | 1060mm | 730mm | 585mm |
| 660 litre bin | 1220mm | 780mm | 1260mm |

*Source: Marrickville Development Control Plan 2011*

## 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 EPA (Environmental Protection Authority).

Examples of waste wall posters (EPA supplied)


Examples of bin lid stickers (EPA supplied)


### Problem Waste Signs

The EPA has also produced a range of images and signs that can be used for problem wastes, such as fluoro globes and tubes, household and car batteries, e-waste and smoke detectors. To access these resources, contact the NSW EPA. Some examples are shown below.


### Safety Signs

The use of safety signs for waste resource recovery rooms must comply with *AS1319 Safety signs for occupational environments*. Safety signs must be used to regulate and control safety related to behaviour, warn of hazards and provide emergency information, including fire protection information. Suitable signs should be decided for each development as required.

**Example safety signs**


*Source:* New South Wales Environmental Protection Authority *Better Practice Guide for Resource Recovery* (2019)

## APPENDIX B.3 TYPICAL SRV SPECIFICATION

VEOLIA
ENVIRONMENTAL SERVICES

**REARLIFT TRUCK 4X2**
**MID RANGE 10m³ & 12m³ BODY**

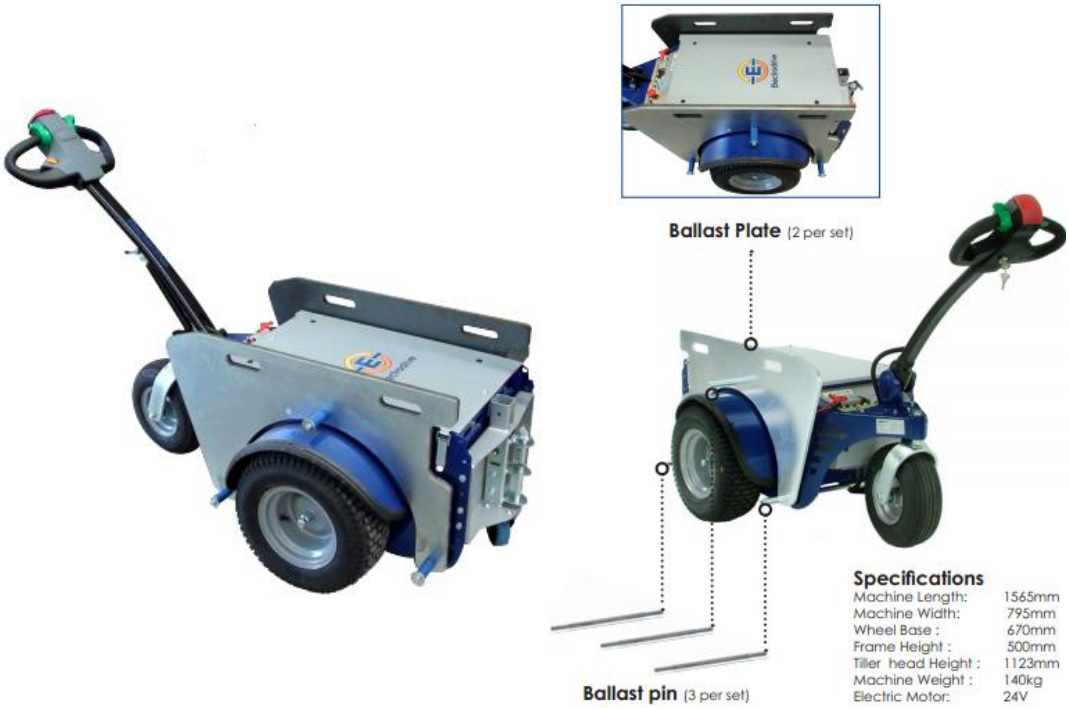

**Specifications:**

- Overall Length – 6440mm (6.14 METRES)
- Overall Width - 2200mm (2.20 METRES) *NOTE: DOES NOT INCLUDE MIRRORS*
- Maximum Height – 2830mm (2.83 METRES)
- Turning Circle - 15000mm (15.00 METRES) Kerb to Kerb
- Tare Weight - 6200 kg's
- GVM - 10400 kg's
- 120 litre & 240 litre & 660 litre & 1100 litre Plastic SULO bins

***SYDNEY/CITY AREA ONLY***

*Source: Capital City Waste Services*

## 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

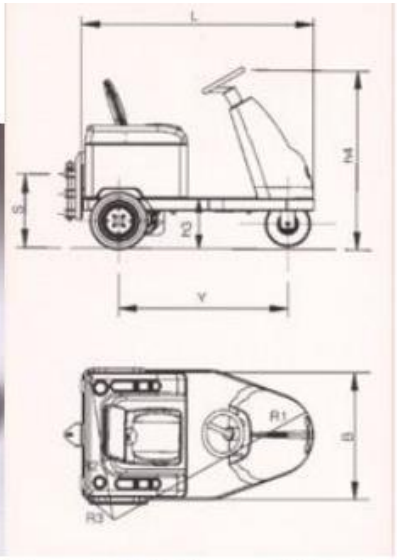
Features:

- 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)*

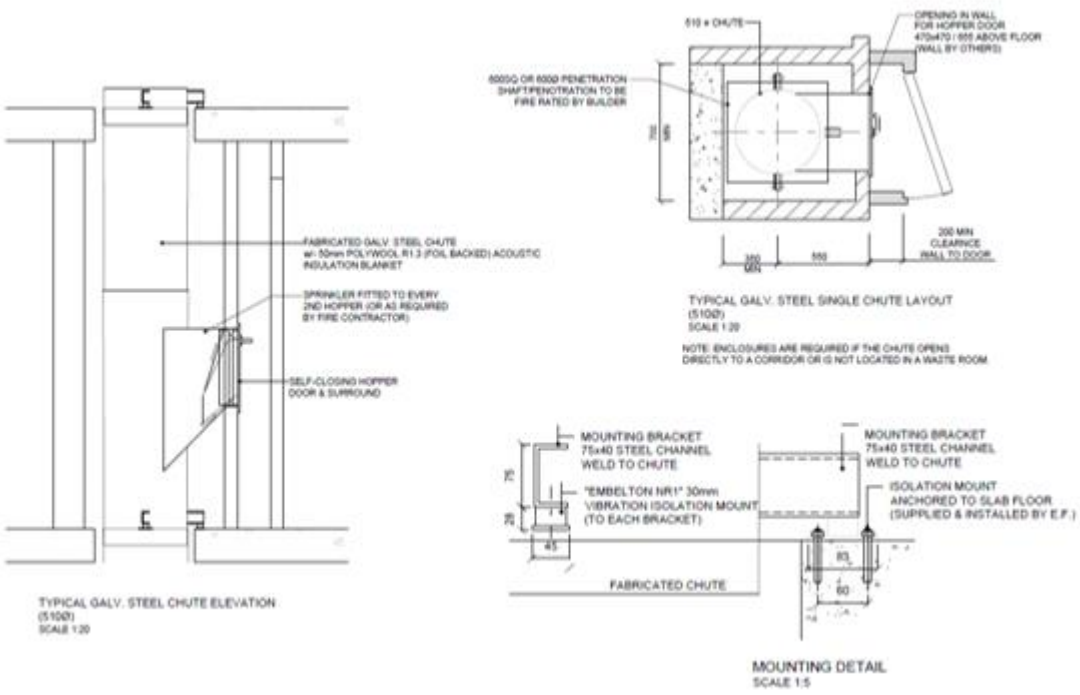
## APPENDIX B.5 TYPICAL SEATED BIN MOVER


| | | 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 INSTALLATION EQUIPMENT

## APPENDIX C.1 TYPICAL SINGLE WASTE CHUTE SPECIFICATIONS

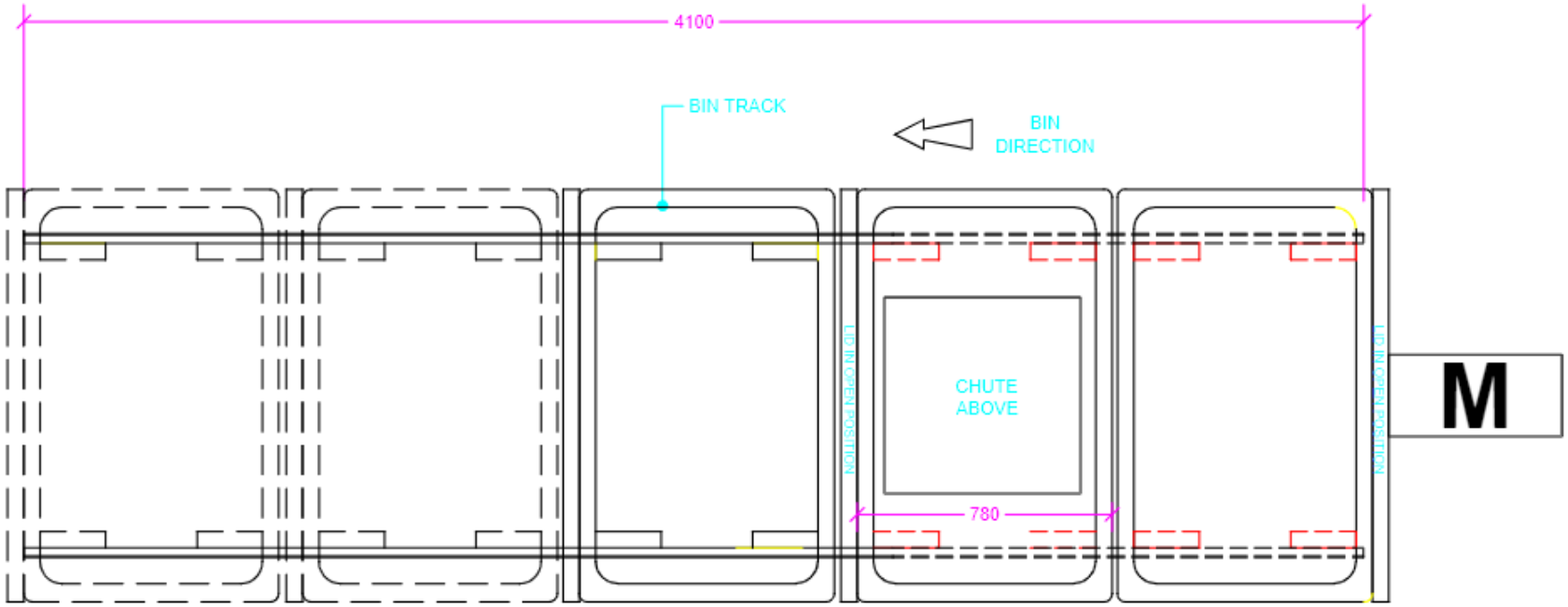



Waste chutes are supplied per the following specifications:

- 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.*

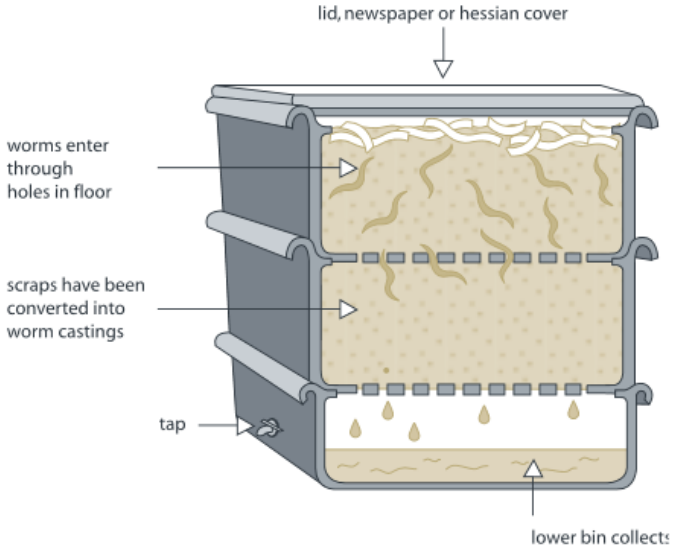
## APPENDIX C.2 TYPICAL LINEAR TRACK SYSTEM



# 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

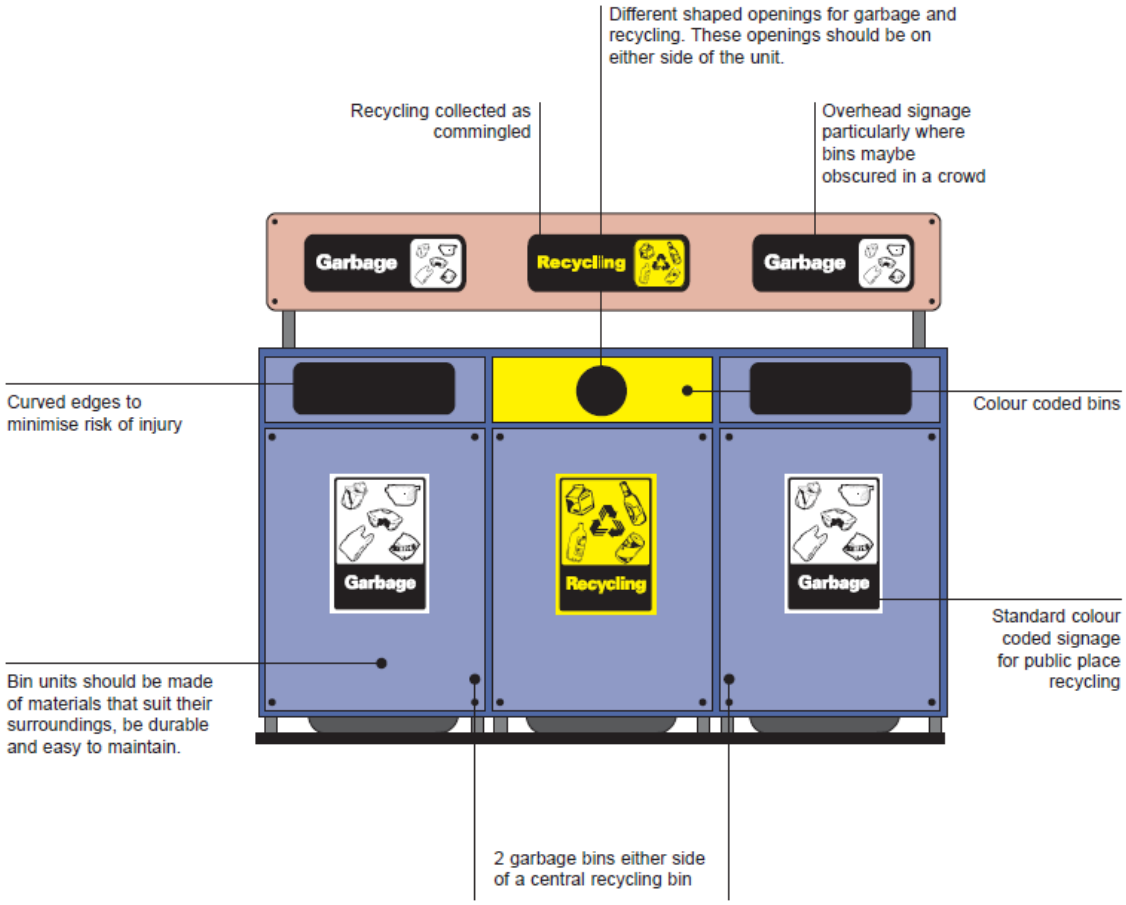
| | |
|---|---|
| Decomposition Method | Fermentation by microorganisms |
| Decomposition Capacity | 2 metric tonnes per year*<br>(4 kg per day*) |
| Rating | 220–240 V 50/60 Hz – 1.1 A |
| Decomposition Time | 24 hrs |
| Operating Temperature | 0C and 40C.** |
| Deodorisation Method | Nano-Filter system |
| 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 D.4 TYPICAL BACK OF HOUSE BINS


## APPENDIX D.5 TYPICAL PUBLIC PLACE WASTE BINS




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