# 8 Forest Road, Warriewood

Residential Development

# OPERATIONAL WASTE MANAGEMENT PLAN

9/09/2020
Report No. SO564
Revision B

Client

## Jackson Teece

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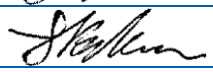
# SCOPE

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 | 21/04/2020 | J Parker | A Armstrong | Draft |  |
| B | 9/09/2020 | J Parker | A Armstrong | Final |  |

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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 Jackson Teece for the operational management of waste generated by the residential development located at 8 Forest Road, Warriewood.

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

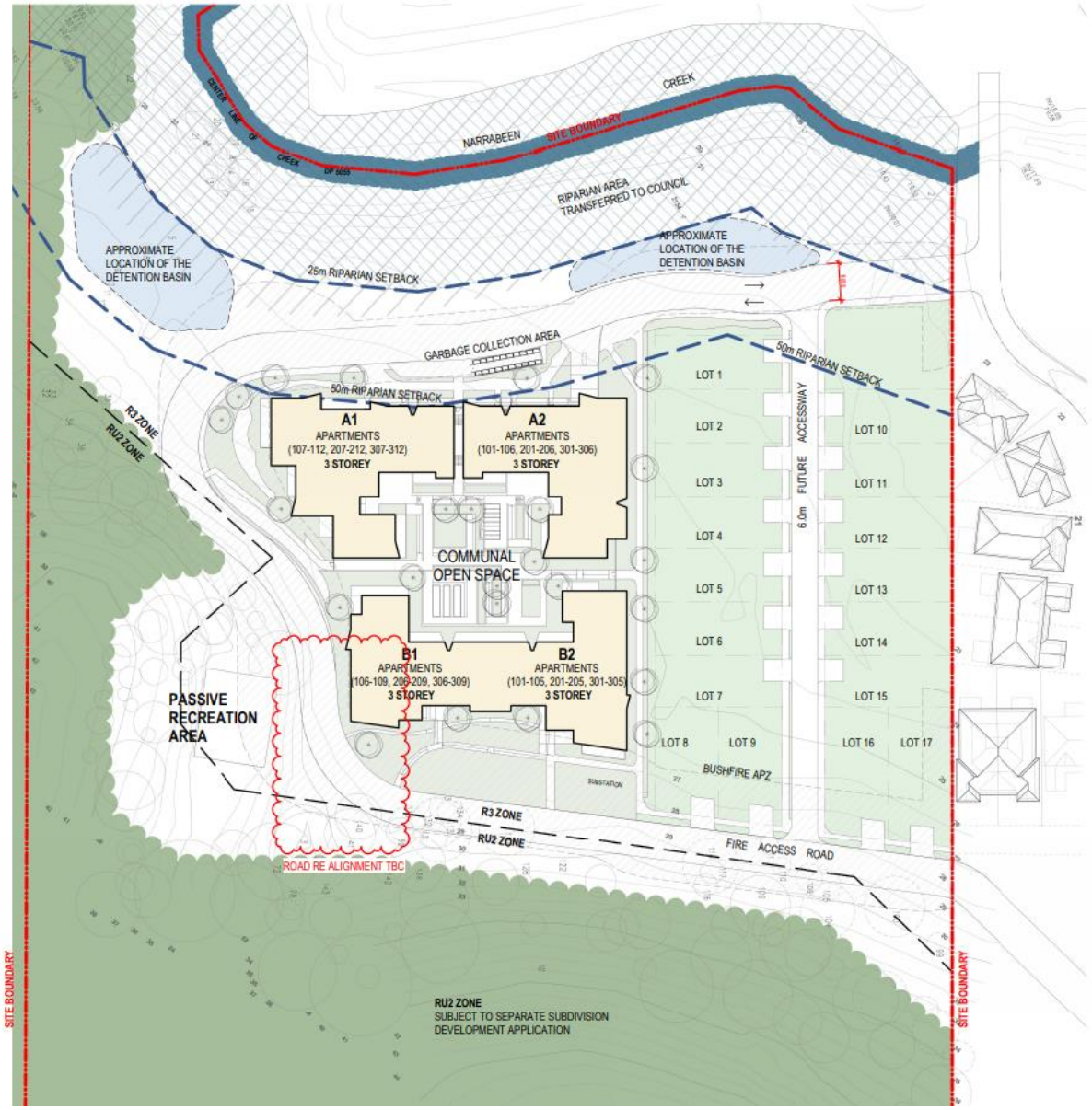
The proposed development falls under the LGA of Northern Beaches Council, and consists of:

**Stage 1** - 17 subdivision lots
**Stage 2** - 2 residential flat buildings separated into 4 cores, each of 3 storeys (63 residential units in total)

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 8 Forest Road, Warriewood, as shown below. The site's internal ring road is accessible from Jubilee Avenue and Hill View Crescent.




*Source: Jackson Teece – Site Plan*

# NORTHERN BEACHES COUNCIL

Northern Beaches Council is the amalgamation of Warringah Council, Pittwater Council, and Manly Council. The proposed development falls within the former LGA of Pittwater Council. The recommended waste management facilities and operations in this OWMP are guided by the services and acceptance criteria of Northern Beaches Council. All waste facilities and equipment are to be designed and constructed to comply with the *Northern Beaches Council Waste Management Guidelines*, the *Pittwater Development Control Plan* (DCP), as well as Australian Standards and statutory requirements.

## COUNCIL OBJECTIVES

Northern Beaches Council is committed to responsible management practices for waste storage and collection. As such, Council aims to:

- Encourage the ongoing minimisation and management of waste handling in the future use of the premises;
- Ensure waste storage and collection facilities complement waste collection and management services offered by Council and the private service providers;
- Minimise risks to health and safety associated with handling and disposal of waste and recycled material, and ensure optimum hygiene;
- Minimise any adverse environmental impacts associated with the storage and collection of waste, and;
- Discourage illegal dumping.

## BETTER PRACTICE GUIDELINES

**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 Northern Beaches 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 FLAT BUILDING WASTE MANAGEMENT

The *Northern Beaches Council Waste Management Guidelines* (2016) has been referenced to calculate the total number of bins required for the two residential flat buildings. 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 flat buildings.

*Table 2: Calculated Waste Generation – Residential Flat Buildings*

| Building/ Core | # Units | Garbage Generation Rate (L/unit/week) | | Generated Garbage (L/week) | Comingled Recycling Generation Rate (L/unit/week) | | Generated Comingled Recycling (L/week) | Paper / Cardboard Recycling Generation Rate (L/unit/week) | | Generated Paper / Cardboard Recycling (L/week) |
|---|---|---|---|---|---|---|---|---|---|---|
| Building A1 | 18 | 80 | | 1440 | 40 | | 720 | 60 | | 1080 |
| Building A2 | 18 | 80 | | 1440 | 40 | | 720 | 60 | | 1080 |
| Building B1 | 12 | 80 | | 960 | 40 | | 480 | 60 | | 720 |
| Building B2 | 15 | 80 | | 1200 | 40 | | 600 | 60 | | 900 |
| **TOTAL** | **63** | | | **5040** | | | **2520** | | | **3780** |
| Collections / Equipment | | Bin Size (L) | | 240 | Bin Size (L) | | 240 | Bin Size (L) | | 240 |
| | | Collections per Week | | 1 | Collections per Week | | 1 | Collections per Week | | 1 |
| | | Total Bins Required | | 21 | Total Bins Required | | 11 | Total Bins Required | | 17 |
| | | Bins Per Core | Building A1 | 6 | Bins Per Core | Building A1 | 3 | Bins Per Core | Building A1 | 5 |
| | | | Building A2 | 6 | | Building A2 | 3 | | Building A2 | 5 |
| | | | Building B1 | 4 | | Building B1 | 2 | | Building B1 | 3 |
| | | | Building B2 | 5 | | Building B2 | 3 | | Building B2 | 4 |

## HOUSEHOLD WASTE

4 garbage chutes will be installed with access provided on all residential levels of each building core. The chutes are to be used for the disposal of garbage only.

Garbage discharges into 240L MGBs located in the waste discharge rooms for each building core on basement level 1. The garbage is not intended to be compacted.

A pair of recycling bins (one for comingled recycling and the other for paper/cardboard) will be situated in the waste compartment on each residential level for collection of recyclable items. The caretaker/cleaner will be responsible for monitoring the capacity of recycling bins and exchanging them with empty bins from the waste discharge rooms on basement level 1 when required. It is anticipated that this will occur on a weekly basis for comingled recycling and no more that twice weekly for paper/cardboard.

Full garbage and recycling bins will then be transferred to the ground floor collection area by the building manager/caretaker on the designated days of collection. Bin transfer will occur via the vehicle ramp and the developer will need to supply a bin moving device to aid in the transfer of bins (see APPENDIX B.4 and APPENDIX B.5 for examples).

## COMMON AREAS

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

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

# SOURCE SEPERATION

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

## GENERAL WASTE (GARBAGE)

Residents will be supplied with a collection area in each unit to deposit garbage 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

Residents will also be supplied with a collection area to deposit comingled recyclable material and paper/cardboard. This area should also be suitable for one day's storage.

***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.

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

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. Composting facilities are to be sited on an unpaved area with soil depth of at least 300mm. Residents may also choose to purchase and install apartment style compost bin where practical and self-manage these systems (see APPENDIX D.1).

# SUBDIVISION LOT WASTE MANAGEMENT

The *Northern Beaches Council Waste Management Guidelines* (2016) has been referenced to calculate the total number of bins required for the subdivision lots. Calculations are based on generic figures; waste generation rates may differ according to the residents' waste management practice.

### ESTIMATED WASTE VOLUMES AND PROVISIONS

Northern Beaches Council offer a four-bin service to all residential properties, designed to minimise landfill. It consists of separate 240L bins for garbage, comingled recycling, paper/cardboard and green waste.

On that basis, the total recommended number of bins for the subdivision lots at this development is as follows:

17 x 240L Garbage Bins (**Red Lid**)
17 x 240L Comingled Recycling Bins (**Yellow Lid**)
17 x 240L Paper/Cardboard Waste Bins (**Blue Lid**)
17 x 240L Green Waste Bins (**Green Lid**)

# 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 dwelling 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.

### RECYCLING

It is recommended that the area designated of the storage of garbage also contains dedicated receptacles to collect comingled recyclable material and paper/cardboard, each suitable for one day's storage.

***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.

### GREEN WASTE

Green waste in any communal areas will be removed by the designated maintenance contractor. Green waste generated in the private external areas may be deposited into the designated green waste bin for each dwelling.

### BULKY GOODS

Residential properties are eligible for two kerbside collection services for bulky items (e.g. whitegoods, furniture, etc.) per year starting from the date of the first booking. The service is based on an online booking system.

Residents should be directed to the following webpage in order to make bookings: https://www.northernbeaches.nsw.gov.au/services/rubbish-and-recycling/bulky-goods-collection

## 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 should be disposed of at an appropriate facility. These items must not be placed in garbage or recycling bins due to safety and environmental factors. Residents may choose to contact Council to find out about strategies for the disposal/collection of electronic waste.

## CHEMICAL WASTE

Chemical waste (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 waste 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 residents confirm these details with 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 residents either create composting areas within private outdoor areas or develop a communal facility. 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 internal compost bins where practical and self-manage these systems (see APPENDIX D.1).

# MOVEMENT AND TRANSPORTATION OF BINS

The building manager/waste caretaker is responsible for the transportation of bins in the residential flat buildings from their designated operational locations to their respective collection area. Residents of the subdivision lots will be required to transfer their own bins to the kerbside immediately outside of their respective property.

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.

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 FLAT BUILDINGS

All waste generated by the residential flat buildings will be collected by Council's waste contractor on a weekly basis.

Prior to collection days, the building manager/caretaker will be responsible for transferring bins from the waste room in each building core to the collection area. It is recommended that a suitable bin moving device is used when transferring bins.

Council's waste collection vehicle will then access the site from Jubilee Avenue and pull into the loading bay at the collection area from where collection staff will service the bins.

Once servicing is complete, the vehicle will leave the site in a forward-facing direction. The building manager/caretaker will then be responsible for returning bins to their respective waste rooms to resume operational use.

## SUBDIVISION LOTS

All waste generated by the subdivision lots will also be collected by Council's waste contractor on a weekly basis.

Prior to collection days, residents will be required to place their bins along the local roadways Council's collection vehicle will then access the site from Jubilee Avenue and circulate around the site, collecting all bins from along the local roadways. While the roadway is completed, temporary alternative arrangements may be required for Lot 17, whereby bins for that lot are collected from the corner adjacent to Lot 16.

Once all bins have been serviced, the collection vehicle will leave the site in a forward-facing direction. Residents will then return their own bins to the designated storage areas to resume operational use.

## 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 3: Equipment Summary*

| Component | Part | Qty | Notes |
|---|---|---|---|
| Chutes | Galvanised Steel / LLDPE Polyethylene Plastic 510mm or 610mm (for 20+ levels) | 4 | 510/610mm diameter (See APPENDIX C.1 for Typical Chute Section) |
| Equipment | Suitable Bin Moving Equipment | 1 | (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 and collections are detailed in Table 4 below. The areas provided are estimates only. Final areas will depend upon room and bin layouts.

*Table 4: Waste Room Areas*

| Level | Waste Room Type | Equipment | Estimated Area ($m^2$) |
|---|---|---|---|
| B1 | Building A1 Waste Room | 6 x 240L MGBs (Garbage)<br>3 x 240L MGBs (Comingled Recycling)<br>5 x 240L MGBs (Paper/Cardboard Recycling) | 30 |
| | Building A2 Waste Room | 6 x 240L MGBs (Garbage)<br>3 x 240L MGBs (Comingled Recycling)<br>5 x 240L MGBs (Paper/Cardboard Recycling) | 30 |
| | Building B1 Waste Room | 4 x 240L MGBs (Garbage)<br>2 x 240L MGBs (Comingled Recycling)<br>3 x 240L MGBs (Paper/Cardboard Recycling) | 20 |
| | Building B2 Waste Room | 5 x 240L MGBs (Garbage)<br>3 x 240L MGBs (Comingled Recycling)<br>4 x 240L MGBs (Paper/Cardboard Recycling) | 20 |
| | RFB Bulky Goods Waste Storage Room | Bin Moving Device | 34 |
| G | RFB Waste Collection Area | 21 x 240L MGBs (Garbage)<br>11 x 240L MGBs (Comingled Recycling)<br>17 x 240L MGBs (Paper/Cardboard Recycling) | 50 |
| | Subdivision Lot Bin Storage Area (Each Dwelling) | 1 x 240L Garbage Bins (Red Lid)<br>1 x 240L Comingled Recycling Bins (Yellow Lid)<br>1 x 240L Paper/Cardboard Waste Bins (Blue Lid)<br>1 x 240L Green Waste Bins (Green Lid) | 4 |

## 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;
- a hot and cold water facility with mixing facility and 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.

**NORTHERN BEACHES COUNCIL CUSTOMER SERVICE**
Phone: 1300 434 434 Email: council@northernbeaches.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

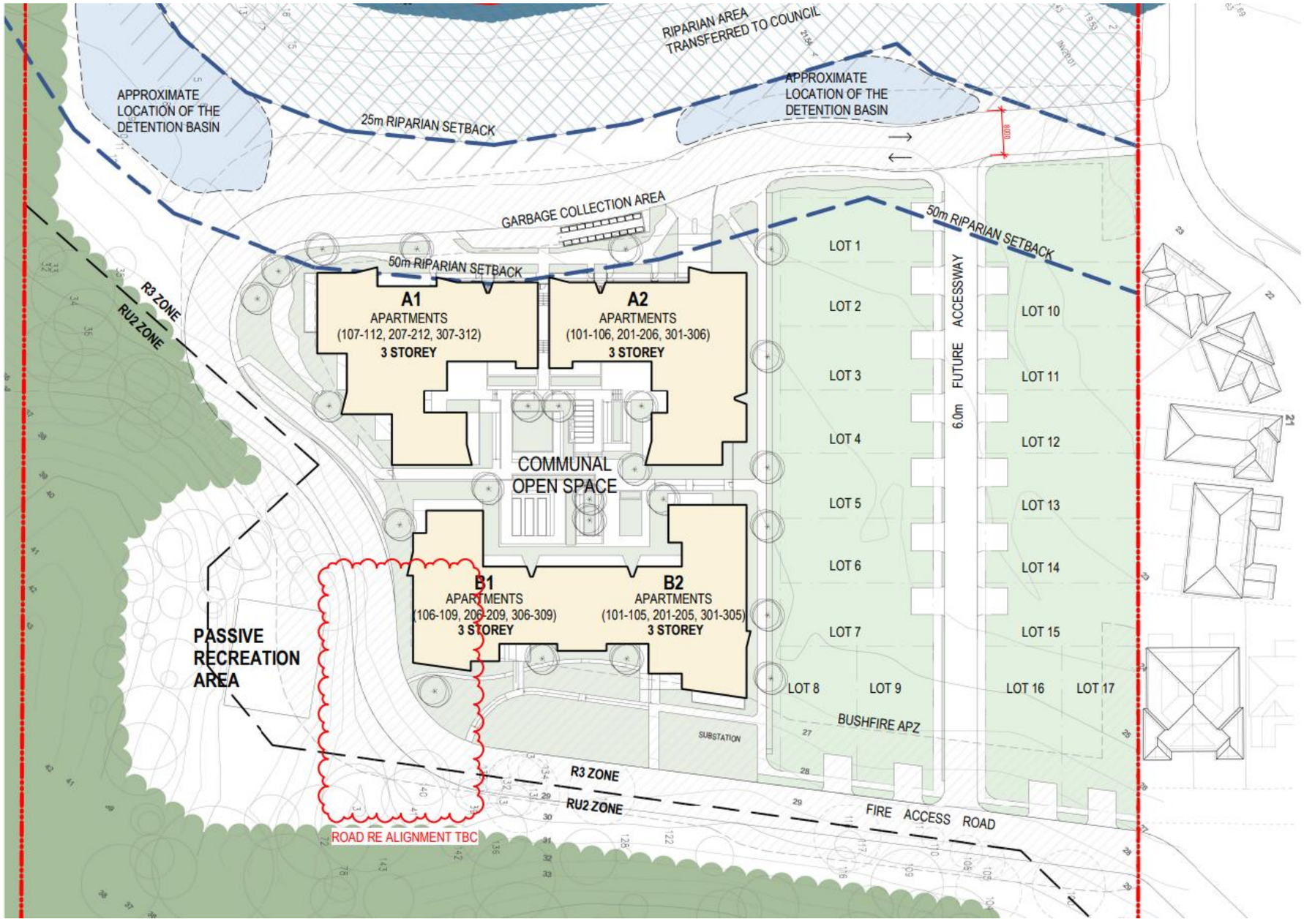
**KOMPACT EQUIPMENT** (Equipment & Servicing Provider)
Phone: 1300 566 722 Email: info@kompactequipment.com.au

**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

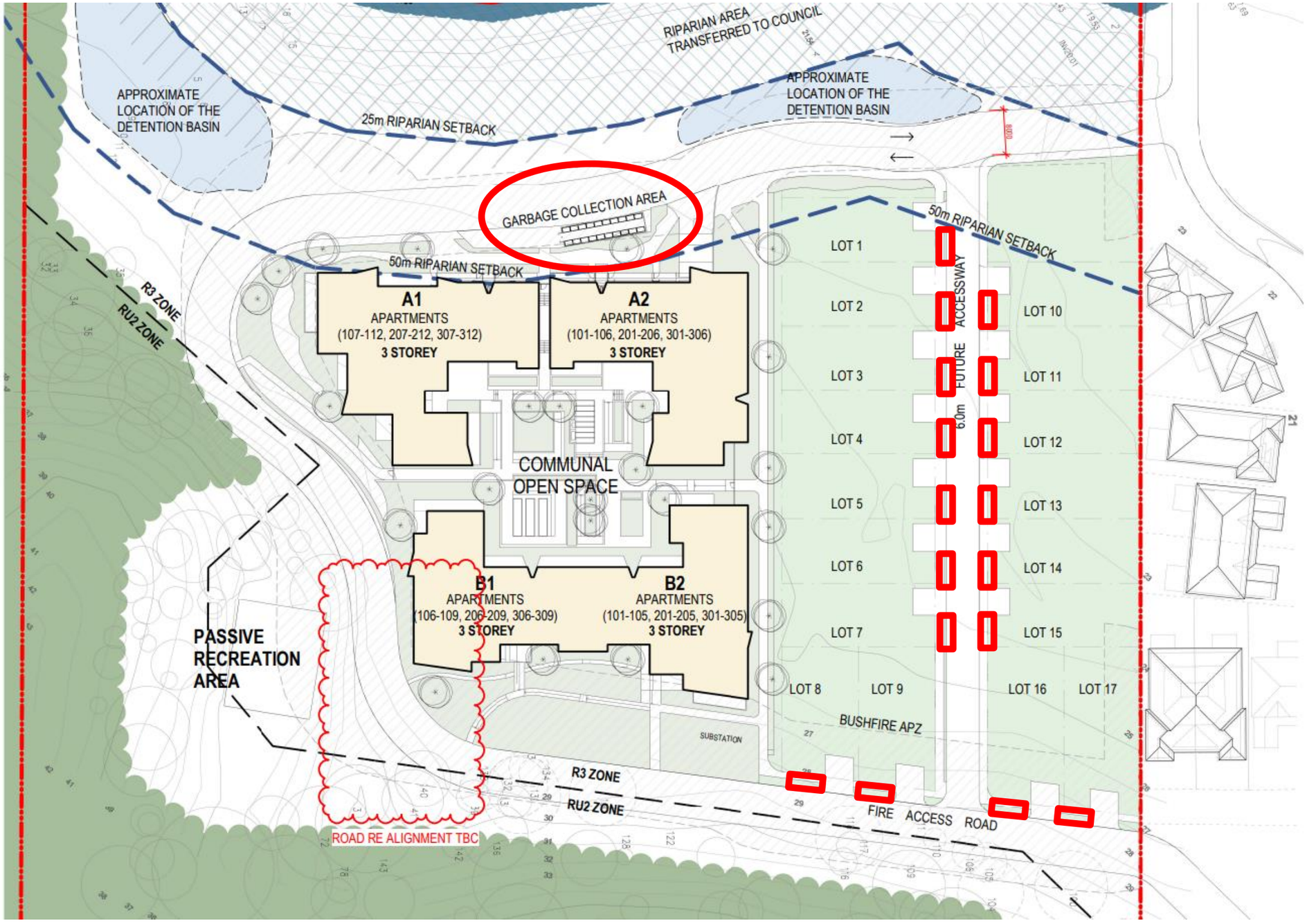



*Source: Jackson Teece, Drawing No. DA-030, Iss.D, 21/08/20 – Site Plan*

## APPENDIX A.2 BASEMENT WASTE ROOMS


*Source: Jackson Teece, Drawing No. DA-109, Iss.E, 21/08/20 – Floor Plan - Basement 1*

## APPENDIX A.3 GROUND LEVEL COLLECTION AREAS




*Source: Jackson Teece, Drawing No. DA-030, Iss.D, 21/08/20 – Site Plan*

# APPENDIX B PRIMARY WASTE MANAGEMENT PROVISIONS

## APPENDIX B.1 TYPICAL BIN SPECIFICATIONS

Design of a 120L or 240L bin. Shape and colour may vary

Design of a 660L bin. Shape and colour may vary

| Bin Type | 120L | 240L | 660L |
|---|---|---|---|
| Height | 940mm | 1080mm | 1250mm |
| Depth | 560mm | 735mm | 850mm |
| Width | 485mm | 580mm | 1370mm |

*Source: Northern Beaches Council Waste Management Guidelines (2016)*

## 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.

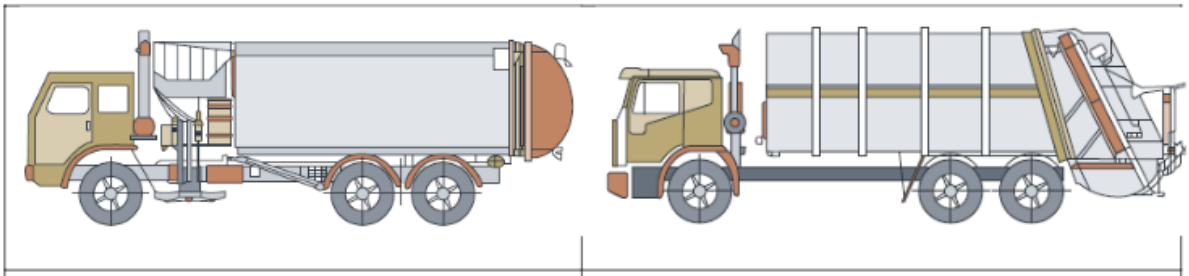

### Safety Signs

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 COLLECTION VEHICLE INFORMATION



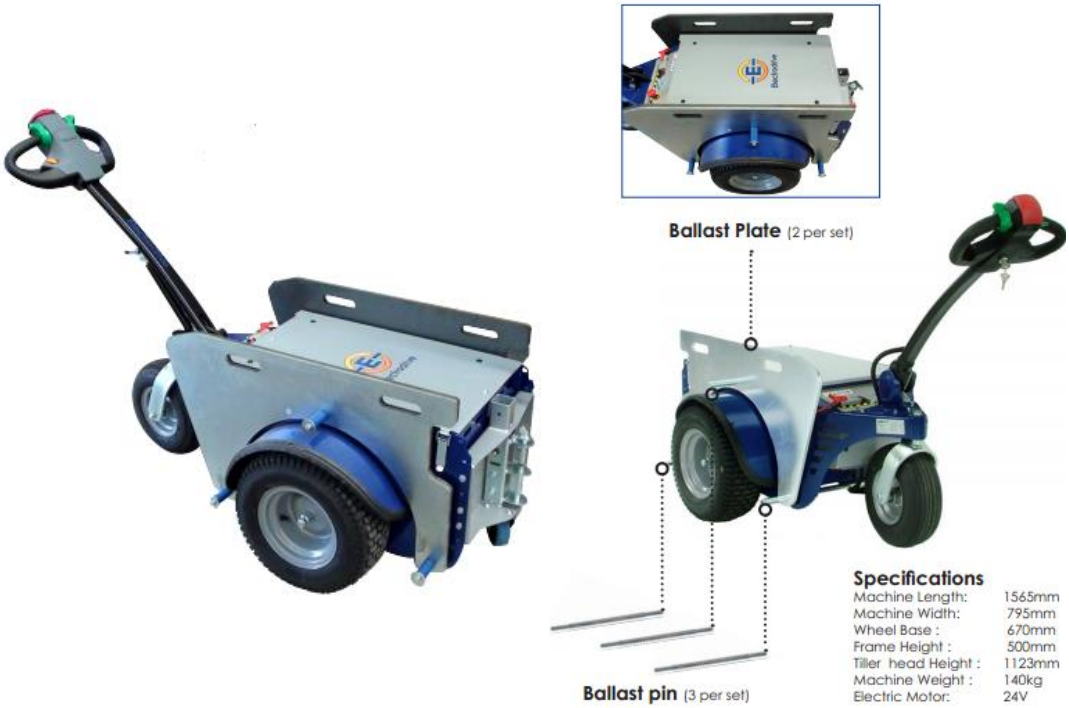
| Heavy rigid side arm compaction vehicle | Heavy rigid rear loader compaction vehicle |
|---|---|

*Photo sourced: from: Better Practice Guide for Waste Management in Multi-unit Dwellings, Department of Environment and Climate Change NSW 2008.*

| Vehicle | Length | Width | Service height | Travel height | Weight | Turning Circle |
|---|---|---|---|---|---|---|
| Council's waste vehicle | 9.7m | 2.5m | 4.5m | 3.9m | 22.5t | 19m |

*Source: Northern Beaches Council Waste Management Guidelines (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

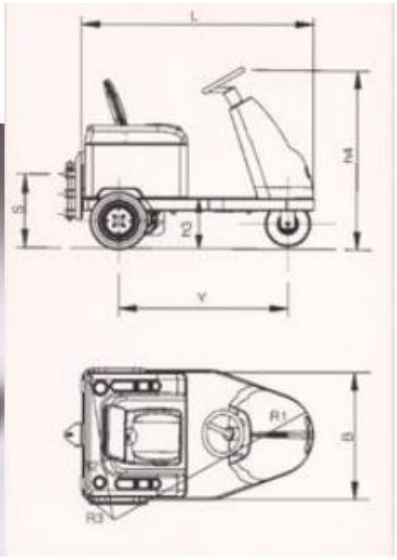
Features:

- 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)*

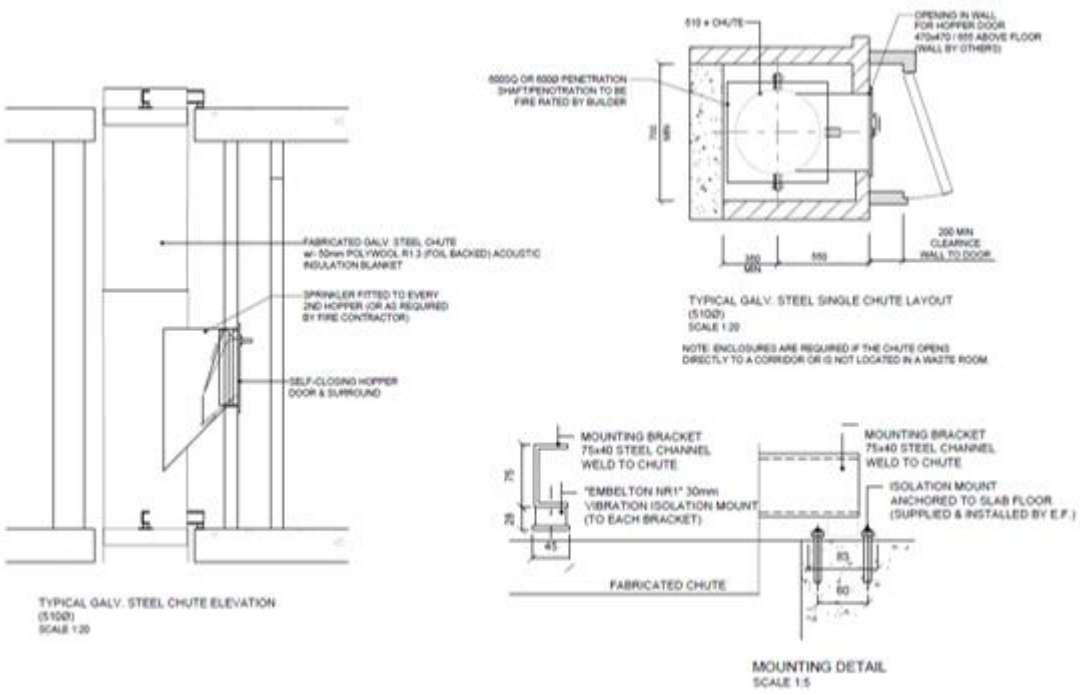
## APPENDIX B.5 TYPICAL SEATED BIN MOVER


| | | 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 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 D SECONDARY WASTE MANAGEMENT PROVISIONS

## APPENDIX D.1 WORM FARM & COMPOSTING GUIDANCE

### Worm farms

Worm farms or vermiculture systems transform food and other organic material into vermicast (worm compost) and vermi-liquid (liquid extraction from a worm farm). Seafood, seafood shells, meat or bones, and dairy products are not an acceptable part of the worms' diet and should not be appled to these systems. Worm farms can occupy a small footprint and be located on balconies or in gardens. The worm farm should be placed in a sheltered position to avoid getting too hot in summer.

Worm farms come in different sizes and designs and are sold through hardware stores and often at local government offices. Medium and large-scale worm farms can service many households and commercial acticities. These larger systems need a management process to ensure they are properly maintained.

### Onsite composting

Compost tumblers and bins and compost bays transform food and other organic material into useful soil enhancer (compost). They are more versatlie than worm farms as they can generally process a wider range of materials, including woody garden organics and can be placed in the sun. A variety of compost bins and tumblers are available from hardware stores or some local councils. There are also various online resources on how to construct them using recycling materials such as timber pallets. The footprint area requirement for a typical single household compost bin is about 1m x 1m x 1m.

Before setting up an onsite composter or worm-farm system, check with council for any local requirements such as setback distances from property boundaries.

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