1 Station Lane, Penrith

Boarding House Development

OPERATIONAL WASTE MANAGEMENT PLAN

17/05/2021
Report No. SO547
Revision C

Client

Station Lane Pty Ltd ATF The Station Lane Trust

25 Governor Macquarie Drive, Chipping Norton NSW 2170
T 02 9755 2777

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

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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	9/04/2020	J Parker	A Armstrong	Draft	[redacted]
B	27/07/2020	J Parker	A Armstrong	Final	
C	17/05/2021	J Parker	A Armstrong	Amendment	

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GLOSSARY OF TERMS

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

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INTRODUCTION

EFRS has been tasked to prepare the following waste management plan for Station Lane Pty Ltd for the operational management of waste generated by the boarding house development located at 1 Station Lane, Penrith.

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 Penrith City Council, and consists of:

- 1 building of 4 levels
  - 23 boarding house rooms
  - 1 manager's unit
  - Ground level communal kitchen/dining area

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

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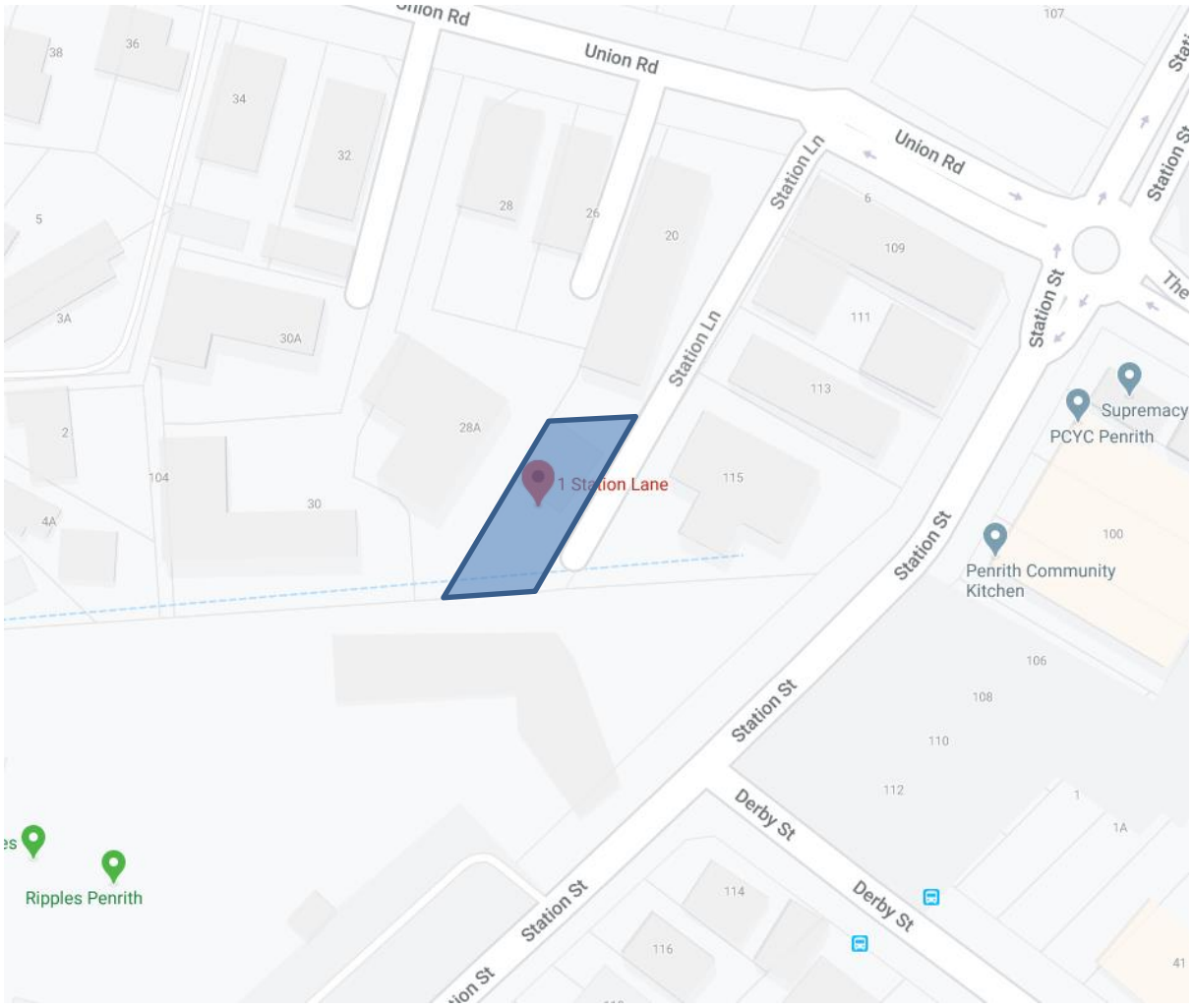
SITE LOCATION

The site is located at 1 Station Lane, Penrith, as shown below. The site's only street frontage and vehicular access are both to Station Lane.



Source: Google Maps

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PENRITH CITY COUNCIL

The garbage and recycling will be guided by the services and acceptance criteria of the Penrith City Council. All waste facilities and equipment are to be designed and constructed to be in compliance with the Penrith Council's *Penrith Development Control Plan 2014, Residential Flat Building Waste Management Guidelines,* Australian Standards and statutory requirements.

COUNCIL OBJECTIVES

- To facilitate sustainable waste management within the City of Penrith in accordance with the principles of Ecologically Sustainable Development;
- To manage waste in accordance with the 'Waste Hierarchy' to:
    - Avoid producing waste in the first place;
    - Minimise the amount of waste produced;
    - Re-use items as many times as possible to minimise waste;
    - Recycle once re-use options have been exhausted; and
    - Dispose of what is left, as a last resort, in a responsible way to appropriate waste disposal facilities;
- To assist in achieving Federal and State Government waste minimisation targets as set out in the *Waste Avoidance and Resource Recovery Act 2001* and *NSW Waste*
- *Avoidance and Resource Recovery Strategy 2007*;
- To minimise the overall environmental impacts of waste by:
    - Encouraging development that facilitates ongoing waste avoidance and complements waste services offered by both Council and/or private contractors;
    - Requiring on-site source separation and other design and siting standards which assist waste collection and management services offered by Council and/or the private sector;
    - Encouraging building designs and construction techniques that minimise waste generation;
    - Maximising opportunities to reuse and recycle building and construction materials as well as other wastes in the ongoing use of a premise; and
    - Reducing the demand for waste disposal.

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 Penrith City Council.

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STAKEHOLDER ROLES AND RESPONSIBILITIES

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

Table 1: Stakeholder Roles and Responsibilities

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

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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.

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.

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BOARDING HOUSE WASTE MANAGEMENT

Penrith Council's *Penrith Development Control Plan* (2014) and *Residential Flat Building Waste Management Guidelines* have been referenced to calculate the total number of bins required for the development. 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 development.

Table 2: Calculated Waste Generation – Boarding House

# Rooms	Garbage Generation Rate (L/unit/week)	Generated Garbage (L/week)	Recycling Generation Rate (L/unit/week)	Generated Recycling (L/week)
24	120	2880	120	2880
Collections / Equipment	Garbage Bin Size (L)	240	Recycling Bin Size (L)	240
	Garbage Bins per Week	12	Recycling Bins per Week	12
	Garbage Collections per Week	2	Recycling Collections per Week	2
	Total Garbage Bins Required	6	Total Recycling Bins Required	6

HOUSEHOLD WASTE

Garbage and recycling are each to be disposed of into 240L bins, located in the storage area on each residential level. The occupants will be responsible for emptying their garbage and recycling directly into the corresponding bins.

COMMON AREAS

Common areas such as lobbies, amenities, the communal kitchen/dining area and circulation areas will be supplied with suitably branded waste and recycling bins where considered appropriate. The majority of these areas generate minimal waste, however garbage and recycling receptacles should be provided and located in convenient locations. The building caretaker/cleaners will be responsible for monitoring the capacity of these bins and emptying them into 240L bins in the bin holding/collection room once full.

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.

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GREEN WASTE

Green waste is not typically generated from boarding house developments other than from surrounding building landscaped areas. This is to be removed by the designated maintenance contractor. In the event that green waste is produced i.e trimming of indoor plants then this may be disposed of into the single communal green waste bin located in the bin holding/collection room. The building manager will be responsible for organising a collection schedule for this bin based on how frequently it is filled.

BULKY GOODS

Penrith Council requires that a bulky goods room is provided at the following rate:

Household bulky waste room dimensions = no. of dwellings x $8m^2$ / 52 (weeks)

A room or caged area of at least $5m^2$ will therefore be made available for the storage of discarded residential bulky items (e.g. whitegoods, furniture, etc.). This room should be located within close proximity of the garbage and recycling bin collection room and 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.

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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 C.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.2 and APPENDIX C.3)*.

CLOTHING WASTE

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

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MOVEMENT AND TRANSPORTATION OF BINS

The building manager/waste caretaker is responsible for the transportation of bins from their designated operational locations to the waste room on the ground level prior to scheduled collection times, returning them once emptied to resume operational use.

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

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

COLLECTION OF WASTE

A private contractor will be engaged to collect the boarding house garbage and recycling to an agreed schedule (this report assumes that both garbage and recycling will be collected on a twice weekly basis).

The waste collection vehicle will access the site from Station Lane and circle around the site before pulling-up adjacent to the waste room.

From this location, collection staff will access the waste room and service all bins via a wheel-in/wheel-out scenario.

Once servicing is complete, the vehicle will leave the site in a forward-facing direction.

COLLECTION AREA

Collection areas have been reviewed by a traffic consultant to confirm the swept paths, load requirements and clearances for waste collections (see APPENDIX A.4). Swept paths have been planned around a ‘6.4m Mini Rear Loader’ from Capital City Waste Services (see APPENDIX B.3 for vehicle specification).

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INSTALLATION EQUIPMENT AND DESIGN

EQUIPMENT SUMMARY

Table 3: Equipment Summary

Component	Part	Qty	Notes
Equipment	Suitable Bin Moving Equipment	N/A	Optional (See APPENDIX B.4 & APPENDIX B.5 for Typical Bin Movers)

WASTE ROOM AREAS

The areas allocated for waste storage 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)
All	Residential Level Bin Cupboard	1 x 240L MGB (Residential Garbage) 1 x 240L MGB (Residential Recycling)	2
G	Bin Holding/Collection Room	6 x 240L MGBs (Residential Garbage) 6 x 240L MGBs (Residential Recycling) 1 x 240L MGB (Green Waste)	10
	Bulky Goods Waste Storage Room	N/A	5

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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 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.

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USEFUL CONTACTS

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

PENRITH COUNCIL CUSTOMER SERVICE
Phone: 02 4732 7777 Email: council@penrithcity.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

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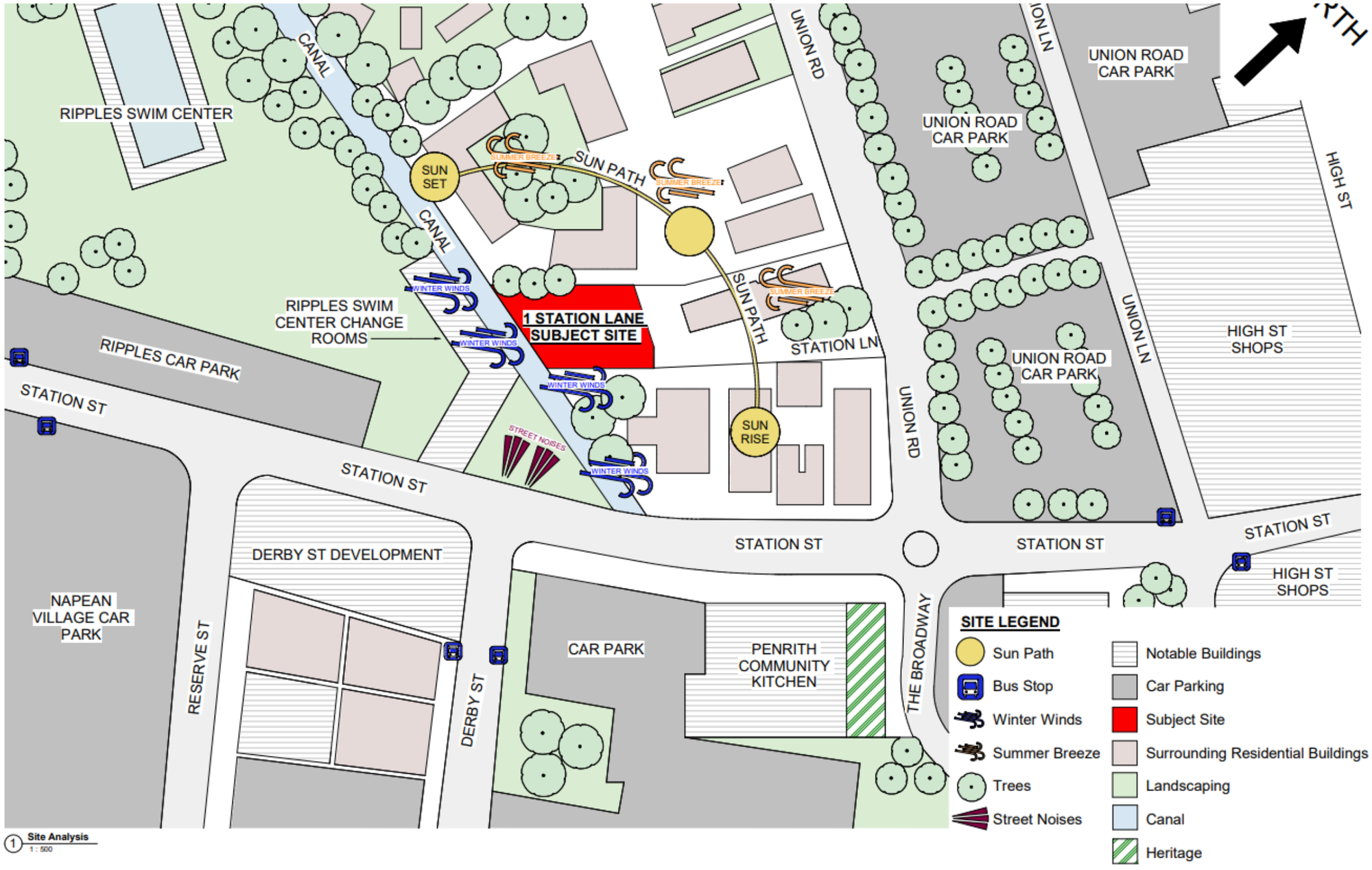
APPENDICES

APPENDIX A ARCHITECTURAL DRAWING EXCERPTS

APPENDIX A.1 SITE PLAN



Source: Prodoc Architects, Drawing No. AR 01, Rev.1, 20/11/20 – Site Analysis

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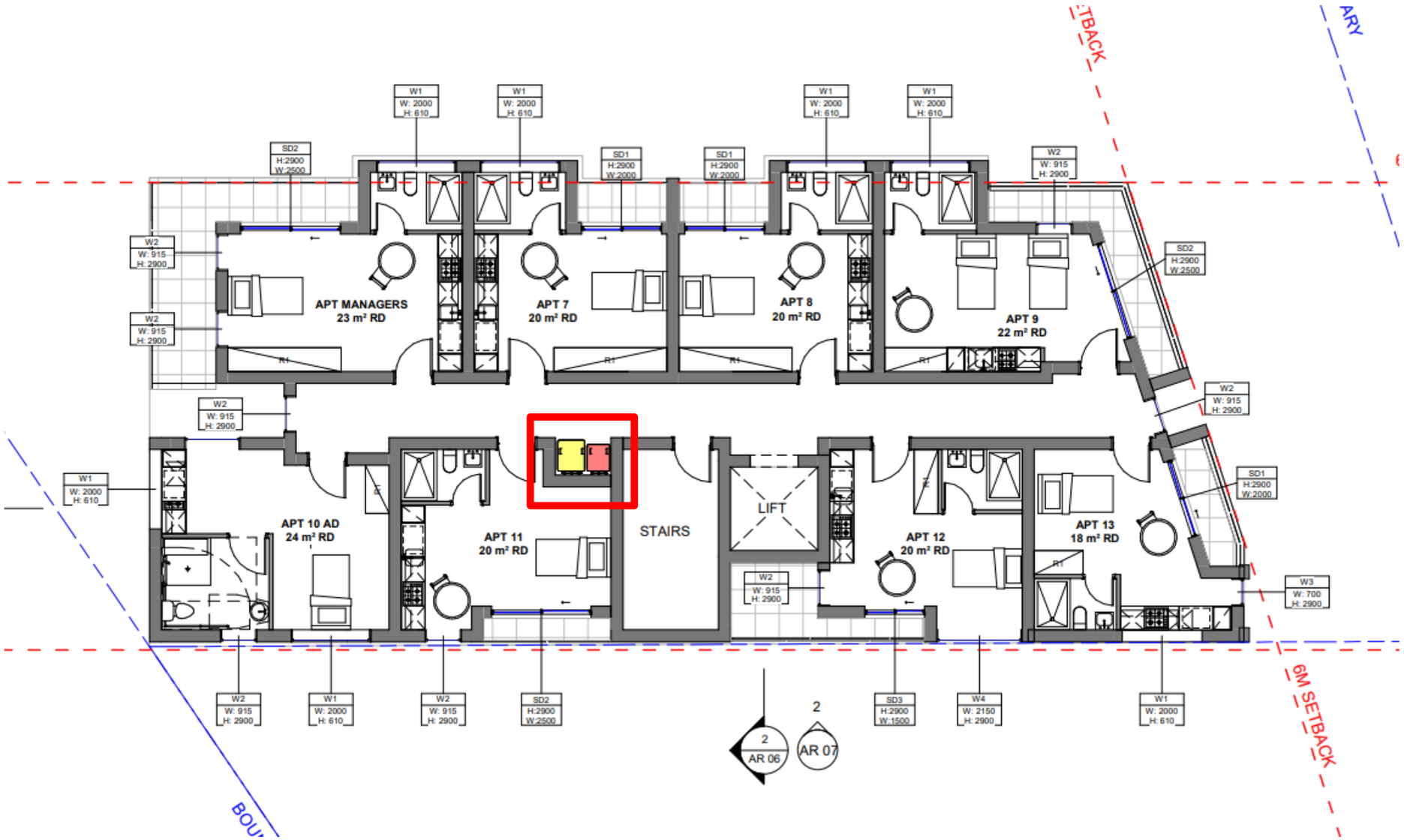
APPENDIX A.2 TYPICAL LEVEL BIN ARRANGEMENT



Source: Prodoc Architects, Drawing No. AR 03, Rev.2, 23/04/21 – Level 1 & 2 GA

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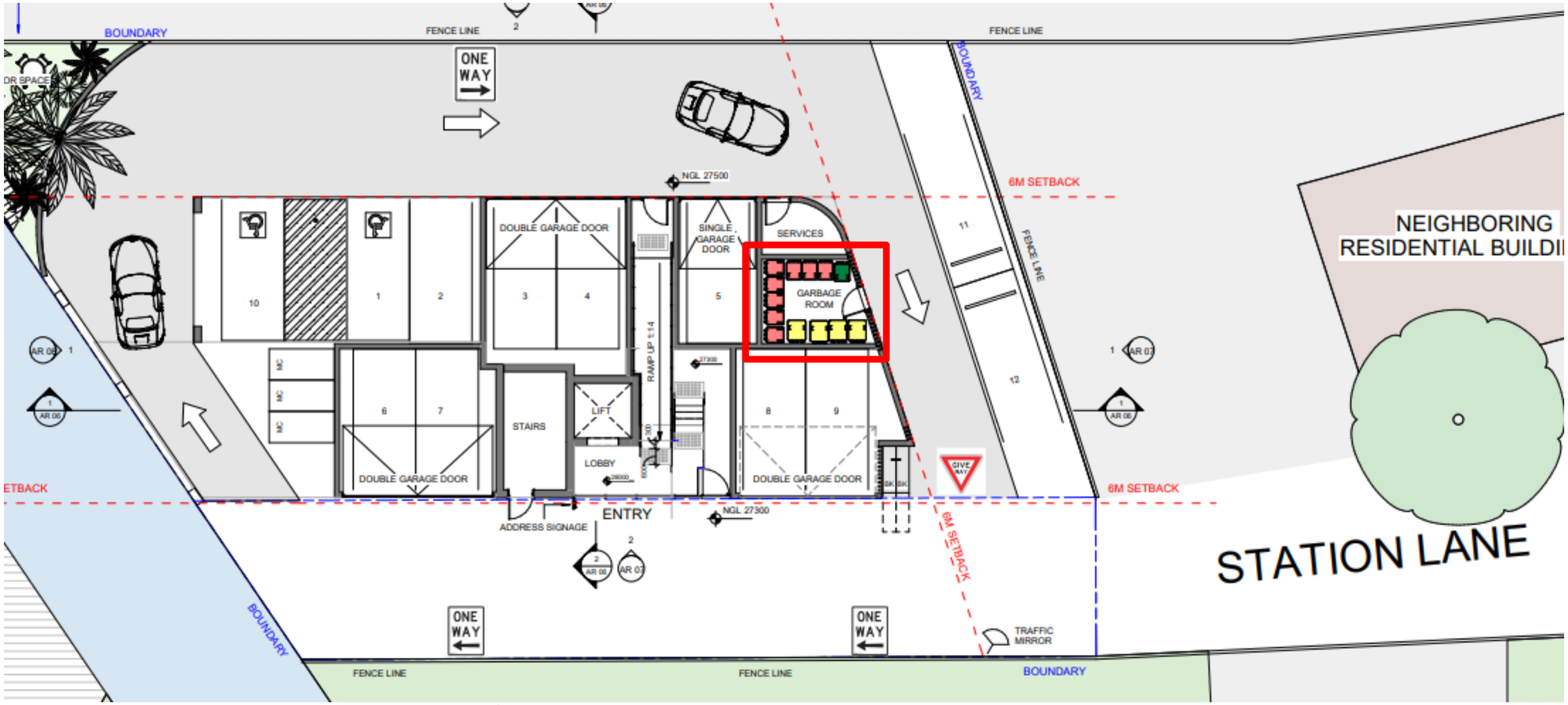
APPENDIX A.3 WASTE ROOMS/COLLECTION AREA



Source: Prodoc Architects, Drawing No. AR 02, Rev.3, 13/05/21 – Ground Floor GA

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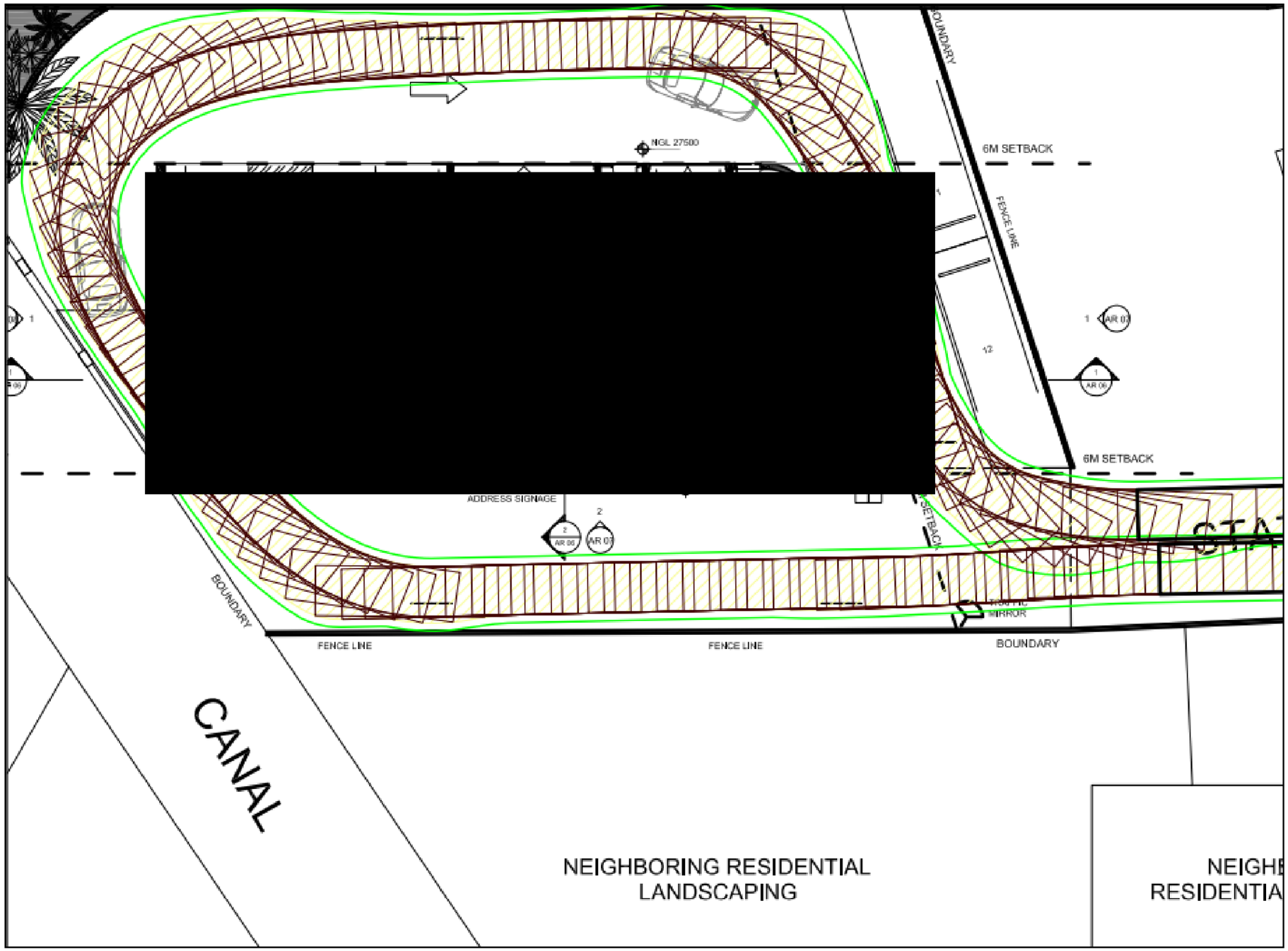
APPENDIX A.4 COLLECTION VEHICLE SWEPT PATH



Source: TTPA – Traffic and Parking Assessment, Iss.A

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APPENDIX B PRIMARY WASTE MANAGEMENT PROVISIONS

APPENDIX B.1 PENRITH BIN SPECIFICATIONS

A	Height (mm)	Length (mm)	Width (mm)
240L Bin	1100	740	600
660L Bin	1400	1260	800
1100L Bin	1330	1240	1090

Table 1: Standard Bin Size and Dimensions

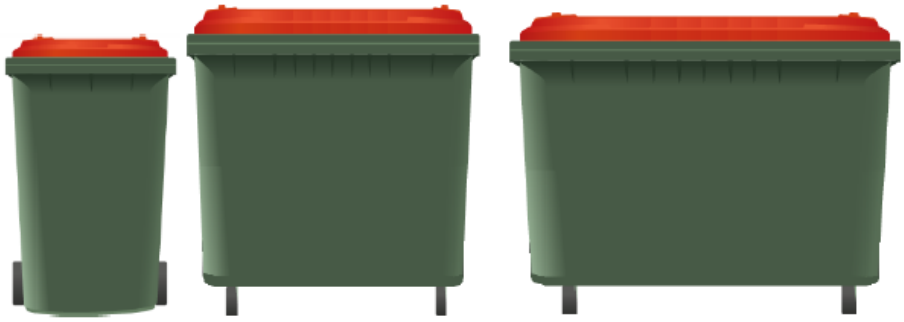

Figure 1: Image of a typical 240L, 660L and 1100L waste collection bins

Source: Penrith's *Residential Flat Building Waste Management Guidelines*

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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)

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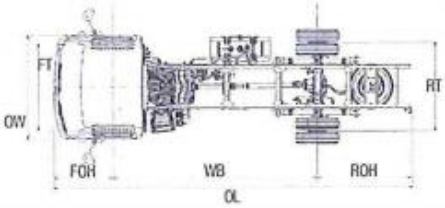
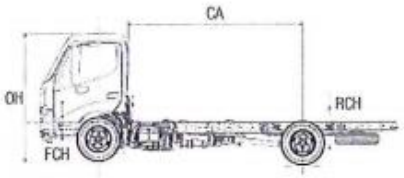
APPENDIX B.3 TYPICAL COLLECTION VEHICLE INFORMATION

616 IFS Auto
616 IFS Hybrid
616 IFS Manual

300 Series

Dimensions





DIMENSIONS – mm / Capacities

Models 300	616 IFS Auto		616 IFS Hybrid		616 IFS Manual	
	Short	Medium	Short	Medium	Short	Medium
Product Code	XZU605R-HKTMSQ3	XZU655R-HKTMSQ3	XKU645R-HKUMSQ3	XKU655R-HKUMSQ3	XZU605R-HKMMSQ3	XZU655R-HKMMSQ3
Nominal Body Length ((WBx.6)+CA-80)	3,460	4,860	3,900	4,860	3,460	4,860
Wheelbase (WB)	2,525	3,400	2,800	3,400	2,525	3,400
Overall Length (OL)	4,710	5,965	5,185	5,965	4,710	5,965
Overall Width (OW) (rear tyre)	1,845	1,845	1,845	1,845	1,845	1,845
Overall Height (OH)	2,095	2,095	2,090	2,085	2,100	2,095
Cab to Rear Axle Centre (CA)	2,025	2,900	2,300	2,900	2,025	2,900
Front Overhang (FOH)	980	980	980	980	980	980
Rear Overhang (ROH)	1,135	1,555	1,375	1,555	1,135	1,555
Front Chassis Height (FCH)	655	655	655	655	655	655
Rear Chassis Height (RCH)	695	695	695	695	695	695
Road Clearance (RC)	170	170	170	170	170	170
Front Track (FT)	1,400	1,400	1,400	1,400	1,400	1,400
Rear Track (RT)	1,435	1,435	1,435	1,435	1,435	1,435
Turning Circle Kerb to Kerb	9,600	12,400	10,400	12,400	9,600	12,400
Wall to Wall	11,000	13,800	11,800	13,800	11,000	13,800
Locking Fuel Tank Capacity (Lts)	80	100	70	100	80	100
Indicative chasis mass – kg (standard tools, 10 litres of fuel, spare tyre and subject to a +/– 3% tolerance)						
Total	2,015	2,075	2,180	2,235	1,970	2,025
Front	1,395	1,440	1,490	1,530	1,365	1,410
Rear	620	630	690	705	605	615
GVM STD	4,495	4,495	4,495	4,495	4,495	4,495
GVM Opt	5,500	5,500	5,500	5,500	5,500	5,500
GCM STD	7,300	7,300	7,995	7,995	7,995	7,995
GCM Opt	7,300	7,300	9,000	9,000	9,000	9,000

Drawings are for reference only to the table. For specific chassis layouts please refer to Body Mounting Manual drawings.

WARRANTY

New vehicle warranty period

Light Duty Model	Axle configuration	Standard warranty	Cab corrosion perforation	Hybrid Nickel metal Hydride Battery
300 616 IFS	4 x 2	3 years or 100,000km	36 months	5 years or 160,000km

Battery warranty – 12 months from date of delivery

Genuine parts or accessories warranty – 3 years unlimited kilometres when fitted by an authorised Hino dealer *

* For conditions, refer to the Hino Parts & Service warranty brochure

DISCLAIMER

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Source: Capital City Waste Services

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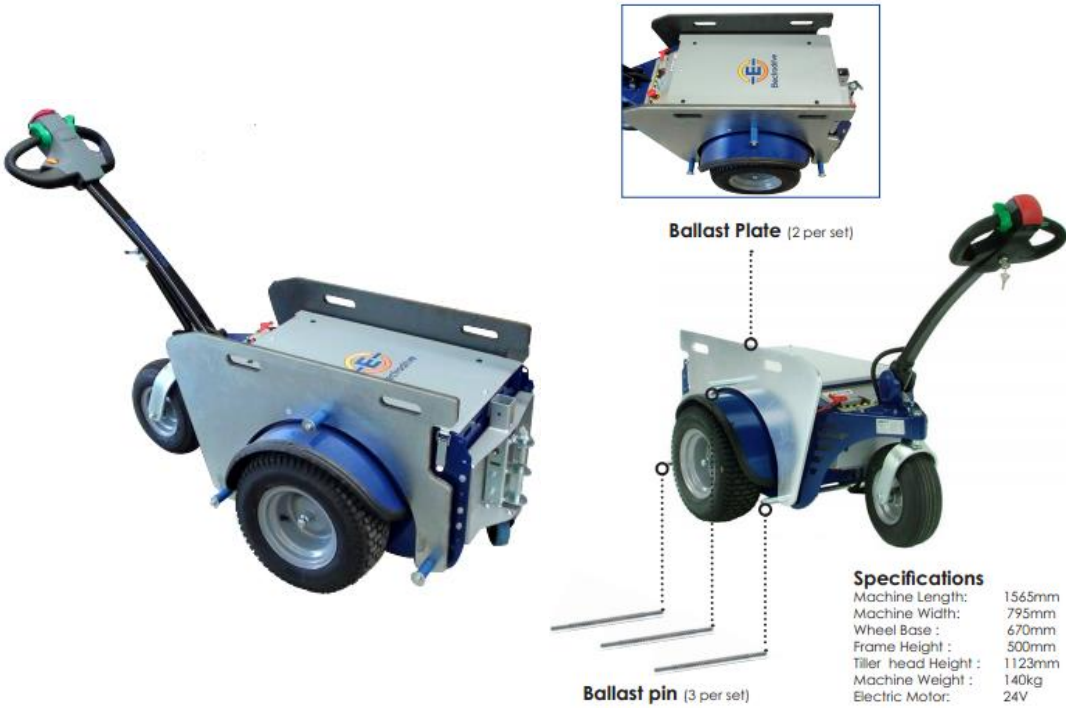
APPENDIX B.4 TYPICAL MOTORISED BIN TUG



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)*

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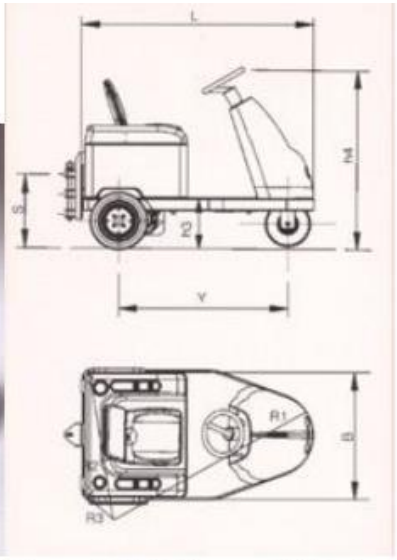
APPENDIX B.5 TYPICAL SEATED BIN MOVER



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

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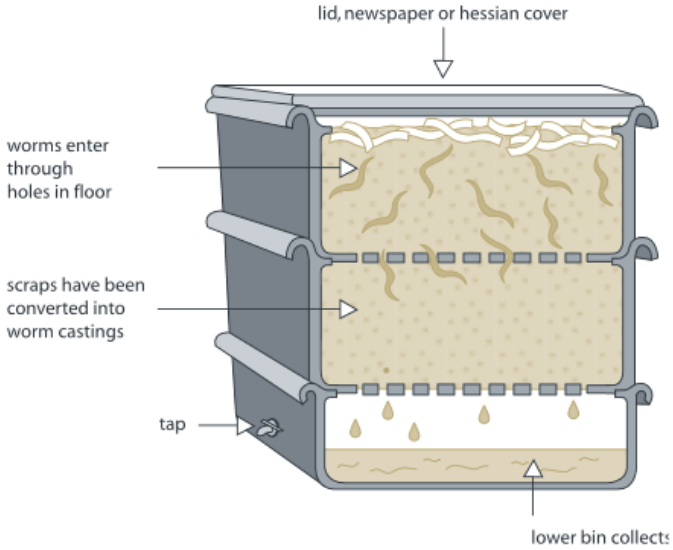
APPENDIX C SECONDARY WASTE MANAGEMENT PROVISIONS

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

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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

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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 d 400 mm h 780 mm

* Food Waste Handling Capacity – based on an optimal operating environment.
** Ambient temperature range of area where unit may be installed.

SOURCE: Closed Loop Domestic Composter – See Useful Contacts
http://www.closedloop.com.au/domestic-composter

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