5-9 Croydon Street, Lakemba

Residential Development

OPERATIONAL WASTE MANAGEMENT PLAN

17/12/2024
Report No. SO253
Revision H

Client

Eloura

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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	9/07/2020	J Parker	A Armstrong	Draft
B	9/09/2020	J Parker	A Armstrong	Amendment
C	21/09/2020	J Parker	A Armstrong	Final
D	12/08/2021	J Parker	A Armstrong	Amendment
E	6/04/2022	J Parker	A Armstrong	Amendment
F	11/07/2024	J Parker	A Armstrong	Amendment
G	16/07/2024	J Parker	A Armstrong	Amendment
H	17/12/2024	H Wilkes	J Parker	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

INTRODUCTION

EFRS has been tasked to prepare the following waste management plan for Eloura for the operational management of waste generated by the residential development located at 5-9 Croydon Street, Lakemba.

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 City of Canterbury Bankstown, and consists of:

- 3 buildings of 7, 7 and 10 levels respectively
  - 144 residential units in total (see Table 1 for Unit Breakdown Matrix)

Table 1: Unit Breakdown Matrix

	BUILDING A			BUILDING B			BUILDING C		
	1 Bed	**2 Bed**	**3 Bed**	**1 Bed**	**2 Bed**	**3 Bed**	**1 Bed**	**2 Bed**	**3 Bed**
LG	0	2	0	0	0	0	0	0	0
1	1	4	0	2	3	0	1	5	2
2	0	5	0	1	5	0	1	6	2
3	0	5	0	1	5	0	1	6	2
4	0	5	0	1	5	0	1	6	2
5	0	5	0	1	5	0	1	8	0
6	0	4	0	0	2	1	1	8	0
7	0	1	2	0	2	1	1	8	0
8							2	3	0
9							1	1	2
10							1	1	2
	1	**31**	**2**	**6**	**27**	**2**	**11**	**52**	**12**
	34			**35**			**75**		

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 5-9 Croydon Street, Lakemba, as shown below. The site fronts onto Croydon Street, with vehicle access via a laneway from Railway Parade.

Source: Google Maps

CITY OF CANTERBURY BANKSTOWN COUNCIL (CITY OF CANTERBURY)

The development is within City of Canterbury Bankstown Council's juristiction. City of Canterbury Bankstown Council is the amalgamation of City of Canterbuy Council and Bankstown City Council. At time of writing this waste management plan, the waste services and associated policies operate under the original council divisions.

Therefore, the residential garbage and recycling will be guided by the services and acceptance criteria of the City of Canterbury. All waste facilities and equipment are to be designed and constructed to be in compliance with the City of Canterbur*y's Canterbury Development Control Plan 2015 – Part B13 Waste Management and Minimisation,* and The City of Canterbury Bankstown's *Waste Management Guide for New Developments,* Australian Standards and statutory requirements.

COUNCIL OBJECTIVES

- To ensure that facilities for handling, storage, collection and disposal of waste are incorporated into all development and are compatible with the design of the development.
- To encourage the reduction in the generation of waste and maximise reuse and recycling of building/construction materials, household generated waste and industrial/commercial waste through:
    - Practical building designs and construction techniques,
    - Design and location of waste facilities, that will assist waste and recycling collection and management services offered by Council and private contractors; and
    - Waste facilities that are easy to use for occupants.

COUNCIL REQUIREMENTS

Access – Ensure waste systems are easy to use and collection vehicles are able to access buildings to safely remove waste and recycling;

Safety – Ensure safe practises for storage, handling and collection of waste and recycling;

Pollution Prevention – Prevent stormwater pollution that may occur as a result of poor waste storage and management practises;

Noise Minimisation – Provide acoustic insulation to the waste service facilities or residential units adjacent to or above chutes, waste storage facilities, chute discharge, waste compaction equipment and waste collection vehicle access points;

Ecologically Sustainable Development (ESD) – Promote the principles of ESD through resource recovery and recycling leading to a reduction in the consumption of finite natural resources;

Hygiene – Ensure health and amenity for residents, visitors and workers in the City of Canterbury

STAKEHOLDER ROLES AND RESPONSIBILITIES

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

Table 2: 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) • General maintenance and cleaning of chute doors on each level; • 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 waste chutes and/or 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 regard to contamination of recyclables; and • Work with building managers to customise waste systems where possible.
Gardening/Landscaping Contractor	• Removal of all garden organic waste generated during gardening maintenance activities for recycling at an offsite location.
Building Contractors	• Removing all construction related waste offsite in a manner that meets all authority requirements.

EDUCATION

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 City of Canterbury Bankstown *Waste Management Guide for New Developments* has been referenced, in conjunction with advice received from Council, to calculate the total number of bins required for the residential 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 development.

Table 3: Calculated Waste Generation – Residential

Building/ Core	# Units	Garbage Generation Rate (L/unit/week)		Generated Garbage (L/week)	Recycling Generation Rate (L/unit/week)		Generated Recycling (L/week)
Building A	34	120		4080	120		4080
Building B	35	120		4200	120		4200
Building C	75	120		9000	120		9000
TOTAL	**144**			**17280**			**17280**
Bin Numbers		Garbage Bin Size (L)		1100	Recycling Bin Size (L)		1100
		Garbage Collections per Week		2	Recycling Collections per Week		2
		Total Garbage Bins Required		**9**	Total Recycling Bins Required		**9**
		Number of Waste Bins Per Core	Building A	2	Number of Recycling Bins Per	Building A	2
			Building B	2		Building B	2
			Building C	5		Building C	5

NOTE: Council have indicated that they would encourage the use of food organics and garden organics (FOGO) bins at this site. However, the developer has indicated that, as this is a recommendation rather than a requirement, and due to the issues this would cause accommodating additional bins into the design at such a late stage, this is not something they will be pursuing. Garden waste bins will however be accommodated in the bin holding room.

HOUSEHOLD WASTE

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

Garbage discharges into 1100L MGBs in carousel systems in each of the three basement level waste rooms and will not be compacted. Full garbage bins will be transferred to the bin holding room on the ground level to await collection. A bin hoist system will be used to transfer the bins between levels and a bin moving device will be used to transfer bins between the basement level waste rooms and the bin hoist. In the event that the bin hoist breaks down, the bin moving device will be used to transfer bins between levels via the vehicle ramp.

Recycling bins will be situated in the waste compartment on each residential level for collection of recyclable items. The caretaker is responsible for monitoring the capacity of recycling bins and transferring them to the chute discharge rooms in the basement once full. Here, the full 240L recycling bins will be decanted into 1100L bins using the bin lifter provided. Empty 240L bins will then be returned to the corresponding level to resume operational use. Full 1100L recycling bins will be transferred to the bin holding room on the ground level to await collection.

10 x 240L garden waste bins will also be provided in the bin holding room on the ground level for residents to deposit organic waste from garden areas. These bins will be serviced from the kerbside by Council's waste contractor.

COMMON AREAS

The lobbies, amenities and circulation areas will be supplied with suitably branded garbage 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.

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 in each unit to deposit recyclable items 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 each unit to ensure correct separation.

GARDEN WASTE

Organic waste generated in residents' private garden areas is to be deposited into the designated garden waste bins in the bin holding room on the ground level. It is recommended that residents use a receptacle to collect garden waste before decanting this into the collection bins. Garden waste from surrounding building landscaped areas will be removed by the designated maintenance contractor.

BULKY GOODS

A separate room for each building will be made available in the basement for the storage of discarded residential bulky items (e.g. whitegoods, furniture, etc.). These rooms must have a minimum doorway width of 2m to allow for easy movement of large waste items. Bulky items will be transferred to the bulky goods collection room on the ground level. The transfer of bulky goods will be carried out using the residential lifts.

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 any transportation and disposal of bulky goods. Ideally, bulky waste should be collected on a regular schedule so that the storage areas do 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/caretaker.

SUPPLEMENTARY RECYCLING

A separate storage area will be provided on the ground level for residents to store additional household items, such as clothing, mattresses, polystyrene, cardboard and electronic waste.

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 but should be planed into the designated E-waste bin in the supplementary recycling area. Recycling of electronic waste will be organised with the assistance of the building manager/caretaker.

CLOTHING/TEXTILE WASTE

A designated bin for recycling clothing waste and textiles will be provided in the supplementary recycling area. Servicing of this bin is to be arranged on an as required basis by the building manager/caretaker.

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.

MOVEMENT AND TRANSPORTATION OF BINS

The building caretaker will be responsible for organising the movement of bins around the site for collection. A bin hoist system will be used to transfer the bins between levels and a bin moving device will be used to transfer bins between the basement level waste rooms and the bin hoist. In the event that the bin hoist breaks down, the bin moving device will be used to transfer bins between levels via the vehicle ramp.

The developer will be required to contact equipment suppliers to provide equipment recommendations. Examples of motorised bin moving equipment can be found in APPENDIX B.4 and APPENDIX B.5.

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

COLLECTION OF WASTE

All waste generated by the development will be collected by Council's waste contractor, with both garbage and recycling being collected twice weekly and garden waste bins expected to be collected on a fortnightly basis.

Prior to garden waste collections, the caretaker will be responsible for transferring 240L bins to the kerbside, ensuring they are neatly arranged and evenly spaced for ease of servicing. These bins will be serviced directly from the kerbside, with the caretaker returning them to the bin holding room after servicing.

On garbage and recycling collection days, the contractor's waste vehicle will access the site from Croydon Street and pull-up on the laneway adjacent to the bin holding room. Collection staff will then access the bin holding room and service 1100L garbage and recycling bins via a wheel-in/wheel-out strategy.

Once all bins have been serviced and returned to the bin holding room, the vehicle will continue around the laneway and exit the site in a forward direction onto Railway Parade.

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.

All waste collections are provided by a Heavy Rigid Vehicle (HRV) as per Australia Standard (AS) 2890.2 Parking Facilities: Off Street Commercial Vehicle Facilities. The public accessible laneway must allow for HRV access, as per Australia Standard (AS) 2890.2.

INSTALLATION EQUIPMENT AND DESIGN

EQUIPMENT SUMMARY

Table 4: Equipment Summary

Component	Part	Qty	Notes
Chutes	Galvanised Steel / LLDPE Polyethylene Plastic 510mm or 610mm (for 20+ levels)	3	510/610mm diameter (See APPENDIX C.1 for Typical Chute Section)
Equipment A	Garbage 3-bin 1100L MGB Carousel System	3	(See APPENDIX C.2 for Typical Carousel)
Equipment B	240L Bin Lifter	3	(See APPENDIX C.3 for Typical Bin Lifter)
Equipment C	Bin Hoist	1	(See APPENDIX C.4 for Typical Bin Hoist)
Equipment D	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 required for waste storage and collections 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)
B1	Waste Discharge Room A	1 x 3-Bin 1100L Carousel System 1 x 1100L MGB (Recycling) 1 x 240L Bin Lifter	20
		Bulky Goods Storage	6
	Waste Discharge Room B	1 x 3-Bin 1100L Carousel System 1 x 1100L MGB (Recycling) 1 x 240L Bin Lifter	20
		Bulky Goods Storage	7
	Waste Discharge Room C	1 x 3-Bin 1100L Carousel System 1 x 1100L MGB (Recycling) 1 x 240L Bin Lifter	20
		Bulky Goods Storage	10
G	Bin Holding Room	9 x 1100L MGBs (Garbage) 9 x 1100L MGBs (Recycling) 10 x 240L MGBs (Garden Waste)	66
	Bulky Goods Collections	N/A	23
	Supplementary Recycling Area	Designated bins for clothing and E-waste	9

GARBAGE ROOMS

CONSTRUCTION REQUIREMENTS

The garbage room will be required to contain the following facilities to minimise odours, deter vermin, protect surrounding areas, and make it a user-friendly and safe area:

- waste room floor to be sealed with a two pack epoxy;
- waste room walls and floor surface is flat and even;
- all corners coved and sealed 100mm up, this is to eliminate build-up of dirt;
- for residential: a hot and cold water facility with mixing facility and hose cock must be provided for washing the bins;
- for retail/commercial: a cold water facility with hose cock must be provided for washing the bins;
- any waste water discharge from bin washing must be drained to sewer in accordance with the relevant water board. (Sydney Water);
- tap height of 1.6m;
- storm water access preventatives (grate);
- all walls painted with light colour and washable paint;
- equipment electric outlets to be installed 1700mm above floor levels;
- the room must be mechanically ventilated;
- light switch installed at height of 1.6m;
- waste rooms must be well lit (sensor lighting recommended);
- optional automatic odour and pest control system installed to eliminate all pest types and assist with odour reduction – this process generally takes place at building handover – building management make the decision to install;
- doorways must be at least 2m wide to allow for manoeuvring of 1100L bins;
- 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.

CANTERBURY BANKSTOWN COUNCIL CUSTOMER SERVICE
Phone: (02) 9707 9000 Email: council@cbcity.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

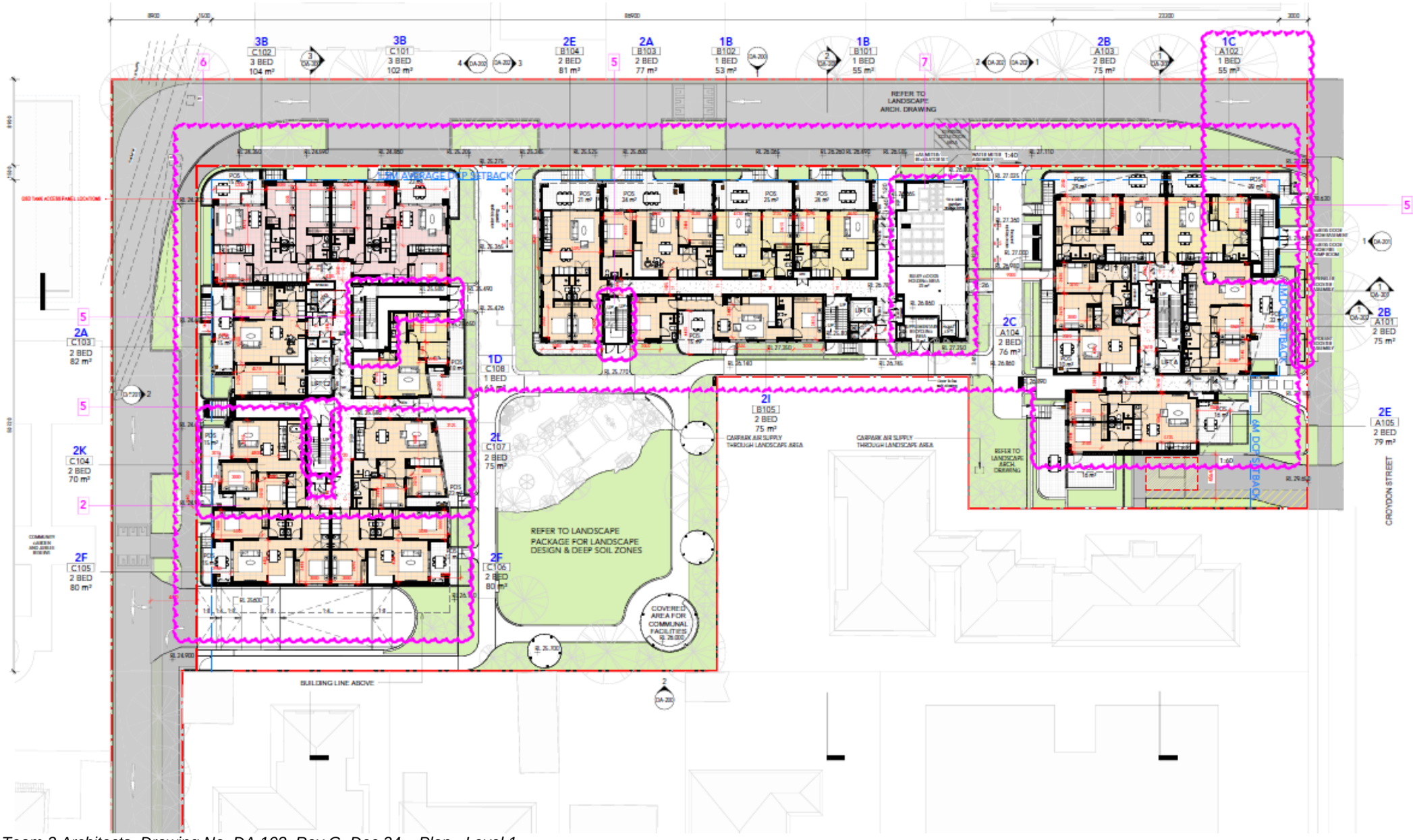
KOMPACT EQUIPMENT (Equipment & Servicing Provider)
Phone: 1300 566 722 Email: info@kompactequipment.com.au

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

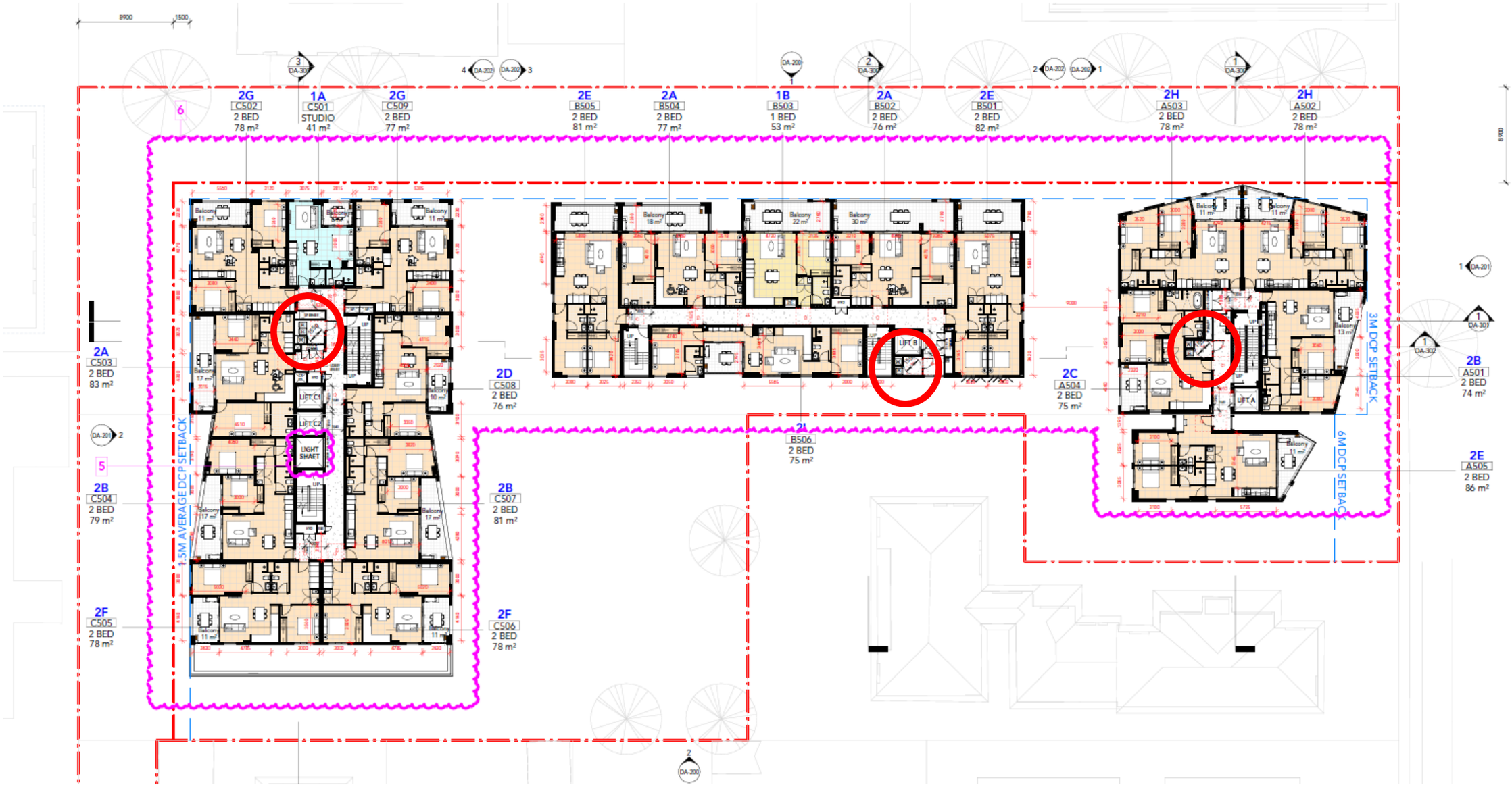
APPENDIX A ARCHITECTURAL DRAWING EXCERPTS

SITE PLAN



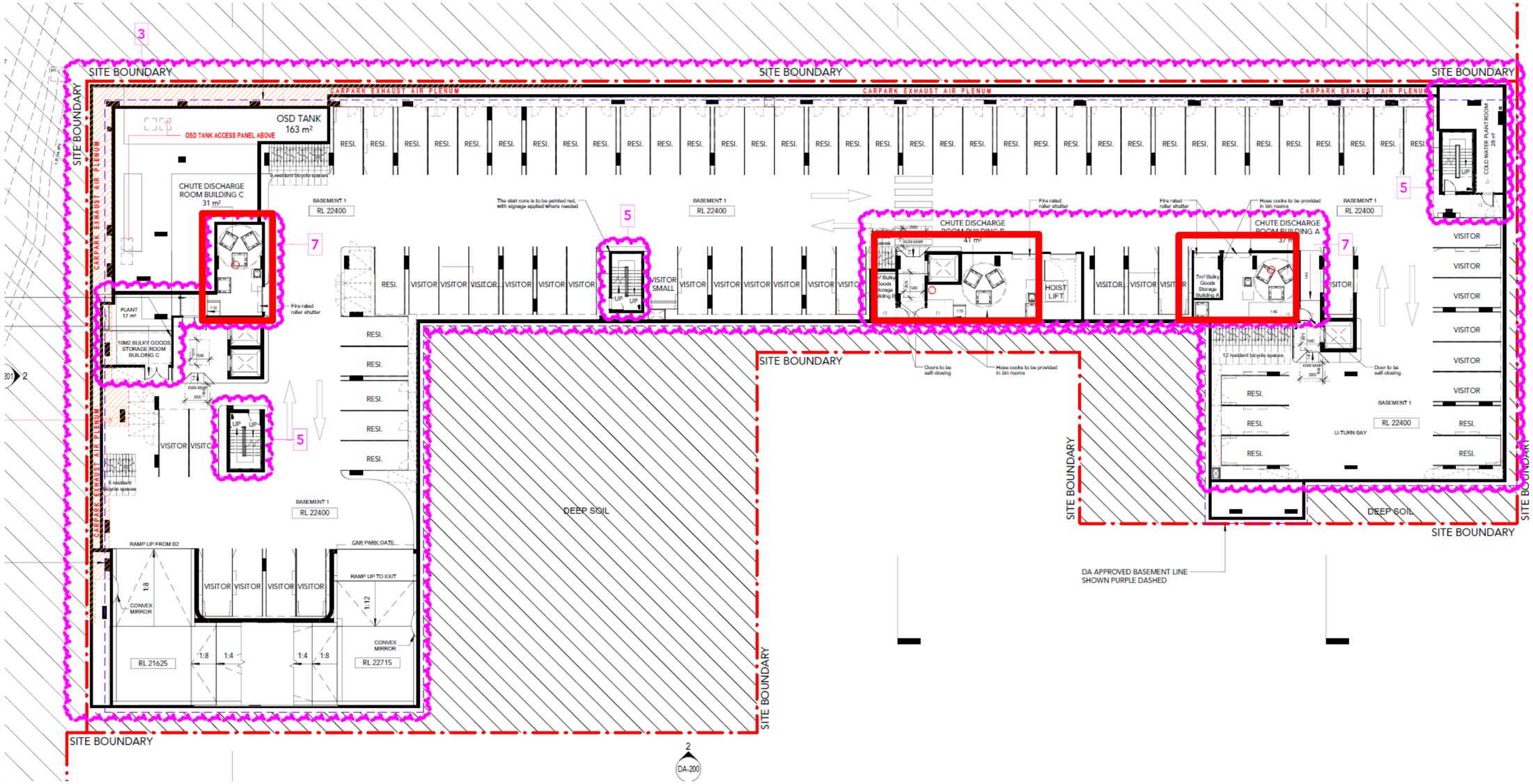
Source: Team 2 Architects, Drawing No. DA 103, Rev.G, Dec 24 – Plan - Level 1

APPENDIX A.1 TYPICAL CHUTE LOCATIONS



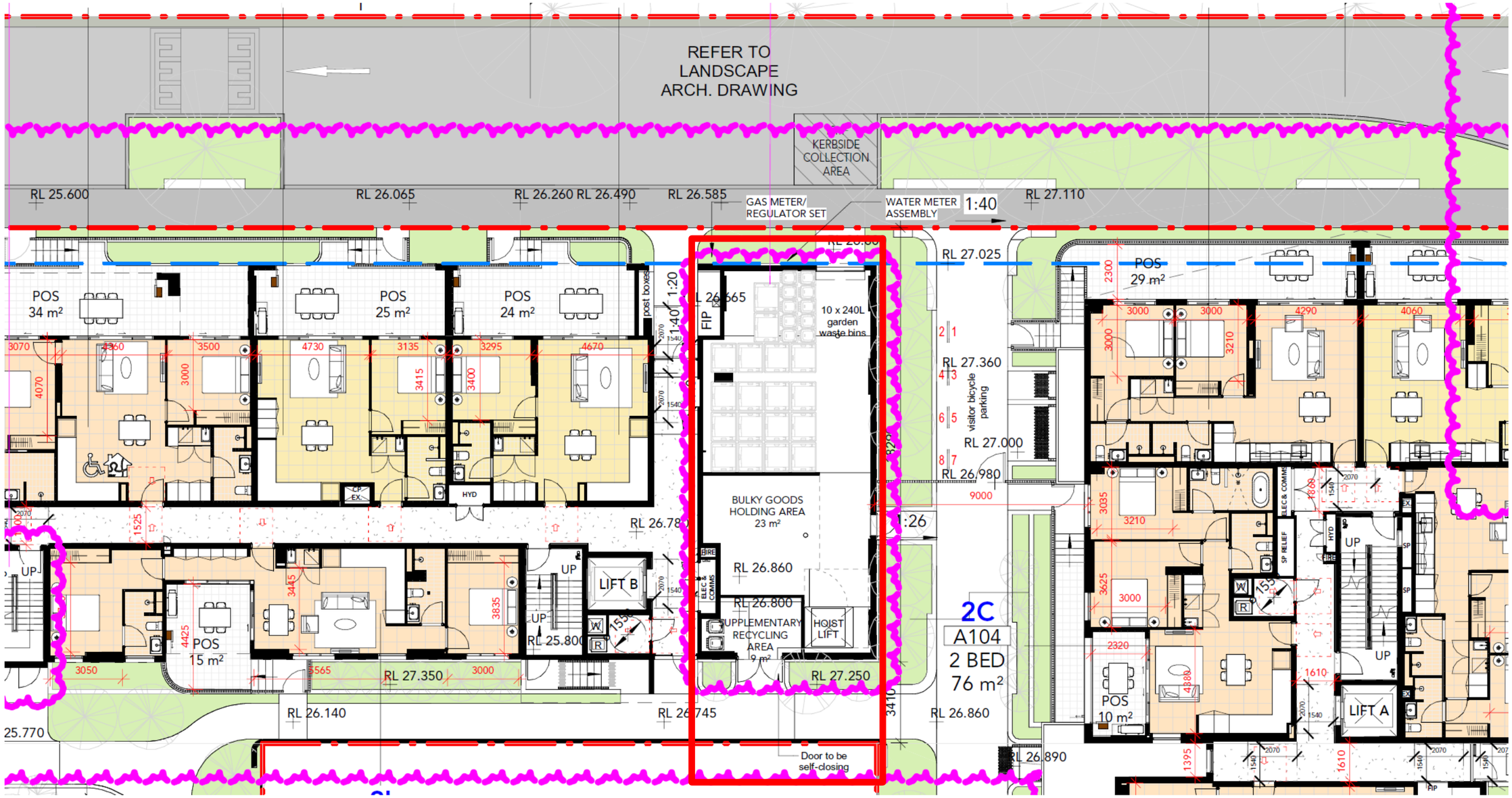
Source: Team 2 Architects, Drawing No. DA 106, Rev.H, Dec24 – Plan - Level 5 (Typical)

APPENDIX A.2 CHUTE DISCHARGE ROOMS



Source: Team 2 Architects, Drawing No. DA 101, Rev.E, Dec24 – Basement 1

APPENDIX A.3 LEVEL 1 - BIN HOLDING/COLLECTION AREA



Exceprt: Team 2 Architects, Drawing No. DA 103, Rev.G, Dec 24 – Plan - Level 1

APPENDIX B PRIMARY WASTE MANAGEMENT PROVISIONS

APPENDIX B.1 TYPICAL BIN SPECIFICATIONS

The most common bin sizes are provided below, although not all sizes are shown. These dimensions are a guide only and differ slightly between manufacturers.

Average dimension ranges for two-wheel mobile bins

Wheelie bin

Bin capacity	80L	120L		140L		240L	360L
Height (mm)	870	940	1065	1080	1100		
Depth (mm)	530	530		540		735	820
Width (mm)	450	485		500		580	600
Approximate footprint (m^2)	0.24	0.26–0.33		0.27-0.33		0.41–0.43	0.49
Approximate weight (kg)	8.5	9.5		10.4		15.5	23
Approximate maximum load (kg)	32	48		56		96	Not known

Sources include Sulo, Single Waste, Cleanaway, SUEZ, just wheelie bins and Perth Waste for two-wheel mobile bins

Average dimension ranges for four-wheel bulk bins

Dome or flat lid container

Bin capacity	660L	770L	1100L	1300L	1700L
Height (mm)	1250	1425	1470	1480	1470
Depth (mm)	850	1100	1245	1250	1250
Width (mm)	1370	1370	1370	1770	1770
Approx footprint (m^2)	0.86–1.16	1.51	1.33–1.74	2.21	2.21
Approx weight (kg)	45	Not known	65	Not known	Not known
Approx maximum load (kg)	310	Not known	440	Not known	Not known

Sources include Sulo, Signal Waste, Cleanaway, SUEZ, Just Wheelie Bins and Perth Waste

Average dimension ranges for bulk bins over 1700L in capacity

Bulk bins greater than 1700L

Bin capacity)	1m³	1.5m³	2m³	3m³	4.5m³	6m³
Height (mm)	1000	910–1250	865–1000	1020–1580	1440–2014	1650
Depth (mm)	1000	905–1000	1300–1400	1470–1700	1605–1900	1900
Width (mm)	1400	1805–2010	1830–2000	1400–2010	1800–2010	2000
Approximate footprint (m^2)	1.4	1.63–2.01	2.4–2.8	2.1–3.4	2.9–3.8	3.8

Sources include TORO Waste Equipment, SUEZ, Signal Waste, Perth Waste and ACT Industrial

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

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)

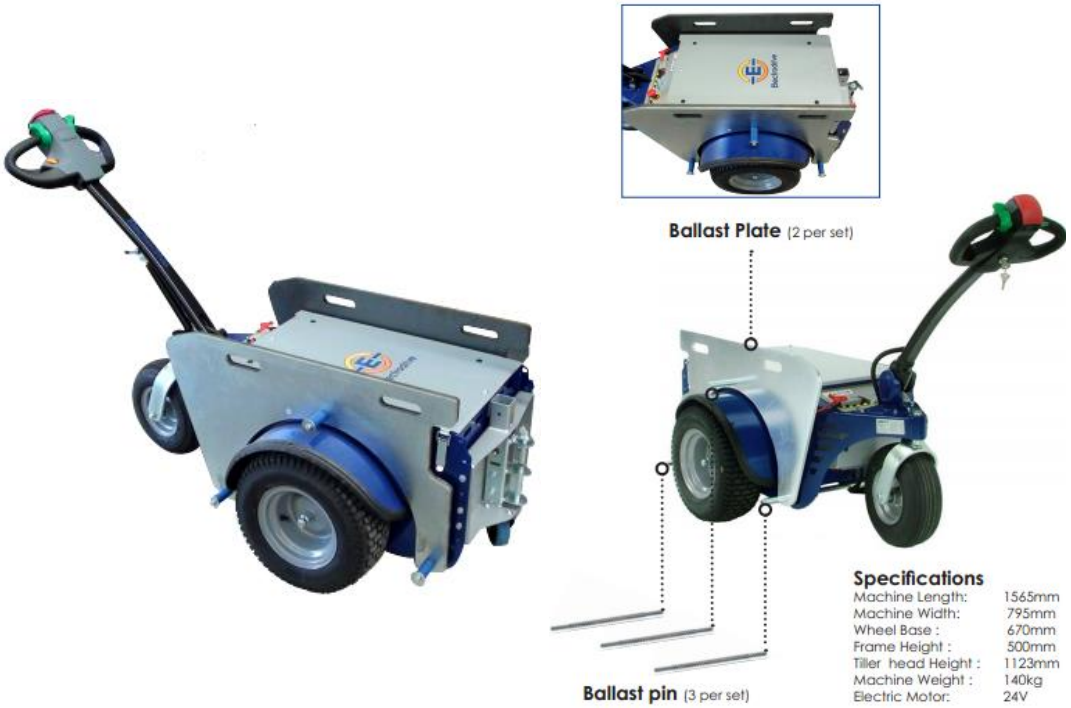
APPENDIX B.3 TYPICAL COLLECTION VEHICLE INFORMATION

Australian Standards for turning circles for medium and heavy rigid class vehicles

Vehicle class	Overall length (m)	Design width (m)	Design turning radius (m)	Swept circle (m)	Clearance (travel) height (m)
Medium rigid vehicle	8.80	2.5	10.0	21.6	4.5
Heavy rigid vehicle	12.5	2.5	12.5	27.8	4.5

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

APPENDIX B.4 TYPICAL MOTORISED BIN TUG



Typical applications:

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

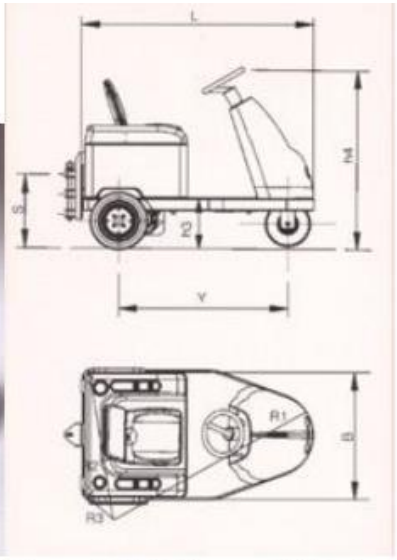
Features:

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

Safety Features:

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

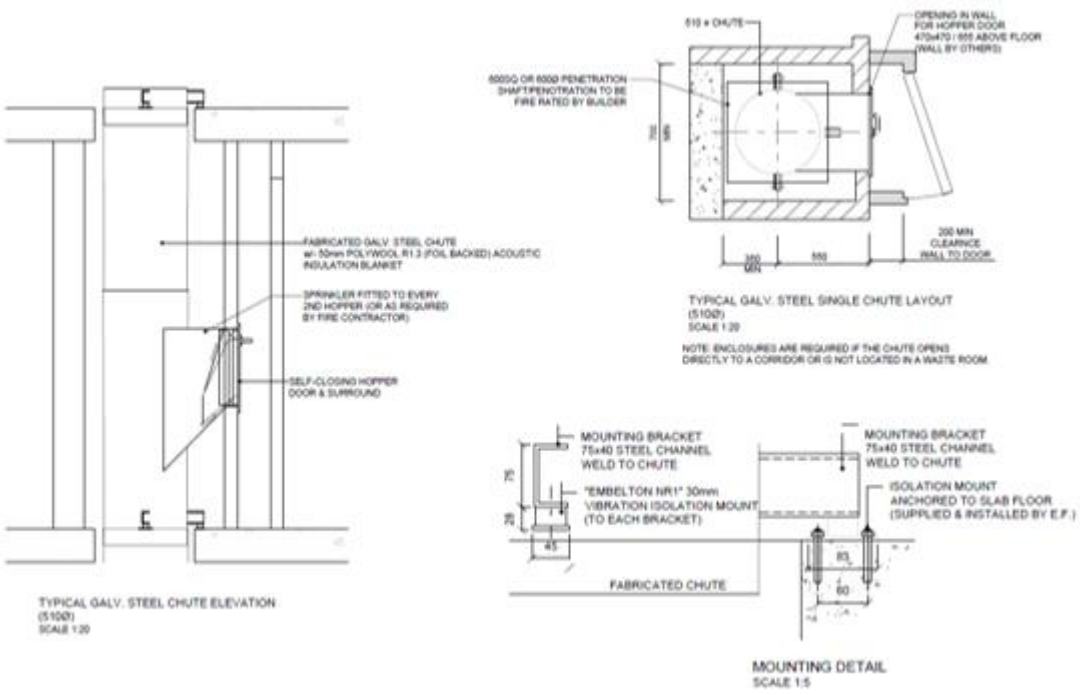
APPENDIX B.5 TYPICAL SEATED BIN MOVER



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

APPENDIX C INSTALLATION EQUIPMENT

APPENDIX C.1 TYPICAL SINGLE WASTE CHUTE SPECIFICATIONS



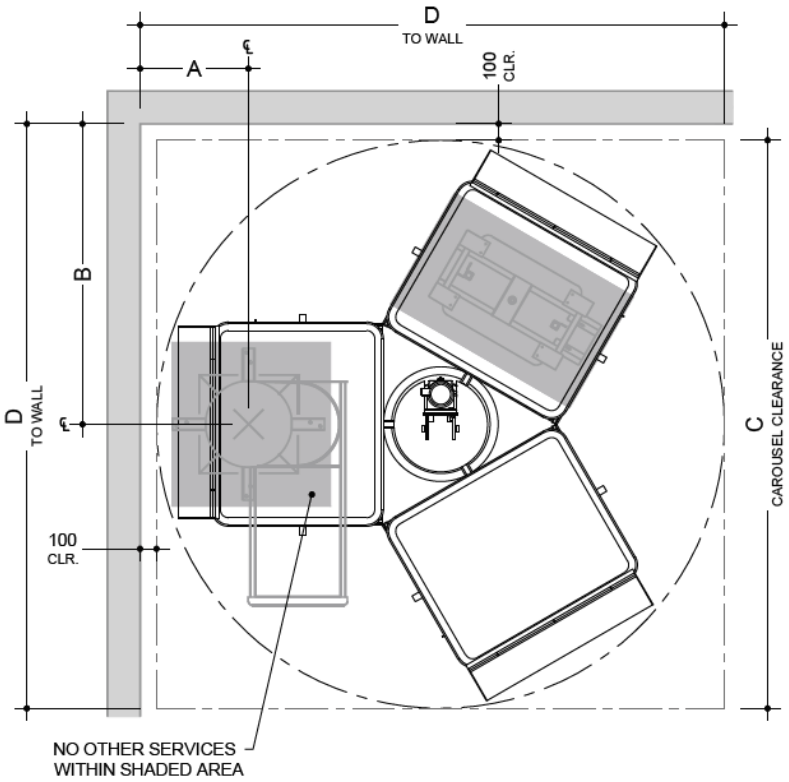
Waste chutes are supplied per the following specifications:

- 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 CAROUSEL SYSTEM

CAROUSEL SYSTEM



1100 LITRE BIN

1100 LITRE BIN CAROUSEL SYSTEM				
No. of Bins	Reference (mm)			
	A	B	C	D
2	650	1700	3200	3350
3	650	1850	3460	3600
4	650	2050	3940	4050

APPENDIX C.3 TYPICAL 240L BIN LIFTER

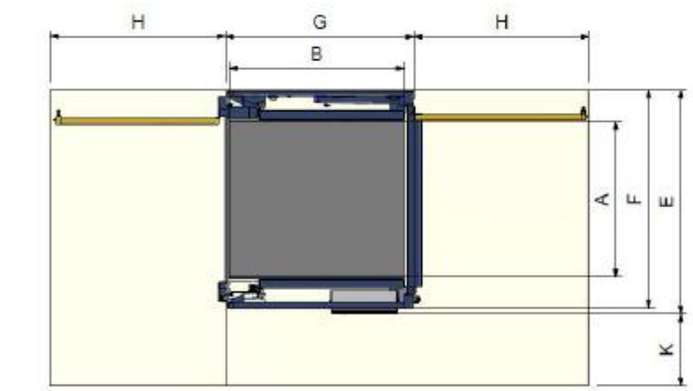
120-240 Litre Binlifter

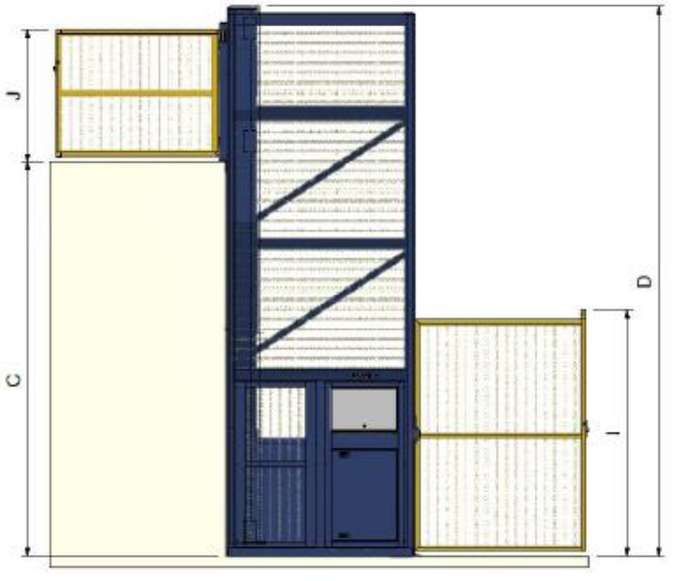
The single bin lifter is designed to safely empty wheelie bins into large dumpsters and compactors. With easy operating push button instructions, the bin lifter is complemented by a safety cage.

Features	120-240 litre bin lifter
Lifting capacity	140 kg
Bin compatibility	120 & 240 litre bins
Operation method	Automatic
Hydraulic	yes
Dimensions	850mm (W) x 1800mm (L)
Safety	Safety cage & control box
Emergency stop	yes
Tipping height	1350mm variable
Clearance	2650mm
Suitability in tipping into	bins , dumpsters and compactors
Power	240 volt, 10amp
Can it be customised?	yes
Weighing & data capture	no

APPENDIX C.4 TYPICAL BIN HOIST

MATERIALS Handling PTY LTD *Working with ease...*





SPECIFICATIONS

1 Goods only hoist - 4000

2 1500kg capacity

3 Self-supporting Structure, no attachment to dock required, swing gates attached to structure

4 Up to 4000mm Travel

5 Power unit can be mounted LH, RH (viewed from lower level) or remote

6 Swing doors, LH and RH available (LH shown)

7 Install as single piece or multiple

8 No pit required

9 2.0m/min (30mm/s) travel speed

10 Infill panels optional for mezzanine applications

Contact Materials Handling for additional information.

TECHNICAL DATA

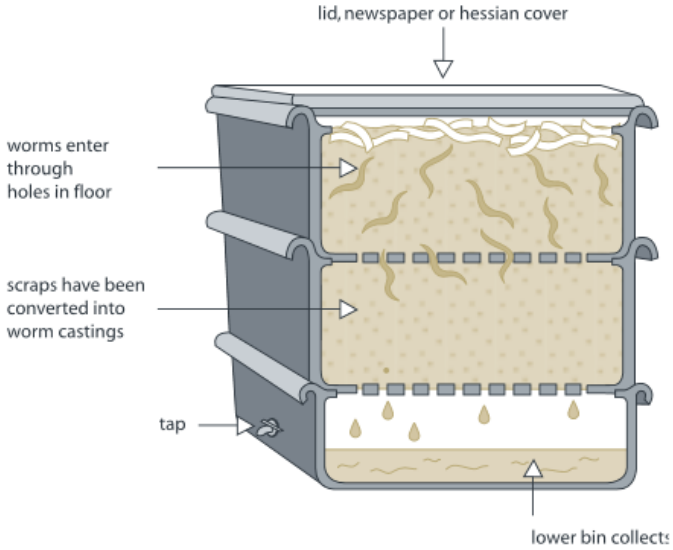
Description	Dimension	Standard (mm)
Platform Width	A	1420
Platform Length	B	1600
Floor to Floor	C	4000
Overall Height	D	5400
Overall Width, On-board PU	E	2050
Overall Width, Remote PU	F	1985
Overall Frame Length	G	1722
Swing Gate Open Length	H	1600
Swing Gate Height (Lower level)	I	2250
Swing Gate Height (Upper level)	J	1200
On Board PU clearance required	K	650

Compact Goods Hoist – 4000 www.materialshandling.com.au

APPENDIX D SECONDARY WASTE MANAGEMENT PROVISIONS

APPENDIX D.1 TYPICAL WORM FARM SPECIFICATIONS

Worm farms



Space requirements for a typical worm farm for an average household:

Height – 300mm per level

Width – 600mm

Length – 900mm

There are many worm farm arrangements. The above dimensions are indicative only.

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

APPENDIX D.2 TYPICAL APARTMENT STYLE COMPOST BINS

Apartment Style Compost bin – available from hardware stores

Suitable for:

- Vegetables
- Coffee grounds and filters
- Tea and tea bags
- Crushed eggshells (but not eggs)
- Nutshells
- Houseplants
- Leaves
- Cardboard rolls, cereal
- Boxes, brown paper bags
- Clean paper
- Shredded newspaper
- Fireplace ashes
- Wood chips, sawdust,
- Toothpicks, burnt matches
- Cotton and wool rags
- Dryer and vacuum cleaner lint
- Hair and fur
- Hay and straw

APPENDIX D.3 ELECTRIC ORGANIC COMPOST BIN

CLOSED LOOP
LOVE WHAT YOU DO
CLO'ey

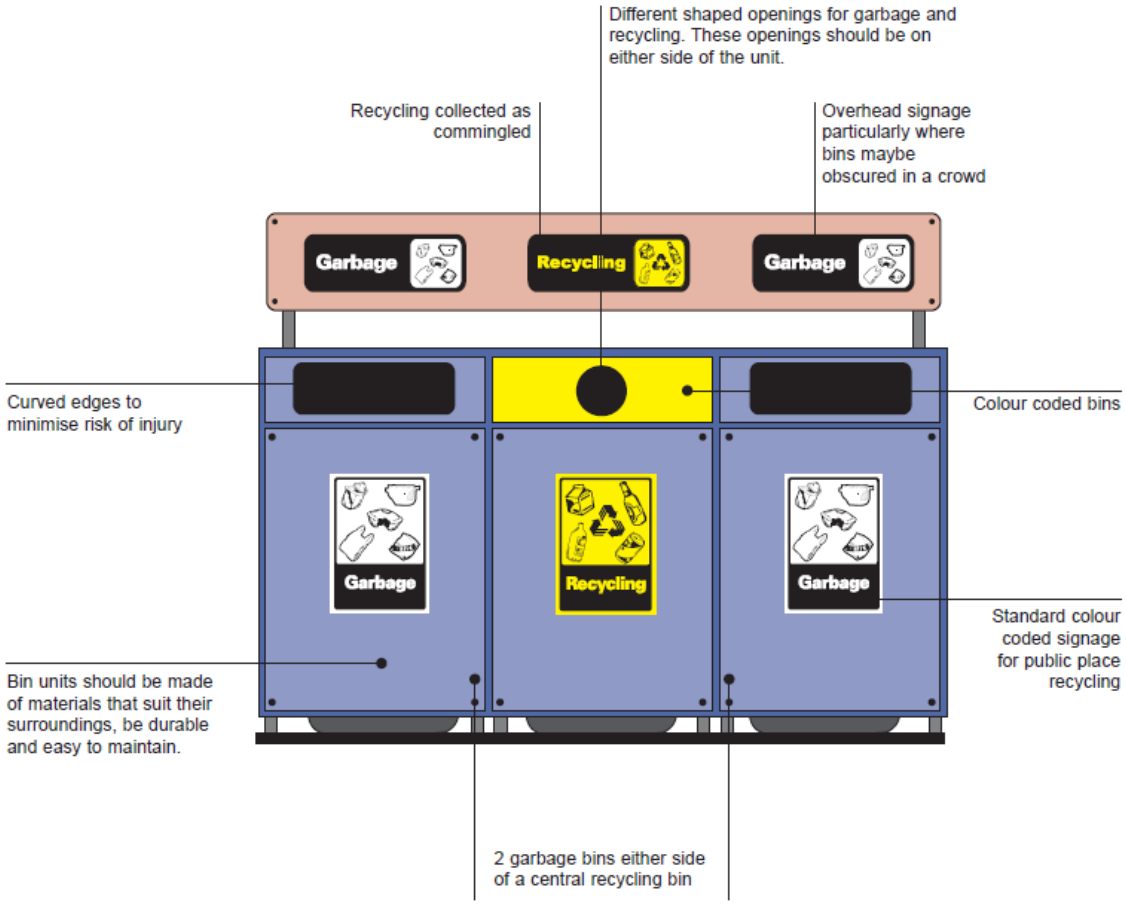
Product Specifications

Decomposition Method	Fermentation by microorganisms
Decomposition Capacity	2 metric tonnes per year* (4 kg per day*)
Rating	220–240 V 50/60 Hz – 1.1 A
Decomposition Time	24 hrs
Operating Temperature	0C and 40C.**
Deodorisation Method	Nano-Filter system
Maximum Power	210 W
Power Usage	Average 1 kwh per day
Weight	21 kgs
External Dimensions	w 400 mm d 400 mm h 780 mm

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

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

APPENDIX D.4 TYPICAL PUBLIC PLACE WASTE BINS



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