WASTE MANAGEMENT PLAN

PREPARED FOR

Deicorp Constructions (NSW) Pty Ltd

ON BEHALF OF

Turner Studio

Student Accommodation Development

Col James Student Accommodation
Pemulwuy Precinct 3
Redfern, NSW, 2016

8/06/2017

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REVISIONS

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B	1	7/06/2017	H Wilkes	A Armstrong	N Beattie	Amendment
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Authorised By: Eddy Saidi
Date: 8/06/2017

DISTRIBUTION LIST

Recipient Name	Company	Revision
Clara Bisanti	Turner Studio	C
Richard Edmonds	Deicorp	C

EXECUTIVE SUMMARY

This waste management plan covers the ongoing management of waste generated by the student accommodation development located at Precinct 3 830123 Eveleigh St. Redfern NSW 2016

Waste audit and management strategies are recommended for new developments to provide support for the building design and promote strong sustainability outcomes for the building. All recommended waste management plans will comply with council codes and any statutory requirements. The waste management plan has three key objectives:

i. ***Ensure waste is managed to reduce the amount of waste and recyclables to land fill*** by assisting residents to segregate appropriate materials that can be recycled; displaying signage to remind and encourage recycling practices; and through placement of recycling and waste bins in the retail precinct to reinforce these messages.

ii. ***Recover, reuse and recycle*** generated waste wherever possible.

iii. ***Compliance*** with all relevant codes and policies.

To assist in providing clean and well-segregated waste material, it is essential that this waste management plan is integral to the overall management of the building and clearly communicated to residents and tenants.

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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 wire ties and strapping
Chute	A ventilated, essentially 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)
Collection Area/Point	The position or area where waste 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)
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
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
Green	Garden organics such as small branches, leaves and grass clippings, tree and shrub pruning, plants and flowers, and weeds
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)
Mobile Garbage Bin(s) (MGB)	A waste container generally constructed of plastic with wheels with a capacity in litres of 120, 240, 660, 1000 or 1100, 1500 or 2000
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.

LIST OF TABLES

INTRODUCTION

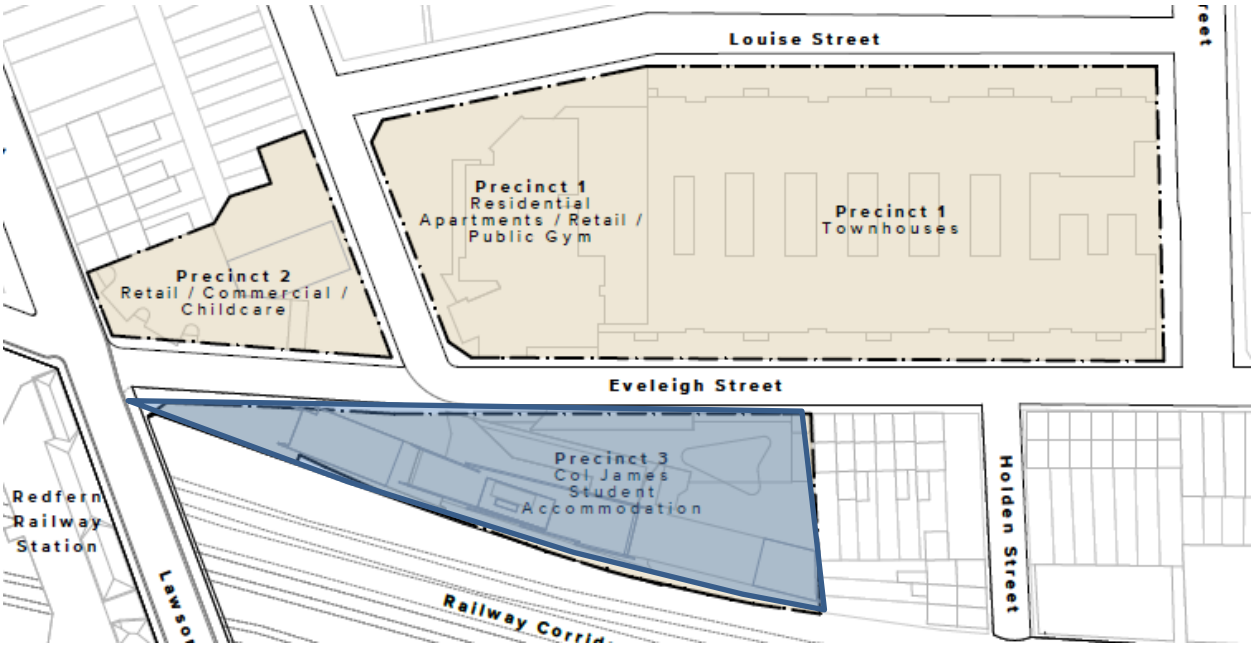
The following waste management plan pertains to the student accommodation student accommodation development located at Col James Student Accommodation Pemulwuy Precinct 3 Precinct 3 830123 Eveleigh St. Redfern NSW 2016
This waste management plan is an operational waste management plan and will address the phases of the completed development.

For the purpose of this report the proposed development will consist of:

- One (1) building with 522 student accommodation boarding rooms
  - The total number occupants is 596 consisting of;
    - 233 in Single Rooms
    - 148 in Twin Rooms
    - 215 In 5 Bed Clusters

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

Figure 1 *Site Plan*



CITY OF SYDNEY COUNCIL

The residential waste and recycling will be guided by the services and acceptance criteria of the City of Sydney Council. The waste generated by the student accommodation will be collected by a private contractor.

All waste facilities and equipment are to be designed and constructed to be in compliance with the City of Sydney Council's *Policy for Waste Minimisation in New Developments 2005,* Council Advices*,* Australian Standards and statutory requirements.

COUNCIL OBJECTIVES

- Ensure that each dwelling has adequate space to manage waste.
- Ensure that buildings provide appropriate facilities to manage waste.
- Ensure that residential amenity is not impacted by waste systems and collection services.

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 Sydney.

GENERATED WASTE VOLUMES

The assessment of projected waste volumes is a calculated estimate only and will be influenced by the development's management and occupant's waste disposal and recycling practices.

CONSTRUCTION AND DEVELOPMENT WASTE

The head contractor will be responsible for removing all construction-related waste offsite in a manner that meets all authority requirements. Please refer to the separate waste management plan submitted for construction waste as part of the Development Application.

BUILDING MANAGER/WASTE CARETAKER

All waste equipment movements are to be managed by the building manager/cleaners at all times. No occupants will be allowed to transport waste or recyclables from the waste room; occupants will only transport their waste to the allocated chute access point.

The building manager/cleaner duties include, but are not limited to, the following:

- General maintenance and cleaning of the chute doors on each level (Frequency dependent on waste generation and will be determined based upon building operation);
- Organising, maintaining and cleaning the general and recycled waste holding areas (Frequency will depend on waste generation and will be determined based upon building operation);
- Transporting of bins as required;
- Organising both garbage and recycled waste pick-ups as required;
- Cleaning and exchanging all bins;
- Ensure site safety for residents, children, visitors, staff and contractors;
- Abide by all relevant OH&S legislation, regulations, and guidelines;
- Assess any manual handling risks and prepare a manual handling control plan for waste and bin transfers; and
- Provide to staff/contractors equipment manuals, training, health and safety procedures, risk assessments, and PPE to control hazards associated with all waste management activities

NOTE: It is the responsibility of the building manager to monitor the number of bins required for the development. As waste volumes may change according to the development's management and occupants' attitudes to waste disposal and recycling, bin numbers and sizes may need to be altered to suit the building operation.

REPORTING

It is recommended that building management ensure that all waste service providers submit monthly reports on all equipment movements and weights of any waste and recycling products removed from the development. Regular reviews of servicing should take place to ensure operational and economic best practise and to assist with sustainability reporting.

EDUCATION

Building management is responsible for creating and managing the waste management education process.

Educational material encouraging correct separation of garbage and recycling items must be provided to each resident to ensure correct use of the waste and recycling chute. This should include the correct disposal process for 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 chute blockages as well as contamination in the collective waste bins.

It is also recommended that the 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.

STUDENT ACCOMMODATION WASTE PLAN

The Council of the City of Sydney's *Policy for Waste minimisation in New Developments* has been referenced to calculate the total number of bins required for the Student Accommodation. The waste and recycling generation rates have been derived from the boarding house/guesthouse generation rates in the Department Environment and Climate Change NSW's *Better Practice Guide for Waste Management in Multi-unit Dwellings.*

Please note that calculations are based on generic figures; waste generation rates may differ according to the residents' waste management practice.

Table 1: *Calculated Waste Generation – Residential*

Building/ Core	**# Occupants**	**Waste Calculation** (L/unit/week)	**Generated Waste** (L/week)	**Compacted Waste** (2:1) (L/week)	**Recycling Calculation** (L/unit/week)	**Generated Recycling** (L/week)
Building 1	596	60	35760	17880	20	11920
TOTAL	**596**		**35760**	**17880**		**11920**

BIN SUMMARY

The following assumptions have been taken into consideration:

- Garbage is compacted at the base of each chute;
- Recycling is not compacted at the base of each chute; and
- Number of bins have been rounded up for best operational with outcome.

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

Waste

Standard: 17x 1100L MGBs Collected **Weekly**
Proposed: 6x 1100L MGBs Collected **Three Times weekly**

Recycling

Standard: 11x 1100L MGBs Collected **Weekly**
Proposed: 4x 1100L MGBs Collected **Three Times Weekly**

Please note that a spare 1100L MGB should be provided for each chute discharge for use during collection periods. These bins are not included in the above figures.

TOTAL BINS: 6 (garbage) + 4 (recycling) + 2 (service) = 12 x 1100L MGBs

NOTE: Subject to the stakeholders preference/capability (and as built constraints), bin sizes and quantities may be changed. As waste volumes may change according to the development's type, bin numbers and collection frequencies may be altered to suit the building operation.

WASTE MANAGEMENT

Two waste chutes will be supplied by Elephants Foot and installed. Breakdown is as follows:

Building : dual chute - one garbage; one recycling

Garbage discharges into 1100L MGBs sitting on a linear track and will be compacted. The recycling (comingle) discharges into 1100L MGBs sitting on a linear track which is not compacted. The discharge is located in the waste discharge room on the ground level. Full bins will be transferred to the bin holding area for servicing.

WASTE HANDLING

WASTE

Each boarding room will be supplied with a collection area (generally in the kitchenette, under bench or similar alternate area) to deposit garbage and collect recyclable material suitable for one days storage. Residents should wrap or bag their waste. Bagged waste should not exceed 3kg in weight or 35cm x 35cm x 35cm in dimension.

The caretaker/cleaner will be required to check the 1100L MGB collecting waste from each chute, rotate full bins to the bin storage room, and replace empty 1100L MGB under each chute operation.

RECYCLING

Cardboard furniture boxes or large cardboard containers should not be included in the waste chute – residents will need to liaise with the building management for assistance with disposal of large cardboard items.

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.

The caretaker/cleaner will be required to check the 1100L MGB collecting recycling from each chute, rotate full bins to the bin storage room, and replace empty 1100L MGB under each chute operation.

TEMPORARY STORAGE OF BULKY GOODS

A room or caged area must be allocated for the storage of discarded bulky items and recyclable electronic goods and sign marked appropriately. The allocated space must be a minimum of $4m^3$. Recyclable electronic goods include batteries, equipment containing printed circuit boards, computers, televisions, fluorescent tubes and smoke detectors.

OTHER WASTE STREAMS

Disposal or recycling of electronic, liquid waste and home detox (paint/chemicals etc.) will be organised with the assistance of the building caretaker. These items must not be placed in waste or recycling bins due to safety and environmental factors.

Residents should be directed to Councils comprehensive website for further information: http://www.cityofsydney.nsw.gov.au/live/waste-and-recycling/e-waste-and-chemicals/e-waste?gclid=CNvChtTMn8QCFY2XvQodV0sA9w

COMMON AREAS

The common areas such as the ground floor lounge, laundry, kitchen and cinema as well as the lobbies and circulation areas will be supplied with suitably branded waste and recycling bins, where considered appropriate. Building management will monitor use and ensure bins are exchanged and cleaned.

WASHROOM FACILITIES

Washroom facilities in common areas 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.

Building management will monitor use and ensure waste bins are exchanged and cleaned.

GREEN WASTE

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

WASTE CHUTES

The waste chute is supplied per the following specifications:

- Either 510mm galvanised steel or 510mm recycled LLDPE polyethylene plastic;
- Galvanised steel chute hoppers are wrapped with 50mm poly-wool R1.3 noise insulation foil to assist in noise reduction;
- Penetrations on each building level at vertically perpendicular points with minimum penetration dimensions of 600mm x 600mm (square or 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.

EQUIPMENT SUMMARY

Table 2: *Equipment Summary*

Component	Part	Quantity	Notes
Chutes	Galvanised Steel / LLDPE Polyethylene Plastic	2	Chute Diameter (*See APPENDIX C.1 for Typical Chute Section*)
Equipment A	*Garbage* Linear Tracks for 1100L MGB with compaction	1	(*See for APPENDIX C.3 Typical Linear System*)
	Recycling Linear Tracks for 1100L MGB	1	(*See APPENDIX C.3 for Typical Linear System*)
Equipment B	Suitable Bin Moving Equipment	1	(*See APPENDIX C.2 for Typical Bin Mover*)

WASTE ROOM AREAS

The waste room will need to accommodate the discharge of the dual chutes and two linear tracks. The bin store room will need to hold all the waste generated between collections and allow enough room to clean and safely manoeuvre bins. A bin wash down area is provided in the loading area.

The areas allocated for residential waste room and bulky goods room are detailed in Table 3 below. The areas provided are considered suitable for purpose.

Table 3: *Waste Room Areas*

Location	Waste Room Type	Number of Bins	Recommended Area (m^2)
Lower Ground Level	Waste Room	2x 2-bin 1100L linear tracks	18
Lower Ground Level	Bin Store Room	6x 1100L MGB (waste) 4x 1100L MGB (recycling) 2x Service bins	28
Lower Ground Level	Bulky Goods Room		3.2

COLLECTION OF WASTE

BOARDING ROOMS

A private contractor will be engaged to collect all boarding house waste to an agreed schedule.

The collection vehicle will enter the site from Eveleigh St in a forward direction where it will park on the turntable in the loading dock.

The waste contractor will wheel the bins from the bin storage area to the vehicle for servicing and returning them upon completion (see APPENDIX A.1Collection Area and Bulky Goods Room).

The bin moving route from the bin holding room to the collection vehicle is indicated in APPENDIX A.3. The development will need to get a letter from the private waste services prior to operation to ensure that they consent to the bin moving route.
If the private contractors have concerns regarding the distance to move bins, an arrangement where bins are placed on designated areas within the loading dock and on the turntable can be investigated.
A bin moving device may be to assist in moving bins to and from the bin storage area (see APPENDIX C.2 – Typical Bin Mover).

After servicing is complete, the turntable will rotate the vehicle 180 degrees and the collection vehicle will leave the site in a forward direction. The building manager will be on site during collections to operate the turntable.

It is the responsibility of the building caretaker to transfer serviced bins back to the designated residential waste rooms upon competition.

COLLECTION AREA

The collection areas will need to be reviewed by a traffic consultant to confirm that these (and other trucks if required) can enter and exit the building in a forward direction. The final number of truck movements will depend on management of waste contract; final configuration of waste and recycling arrangements therefore number of bin lifts and additional irregular truck movements for hard waste.

Swept paths for waste collections, access and egress, internal manoeuvring to assume parked position for loading and to exit, load requirements as well as collection vehicle dimensions have been assessed by a traffic consultant. This information and supporting drawings will be provided separate to this operational waste management report.

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;
- 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;
- All personnel doors are hinged 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 & APPENDIX B.3*). 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.

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.

STORM WATER PREVENTION & LITTER REDUCTION

Building management shall be responsible for the following to minimise dispersion of site litter and prevent stormwater pollution to avoid impact to the environment and local amenity:

- Promote adequate waste disposal into the bins;
- Secure all bin rooms (whilst affording access to staff/contractors);
- Prevent overfilling of bins, keep all bin lids closed and bungs leak-free;
- Take action to prevent dumping or unauthorised use of waste areas; and
- Ensure collection contractors clean-up any spillage that may occur when clearing bins

ADDITIONAL INFORMATION

Transfer of waste and all bin movements require minimal manual handling therefore the operator must assess manual handling risks and provide any relevant documentation to building management. If required, a bin-tug, trailer or tractor consultant should be contacted to provide equipment recommendations. Hitches may require installation to move multiple bins to the collection area. Council must be informed of any hitch attachments required to be installed on bins.

LIMITATIONS

The purpose of this report is to document a Waste Management Plan as part of a development application and is supplied with the following conditions:

- Drawings, estimates and information contained in this waste management plan have been prepared by analysing the information, plans and documents supplied by you 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 chute equipment and systems must be approved by the supplier.

USEFUL CONTACTS

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

City of Sydney Council Customer Service
Phone: 02 9265 9333 Email: council@cityofsydney.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
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

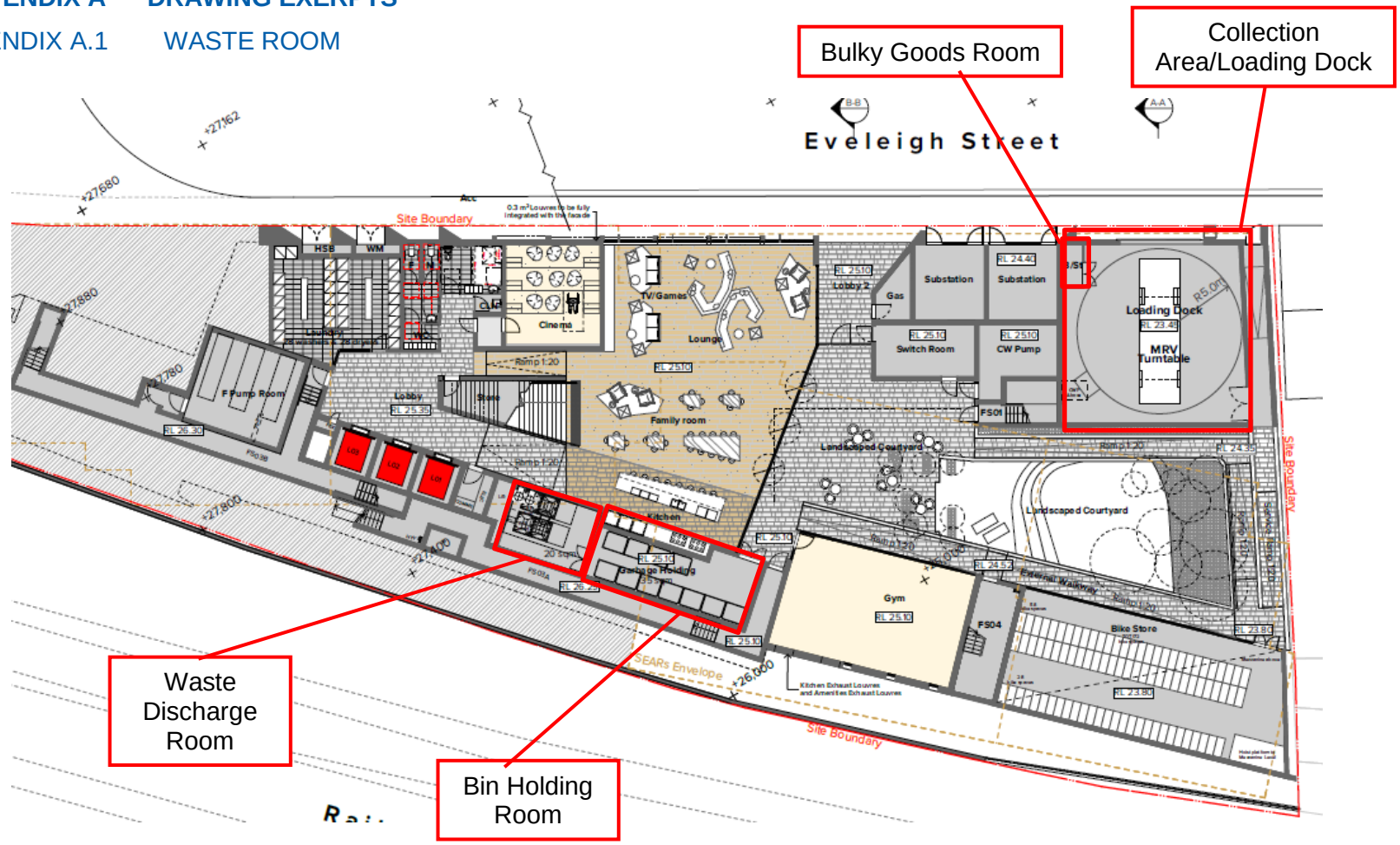
PURIFYING SOLUTIONS (Odour Control)
Phone: 1300 636 877 Email: sales@purifyingsolutions.com.au

Elephants Foot Recycling Solutions (Chutes, Compactors and eDiverter Systems)
44 – 46 Gibson Avenue
Padstow NSW 2211
Free call: 1800 025 073 Email: natalie@elephantsfoot.com.au

APPENDICES

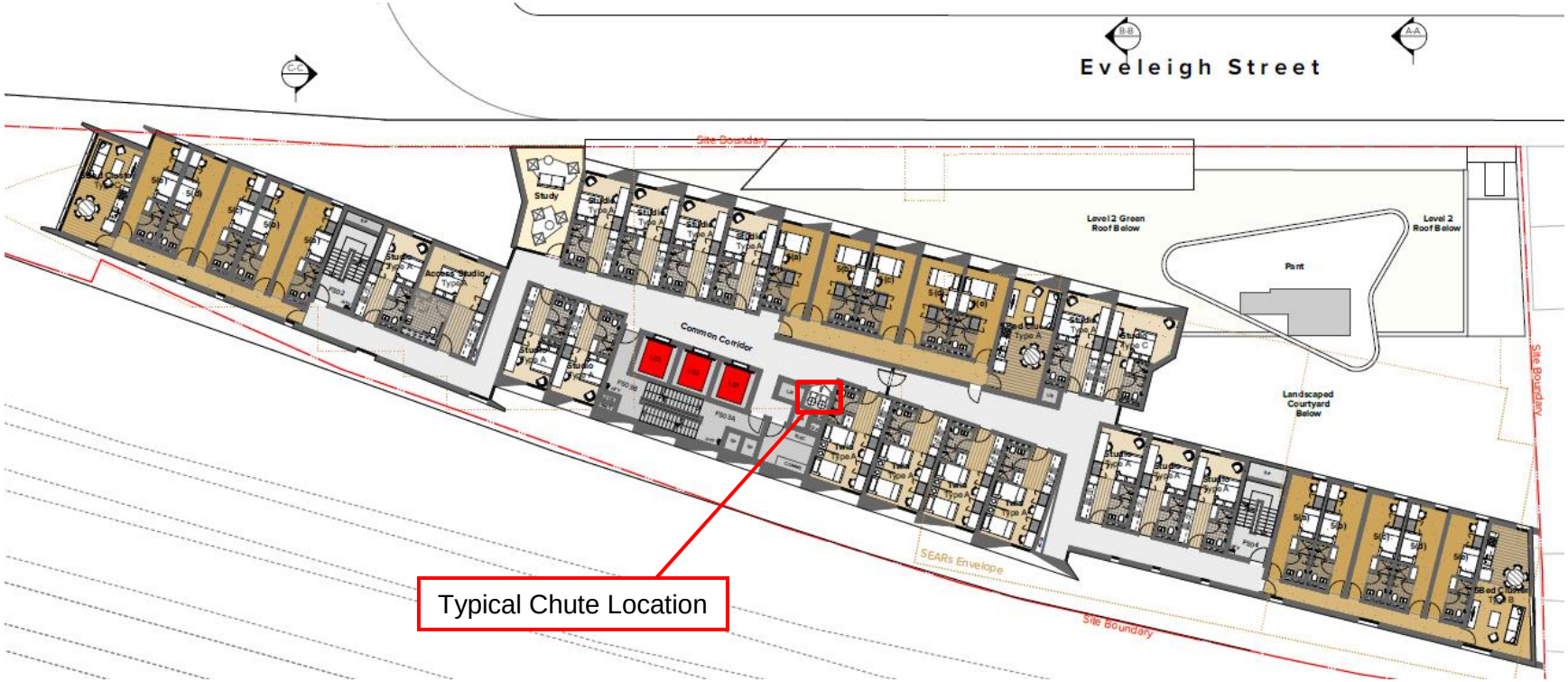
APPENDIX A DRAWING EXERPTS

APPENDIX A.1 WASTE ROOM



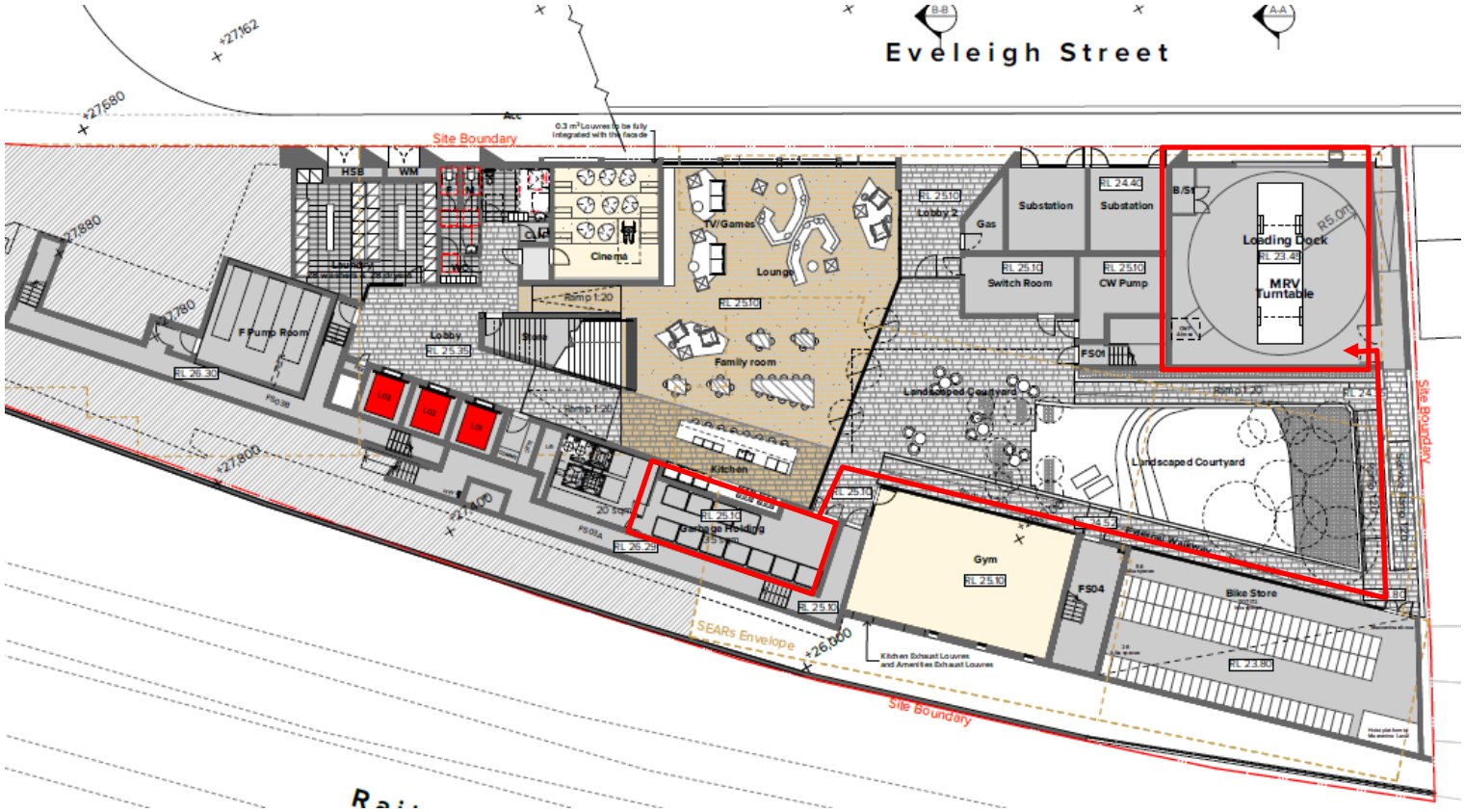
Source: Turner Studio, Pemulwuy Precinct 3 – 83 -123 Eveleigh St Redfern NSW, Title: Lower Ground Floor Plan, Drawing No. A110-007, Rev P Date: June 2017

APPENDIX A.2 TYPICAL CHUTE AND INTERMEDIATE RECYCLING LOCATION



Source: Turner Studio, Pemulwuy Precinct 3 – 83 -123 Eveleigh St Redfern NSW, Title: Level 03, Drawing No. A110-030, Rev P Date: June 2017

APPENDIX A.3 BIN MOVING ROUTE



Source: Turner Studio, Pemulwuy Precinct 3 – 83 -123 Eveleigh St Redfern NSW, Title: Lower Ground Floor Plan, Drawing No. A110-007, Rev P Date: June 2017

APPENDIX B CITY OF SYDNEY COUNCIL EQUIPMENT SPECIFICATIONS

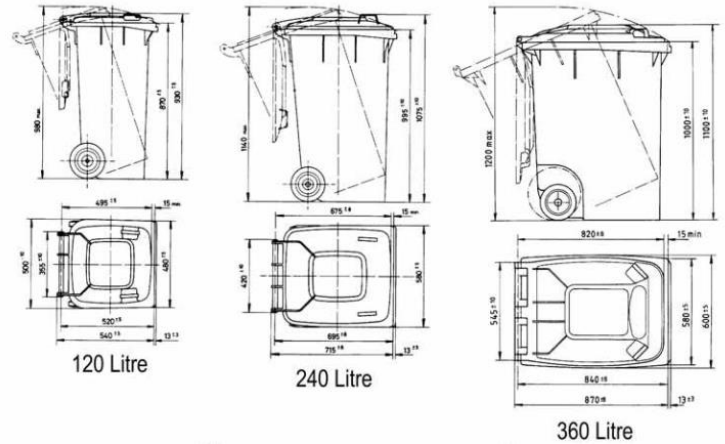
APPENDIX B.1 BINS DIMENTIONS

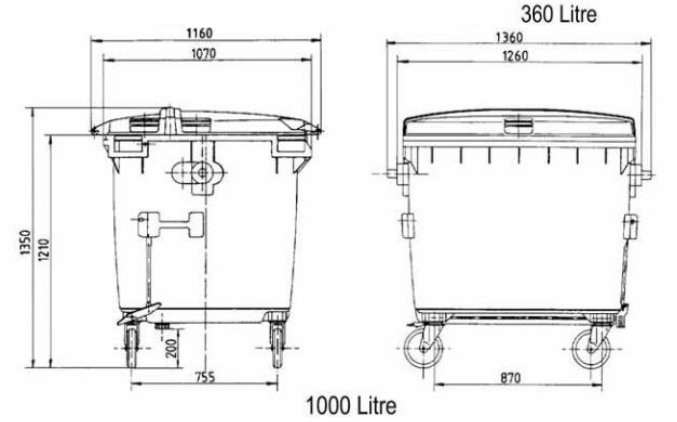
Crates

Bin Type	50L Crate	70L Crate	90L Crate
Height	320 mm	395 mm	420 mm
Length	575 mm	575 mm	450 mm
Width	445 mm	445 mm	450 mm

Mobile Garbage Bins (MGBs)

Bin Type	120L MGB	140L MGB	240L MGB	1000L MGB
Height	940 mm	1065 mm	1080 mm	1350 mm
Length	560 mm	540 mm	735 mm	1160 mm
Width	485 mm	500 mm	580 mm	1360 mm



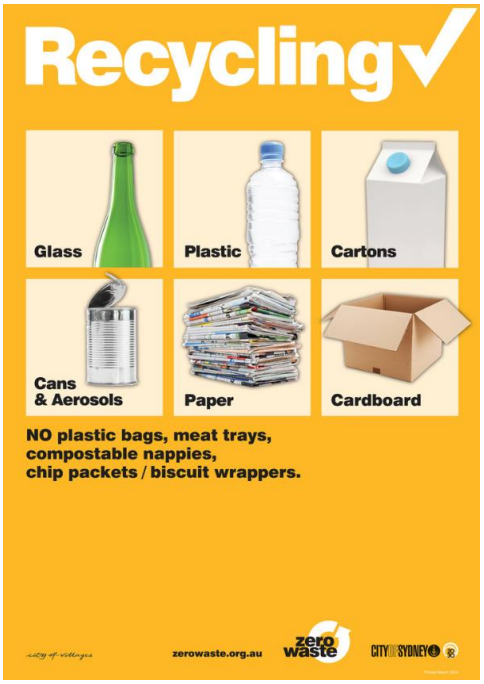


APPENDIX B.2 SIGNAGE FOR WASTE & RECYCLING BINS

APPENDIX B.3 SIGNAGE FOR COMMUNAL WASTE ROOMS & NOTICE BOARDS

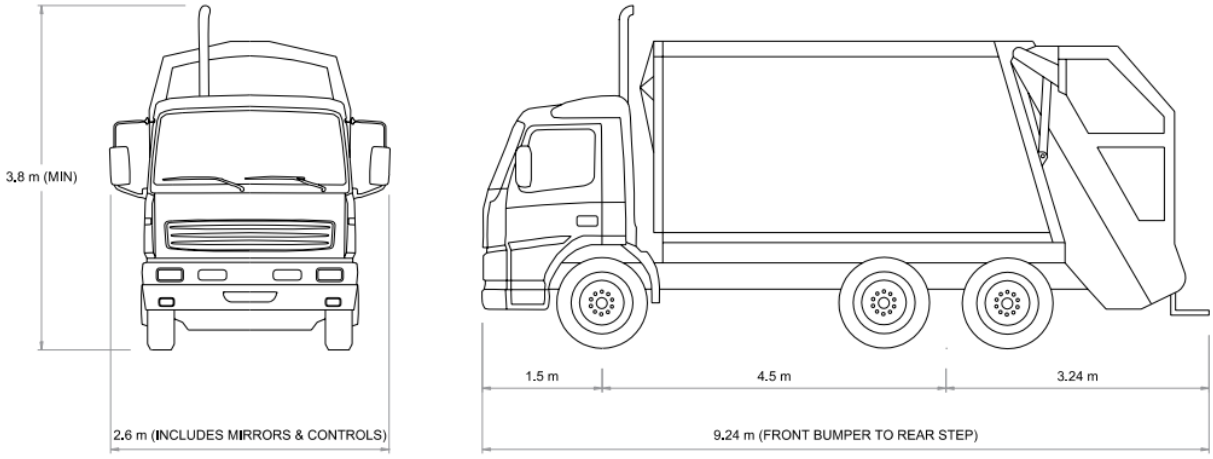
The City of Sydney Council offers free resources available for communal garbage rooms and notice boards to highlight what can and cannot be recycled. These include stickers for bins and signs for bin rooms.


Garbage
Meat trays
Nappies
Styrofoam
Wrappers
Food
NO sharps or syringes.
zerowaste.org.au
zero waste
CITY OF SYDNEY


Recycling
Glass
Plastic
Cartons
Cans & Aerosols
Paper
Cardboard
NO plastic bags, meat trays, compostable nappies, chip packets / biscuit wrappers.
zerowaste.org.au
zero waste
CITY OF SYDNEY


Garden Organics
Flowers
Sticks & branches
(under 10cm thick)
Grass clippings
Leaves
If it doesn't fit in this bin, book it for collection through our free clean up service. Call 9265 9333.
zerowaste.org.au
zero waste
CITY OF SYDNEY

APPENDIX B.4 TYPICAL COLLECTION VEHICLE INFORMATION



Rear loading collection vehicle for MGBs	
Length overall	9.54 m
Width overall	2.6 m
Operational height	4 m
Travel height	3.8 m
Weight (payload)	26 tonnes

APPENDIX B.5 VEHICLE ACCESS/TURNING CIRCLES

Access and turning provisions

Best design practice for access and egress from a development calls for a separate entrance and exit to allow the collection vehicle to travel in a forward direction at all times. Where there is a requirement for collection vehicles to turn at a cul-de-sac head within a development, the design must incorporate either a bowl, 'T' or 'Y' shaped arrangement.

The design aspects that must be taken into account include the following:

- Placement of waste and recycling bins outside each home, or in a common collection area;
- The presence of parked cars on access roads;
- Trucks must only be expected to make a three-point turn to complete a U-turn; and
- Allow for collection vehicle overhang and possible interference with bins and road furniture.

Road geometry

The design parameters that must be complied with are:

- A maximum desirable gradient of 10% for turning heads;
- A maximum longitudinal road gradient of 15%;
- A minimum kerb radius of 8.5m at the outside of turn where there is to be no kerbside collection;
- A minimum kerb radius of 10.0m at outside of turn if there is to be kerbside collection;
- A minimum pavement width of 5.0m if less than 24 car-parking spaces are required;
- A minimum pavement width of 6.5m if 25 or more car-parking spaces are required; (use of passing bays is acceptable); and
- An industrial-type strength pavement designed for a maximum wheel loading of 7 tonnes per axle in order to accommodate waste and recycling collection trucks (The standard road pavement design specifications for an industrial driveway entry on public land is 150mm thick concrete, 20MPa concrete with F82 mesh).

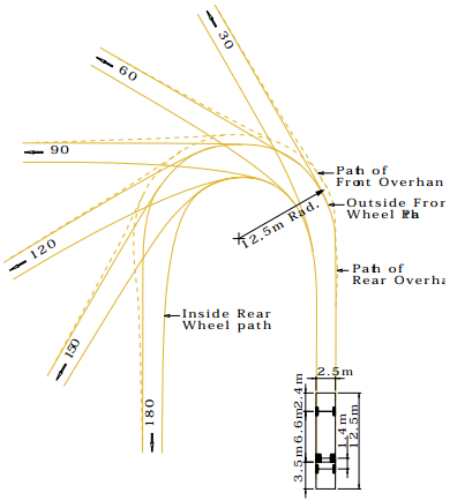
Collection from enclosures

Collection vehicles may enter building basements for the collection of waste and/or recyclables provided the following requirements are met:

- The gradient of the ramp access to basement must not exceed 1:8;
- The height to the structural members and upper floor ceiling must allow for a typical collection vehicle travel height / operational height consistent with type of vehicle employed;
- The provision of space clear of structural members or vehicle parking spaces adequate to allow typical three-point turn of collection vehicles; and
- The basement floor must be of industrial-type strength pavement and designed for a maximum wheel loading of 7 tonnes per axle in order to accommodate waste and recycling collection trucks. (The standard road pavement design specifications for an industrial driveway entry on public land is 150mm thick concrete, 20MPa concrete with F82 mesh).

Sample turning circle design

source: AUSTROADS design single unit truck / BUS (12.5m)
scale 1 : 200 radius 12.5m
ABSOLUTE MINIMUM RADIUS
For use at mandatory stop only. Turning speed up to 5km/h.

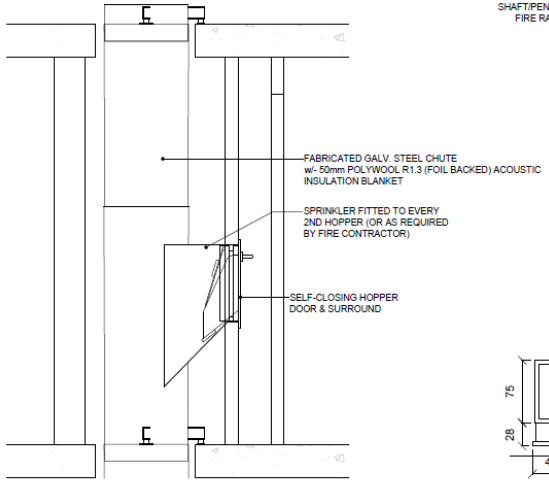


Notes:- 1. Locate face of kerbs at least 0.6m clear of wheel paths.

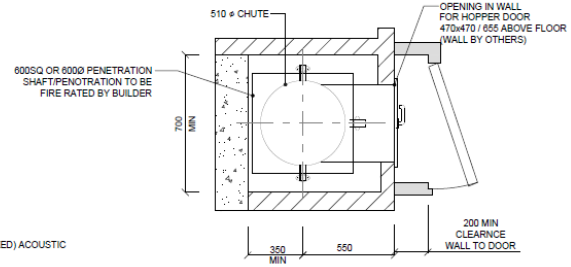
2. Allow 0.6m clearance outside path of overhang and ensure that this area is kept free of road furniture.

APPENDIX C WASTE MANAGEMENT EQUIPMENT SPECIFICATIONS

APPENDIX C.1 CHUTE ELEVATION

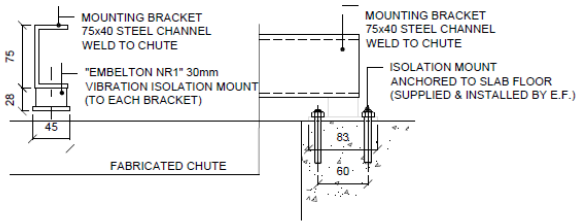


TYPICAL GALV. STEEL CHUTE ELEVATION
(510Ø)
SCALE 1:20

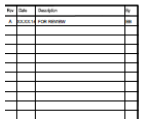


TYPICAL GALV. STEEL SINGLE CHUTE LAYOUT
(510Ø)
SCALE 1:20

NOTE: ENCLOSURES ARE REQUIRED IF THE CHUTE OPENS
DIRECTLY TO A CORRIDOR OR IS NOT LOCATED IN A WASTE ROOM.



MOUNTING DETAIL
SCALE 1:5



APPENDIX C.2 TYPICAL BIN MOVER

Typical applications:

- Move trolleys, waste bin trailers and 660litre/1100 litre bins up and down a ramp incline. Ideal for Apartment Buildings (to move waste bins located at a basement level to road level).
- Quiet, smooth operation with zero emissions and simple to use, no driver's licence required

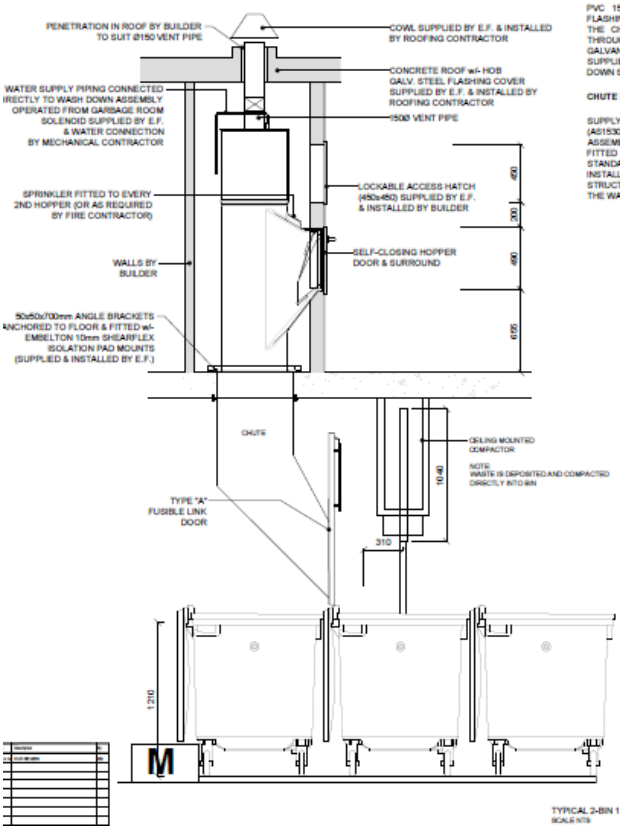
Features:

- Up to 1 Tonne on a ramp surface (depending on ballast and incline)
- Anti-rollback system on slopes
- Foot print: 1548L x 795W x 1104H (handle in the drive position)
- Pin Hitch is standard however alternate hitching options may be available to suit your specific application (e.g. tow ball)

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 C.3 TYPICAL LINEAR SYSTEM TO SUIT 1100L MGBs



VENT:

PVC 150MM DIAMETER VENT PIPE WITH COWL, DEKTITE FLASHING AND EXTRACTION CAP FITTED FROM THE TOP OF THE CHUTES. PIPE EXITS AS PER REQUIRED BY BUILDER THROUGH PLANT ROOM ROOF AND CAPPED WITH GALVANISED STEEL REDUCTION CAP. ACCESS HATCH TO BE SUPPLIED ON LAST LEVEL FOR SERVICING OF THE WASH DOWN SYSTEM

CHUTE DOORS

SUPPLY AND FIT STAINLESS STEEL, TWO HOUR FIRE-RATED (AS1530.4-2005) REFUSE CHUTE DOORS AND THROAT ASSEMBLIES AT EACH SERVICE LEVEL. ALL DOORS ARE FITTED WITH A SELF-CLOSING MECHANISM TO MEET BSA FIRE STANDARDS. DOORS TO BE BLOCKED IN BY OTHERS INSTALLATION OF DOORS ON COMPLETION OF THE BUILDING STRUCTURE. THE CHUTE PIPES BRICKED IN, RENDERED AND THE WALLS PAINTED.

FIRE

FIRE SYSTEM CONTRACTOR TO:

- SUPPLY FIRE SPRINKLERS AND CONNECTION FOR SPRINKLER SYSTEM
- SPRINKLERS FITTED ON EVERY 2ND LEVEL (OR AS PER FIRE CONTRACTOR INSTRUCTION)

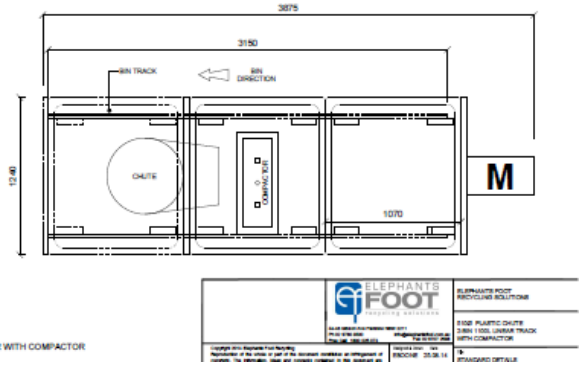
ELECTRICAL

YOUR ELECTRICIAN TO PROVIDE:

- ONE (1) STANDARD 240V GPO IN MAIN GARBAGE ROOM
- ONE (1) 415VOLTS, 5 PINS, 20AMPS FOR EACH REQUIRED COMPACTOR, CAROUSEL OR LINEAR
- COORDINATE WITH ELECTRICAL SUBCONTRACTOR

OPTIONAL EQUIPMENT

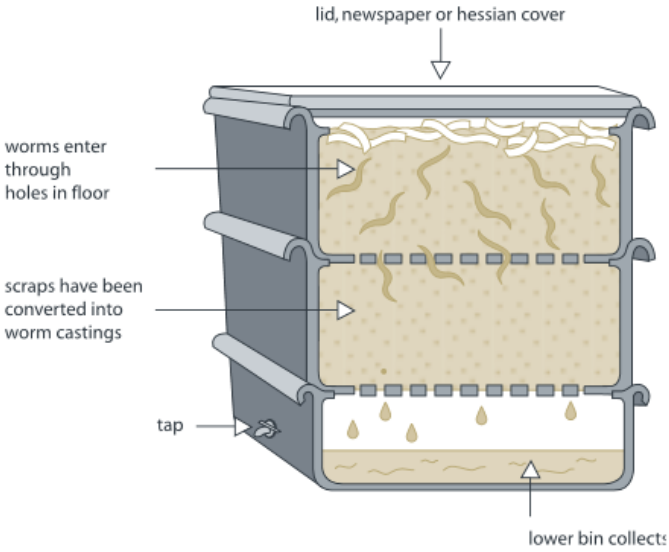
ELEPHANTS FOOT SUPPLY BALERS SUITABLE FOR BALING CARDBOARD PRODUCT IN COMMERCIAL, RETAIL AND RESIDENTIAL AREAS. BALED PRODUCT REDUCES THE REQUIREMENTS FOR ADDITIONAL COLLECTION EQUIPMENT. STATE OF THE ART COMPACTORS ARE ALSO AVAILABLE IN AUGER, BLADE AND ECO MODELS.



TYPICAL 2-BIN 1100L LINEAR WITH COMPACTOR
SCALE NTS

APPENDIX C.4 TYPICAL WORM FARM SPECIFICATIONS

Worm farms



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

Height – 300mm per level

Width – 600mm

Length – 900mm

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

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

APPENDIX C.5 TYPICAL APARTMENT STYLE COMPOST BINS

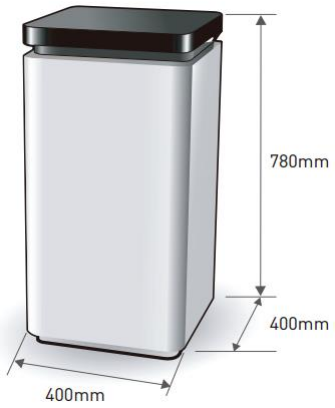
Apartment Style Compost bin – available from hardware stores

Suitable for:

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

APPENDIX C.6 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*