167 Northumberland Street, Liverpool

Mixed-Use Development

OPERATIONAL WASTE MANAGEMENT PLAN

17/02/2021
Report No.
Revision E

Client

Meriton

Architect

PTW Architects

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SCOPE

This waste management plan (WMP) only applies to the **operational** phase of the proposed development; therefore the requirements outlined in this WMP must be implemented during the operational phase of the site and may be subject to review upon further expansion for, and/or changes to the development.

The waste management of the **construction** and **demolition** phases of the development are not addressed in this report. It is EFRS's understanding that a construction and demolition WMP will be completed by a separate party appointed by the developer, and submitted separately to this report. Typically, the head contractor of the site will be responsible for removing all construction-related waste offsite in a manner that meets all authority requirements.

REVISION REFERENCE

Revision	Date	Prepared by	Reviewed by	Description
A	18/11/2019	A Armstrong	E Saidi	Draft
B	16/12/2019	A Armstrong	E Saidi	Amendment
C	20/02/2020	A Armstrong	E Saidi	Final
D	05/03/2020	A Armstrong	E Saidi	Amendment
E	17/02/2021	A Armstrong	E Saidi	Amendment

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GLOSSARY OF TERMS

TERM	DESCRIPTION
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
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

Elephants Foot Recycling Solutions (EFRS) has been engaged to prepare the following waste management plan for PTW Architects on behalf of Meriton for the operational management of waste generated by the mixed use development located at 167 Northumberland Street, Liverpool.

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 integrated into the overall management of the building and clearly communicated to all relevant stakeholders.

REPORT CONDITIONS

The purpose of this report is to document a Waste Management Plan (WMP) as part of a development application and is supplied by 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 chute equipment and systems must be approved by the supplier.
- EFRS cannot be held accountable for late changes to the design after the WMP has been submitted to Council.
- EFRS will provide specifications and recommendations on bin access and travel paths within the WMP, however it is the architect's responsibility to ensure the architectural drawings meet these provisions.
- EFRS are not required to provide information on collection vehicle head heights, internal manoeuvring and loading requirements. These variables are considered to be within the applicable Traffic Consultants domain.
- Council are subject to changing waste and recycling policies and requirements at their own discretion. Information in this operational waste management plan is correct as of December 2019.

This WMP has only been finalised once the Draft Watermark has been removed. If the Draft Watermark is present, the information in the WMP is not confirmed.

DEVELOPMENT SUMMARY

The proposed development falls under the LGA of Liverpool Council, and consists of 1 x 32-storey building incorporating:

- **163** serviced apartments (not strata-titled apartments);
- 3 retail tenancies with a combined GFA of **281m^2**;
- 2 commercial/recreational tenancies with a combined GFA of **2281m^2**; &
- 1 childcare facility with an indoor GFA of **554m^2**.

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

SITE LOCATION

The site is located at 167 Northumberland Street, Liverpool, as shown in Figure.1. The site has frontages to Northumberland Street and a service way, with vehicle access via the service way.

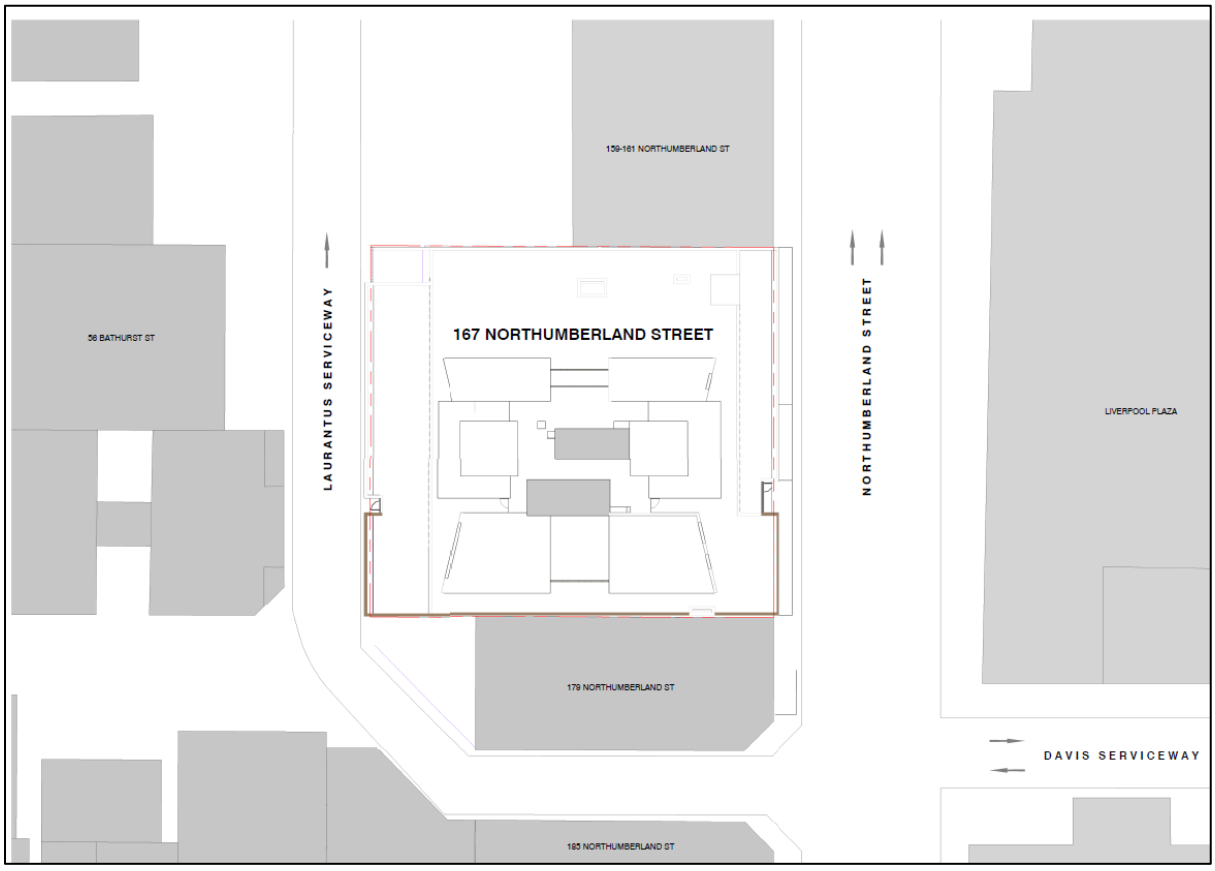


Figure 1 - Site Location

LIVERPOOL COUNCIL

The waste and recycling will be guided by the acceptance criteria of the Liverpool Council and will be serviced by a private waste contractor. All waste facilities and equipment are to be designed and constructed to be in compliance with the *Liverpool Development Control Plan 2008,* 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 Liverpool.

STAKEHOLDER ROLES AND RESPONSIBILITIES

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

Table 1: Stakeholder Roles & Responsibilities

Roles	Responsibilities
Building 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. • Ensuring effective signage, communication and education is provided to occupants, tenants and cleaners on waste and recycling streams and disposal procedures. • Ensuring policies are in place to ensure that waste and recyclables are not mixed.
Cleaners/Building Caretaker	• 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; • Transferring waste and recyclables from each serviced apartment to the chute and 240L recycling bins on each level; • Cleaning and transporting of bins as required; • Checking contamination in waste and recycling bins and manually rectifying any evident cross contamination. • Ensuring that recyclables are not bagged. • Organising, maintaining and cleaning the waste rooms; • Organising both waste and recycled waste pick-ups as required; • Organising replacement or maintenance requirements for bins; • Investigating and ensuring prompt clean-up of illegally dumped waste materials.
Tenants	• Dispose of all waste and recycling in the allocated receptacles provided; • Ensure adequate separation of waste and recycling; and • Compliance with the provisions of Council and the WMP.
Council or 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.

EDUCATION

Building management must provide educational material to all tenants on the correct separation and disposal processes of waste and recycling.. It is recommended that management provides information in multiple languages to support correct practises and minimise the possibility of chute blockages as well as contamination in the collective waste bins.

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.

It is expected that leasing arrangements with retail and commercial operations contain direction on waste management services and expectations.

SERVICED APARTMENTS WASTE MANAGEMENT

The *EPA's Better Practice Guide for Resource Recovery in Residential Developments 2019* has been referenced to calculate the total number of bins required for the serviced apartments. 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 waste and recycling generated by the serviced apartments. Please note, the recycling calculation are based on the number of recycling bins required for each residential level.

Table 2: Calculated Waste Generation – Serviced Apartments

# Units		Waste Generation Rate (L/unit/week)	Generated Waste (L/week)	Recycling Generation Rate (L/unit/week)	Generated Recycling (L/week)
163		60	9780	60	9780
TOTAL	**0**		**9780**		**9780**
Bins and Collections		Waste Bin Size (L)	1100	Recycling Bin Size (L)	240
		Waste Bins per Week	8.89	Recycling Bins per Week	40.75
		Waste Collections per Week	2	Recycling Collections per Week	2
		Total Waste Bins Required	**5**	Total Recycling Bins Required	**27**
Waste Rooms			*Recommended Size: 38msqr*		

**Note: An additional 1100L MGB should be provided for each chute discharge for use during collection periods. These bins are not included in the above figures.*

BIN SUMMARY

Based on the calculations presented in Table. 2, the required bin quantities have been tabulated below:

Waste: 5 x 1100L collected twice a week
Recycling: 27 x 240L bins collected twice a week (1 x 240L bin per level)

OVERALL WASTE STRATEY

All serviced apartments will be supplied with a collection area to deposit waste and collect recyclable material suitable for one day's storage. This is typically located in the kitchen, under the bench or similar alternate area.

Waste receptacles must be lined with a bag and recycling must not be bagged. It is recommended that a crate or dedicated bin is provided for collecting recyclables to ensure correct separation.

The serviced apartments will be cleaned by contract cleaners daily or when required. The cleaners will be responsible for removing the waste and recycling from each serviced apartment and transporting sorted waste and recycling to the allocated disposal point on each level.

1 x waste chute will be installed with access provided on each serviced apartment level. The chute is to be used for the disposal of waste only.

Waste discharges into 1100L MGBs which are not compacted. The discharge is located in the serviced apartment waste room on the ground level.

1 x 240L recycling bin will be situated in the waste compartment on each serviced apartment level for collection of recyclable items. The contract cleaners are responsible for monitoring the capacity of recycling bins and transferring them to the serviced apartment waste room when full.

Serviced apartment residents will also have access to the waste chute and 240L recycling bin to dispose of waste and recyclables when required.

On collection days, the building caretaker will transfer recycling bins to the serviced apartment waste room on the ground level, via the lift. All waste and recycling bins will be collected by a private waste contractor directly from the serviced apartment waste room, via the designated vehicle loading bay. Once serviced, the building caretaker will transfer recycling bins back to each level.

COMMON AREAS

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

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

RETAIL AND COMMERCIAL WASTE MANAGEMENT

The *Better Practice Guide for Resource Recovery in Residential Developments 2019* has been referenced to calculate the total number of bins required for the retail areas. Calculations are based on generic figures; waste generation rates may differ according to the tenants' waste management practice.

ESTIMATED WASTE VOLUMES AND PROVISIONS

The following table shows the estimated volume (L) of waste and recycling generated by the retail component of the development.

The total GFA of the retail component has been divided into thirds (standard non-food retail, food retail & restaurant) to take into account the waste generation of future possible tenancies. A seven day operating week has been assumed for the retail component.

A five day operating week has been assumed for the commercial (offices) and childcare component.

Table 3: Calculated Waste Generation – Retail

Tenancy	Type	NLA (m^2)	Waste Generation Rate (L/100m^2/day)	Generated Waste (L/week)	Recycling Generation Rate (L/100m^2/day)	Generated Recycling (L/week)
Retail	Standard (non-food) Retail	94	50	329	100	658
Retail	Food Retail	94	120	790	80	526
Retail	Restaurant	94	400	2327	280	1842
Childcare		554	60	1662	60	1662
Commercial (Offices)		2281	10	1141	15	1711
	TOTAL	**3117**		**6249**		**6399**
Collections & Equipment		Bin Size (L)		1100	Bin Size (L)	1100
		Waste Bins Per Week		6	Recycling Bins Per Week	6
		Collections per Week		2	Collections per Week	2
		Total Waste Bins Required		**3**	Total Recycling Bins Required	**3**

BIN SUMMARY

Based on the calculations presented in Table. 3, the required bin quantities have been tabulated below:

Waste: 3 x 1100L bins collected twice a week
Recycling: 3 x 1100L bins collected twice a week

RETAIL WASTE MANAGEMENT

Tenants will be responsible for their own storage of waste and recycling back of house (BOH) during daily operations. On completion of each trading day or as required, nominated retail staff or cleaners will transport their waste and recycling to the commercial/ retail waste room on the ground level and place waste and recycling into the appropriate 1100L bins.

Food handling for food cooked or prepared, served and consumed on site will produce a typical waste composition of food scraps from plates, packaging waste and some plastics. Café or restaurant staff will be responsible for their own BOH waste management.

Cardboard is a major component of the waste generated by retail tenancies. All cardboard should be flattened (to save bin space), placed in and collected from bulk bins. Whilst cardboard is bulky, it is generally lightweight however it can be contaminated with food or liquid which makes it unsuitable for recycling.

To ensure the proper management and disposal of waste, tenants must be made aware of the following practices:

- All waste should be bagged and waste bins should be plastic lined;
- Bagging of recyclables is not permitted;
- All interim waste storage is located BOH during operations;
- Individual recycling programs are recommended for retailers to ensure commingled recycling is correctly separated;
- Any food and beverage tenant will make arrangements for storing used and unused cooking oil in a bunded storage area;
- The operator will organise grease interceptor trap servicing;
- A suitable storage area needs to be provided and effectively bunded for chemicals, pesticides and cleaning products;
- Dry basket arrestors need to be provided to the floor wastes in the food preparation and waste storage areas; and
- All flattened cardboard will be collected and removed to the waste room recycling MGB

Consideration should be given to the use of cooking oil collection systems. A single service provider may be used to reduce the amount of commercial traffic into the loading bay or around the precinct area. This should be measured against bulk delivery of oils where the same vehicle is used to remove containers of waste cooking oils (see APPENDIX C.2 for Typical Cooking Oil Collection System)

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, customer base and retail tenancy attitudes to waste disposal and recycling, bin numbers and sizes may need to be altered to suit the building operation. Seasonal peak periods i.e. public and school holidays should also be considered.

CHILDCARE WASTE MANAGEMENT

Most of the waste typically generated by child care facilities include soiled nappies, wipes, and change sheets. It is recommended that a recycling service for soiled disposable nappies be investigated.

20L waste and recycling receptacles will be conveniently located within each indoor playroom, the kitchen and the staff room. Child care centre staff will be responsible for sorting waste and recyclables into the appropriate receptacles.

At the end of each trading day or as required, allocated staff or contracted cleaners will transport the sorted waste (bagged) and recyclables to the retail/commercial waste room on the ground level.

Typically, bins for paper or general waste are positioned next to each workers desk or work station. Bins for general waste and recyclables are also located centrally in each office, generally in the kitchen area and printer room.

The cleaners circulate around the workplace after normal office hours emptying the waste and recyclables into larger bags/crates. The cleaners will be responsible for transporting of the

waste and recycling to the retail/commercial waste room on the ground level and placing it into the appropriate 1100L bins.

COMMERCIAL (OFFICE) WASTE MANAGEMENT

Small bins will be provided around the office (e.g. tea rooms, print rooms, desks) for the collection of general waste, commingled recyclables and paper recycling. A space will also be dedicated for the collection of bulky cardboard.

At the end of each trading day, or as needed, it will be the responsibility of nominated staff or cleaning contractors to empty the small waste and recycling bins from the offices into the designated 1100L bins provided in the retail/commercial waste room on the ground level.

COLLECTION OF WASTE

Private waste contractors will be engaged to service all MGBs for the serviced apartments, retail and commercial components to an agreed collection schedule. This report assumes twice a week collections for both waste and recycling.

The collection vehicle will enter the loading dock via the service way and service all MGBs directly from the waste rooms.

It is Elephant Foot's understanding that the collection area has been reviewed by a traffic consultant to confirm the swept paths, load requirements and clearances for waste collections.

The final number of truck movements will depend on the waste contract with the allocated contractor.

WASTE ROOM AREAS

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

Chute discharge requires a minimum of 3000mm distance from floor to ceiling and needs to be free of service pipes and other overhead obstacles within the immediate space around the chute discharge.

The areas allocated for waste storage and collection areas 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	MGBs		Allocated Area (m^2)
G	Serviced Apartments Waste Room	Waste: Recycling:	5 x 1100L MGBs 27 x 240L MGBs	35
G	Retail/Commercial Waste Room	Waste: Recycling:	3 x 1100L MGBs 3 x 1100L MGB	18

EQUIPMENT SUMMARY

Table 5: Equipment Summary

Component	Part	Qty	Notes
Waste Chute	Please refer to supplier's information	1	(See APPENDIX C for Typical Chute Section)

CONSTRUCTION REQUIREMENTS

The waste 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;
- 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 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.

LIVERPOOL COUNCIL CUSTOMER SERVICE
Phone: (02) 8711 7177 Email: library@liverpool.nsw.gov.au

SULO MGB (MGB, Public Place Bins, Tugs and Bin Hitches)
Phone: 1300 364 388

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 9599 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

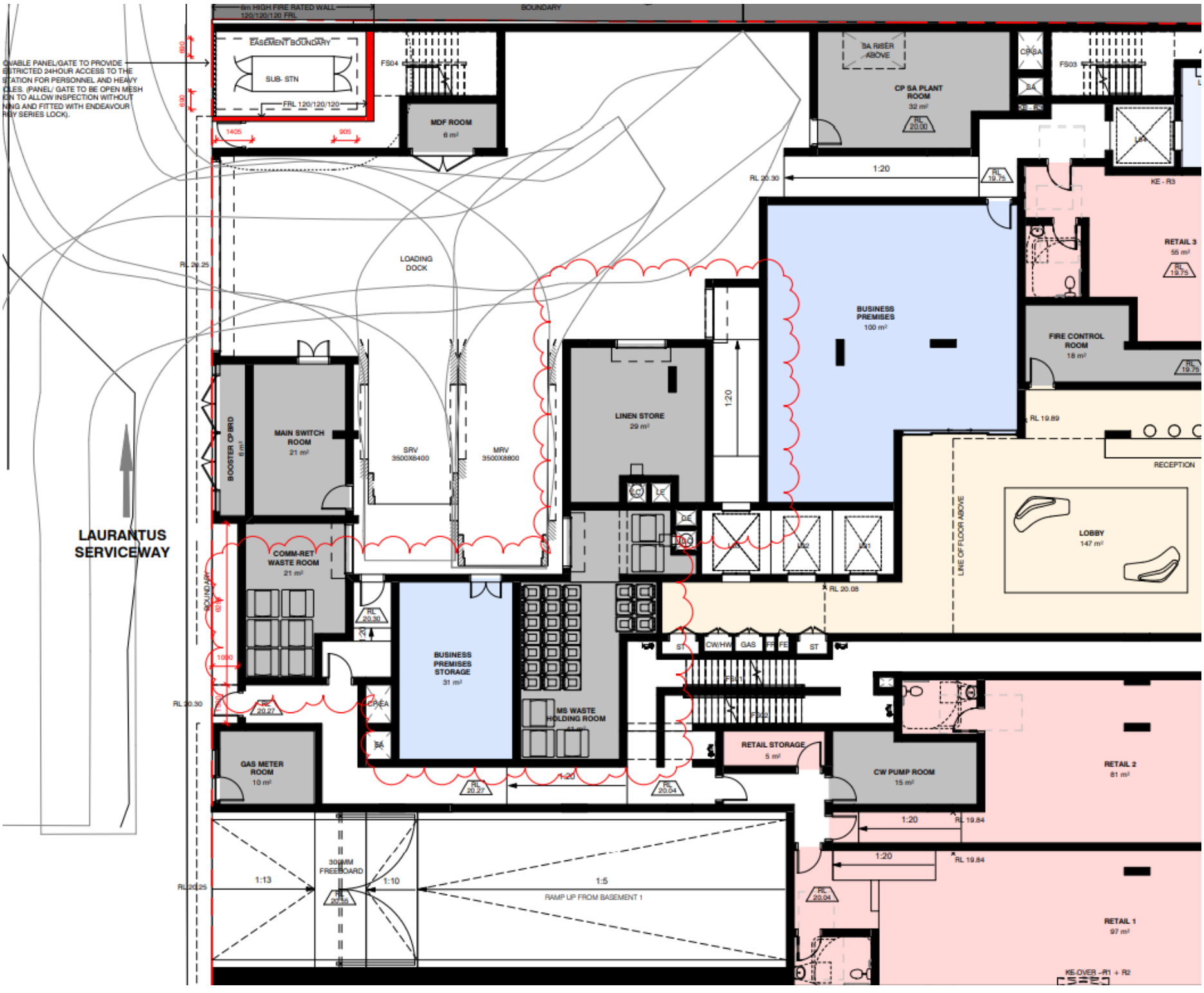
AUSCOL (Recycling Oils & Animal Fats)
Phone: 1800 629 476

ELEPHANTS FOOT RECYCLING SOLUTIONS (Chutes, Compactors and eDiverter Systems)
44 – 46 Gibson Avenue
Padstow NSW 2211
Free call: 1800 025 073 Email: info@elephantsfoot.com.au

APPENDICES

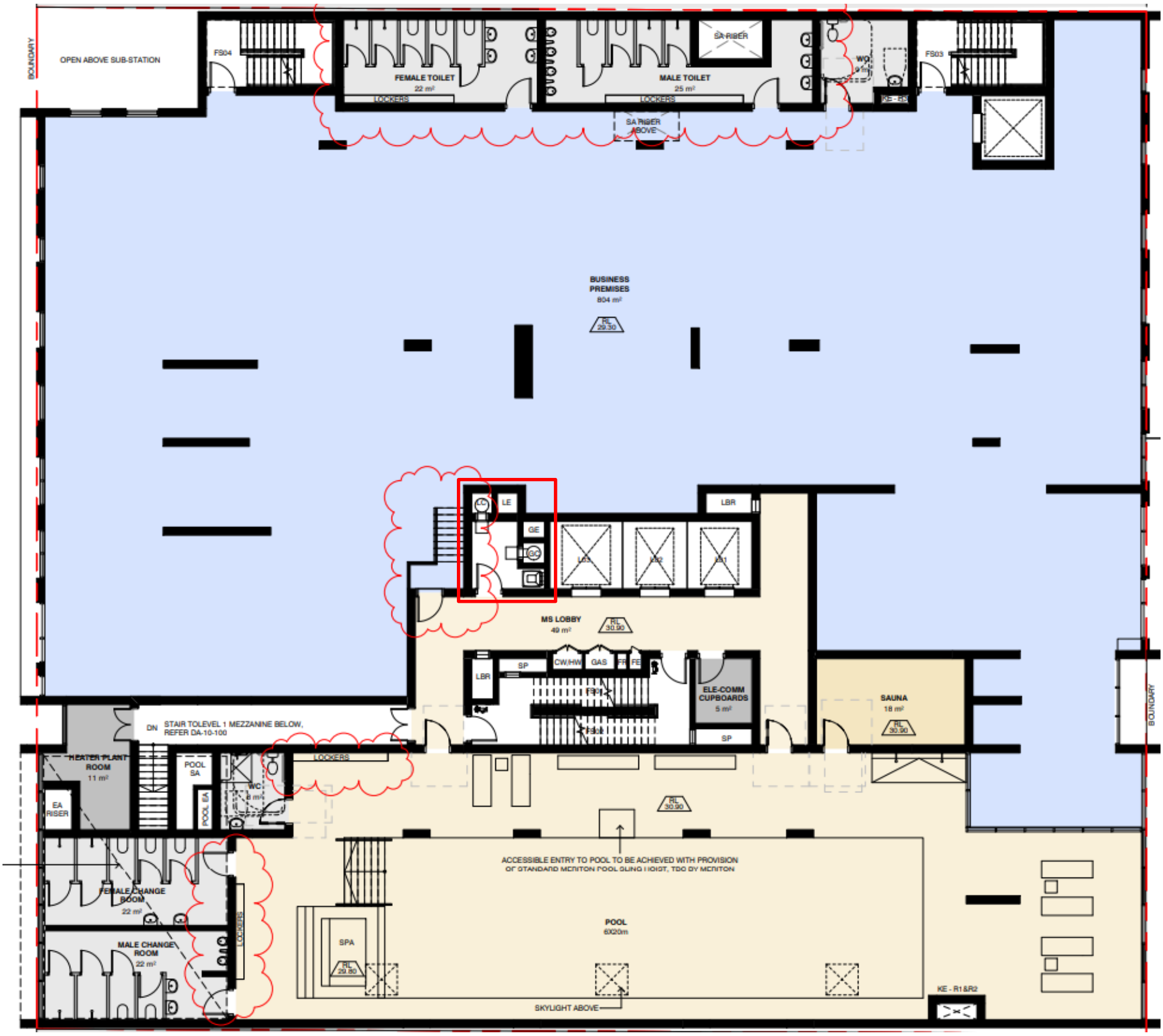
APPENDIX A ARCHITECTURAL DRAWING EXCERPTS

APPENDIX A.1 GROUND LEVEL DISPLAYING WASTE ROOMS AND COLLECTION AREA



Excerpt – PTW – DA-10-1000 Rev B dated 10/02/2021 – Ground Floor Plan

APPENDIX A.2 TYPICAL LEVEL DISPLAYING CHUTE LOCTAION



Excerpt – PTW – DA-10-1200 Rev B dated 10/02/2021 – Level 2

APPENDIX B PRIMARY WASTE MANAGEMENT PROVISIONS

APPENDIX B.1 TYPICAL BIN SPECIFICATIONS

Mobile bins come in a variety of sizes and are designed for lifting and emptying by purpose-built equipment.

Mobile bins with capacities of up to 1700L must comply with *AS4123.6-2006 Mobile waste containers* which specifies standard sizes and sets out the colour designations for the bodies and lids of mobile waste containers indicating the type of materials they are used to collect.

The most common bin sizes are provided below, although not all sizes are shown. The dimensions are a guide only and differ slightly between manufacturers. Some bins have flat or domed lids and are used with different lifting devices. Refer to *AS4123.6-2006* for further details.

Table G1.1: 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

Table G1.2: 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

APPENDIX B.2 SIGNAGE FOR WASTE & RECYCLING BINS

Signs and educational materials perform several functions including:

- informing residents why it is important to recover resources and protect the environment
- providing clear instructions on how to use the bins and services provided
- alerting people to any dangers or hazards within the bin storage areas.

All waste, recycling and organic bins should be Australian Standard colours and clearly and correctly labelled, such as by a sticker on the lid and/or the body of the bin.

Communal bin storage areas should be clearly signposted with signs outlining how to correctly separate waste into the bins provided. The local council responsible for waste services may be a good source of signs and posters and can advise on what signs are suitable.

Information on who to contact to find out more about the recycling and/or other resource recovery services in the building should also be displayed in communal areas, such as on a noticeboard.

The Planet Ark website also has resources available free of charge for use by businesses and councils. These signs can be found at businessrecycling.com.au/research/signage.cfm

Figure I1.1: Examples of waste wall posters (EPA supplied)

Figure I1.2: Examples of bin lid stickers (EPA supplied)

APPENDIX B.3 TYPICAL COLLECTION VEHICLE INFORMATION

Waste collection vehicles may be side-loading, rear-loading, front-lift-loading, hook or crane lift trucks. Vehicle dimensions vary by collection service, manufacturer, make and model. It is not possible to provide definitive dimensions, so architects and developers should consult with the local council and/or contractors.

The following characteristics represent typical collection vehicles and are provided for guidance only. Reference to *AS2890.2 Parking facilities: off-street commercial vehicle facilities* for detailed requirements, including vehicle dimensions, is recommended.

Table B2.1: Collection vehicle dimensions

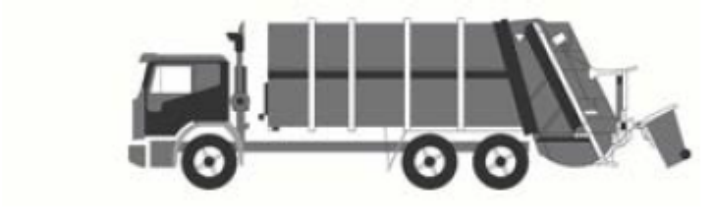
Vehicle type	Rear-loading	Side-loading*	Front-lift-loading	Hook truck	Crane truck
Length overall (m)	10.5	9.6	11.8	10.0	10.0
Width overall (m)	2.5	2.5	2.5	3.0	2.5
Travel height (m)	3.9	3.6	4.8	4.7	3.8
Operational height for loading (m)	3.9	4.2	6.5	3.0	8.75
Vehicle tare weight (t)	13.1	11.8	16.7	13.0	13.0
Maximum payload (t)	10.0	10.8	11.0	14.5	9.5
Turning circle (m)	25.0	21.4	25.0	25.0	18

* The maximum reach of a side arm is 3 m.

Sources: JJ Richards, SUEZ, MacDonald Johnson, Cleanaway, Garwood, Ros Roca, Bingo and Edbro. Figures shown represent the maximum dimensions for each vehicle type.

Rear-loading collection vehicles

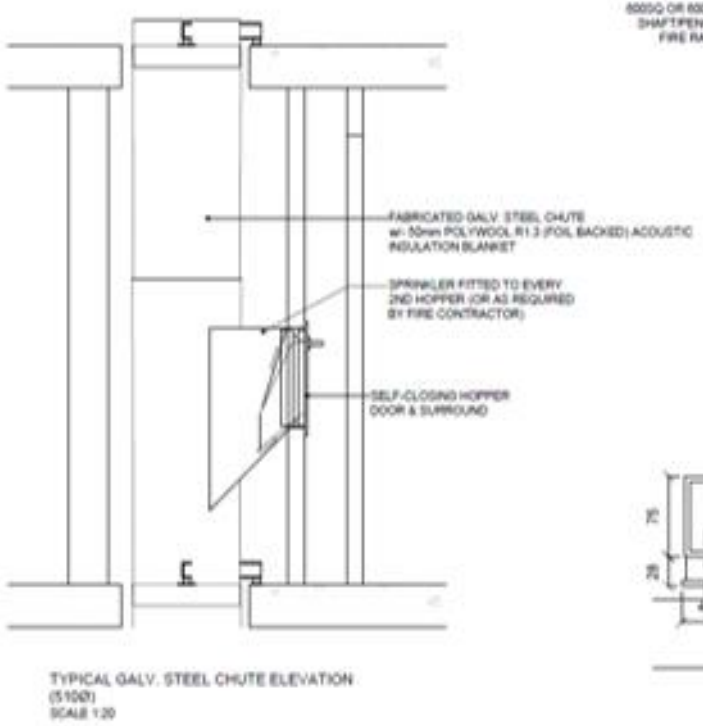
These vehicles are commonly used for domestic waste collections from MUDs and RFBs and sometimes for recycling. They can be used to collect waste stored in mobile bins or bulk bins, particularly where bins are not presented at the kerbside. They are also used for collecting bulky waste.



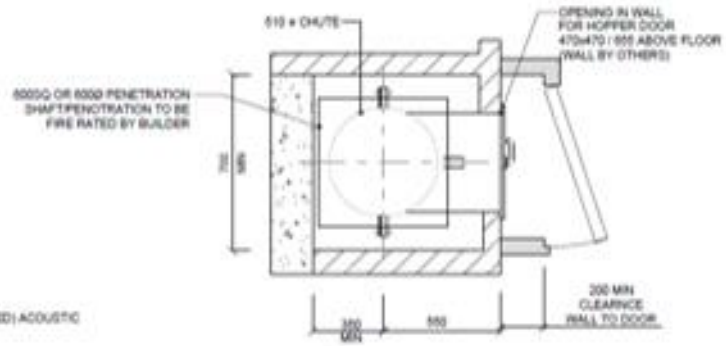
Rear-loading waste collection vehicle

APPENDIX C INSTALLATION EQUIPMENT AND WASTE ROOM LAYOUTS

APPENDIX C.1 TYPICAL SINGLE WASTE CHUTE SPECIFICATIONS

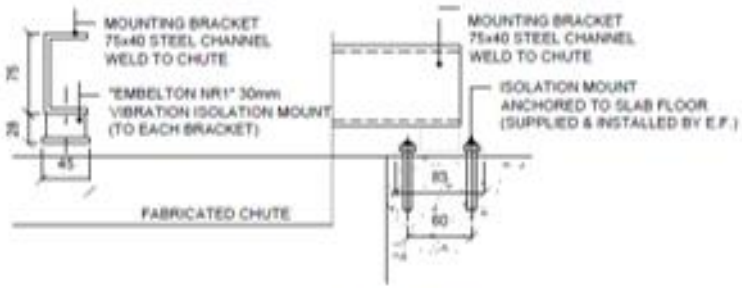


TYPICAL GALV. STEEL CHUTE ELEVATION
(510Ø)
SCALE 1:20



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

Please note: this is an example only – please refer to supplier's information and specification.

APPENDIX C.2 TYPICAL COOKING OIL CONTAINERS

AUSCOL
A GrainCorp business

Home About Services Our Parent Company Contact

The RIGHT WAY for Cooking Oil Collection Systems

Drums 205L

Pour in Bulk Tank

View Brochure

Oil Kaddy System

View Brochure

- Collection Service
- Collection Systems
- Recycling & Environment
- Safety
- Fresh Oil *(WA Only)*

Eco Systems

Direct-Connect to Fryer

APPENDIX C.3 TYPICAL BACK OF HOUSE BINS FOR RETAIL/COMMERCIAL OPERATIONS