42 Honeysuckle Dr Newcastle

Mixed Use Development

OPERATIONAL WASTE MANAGEMENT PLAN

7/02/2020

Revision J

Client

Doma Group

Architect

Bates Smart

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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	Copy No.	Date	Prepared by	Reviewed by	Approved by	Remarks
A	1	9/08/2017	H Wilkes	A Armstrong	N Beattie	Draft
B	1	18/08/2017	H Wilkes	A Armstrong	N Beattie	Updated Plans
C	1	24/08/2017	H Wilkes	A Armstrong	N Beattie	Final
D	1	25/10/2017	H Wilkes	A Armstrong	N Beattie	Updated Plans
E	1	10/10/2018	H Wilkes	A Armstrong	A Armstrong	Amendment
F	1	1/05/2019	H Wilkes	A Armstrong	A Armstrong	Amendment Draft
G	1	3/05/2019	H Wilkes	A Armstrong	A Armstrong	Amendment Draft
H	1	17/05/2019	H Wilkes	A Armstrong	A Armstrong	Amendment Final
I	1	19/11/2019	H Wilkes	A Armstrong	A Armstrong	Amendment Draft
J	1	7/02/2020	H Wilkes	A Armstrong	A Armstrong	Amendment Final

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GLOSSARY OF TERMS

TERM	DESCRIPTION
Baler	A device that compresses waste into a mould to form bales which may be self-supporting or retained in shape by strapping
Chute	A ventilated, vertical pipe passing from floor to floor of a building with openings as required to connect with hoppers and normally terminating at its lower end at the roof of the central waste room(s)
Chute Discharge	The point at which refuse exits from the refuse chute
Chute Discharge Room	A secure, enclosed area or room housing the discharge and associated equipment for the refuse chute
Collection Area/Point	The identified position or area where garbage or recyclables are actually loaded onto the collection vehicle
Compactor	A machine for compressing waste into disposable or reusable containers
Composter	A container/machine used for composting specific food scraps
Crate	A plastic box used for the collection of recyclable materials
Garbage	All domestic waste (Except recyclables and green waste)
Green Waste	All vegetated organic material such as small branches, leaves and grass clippings, tree and shrub pruning, plants and flowers
Hopper	A fitting into which waste is placed and from which it passes into a chute or directly into a waste container. It consists of a fixed frame and hood unit (the frame) and a hinged or pivoted combined door and receiving unit
L	Litre(s)
Liquid Waste	Non-hazardous liquid waste generated by commercial premises that is supposed to be connected to sewer or collected for treatment and disposal by a liquid waste contractor (including grease trap waste)
LRV	Large rigid vehicle described by AS 2890.2-2002 Parking facilities – Off-street commercial vehicle facilities as heavy rigid vehicle (HRV)
Mobile Garbage Bin(s) (MGB)	A waste container generally constructed of plastic with wheels with a capacity in litres of 120, 240, 360, 660, 1000 or 1100
MRV	Medium rigid vehicle
Putrescible Waste	Component of the waste stream liable to become putrid. Usually breaks down in a landfill to create landfill gases and leachate. Typically applies to food, animal and organic products.
Recycling	Glass bottles and jars – PET, HDPE and PVC plastics; aluminium aerosol and steel cans; milk and juice cartons; soft drink, milk and shampoo containers; paper, cardboard, junk mail, newspapers and magazines
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 the operational management of waste generated by the hotel and commercial development located at 42 Honeysuckle Dr Newcastle.

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.

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 Newcastle Council, and consists of:

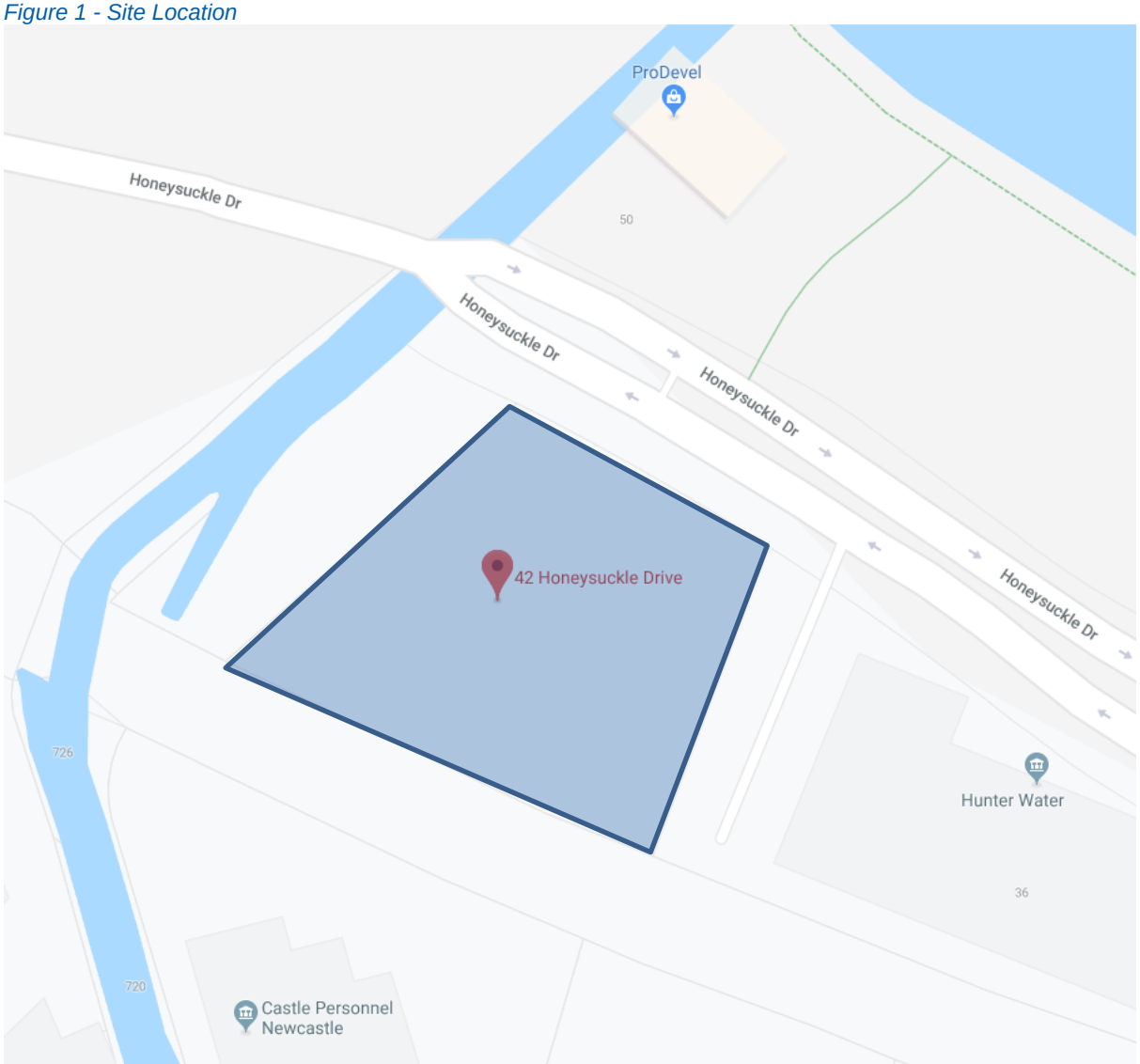
- One building with 9 Levels
  - A café on ground level of 81m^2
  - A bar and lounge on level 3 of 388m^2
  - 179 hotel rooms on levels 1 -7
  - Commercial tenancies on level 1-2 and Levels 4-8 with a total GFA of 5 227m^2

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 42 Honeysuckle Dr Newcastle, as shown in Figure.1. The site has frontages to Honeysuckle Dr with vehicle access via Honeysuckle Dr.

Figure 1 - Site Location



NEWCASTLE CITY COUNCIL

The waste and recycling will be guided by the services and acceptance criteria of the Newcastle City Council. All waste facilities and equipment are to be designed and constructed to be in compliance with *The Newcastle Development Control Plan 2012, Council Advices,* Australian Standards and statutory requirements.

COUNCIL OBJECTIVES

- Encourage source separation of waste, reuse, and recycling by ensuring appropriate storage and collection facilities for waste, and quality design of waste facilities.
- Ensure waste management systems are as intuitive for occupants as possible and are readily accessible.
- Ensure appropriate resourcing of waste management systems, including servicing.
- Minimise risk to health and safety associated with handling and disposal of waste and recycled material, and ensure optimum hygiene.
- Minimise adverse environmental impacts associated with waste management.

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 Newcastle City Council.

STAKEHOLDER ROLES AND RESPONSIBILITIES

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

Table 1: Stakeholder Roles and Responsibilities

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

EDUCATION

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

Educational material encouraging the correct separation of garbage and recycling items must be provided to guests and staff to ensure the correct disposal of waste, including bulky goods (old furniture, large discarded items, etc.) It is recommended that the building management provides information in multiple languages to support correct practises and minimise the possibility of contamination in the collective waste bins.

SIGNAGE

The building manager/caretaker is responsible for waste room signage including safety signage (*see APPENDIX B.1*). Appropriate signage must be prominently displayed clearly stating what type of waste or recyclables is to be placed in each bin.

WASTE MANAGEMENT

The NSW EPA's *Better Practice Guide for Resource Recovery in Residential Developments (2019)* has been referenced to calculate the total number of bins required. 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 garbage and recycling generated by the hotel, café and bar components of the development. A seven day operating week has been assumed.

Table 2: Calculated Waste and Recycling Generation –Hotel and Retail

Type	#Rooms	Garbage Generation Rate (L/room/day)	Generated Garbage (L/week)	Recycling Generation Rate (L/room/day)	Generated Recycling (L/week)
Hotel	179	10	12530	5	6265
Type	**GFA (m^2)**	**Garbage Generation Rate ($L/100m^2$/day)**	**Generated Garbage (L/week)**	**Recycling Generation Rate ($L/100m^2$/day)**	**Generated Recycling (L/week)**
Café (ground)	81	100	567	120	680.4
Lounge & Bar (level 3)	388	150	4074	100	2716
TOTAL	**469**		**17171**		**9661.4**
Collections & Equipment	Bin Size (L)		1100	Bin Size (L)	1100
	Garbage Bins Per Week		16	Recycling Bins Per Week	9
	Collections per Week		3	Collections per Week	3
	Total Waste Bins Required		6	Total Recycling Bins Required	3

Table 3: Calculated Waste and Recycling Generation – Commercial Tenancies

Type	GFA (m^2)	Garbage Generation Rate ($L/100m^2$/day)	Generated Garbage (L/week)	Recycling Generation Rate ($L/100m^2$/day)	Generated Recycling (L/week)
Commercial (offices)	5227	10	3658.9	15	5488.35
TOTAL	**5227**		**3658.9**		**5488.35**
Collections & Equipment	Bin Size (L)		1100	Bin Size (L)	1100
	Garbage Bins Per Week		4	Recycling Bins Per Week	5
	Collections per Week		3	Collections per Week	3
	Total Waste Bins Required		2	Total Recycling Bins Required	2

It is the responsibility of the building manager to monitor the number of bins required. Waste volumes may change according to the development's management, customer base and attitudes to waste disposal and recycling. The 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.

WASTE MANAGEMENT PROCEDURES

The hotel, café, bars and office tenancies will share bins and a waste room and collection service. The waste room will contain 1100L MGBs for the collect of waste and recycling. The staff for each area will be responsible for walking the waste and recycling to the appropriate waste room and placing the waste and recycling into the correct bins.

HOTEL ROOMS

The vast majority of people who stay in hotels generally spend a relatively short time at the facility, therefore the waste generated in each unit is managed by the staff. Most waste generated is from goods received at the loading dock in the form of packaging (cardboard and plastic film), food waste, recyclables (mixed containers), newspapers and magazines. Office paper may also be generated however this is generally a minimal quantity.

All guests of each hotel suite will be supplied with a collection receptacle in each unit (generally in the main room and bathroom, under bench or similar alternate area) to deposit garbage and collect recyclable material suitable for one days storage. Garbage receptacles must be supplied with bin liners. Recycling must not be bagged. It is recommend that hotel guests use a crate or dedicated bin for collecting recyclables within the allocated hotel space provided to ensure correct separation before recyclables are transferred to the garbage room. It is expected that hotel guests will place clean and empty recycling items into the collection bins.

Nominated staff or cleaners will collect the waste from the guests' rooms. They will also transport sorted garbage and recyclable items to the hotel waste room on the ground level and place bagged garbage into 1100L collection bins and recycling (comingle) into 1100L collection bins.

CAFÉ AND BAR AREAS

The staff in cafe and bar areas will be required to be responsible for the storage of waste and recycling back of house (BOH). On completion of each trading day or as required, nominated staff/cleaners will transport their waste and recycling to the allocated waste room and place waste and recycling into the appropriate collection 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. Restaurant staff will be responsible for their waste management.

Cardboard is a major component of the waste generated by restaurants. 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.

It is recommended that:

- All waste should be bagged and waste bins should be plastic lined;
- Bagging of recyclables is not permitted;
- 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 affectively bunded for chemicals, pesticides and cleaning products;
- Dry basket arresters need to be provided to the floor wastes in the food preparation and waste storage areas;

COMMERCIAL (OFFICE) WASTE MANAGEMENT PROCEDURES

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 and perform cleaning tasks. At this time the cleaners will empty the waste and recycling bins into bags which they transport around the offices in a cart which is also used to store cleaning products, spare bags, PPE and consumables.

The cleaners will be responsible for transporting of the waste and recycling to the Waste Room and placing it into the appropriate bin.

OTHER WASTE MANAGEMENT

WASHROOMS

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.

COMMON AREAS

The common areas including lobbies, amenities and circulation areas will be supplied with suitably branded waste and recycling bins, where considered appropriate. Building management or cleaners will monitor use and ensure bins are exchanged and cleaned.

STAFF FACILITIES AND TEA ROOMS

Any food preparation areas, including kitchens and office tea rooms will be provided with dedicated source separation bins including a general garbage bins and a recycling bin. The cleaners will be responsible for monitoring the fullness of these bins and emptying them as required.

WASTE OILS

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.

MANAGEMENT OF SPECIALITY WASTE STREAMS

The building manager is responsible for making arrangements for the disposal and recycling of specialised waste streams with an appropriate contractor. Specialised wastes cannot be placed in general waste as they can have adverse impacts to human health and the environment if disposed of in landfill. Retail and Commercial tenants will need to liaise with the building manager when disposing of specialised waste streams.

Specialised waste streams include:

- Chemical Waste
- Liquid wastes
- Toner cartridges
- Lightbulbs
- eWaste
- Batteries

MOVEMENT AND TRANSPORTATION OF BINS

The cleaners and the building manager are responsible for transporting waste and recycling receptacles from their operational location to the collection bins and returning them once emptied to resume operational use.

Transfer of waste and all bin movements should minimise manual handling. Building management must assess manual handling risks and provide any relevant documentation to relevant personnel.

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

COLLECTION OF WASTE

A private contractor will be engaged to collect the waste and recycling to an agreed schedule. This report assumes waste and recycling will be collected three times weekly.

The collection vehicle will enter the site from Honeysuckle drive and park in the designated loading bay. The waste collection staff will collect the bins directly from the appropriate waste room.

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. It must be ensured that that the collection vehicle (and other trucks if required) can enter and exit the building in a forward direction. The final number of truck collections will depend on management of waste contract.

WASTE ROOM AREAS

The bins in the waste room should be arranged so that all bins can be accessed without moving any other bins. This is to ensure the safety of staff accessing these rooms to dispose of waste and recycling. 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	Equipment	Estimated Area (m^2)
G	Shared Waste Room	8x 1100L MGBs (waste) 5x 1100L MGBs (recycling)	>36

WASTE ROOMS - CONSTRUCTION RECOMMENDATIONS

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

VENTILATION

Waste and recycling rooms must have their own exhaust ventilation system either;

- Mechanically - exhausting at a rate of 5L/m^2 floor area, with a minimum rate of 100L/s minimum. Mechanical exhaust systems shall comply with AS1668 and not cause any inconvenience, noise or odour problem; or
- Naturally - permanent, unobstructed, and opening direct to the external air, not less than one-twentieth (1/20) of the floor area.

USEFUL CONTACTS

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

NEWCASTLE CITY COUNCIL CUSTOMER SERVICE
Phone: (02) 4974 2000

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 9399 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

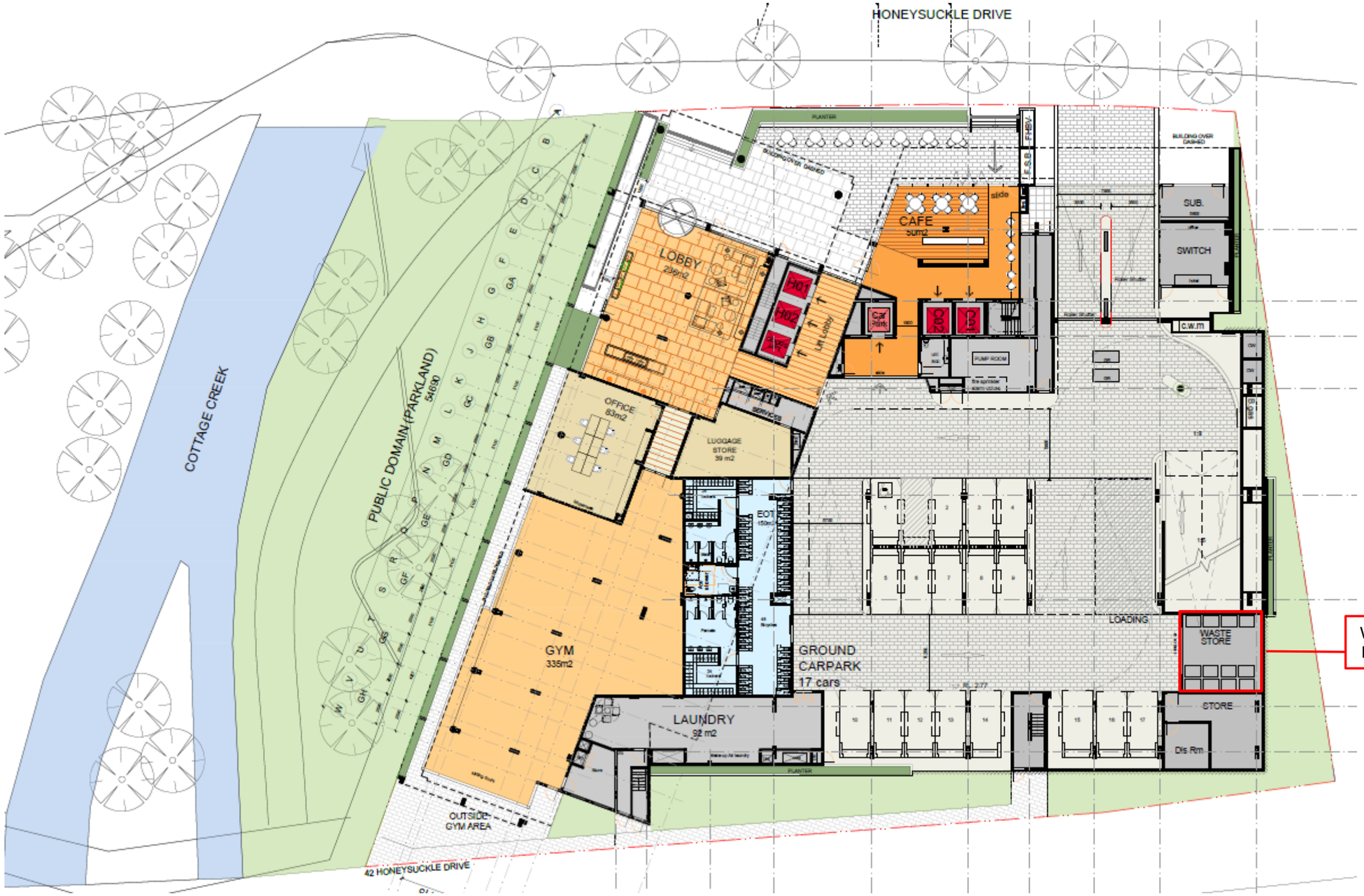
AUSCOL (Recyling Oils & Animal Fats)
Phone: 1800 629 476

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 – WASTE FACILITIES



Source: Bates Smart, 42 Honeysuckle Dr Newcastle, Drawing no A03.000 Rev 3 – Jan2020

APPENDIX B PRIMARY WASTE MANAGEMENT PROVISIONS

APPENDIX B.1 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.2 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

Collection vehicles

Large collection vehicles

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

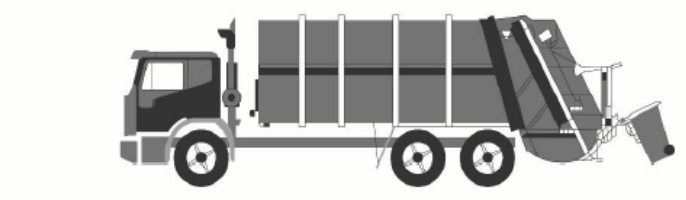
Vehicle type	Rear-loading	Side-loading*	Front-lift-loading	Hook truck	Crane truck
Length overall (m)	10.5	9.6	11.8	10.0	10.0
Width overall (m)	2.5	2.5	2.5	3.0	2.5
Travel height (m)	3.9	3.6	4.8	4.7	3.8
Operational height for loading (m)	3.9	4.2	6.5	3.0	8.75
Vehicle tare weight (t)	13.1	11.8	16.7	13.0	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

Side-loading collection vehicles

This is the most commonly used vehicle for domestic waste, recycling and organics collections. It is only suitable for collecting mobile bins up to 360L in capacity.

Side-loading waste collection vehicle

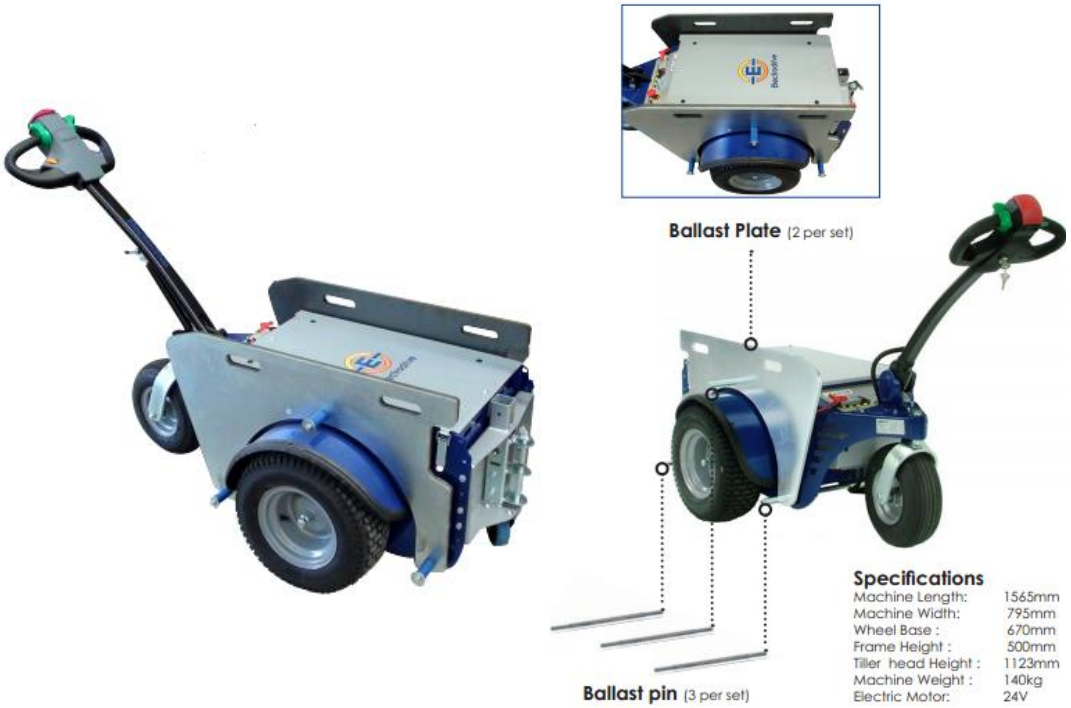
Front-lift-loading collection vehicles

These vehicles are commonly used for collecting commercial and industrial waste. They can only collect specially designed front-lift bulk bins and not mobile bins.

Front-lift-loading waste collection vehicle

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

APPENDIX B.3 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 C SECONDARY WASTE MANAGEMENT PROVISIONS

APPENDIX C.1 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.2 TYPICAL BACK OF HOUSE BINS FOR RETAIL/COMMERCIAL OPERATIONS