



**Consulting.**<sup>TM</sup>  
an Elephants Foot Company

101-105 Old Pittwater Road, Brookvale NSW 2100  
Industrial Development

## OPERATIONAL WASTE MANAGEMENT PLAN

11/04/2022  
Report No. 3891  
Revision D

Client

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## GLOSSARY OF ABBREVIATIONS AND TERMS

TERM	DESCRIPTION
<i>Bin-carting Route</i>	Travel route for transferring bins from the storage area to a nominated collection point
<i>Collection Area/Point</i>	The identified position or area where general waste or recyclables are loaded onto the collection vehicle
<i>Composter</i>	A container/machine used for composting specific food scraps
<i>Crate</i>	A plastic box used for the collection of recyclable materials
<i>DA</i>	Development Application
<i>DCP</i>	Development Control Plan
<i>EPA</i>	Environmental Protection Authority
<i>HRV</i>	Heavy Rigid Vehicle described by AS 2890.2-2002 Parking facilities – Off-street commercial vehicle facilities
<i>L</i>	Litre(s)
<i>LEP</i>	Local Environmental Plans guide planning decisions for local government areas
<i>Liquid Waste</i>	Non-hazardous liquid waste generated by industrial premises that must be connected to sewer or collected for treatment and disposal by a liquid waste contractor (including grease trap waste)
<i>Mobile Garbage Bin(s) (MGB)</i>	A waste container generally constructed of plastic with wheels with a capacity in litres of 120, 240, 360, 660, 1000 or 1100
<i>MRV</i>	Medium Rigid Vehicle described by AS 2890.2-2002 Parking facilities – Off-street commercial vehicle facilities
<i>Onsite Collection</i>	When the collection vehicle enters the property and services the development within the property boundary from a designated loading area
<i>Owners Corporation</i>	An organisation or group of persons that is identified by a particular name and acts, or may act, as an entity
<i>SRV</i>	Small Rigid Vehicle described by AS 2890.2-2002 Parking facilities – Off-street commercial vehicle facilities
<i>WHS</i>	Workplace Health and Safety
<i>Wheel-in wheel-out service</i>	A type of waste collection service offered by local councils where the council waste collection personnel enter the premises to collect the bins and returns them to the property

# 1 INTRODUCTION

Elephants Foot Consulting (EFC) has been engaged to prepare the following waste management plan for the operational management of waste generated by the industrial development located at 101-105 Old Pittwater Road, Brookvale NSW 2100.

Waste management strategies and audits are required for new developments in order to support the design and sustainable performance of the building. It is EFC'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. **Comply** with all relevant council codes, policies, and guidelines.

To achieve these objectives, this operational waste management plan (OWMP) identifies the different waste streams likely to be generated during the operational phase of the development, as well as how the waste will be handled and disposed, 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 OWMP is integrated into the overall management of the building and is clearly communicated to all relevant stakeholders.

## 1.1 SCOPE OF REPORT

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

## 1.2 REPORT CONDITIONS

The purpose of this report is to document an OWMP as part of a development application, which is supplied by EFC with the following limitations:

- Drawings, estimates and information contained in this OWMP have been prepared by analysing the information, plans and documents supplied by the client and third parties including Council and other government agencies. The assumptions based on the information contained in the OWMP is outside the control of EFC,
- 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 management's approach to educating tenants regarding waste management operations and responsibilities,
- The building manager will adjust waste management operations as required based on actual waste volumes (e.g., 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 is made that the OWMP reflects the actual outcome of the proposed waste facilities, services, and operations, and EFC will not be liable for plans or results that are not suitable for purpose due to incorrect or unsuitable information or otherwise,
- EFC offer no warranty or representation of accuracy or reliability of the OWMP unless specifically stated,
- Any manual handling equipment recommended in this OWMP should be provided at the recommendation of the appropriate equipment provider who will assess the correct equipment for supply,
- Design of waste management equipment and systems must be approved by the supplier,
- EFC cannot be held accountable for late changes to the design after the OWMP has been submitted to Council,
- EFC will provide specifications and recommendations on bin access and travel paths within the OWMP; however, it is the architect's responsibility to ensure the architectural drawings meet these provisions,
- EFC are not required to provide information on collection vehicle swept paths, head heights, internal manoeuvring or loading requirements. It is assumed this information will be provided by a traffic consultant,
- Council are subject to changing waste and recycling policies and requirements at their own discretion.

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

## 2 LEGISLATION & GUIDANCE

Waste management and resource recovery regulation in Australia is administered by the Australian Constitution, Commonwealth laws, and international agreements. State and territory governments maintain primary responsibility for controlling development and regulating waste. The following legislation has been enacted in New South Wales, and provides the lawful underpinnings of this OWMP.

- NSW Environmental Planning & Assessment Act 1979
- NSW Protection of the Environment Operations Act 1997
- NSW Waste Avoidance & Resource Recovery Act 2001

At the local level, councils or Local Government Areas (LGAs) require OWMPs to be included in new development applications. This OWMP is specifically required by:

- Warringah Development Control Plan 2011
- Warringah Local Environmental Plan 2011

The primary purpose of a development control plan (DCP) is to guide development according to the aims of the corresponding local environmental plan (LEP). The DCP must be read in conjunction with the provisions of the relevant LEP.

Information provided in this OWMP comes from a wide range of waste management guidance at the local, state, and federal levels. The primary sources of guidance include:

- Northern Beaches Council Waste Management Guidelines 2016
- NSW Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities 2012
- NSW Better Practice Guide for Resource Recovery in Residential Developments 2019
- NSW Waste Avoidance and Resource Recovery (WARR) Strategy 2014-2021
- NSW Waste Classification Guidelines 2014
- Australia's National Waste Policy 2018

### 2.1 COUNCIL OBJECTIVES

The Northern Beaches Council considers waste management to be highly important for the protection and enhancement of both the natural and built environments. As

- To facilitate sustainable **waste** management in a manner consistent with the principles of Ecologically Sustainable Development (ESD).
- To achieve **waste** avoidance, source separation and recycling of household and industrial/commercial **waste**.
- To design and locate **waste** storage and collection facilities which are convenient and easily accessible; safe; hygienic; of an adequate size, and with minimal **adverse** impacts on residents, surrounding neighbours, and pedestrian and vehicle movements.
- To ensure **waste** storage and collection facilities complement **waste** collection and management services, offered by Council and the private service providers and support on-going control for such standards and services.
- To minimise risks to health and safety associated with handling and disposal of **waste** and recycled material, and ensure optimum hygiene.
- To minimise any adverse environmental impacts associated with the storage and collection of **waste**.



### 3 DEVELOPMENT OVERVIEW

The proposed development falls under the LGA of Northern Beaches Council, and consists of:

- 1 building with 2 levels and one basement level, incorporating:
  - 34 industrial units with a total GFA of 3855m<sup>2</sup>
  - Self-storage units on the basement level with a total GA of 1900.9m<sup>2</sup>

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

#### 3.1 SITE LOCATION

The site is located at 101-105 Old Pittwater Road, Brookvale NSW 2100 as shown in Figure.1. The site has frontages and vehicle access via Old Pittwater Road.

Figure 1. Site Location



Source: Google Maps

## 4 INDUSTRIAL WASTE MANAGEMENT

The following section outlines best practice waste management for the industrial development, including waste generation estimates and waste disposal and collection procedures.

### 4.1 WASTE GENERATION ESTIMATES

The Northern Beaches Councils' *Waste Management Guidelines 2016* has been referenced to calculate the total number of bins required for the anticipated tenants. Calculations are based on generic figures, and waste generation rates may differ according to the tenants' actual waste management practice.

The following table shows the estimated volume (L) of general waste and recyclables that will be generated by the warehouse development.

It is assumed that the industrial units will share waste bins, the waste storage room, and the waste collection service.

The following estimates are based on a seven-day operating week.

*Table 1: Estimated Waste and Recycling Volumes – Warehouse*

Tenancy Type	GFA m <sup>2</sup>	Waste Generation Rate (L/100m <sup>2</sup> /Day)	Generated Waste (L/Week)	Recycling Generation Rate (L/100m <sup>2</sup> /Day)	Generated Recyclables (L/Week)
Industrial Units	3855	30	8095.5	30	8095.5
Self-storage Units	1901	2	266.1	2	266.1
<b>TOTALS</b>	<b>5756</b>		<b>8362</b>		<b>8362</b>

### 4.2 BIN SUMMARY

The following assumptions have been taken into consideration:

- Each industrial tenancy  $\leq 110\text{m}^2$  GFA will be allocated a 240L MGB for garbage and a 240L MGB for recycling, to be stored and managed by the tenancy.
- Each industrial tenancy  $\geq 110\text{m}^2$  GFA will be allocated a 660L MGB for garbage and a 660L MGB for recycling, to be stored and managed by the tenancy.
- The whole site will share a garbage and recycling collection service to minimise traffic.
- Specialised Industrial waste which can't be disposed into the general waste or recycling stream will be managed by each tenant BOH and each tenant will arrange their own specialised contractor (E.g., liquid wastes).
- Recycling Paper and Co-Mingled calculations are combined; 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: Tenancy numbers can be viewed on *APPENDIX: A.1* and *APPENDIX: A.2*.

*Table 2: Bin Quantities and Space Required within Each Tenancy*

Tenancy No.	Waste Bin Required	Recycling Bin Required	Space Per Tenancy to Accommodate Bins
3 to 8, 17 to 25, 27 and 28.	1 x 240L MGBs (General waste)	1 x 240L MGB (Recycling)	2m <sup>2</sup>
1,2, 9 to 16, 26, 29 to 34.	1 x 660L MGBs (General waste)	1 x 660L MGBs (Recycling)	4m <sup>2</sup>

The total number of bins required for the development can be seen below:

Tenancies ≤ 110m <sup>2</sup> GFA:	<u>Waste:</u>	17 x 240L MGBs collected <b>1 x Weekly</b>
	<u>Recycling:</u>	17 x 240L MGBs collected <b>1 x Weekly</b>
Tenancies ≥ 110m <sup>2</sup> GFA:	<u>Waste:</u>	17 x 660L MGBs collected <b>1 x Weekly</b>
	<u>Recycling:</u>	17 x 660L MGBs collected <b>1 x Weekly</b>
Self-storage room:	<u>Waste:</u>	1 x 240L MGBs collected <b>1 x Weekly</b>
	<u>Recycling:</u>	1 x 240L MGBs collected <b>1 x Weekly</b>

The bin estimations have been calculated based on the GFA of each tenancy for once weekly collections.

Bin sizes, quantities, and/or collection frequencies may be modified by the building manager once the proposed development is operational. Building management will be required to negotiate any changes to bins or collections with the collection service provider. Seasonal peak periods such as public and school holidays should also be considered.

### 4.3 SELF-STORAGE UNITS (BASEMENT)

As it is assumed that the self-storage unit facilities will produce a negligible amount of waste, this is to be deposited in the bins allocated for the office area. Should this facility produce a greater amount of waste than anticipated, a further review will have to be conducted and additional bins may be required. A small bin room of 2m x 2m will be made available within the basement for incidental waste with shared bins. Bin receptacles and bin room operations will be managed by building management upstairs for an on-call collection from a private contractor.

### 4.4 WASTE DISPOSAL PROCEDURES

The warehouse tenants will be responsible for their own storage of waste and recycling back of house (BOH), and placing their waste into the designated bins. Their bins will be kept inside their tenancies at all times except at collection times.

It is recommended that the tenancies share a waste collection service to minimise the number of trucks accessing the site. The building management will be responsible for engaging and managing the shared private collection service.

Any industrial or hazardous waste that is produced by the tenants is the responsibility of the tenant and will be kept within the tenancy in the correct storage method until it is collected. The tenant will also be responsible for arranging collection of any types of waste other than general waste and recycling.

### 4.5 WASTE COLLECTION PROCEDURES

The warehouse tenants will be responsible for their own storage of waste and recycling back of house (BOH). It is recommended that the tenancies share a waste collection service to minimise the number of trucks accessing the site. The building management will be responsible for engaging and managing the shared private collection service.

On collection days, the tenants will wheel their bin to the front of their tenancy for collection. The collection vehicle will enter the site from Old Pittwater Road and circulate around the site, collecting the bins from the front of each tenancy. After servicing has been completed, the tenants will return their bins to the storage area within their tenancy.

Any industrial or hazardous waste that is produced by the tenants is the responsibility of the tenant and will be kept within the tenancy in the correct storage method until it is collected. The tenant will also be responsible for arranging collection.

All access and clearances have been designed for a private waste collection contractor for a 3.5-meter long SRV as per the AS2890.2-2002.

## **4.6 OTHER WASTE MANAGEMENT CONSIDERATIONS**

Based on the types of tenancies anticipated for this development, the following waste management practices are recommended.

### **4.6.1 KITCHEN, OFFICE TEA ROOMS AND FOOD PREPARATION AREAS**

Any food preparation area, including kitchens and office tea rooms will be provided with dedicated source separation bins including a general waste bin and a recycling bin. Cleaners or nominated staff will be responsible for monitoring these bins and emptying them as required.

### **4.6.2 BATHROOMS**

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.

### **4.6.3 LIQUID WASTE**

Liquid wastes such cleaning products, chemicals, paints, and cooking oil, etc., will be stored in a secure space that is bunded and drained to a grease trap in accordance with State government authorities and legislation.

### **4.6.4 PROBLEM WASTE**

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

Problem waste streams include:

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

## 5 STAKEHOLDER ROLES & RESPONSIBILITIES

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

*Table 3: Stakeholder Roles and Responsibilities*

Roles	Responsibilities
Strata or Management	<ul style="list-style-type: none"> <li>• Ensure all waste service providers submit monthly reports on all equipment movements and waste quantities/weights;</li> <li>• Organise internal waste audits/visual assessments on a regular basis</li> <li>• Purchase any on-going waste management equipment or maintenance of equipment once building is operational; and</li> <li>• Manage any non-compliances/complaints reported through waste audits.</li> </ul>
Building Manager or Waste Caretaker	<ul style="list-style-type: none"> <li>• Coordinate general waste and recycling collections;</li> <li>• Clean and transport bins as required;</li> <li>• Organise replacement or maintenance requirements for bins;</li> <li>• Organise, maintain and clean the waste holding area;</li> <li>• Organise bulky goods collection when required</li> <li>• Investigate and ensure prompt clean-up of illegally dumped waste materials.</li> <li>• Prevent storm water pollution by taking necessary precautions (securing bin rooms, preventing overfilling of bins)</li> <li>• Abide by all relevant WH&amp;S legislation, regulations, and guidelines;</li> <li>• Provide staff/contractors with equipment manuals, training, health and safety procedures, risk assessments, and PPE to control hazards associated with all waste management;</li> <li>• Assess any manual handling risks and prepare a manual handling control plan for waste and bin transfers;</li> <li>• Ensure site safety for staff, visitors and contractors; and</li> <li>• Ensure effective signage, communication and education is provided to occupants, tenants, maintenance staff, and cleaning contractors.</li> </ul>
Warehouse Tenants	<ul style="list-style-type: none"> <li>• Manage the back of house storage of generated waste and recycling during daily operation.</li> <li>• Correctly separate waste and recycling streams; bag general waste and ensure recyclables are not bagged.</li> <li>• Flatten cardboard within the recycling bin.</li> <li>• If required, arrange for storage of used and unused cooking oil in a bunded area,</li> <li>• Organise grease interceptor trap servicing,</li> <li>• Ensure dry basket arrestors are provided to the floor wastes in the food preparation, and</li> <li>• Ensure the suitable storage for chemicals, pesticides and cleaning products waste back of house.</li> </ul>
Waste Collection Contractor	<ul style="list-style-type: none"> <li>• Provide a reliable and appropriate waste collection service;</li> <li>• Provide feedback to building managers/ tenants regarding contamination of recyclables; and</li> <li>• Work with building managers to customise waste systems where possible.</li> </ul>
Gardening/ Landscaping Contractor	<ul style="list-style-type: none"> <li>• Remove all garden organic waste generated during gardening maintenance activities for recycling at an offsite location.</li> </ul>
Developer	<ul style="list-style-type: none"> <li>• Purchase all equipment required to implement this OWMP prior to the occupation of the building to be provided to the strata.</li> </ul>

## 6 SOURCE SEPARATION

Better practice waste management includes the avoidance, reuse, and recovery of unwanted items, which can be achieved through source separation. The table below outlines what is typically included in various waste streams and how they can be managed. Refer to your local council for a list of accepted materials. Planet Ark can be accessed online to find other facilities that recover unwanted items.

*Table 4: Operational Waste Streams*

Waste Stream	Description	Typical Destination	Waste Stream Management
<b>General Waste</b>	The remaining portion of the waste stream that is not recovered for re-use, processing, or recycling. May include soft plastics, food scraps, polystyrene, etc.	Landfill	Waste should be bagged before placing in the designated waste bins.
<b>Recycling</b>	A mixture of items that are commonly recycled usually segregated through a MRF. Typically include food and beverage containers (e.g., aluminium, glass, steel, hard plastics, cartons). Also included cardboard and paper products.	Resource Recovery Centre	Recycling must not be bagged, and instead should be placed loosely in the designated recycling bins.  Cardboard should be flattened before placing in the designated cardboard bin.
<b>Secure Documents</b>	Secure documents are printed paper materials that contain sensitive information.	Recycling Facility	Secure documents are placed in allocated secure document bins. Private contractor removes bins from site.
<b>Food Waste</b>	Food waste consists of unwanted or uneaten kitchen scraps that are easily compostable/biodegradable (e.g., vegetable peels, fruit rinds, coffee grounds).	Composting facility or Landfill	Food waste can be composted on-site, off-site, or else included in the general waste stream.
<b>Electronic Waste</b>	Discarded e-waste, electronic components and materials such as computers, mobile phones, keyboards, etc.	Resource Recovery Centre	Tenants arrange for recycling of their own e-waste.
<b>Bulky Items</b>	Items that are too large to place into general rubbish collection. This includes disused and/or broken furniture, mattresses, white goods, etc.	Resource Recovery Centre or Landfill	Tenants are responsible for removal of their bulky items.
<b>Sanitary Waste</b>	Feminine hygiene waste generated from female bathrooms.	Incineration or Landfill	Sanitary bins are serviced by sanitary waste contractor.
<b>Other</b>	Other recyclable items that require special recovery may include ink cartridges, batteries, chemical waste, fluorescent tubes, etc.	Resource Recovery Facility	Building manager or tenant arranges collection by appropriate recycling services when required.

## 7 EDUCATION

Educational materials encouraging correct separation of general waste and recyclables must be provided to each tenant and staff member. This should include the correct disposal process for bulky waste such as old furniture, large discarded items, and other materials including electronic and chemical wastes. It is recommended that the building caretaker provides information in multiple languages to support correct behaviours, and to minimise the possibility of contamination in communal waste bins.

### 7.1 SIGNAGE

Signage and education are essential components to support best practice waste management including resource recovery, source separation, and diversion of waste from landfill.

Signage should include:

- Clear and correctly labelled waste and recycling bins,
- Instructions for separating and disposing of waste items. Different languages should be considered,
- Locations of, and directions to, the waste storage areas with directional signs, arrows, or lines,
- The identification of all hazards or potential dangers associated with the waste facilities, and
- Emergency contact information should there be issues with the waste systems or services in the building.

The building manager is responsible for waste room signage including safety signage. 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 each bin.

All signage should conform to the relevant Australian Standards.

### 7.2 POLLUTION PREVENTION

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:

- Promoting adequate waste disposal into the bins
- Securing all bin rooms (whilst affording access to staff/contractors)
- Prevent overfilling of bins, keep all bin lids closed and bungs leak-free
- Taking action to prevent dumping or unauthorised use of waste areas
- Require collection contractor/s to clean up any spillage when clearing bins



## 9 WASTE ROOMS

The areas allocated for waste storage and collection areas are detailed in the table below, and are estimates only. Final areas will depend on room and bin layouts. The tenancy numbers can be viewed on *APPENDIX: A.1* and *APPENDIX: A.2*.

*Table 5: Waste Room Areas*

Location	Tenancy Number	Equipment	Estimated Area Required (m <sup>2</sup> )	Actual Area Provided (m <sup>2</sup> )
<i>B1</i>	N/A	1 x 240L MGB (General waste) 1 x 240L MGBs (Recycling)  Bin separation receptacles for incidental waste	2	4
<i>Lower Ground and Upper Ground</i>	<i>4 to 8, 17 to 25, 27 and 28</i>	1 x 240L MGBs (General Waste) 1 x 240L MGB (Recycling)	2	<i>TBD</i>
	<i>1, 2, 9 to 16, 26, 29 to 34.</i>	1 x 660L MGBs (General Waste) 1 x 660L MGBs (Recycling)	4	<i>TBD</i>

The waste room areas have been calculated based on equipment requirements and/or bin dimensions with an additional 70% of bin GFA factored in for manoeuvrability. This space is required to store bins within the tenancies, and would require the same space when placed outside the tenancies for collection.

In addition, all doorways and passageways facilitating the movement of bins and/or bulky waste items must be at least 1500mm wide to accommodate 240L and 660LMGBs. The following table provides further waste room requirements.

*Table 6: Waste Room Requirements*

Waste Room Type	Waste Room Requirements
Bin Rooms	<ul style="list-style-type: none"> <li>In order to ensure staff safety, all bins should be arranged so they can be accessed without moving another bin</li> </ul>



## 10 BIN MOVING PATHS

The building caretaker or nominated staff are responsible for the transportation of bins as required from their designated operational locations to their collection area (outside the tenancy) as required and returning them once emptied to resume operational use.

Transfer of bins should minimise manual handling where possible, as bins become heavy when full. The building manager must assess manual handling risks and provide any relevant documentation to key personnel.

The routes along the bin moving path should;

- Allow for a continuous route that is wholly within the property boundary.
- Be free from obstruction and obstacles such as steps and kerbs.
- Be constructed of solid materials with a non-slip surface
- Be A minimum of 300mm wider than the largest bin used onsite.
- If bins are moved manually, the route must not exceed a grade of 1:14.
- If a bin moving device is used, the route cannot exceed the maximum operating grade of the device. This is typically a grade of 1:4, however this will vary depending on the model of bin moving device acquired for the site.

If distance of the bin moving paths exceed 10m, or a ramp is present in the bin moving path, a bin moving device is require to aid the movement of full bins. The developer is responsible for suppling all equipment required for moving bins this includes any bin lifters, bin moving devices and waste transfer bins. This equipment must be new and appropriate for the site. The developer should contact a bin-tug, trailer or tractor consultant to provide equipment recommendations.

Once the site is operational (and the developers is no longer involved) the building proprietors/strata will be responsible for maintaining, repairing and replacing waste management equipment.

## 11 USEFUL CONTACTS

EFC does not warrant or make representation for goods or services provided by suppliers.

### LOCAL COUNCIL

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Northern Beaches Council Customer Service	Ph: 1300 434 434	E: <a href="mailto:council@northernbeaches.nsw.gov.au">council@northernbeaches.nsw.gov.au</a>
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### PRIVATE WASTE COLLECTION PROVIDER

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Capital City Waste Services	Ph: 02 9599 9999	E: <a href="mailto:service@ccws.net.au">service@ccws.net.au</a>
Remondis	Ph: 02 9032 7100	
Suez Environmental	Ph: 13 13 35	
Wastewise NSW	Ph: 1300 550 408	E: <a href="mailto:admin@wastewise.com.au">admin@wastewise.com.au</a>

### BIN MOVING DEVICE SUPPLIERS

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Electrodrive	Ph: 1800 333 002	E: <a href="mailto:sales@electrodrive.com.au">sales@electrodrive.com.au</a>
Sitecraft	Ph: 1300 363 152	E: <a href="mailto:sales@sitecraft.com.au">sales@sitecraft.com.au</a>
Spacepac	Ph: 1300 763 444	

### ORGANIC DIGESTERS AND DEHYDRATORS

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Closed Loop	Ph: 1300 762 166	
Orca		E: <a href="mailto:contact.australia@feedtheorca.com">contact.australia@feedtheorca.com</a>
Soil Food	Ph: 1300 556 628	
Green Eco Technologies	Ph: 1800 614 272	E: <a href="mailto:equires@greenecotec.com">equires@greenecotec.com</a>

### COOKING OIL CONTAINERS AND DISPOSAL

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Auscol	Ph: 1800 629 476	E: <a href="mailto:sales@auscol.com">sales@auscol.com</a>
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### ODOUR CONTROL

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EF Neutralizer	Ph: 1300 435 374	E: <a href="mailto:info@elephantsfoot.com.au">info@elephantsfoot.com.au</a>
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### SOURCE SPERATION BINS

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Source Separation Systems	Ph: 1300 739 913	E: <a href="mailto:info@sourceseparationsystems.com.au">info@sourceseparationsystems.com.au</a>
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### MOBILE GARBAGE BINS, BULK BINS AND BIN EQUIPMENT

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SULO	Ph: 1300 364 388	E: <a href="mailto:sales@sulo.com.au">sales@sulo.com.au</a>
OTTO Australia	Ph: 02 9153 6999	

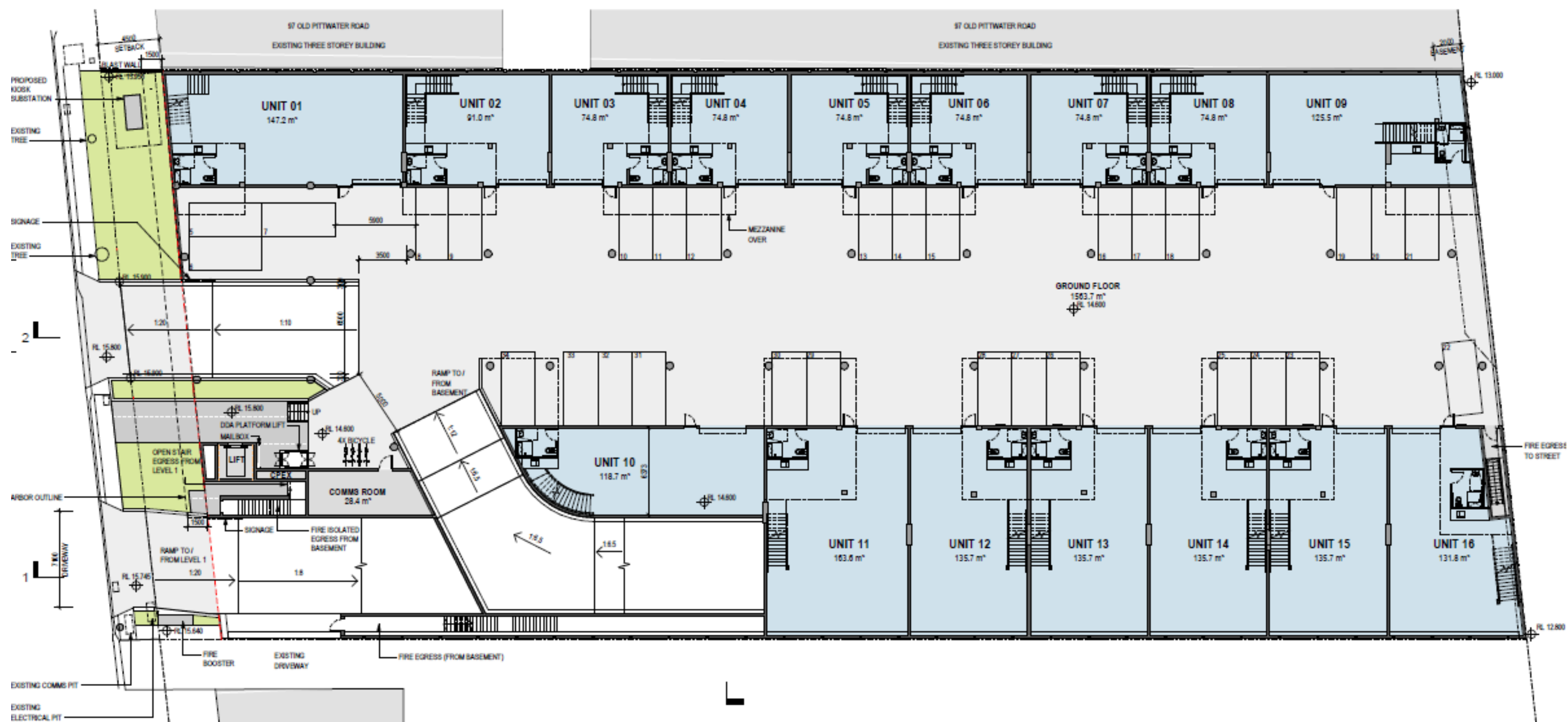
### CHUTES, COMPACTORS AND EDIVERTER SYSTEMS

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Elephants Foot	Ph: 1800 025 073	E: <a href="mailto:info@elephantsfoot.com.au">info@elephantsfoot.com.au</a>
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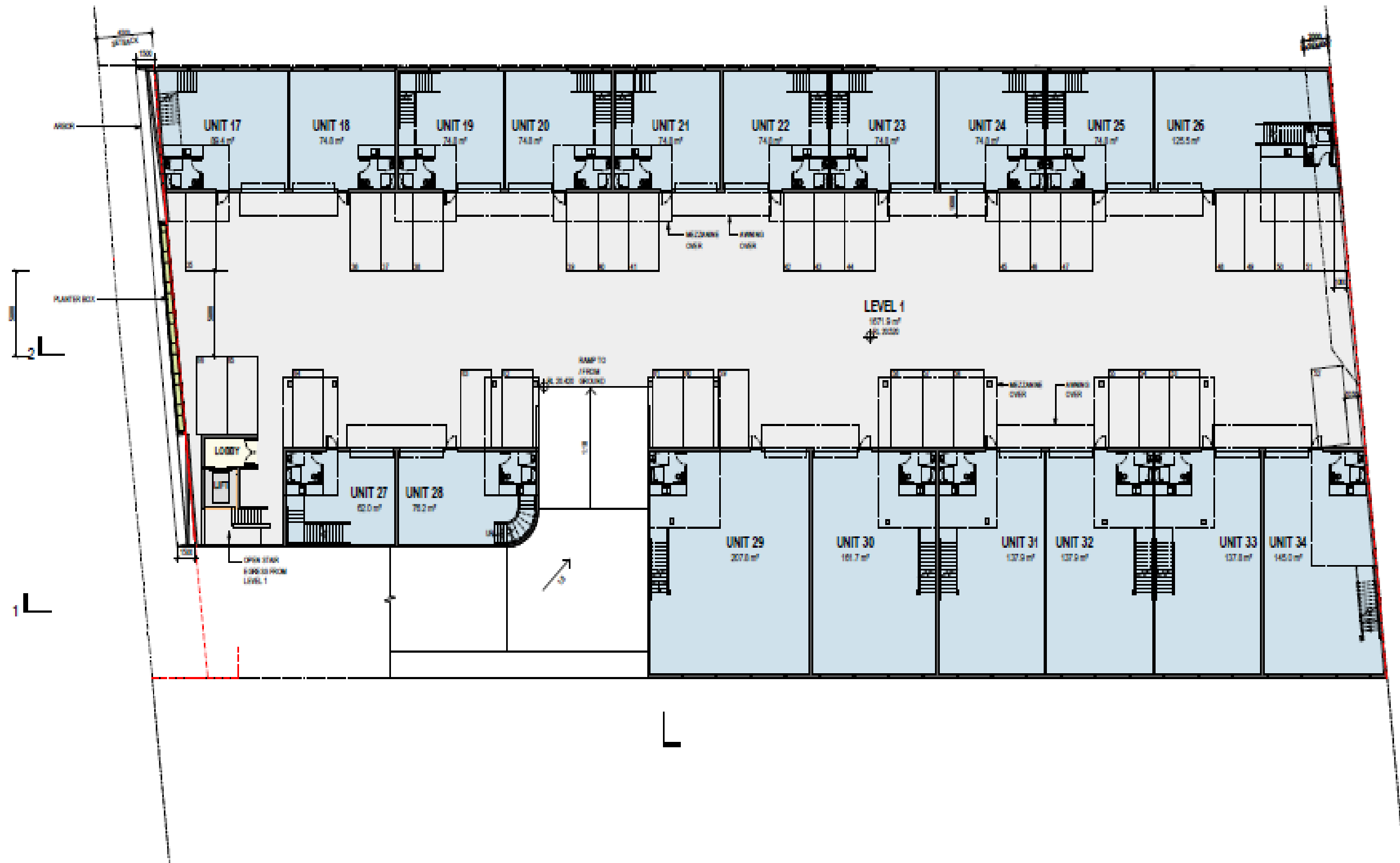
## APPENDIX A: ARCHITECTURAL PLANS

## APPENDIX: A.1 GROUND FLOOR PLAN



Source: Rothelowman, Drawing no. DA01.02, Revision P1, 8<sup>th</sup> April 2022, Ground Floor Plan.

APPENDIX: A.2 LEVEL ONE PLAN



Source: Rothelowman, Drawing no. DA01.04, Revision P1, 8<sup>th</sup> April 2022, Level 1.

## APPENDIX B: PRIMARY WASTE MANAGEMENT PROVISIONS

## APPENDIX: B.1 TYPICAL BIN SPECIFICATIONS


### Mobile bins

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




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 <sup>2</sup> )	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

**Wheelie bin**

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



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 <sup>2</sup> )	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

**Dome or flat lid container**

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

Source: *Better Practice Guide For Resource Recovery In Residential Developments 2019*, NSW Environmental Protection Authority

## APPENDIX: B.2 SIGNAGE FOR WASTE AND RECYCLING BINS

### Waste signs

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](https://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)



Source: *Better Practice Guide For Resource Recovery In Residential Developments 2019*, NSW Environmental Protection Authority



## 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.

Figure I2.1: Problem waste signs



## 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.

Figure I3.1: Example safety signs



Source: *Better Practice Guide For Resource Recovery In Residential Developments 2019*, NSW Environmental Protection Authority

## APPENDIX: B.3 TYPICAL COLLECTION VEHICLE INFORMATION

### General

Appropriate heavy rigid vehicle standards should be incorporated into the road and street designs in new developments where onsite collections are proposed. Road and street designs must comply with relevant Acts, regulations, guidelines, and codes administered by Austroads, Standards Australia, NSW Roads and Maritime Services, WorkSafe NSW and any local council traffic requirements.

Applicants and building designers should consult with councils and other relevant authorities before designing new roads or streets and access points for waste collection vehicles to establish specific design requirements.

**Table H4.1: Australian Standards for turning circles for medium and heavy rigid class vehicles**

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

Source: *Better Practice Guide For Resource Recovery In Residential Developments 2019*, NSW Environmental Protection Authority

### 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**

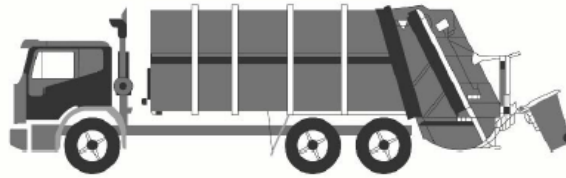
Vehicle type	Rear-loading	Side-loading*	Front-lift-loading	Hook truck	Crane truck
Length overall (m)	10.5	9.6	11.8	10.0	10.0
Width overall (m)	2.5	2.5	2.5	3.0	2.5
Travel height (m)	3.9	3.6	4.8	4.7	3.8
Operational height for loading (m)	3.9	4.2	6.5	3.0	8.75
Vehicle tare weight (t)	13.1	11.8	16.7	13.0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

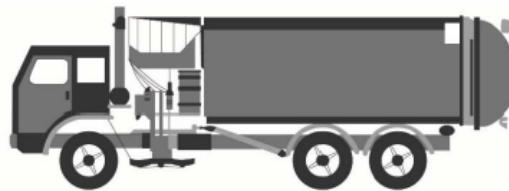
These vehicles are commonly used for domestic waste collections from MUDs and RFBs and sometimes for recycling. They can be used to collect waste stored in mobile bins or bulk bins, particularly where bins are not presented at the kerbside. They are also used for collecting bulky waste.



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

### Small collection vehicles

Typically, councils and their contractors operate with large collection vehicles (heavy rigid class vehicles) because they carry greater payloads and allow for more cost-effective collection services. Some councils, or their contractors, may have smaller collection vehicles in their fleet. Early discussion with the council is important to confirm this, but it should not be assumed that the council will have access to small collection vehicles.

The waste management systems and the location of the collection point should always be designed so that the council can provide the standard domestic waste service.

Source: *Better Practice Guide For Resource Recovery In Residential Developments 2019*, NSW Environmental Protection Authority

## APPENDIX: B.4 TYPICAL BIN MOVERS

### Battery powered tug with a 1 or 2 tonne tow capacity



#### Features at a glance

One tonne (Evo 1T) or two tonne (Evo 2T) tow capacity

Auto latching hitch

Three speed motor with emergency stop

#### Typical applications

The Tug Evo is suitable for airports, factories, warehouses, apartment buildings or large facilities. This powered tug is also suitable for transporting medical carts around hospitals or moving heavy specialist equipment.

#### Features:

- 1 or 2 tonne tow capacity of inclines up to 6 degrees
- 500kg tow capacity if inclines up to 14 degrees
- CE Compliant
- 5 km/h max speed
- 2 x 12V 42Ah MK-gel batteries with 24V smart charger.
- Powerful transaxle

#### Safety Features:

- Intuitive control with standard automatic safety brake, forward and reverse drive.
- Emergency stop button.
- Emergency back-off button

Source: <http://www.electrodrive.com.au/products/tugs/tug-evo>