67-69 Pioneer Rd & 28-30 Bramsen St Bellambi

Residential Development

OPERATIONAL WASTE MANAGEMENT PLAN

22/03/2022
Report No. SO1011
Revision E

Client

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REVISION REFERENCE

Revision	Date	Prepared by	Reviewed by	Description
A	7/05/2021	H Wilkes	A Armstrong	Draft
B	7/05/2021	H Wilkes	A Armstrong	Amendment
C	25/06/2021	H Wilkes	A Armstrong	Final
D	17/01/2022	H Wilkes	A Armstrong	Updated plans
E	22/03/2022	H Wilkes	A Armstrong	Updated plans

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GLOSSARY OF ABBREVIATIONS AND 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
Bin-carting Route	Travel route for transferring bins from the storage area to a nominated collection point
Collection Area/Point	The identified position or area where general waste or recyclables are 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
DA	Development Application
DCP	Development Control Plan
EPA	Environmental Protection Authority
HRV	Heavy Rigid Vehicle described by AS 2890.2-2002 Parking facilities – Off-street commercial vehicle facilities
L	Litre(s)
LEP	Local Environmental Plans guide planning decisions for local government areas
Liquid Waste	Non-hazardous liquid waste generated by commercial premises that must be connected to sewer or collected for treatment and disposal by a liquid waste contractor (including grease trap waste)
Mixed Use Development	A development comprised of two or more different uses
MUD	Multi-Unit Dwellings comprise of a development with more than one dwelling. This ranges from dual occupancies and attached dwellings to high-rise residential developments
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 described by AS 2890.2-2002 Parking facilities – Off-street commercial vehicle facilities
Onsite Collection	When the collection vehicle enters the property and services the development within the property boundary from a designated loading area
Owners Corporation	An organisation or group of persons that is identified by a particular name and acts, or may act, as an entity
Service Bins	Bin set side to be placed under a chute while the remainder of the bins are being collected

SRV	Small Rigid Vehicle described by AS 2890.2-2002 Parking facilities – Off-street commercial vehicle facilities
WHS	Workplace Health and Safety
Wheel-in wheel-out service	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

1.0 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 residential development located at 67-69 Pioneer Rd & 28-39 Bramsen St Bellambi.

Waste management strategies and audits are required for new developments in order to support the design and sustainable performance of 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. ***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.

The waste management of the **construction** and **demolition** phases of the development are not addressed in this report. A construction and demolition WMP will be provided separately.

1.2 REPORT CONDITIONS

The purpose of this report is to document an OWMP as part of a part 5 application on behalf of the Land and Housing Corporation (LaCH), which is supplied by EFRS 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 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 management's approach to educating residents and 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 EFRS will not be liable for plans or results that are not suitable for purpose due to incorrect or unsuitable information or otherwise,
- EFRS 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,
- EFRS cannot be held accountable for late changes to the design after the OWMP has been submitted to Council,
- EFRS 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,
- EFRS 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.

2.0 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 in this case LaHC require an OWMPs be prepared to guide waste management process through the operational phase of the project in new development applications. This OWMP is specifically required by:

- Wollongong Development Control Plan 2009
- Wollongong Local Environmental Plan 2009

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:

- 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 WOLLONGONG CITY COUNCIL OBJECTIVES

Wollongong City Council is committed to responsible management practices for waste storage and collection. As such, Council aims to:

- Encourage development which facilitates waste minimisation and complements waste services offered by Council or private contractors;
- Reduce the demand for waste disposal;
- Maximise reuse and recycling of building materials and household, industrial, and commercial waste;
- Provide appropriately located, sized, and accessible waste storage facilities;
- Assist applicants in planning for sustainable waste management, through the preparation of a site waste minimisation and management plan at the application stage.

3.0 DEVELOPMENT OVERVIEW

The proposed development Is located in the Wollongong City Council local government area, and consists of:

- One building with 2 levels
  - 18 residential units in total, consisting of;
    - 4 units in Core 1
    - 6 units in Core 2
    - 4 units in Core 3
    - 4 units in Core 4

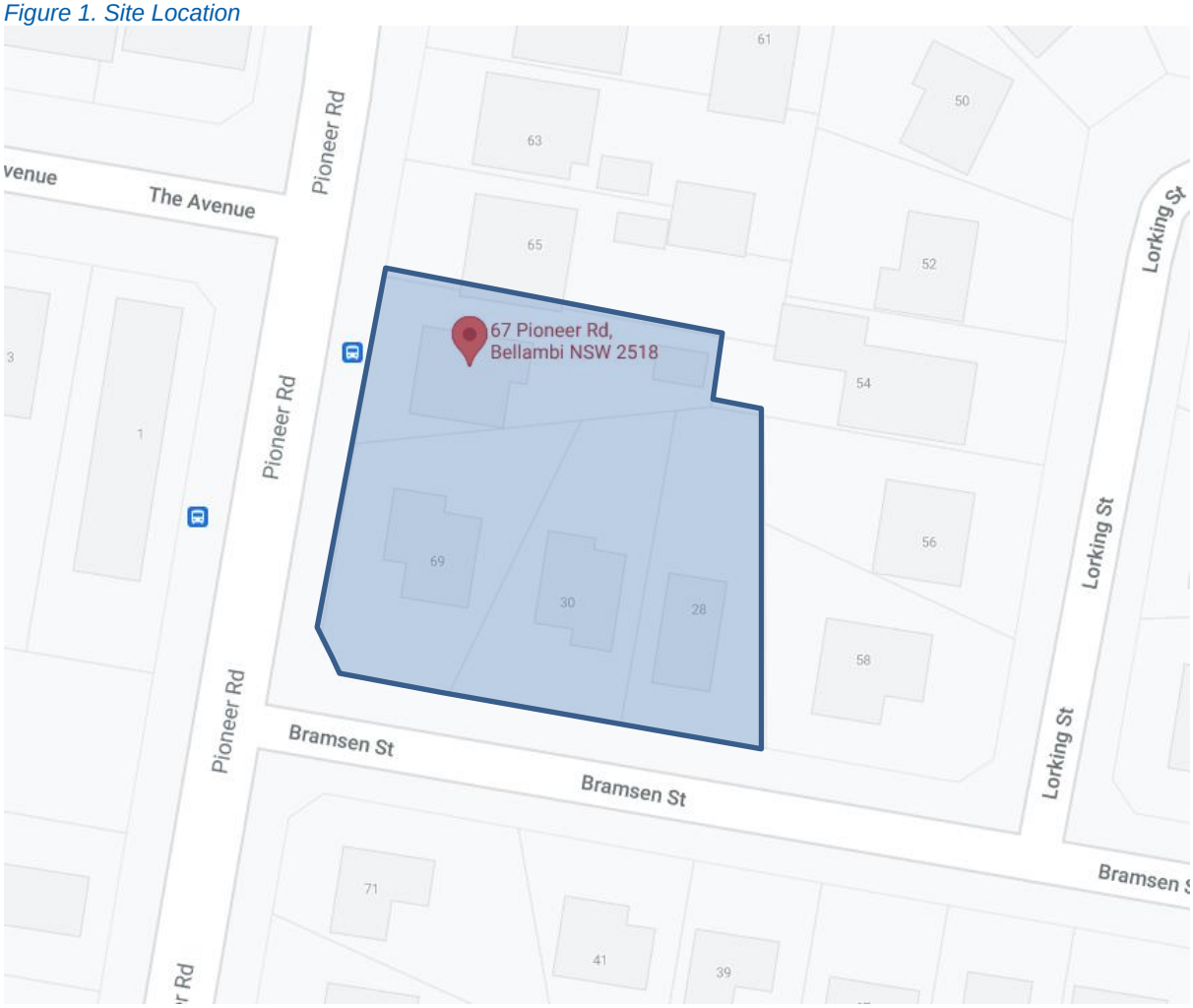
All figures and calculations are based on area schedules as advised by our client and shown on architectural drawings.

The waste areas shown in Drawing A101 Rev 1 06/12/21 are suitably sized to show the required equipment for each area.

3.1 SITE LOCATION

The site is located at 67-69 Pioneer Rd & 28-30 Bramsen St Bellambi, as shown in Figure.1. The site has frontages to Pioneer Rd and Bramsen St, with vehicle access via Bramsen St.

Figure 1. Site Location



Source: Google Maps

4.0 RESIDENTIAL WASTE MANAGEMENT

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

4.1 WASTE GENERATION ESTIMATES

The *Wollongong DCP 2009 Chapter E07 Waste Management* has been referenced to calculate the total number of bins required for the residential units. Calculations are based on generic rates, and waste and recycling volumes generated in operation may differ according to the residents' actual waste management practices.

It is assumed the General Waste Generation Rate represents 50% Food Organics and Garden Organics (FOGO) and 50% landfill waste.

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

Table 1: Estimated Waste and Recycling Volumes – Residential

Core	# Units	General Waste Generation Rate (L/unit/week)	Generated General Waste (L/week)	Recycling Generation Rate (L/unit/fortnight)	Generated Recycling (L/fortnight)
Core A	4	120	480	120	480
Core B	6	120	720	120	720
Core C	4	120	480	120	480
Core D	4	120	480	120	480
TOTAL	**18**		**2160**		**2160**
Equipment and Collections		General Waste Bin Size (L)	240	Recycling Bin Size (L)	240
		General Waste Bins per Week	9	Recycling Bins per Fornight	9
		General Waste Collections per Week	1	Recycling Collections per Fortnight	1
		Total General Waste Bins Required for Collection	**9**	Total Recycling Bins Required for Collection	**9**

4.2 BIN SUMMARY

Based on the estimated general waste, FOGO and recycling volumes, the recommended bin quantities and collection frequencies are as follows:

General (landfill) Waste: 5 x 240L MGBs collected **1 x weekly**
FOGO (Food Organics and Garden Organics) : 4 x 240L MGBs collected **1 x weekly**
Recycling: 9 x 240L MGBs collected **1 x fortnight**

During operation, it is the responsibility of the building manager to monitor the number of bins required. Waste and recycling volumes may change according to residents' attitudes to waste disposal and recycling, building occupancy levels or development's management. Any requirements for adjusting the capacity of the waste facilities can be achieved by changing the number of bins, the bin sizes or collection frequencies. Building management will be required to negotiate any changes to bins or collections with the collection service provider.

4.3 WASTE DISPOSAL PROCEDURES

The residents of each core will be provided with a Communal Bin Enclosure on the ground level containing 240L MGBs for general (landfill) waste, recycling and FOGO. The residents will be responsible for walking their waste, FOGO and recycling to the Communal Bin Enclosure for their core and placing their waste, recycling and FOGO into the correct bin.

4.4 WASTE COLLECTION PROCEDURES

Council will collect the bins from the kerbside in accordance with Council's collection schedule. At present, waste bins and FOGO bins are collected weekly and recycling bins fortnightly.

On the night before collection days, the residents will move their bins from the Communal Bin Enclosure for their core to the kerbside. The residents are responsible for ensuring that the bins are presented appropriately on the kerbside, as per the following:

- Bins are to be presented 50cm apart.
- Bins should be presented a distance from trees, telegraph poles, parked cars or other obstacles.
- Bin lids should open facing the road.
- Bin lids should be kept closed while situated on the kerb.
- Bins should not be overfilled or overflowing, the bins must be under 70kg.

After the bins have been serviced, the residents are responsible for returning the empty bins to their Communal Bin Enclosure for their core, as soon as possible, on the same day as collection.

5.0 STAKEHOLDER ROLES & RESPONSIBILITIES

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

Table 2: Stakeholder Roles and Responsibilities

Roles	Responsibilities
Strata or 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 • Purchasing any on-going waste management equipment or maintenance of equipment once building is operational; and • Managing any non-compliances/complaints reported through waste audits.
Building Manager or Waste Caretaker	• Organising replacement or maintenance requirements for bins; • Organising, maintaining and cleaning the waste holding area; • Organising bulky goods collection when required • Investigating and ensuring prompt clean-up of illegally dumped waste materials. • Preventing storm water pollution by taking necessary precautions (securing bin rooms, preventing overfilling of bins) • Abiding by all relevant WH&S legislation, regulations, and guidelines; • Providing staff/contractors with equipment manuals, training, health and safety procedures, risk assessments, and PPE to control hazards associated with all waste management; • Assessing any manual handling risks and preparing a manual handling control plan for waste and bin transfers; • Ensuring site safety for residents, children, visitors, staff and contractors; and • Ensuring effective signage, communication and education is provided to occupants, tenants, maintenance staff, and cleaning contractors.
Residents	• Dispose of all general waste and recycling in the allocated MGBs provided; • Ensure adequate separation of general waste and recycling; • Wheel bins to kerbside and return empty bins • Wash bins as required and • Compliance with the provisions of Council and the OWMP.
Waste Collection Contractor	• Provide a reliable and appropriate waste collection service; • Provide feedback to building managers/residents regarding 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.
Developer	• Purchasing all equipment required to implement this OWMP prior to the occupation of the building to be provided to the strata.

6.0 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 3: Operational Waste Streams

Waste Stream	Description	Typical Destination	Waste Stream Management
General Waste	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.
Recycling	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 recycling bin.
Food Organics and Garden Organics (FOGO)	Garden Organics consists of unwanted organic materials generated from gardens that are easily biodegradable and/or compostable (e.g. lawn clippings, branches). Food Organics consists of unwanted or uneaten kitchen scraps that are easily compostable/biodegradable (e.g. vegetable peels, fruit rinds, coffee grounds).	Resource Recovery Centre	FOGO will be collected in council bins and removed from site through council's collection service.
Electronic Waste	Discarded e-waste, electronic components and materials such as computers, mobile phones, keyboards, etc.	Resource Recovery Centre	Building manager arranges collection for e-waste recycling as needed by residents. Commercial tenants arrange for recycling of their own e-waste.
Bulky Items	Items that are to too large to place into general rubbish collection. This includes disused and/or broken furniture, mattresses, white goods, etc.	Resource Recovery Centre or Landfill	Residents must arrange for Bulky Items to be removed from site and disposed of.
Other	Other recyclable items that require special recovery may include ink cartridges, batteries, chemical waste, fluorescent tubes, etc.	Resource Recovery Facility	Building manager arranges collection by appropriate recycling services when required.

7.0 EDUCATION

Educational materials encouraging correct separation of general waste and recyclables must be provided to each resident. 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 shared 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

8.0 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.

Table 4: Waste Room Areas

Level	Waste Room Type	Equipment	Estimated Area Required (m^2)
G	Communal Bin Enclosure – Core A	2x 240L MGBs (Recycling) 1x 240L MGBs (FOGO) 1x 240L MGBs (General Waste)	>4
G	Communal Bin Enclosure – Core B	2x 240L MGBs (Recycling) 1x 240L MGBs (FOGO) 2x 240L MGBs (General Waste)	>5
G	Communal Bin Enclosure – Core C	2x 240L MGBs (Recycling) 1x 240L MGBs (FOGO) 1x 240L MGBs (General Waste)	>4
G	Communal Bin Enclosure – Core D	2x 240L MGBs (Recycling) 1x 240L MGBs (FOGO) 1x 240L MGBs (General Waste)	>4

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.

The Communal Bin Enclosures shown in Drawing A101 Rev 1 06/12/21 are suitably sized to show the required equipment for each area.

The following table provides further waste room requirements.

Table 5: Waste Room Requirements

Waste Room Type	Waste Room Requirements
Communal Bin Enclosures	• Bins should be arranged so that all bins are accessible. Bins are not be placed in front another or in such away as to restrict access to the other bins for use.

9.0 BIN MOVING PATHS

The residents responsible for the transportation of bins as required from their designated operational locations kerbside on collection days 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 management must assess manual handling risks and provide any relevant documentation to key personal.

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.

9.1 CONSTRUCTION REQUIREMENTS

Waste room construction must comply with the minimum standards as outlined in the *Wollongong Development Control Plan 2009,* in order to minimise odours, deter vermin, protect surrounding areas, and make it a user-friendly and safe area.

The *NSW Better Practice Guide for Resource Recovery in Residential Developments (2019)* also states that better practice bin storage areas should achieve more than the minimum compliance requirements, which are as follows:

- Ensuring BCA compliance, including ventilation. Where required, ventilation system must comply with AS1668.4-2012 The use of ventilation and air conditioning in buildings.
- Ensuring storage areas are well lit (sensor lighting preferred) and have lighting available 24 hours a day.
- Provision of bin washing facilities, including taps for hot and cold water provided through a centralised mixing valve. The taps must be protected from bins and be located where they can be easily accessed even when the area is at bin capacity.
- Floor constructed of concrete at least 75mm thick.
- Floor graded so that any water is directed to a sewer authority approved drainage connection to ensure washing bins and/or waste storage areas do not discharge flow into the stormwater drain.
- Provision of smooth, cleanable and durable floor and wall surfaces that extend up the wall to a height equivalent to any bins held in the area.
- Ensuring ceilings are finished with a smooth-faced non-absorbent material capable of being cleaned.
- All surfaces (walls, ceiling and floors) finished in a light colour.

10.1.1 ADDITIONAL CONSIDERATIONS

- Waste room floor to be sealed with a two-pack epoxy;
- All corners coved and sealed 100mm up, this is to eliminate build-up of dirt;
- Tap height and light switch 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 finished floor level;
- Optional automatic odour and pest control system installed
- If 660L or 1100L bins are utilised, 2 x 820mm (minimum) double-doors must be used;
- All personnel doors are hinged, lockable and self-closing;
- Conform to the Building Code of Australia, Australian standards and local laws; and
- Childproofing and public/operator safety shall be assessed and ensured

11.0 USEFUL CONTACTS

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

PRIVATE WASTE COLLECTION PROVIDER

Capital City Waste Services	Ph: 02 9599 9999	E: service@ccws.net.au
Remondis	Ph: 02 9032 7100	
Suez Environmental	Ph: 13 13 35	
Wastewise NSW	Ph: 1300 550 408	E: admin@wastewise.com.au

BIN MOVING DEVICE SUPPLIERS

Electrodrive	Ph: 1800 333 002	E: sales@electrodrive.com.au
Sitecraft	Ph: 1300 363 152	E: sales@sitecraft.com.au
Spacepac	Ph: 1300 763 444	

ORGANIC DIGESTERS AND DEHYDRATORS

Closed Loop	Ph: 1300 762 166	
Orca		E: contact.australia@feedtheorca.com
Soil Food	Ph: 1300 556 628	
Waste Master	Ph: 1800 614 272	E: hello@wastemasterpacific.com.au

COOKING OIL CONTAINERS AND DISPOSAL

Auscol	Ph: 1800 629 476	E: sales@auscol.com

ODOUR CONTROL

Purifying Solutions	Ph: 1300 636 877	E: sales@purifyingsolutions.com.au

SOURCE SPERATION BINS

Source Separation Systems	Ph: 1300 739 913	E: info@sourceseparationsystems.com.au

MOBILE GARBAGE BINS, BULK BINS AND BIN EQUIPMENT

SULO	Ph: 1300 364 388	E: sales@sulo.com.au
OTTO Australia	Ph: 02 9153 6999	

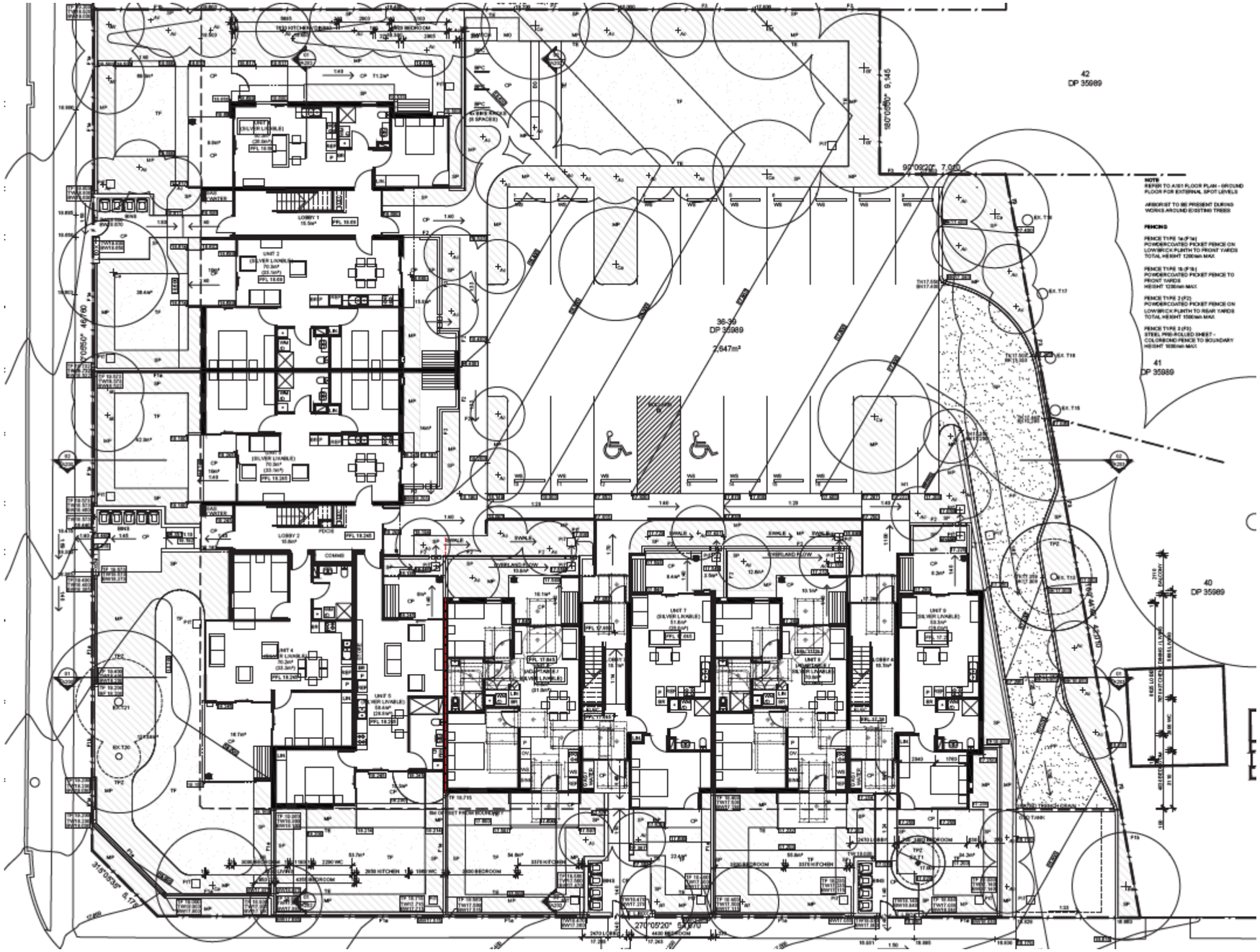
CHUTES, COMPACTORS AND EDIVERTER SYSTEMS

Elephants Foot Recycling Solutions	Ph: 1800 025 073	E: info@elephantsfoot.com.au

APPENDIX A: ARCHITECTURAL PLANS

APPENDIX A.1 GROUND FLOOR PLAN

The waste areas shown in Drawing A101 Rev 1 09/02/22 are suitably sized to show the required equipment for each area.

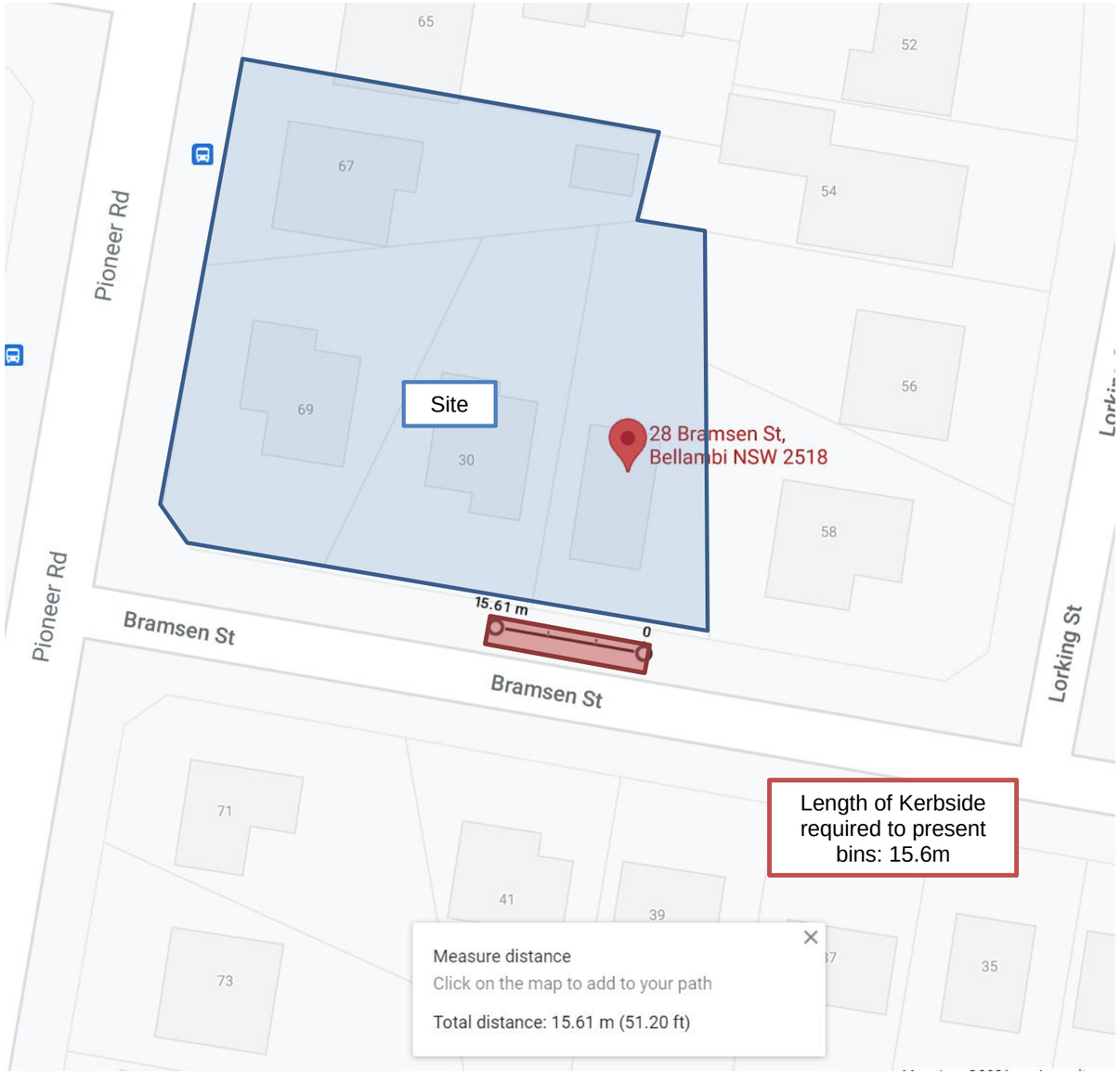


Source: Mcintosh & Phelps Architecture, 67-69 Pioneer Rd and 28-30 Bramsen St Bellambi NSW, Drawing No A101 Rev 1 – Ground Floor

APPENDIX A.2 KERBSIDE COLLECTION

Estimation for size of kerbside required to present bins

Kerbside required = number of bins x (width of bins + 300mm distance between bins) - 300mm
= 17 (580 + 300) -300
= 15 540mm



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

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

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

APPENDIX B.2 SIGNAGE FOR WASTE & 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

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

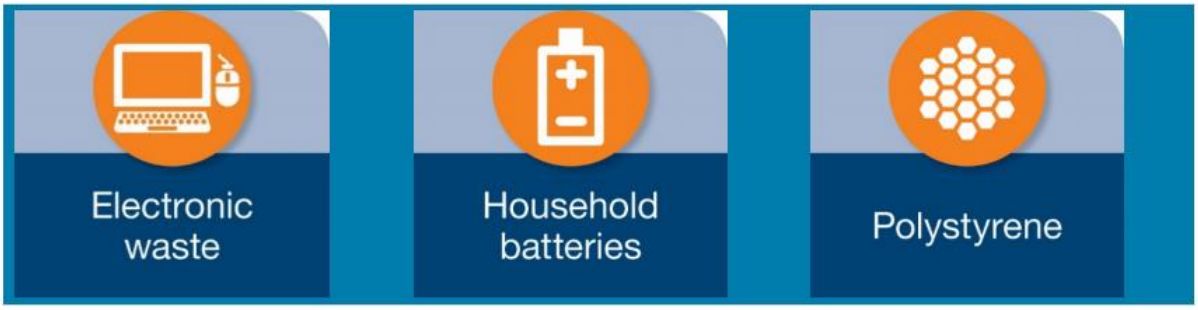
Figure I1.2: Examples of bin lid stickers (EPA supplied)

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

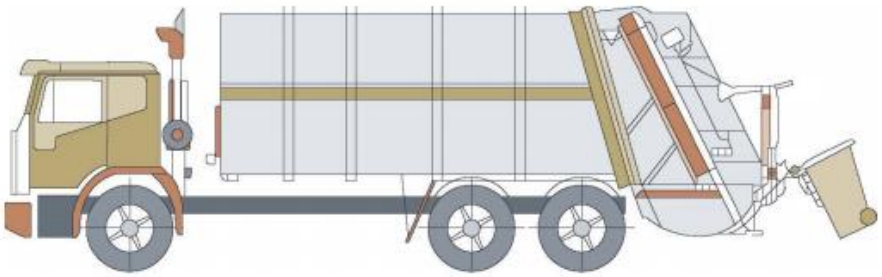
APPENDIX B.3 WOLLONGONG COLLECTION VEHICLE INFORMATION

Appendix: 7 Collection Vehicles

Waste collection vehicles may be side loading, rear-end loading, front-end loading or crane trucks. The size of vehicle varies according to the collection service. The following characteristics represent the typical collection vehicle, however, these are only for guidance. It may be possible to engage a collection service provider to use smaller collection vehicles to service developments with narrow roadways and laneways, or for on-site collections. However, as the availability of smaller vehicles to make services is limited, developments should be designed to accommodate vehicles of a similar size to that reported below.

Rear loading collection vehicle

This is commonly used for domestic garbage and recycling collections from Multiple Dwellings and Residential Flat Buildings. It can be used to collect waste stored in MGBs or bulk bins, particularly where bins are not presented on the kerbside.



Rear loading collection vehicle	
Length overall	10.24m
Width overall	2.5m
Operational height	3.5m
Travel height	3.5m
Weight (vehicle only)	12.4 tonnes
Weight (payload)	9.5 tonnes
Turning circle	18.0m

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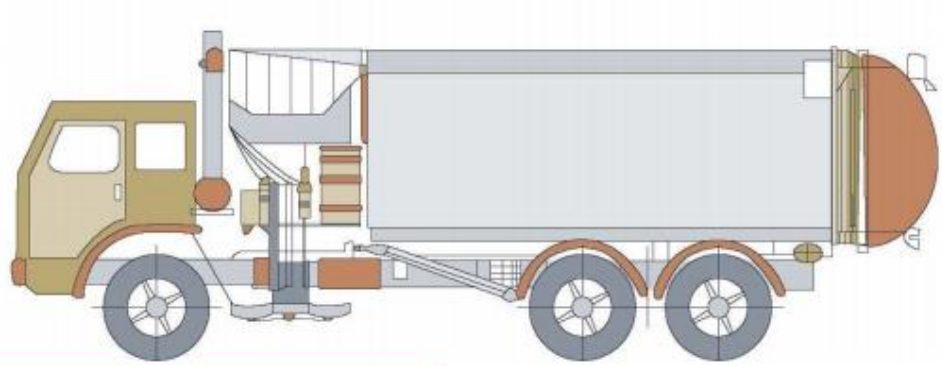
Side loading collection vehicle

This is the most commonly used vehicle for domestic garbage and recycling collections. It is only suitable for collecting MGBs up to 360 litres in size.



Side-loading collection vehicle	
Length overall	9.64m
Front overhang	1.51m
Wheelbase	5.20m
Rear overhang	2.93m
Turning circle kerb to kerb	17.86m
Turning circle wall to wall	20.56m
Front of vehicle to collection arm	3.8m
Maximum reach of side arm	3.0m
Travel height	3.63m
Clearance height for loading	3.9m

Soruce: Woolongong Development Control Plan 2009 Chapter E7: Waste Management