

# **Attachment A17**

**Preliminary Operational  
Waste Management Report  
187 Thomas Street, Haymarket**



187 Thomas Street, Haymarket NSW  
Commercial Development

## OPERATIONAL WASTE MANAGEMENT PLAN

13/03/2020  
Report No. SO267  
Revision C

Client

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### Greaton Development

Level 20, 20 Bond St., Sydney NSW  
P | 02 9223 9299

Architect

---

### Francis-Jones Morehen Thorp Pty Ltd

Level 5, 70 King St., Sydney NSW  
P | 02 9251 7077 E | [fjmt@fjmtstudio.com](mailto:fjmt@fjmtstudio.com)

**ELEPHANTS FOOT RECYCLING SOLUTIONS • ABN 70 001 378 294**  
44-46 Gibson Ave Padstow NSW 2211  
[www.elephantsfoot.com.au](http://www.elephantsfoot.com.au)

T +612 9780 3500 • F +612 9707 2588  
E [info@elephantsfoot.com.au](mailto:info@elephantsfoot.com.au)

## SCOPE

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 for, and/or changes to the development.

The waste management of the **construction** and **demolition** phases of the development are *not* addressed in this document. The Construction and Demolition Waste Management Plan (C&D WMP) has been prepared by Elephants Foot Recycling Solutions' (EFRS) in a separate report.

## REVISION REFERENCE

Revision	Date	Prepared by	Reviewed by	Description
A	03/02/2020	W. Brunson	A. Armstrong	Draft
B	09/03/2020	W. Brunson	A. Armstrong	Amendment
C	13/03/2020	W. Brunson	A. Armstrong	Final

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## GLOSSARY OF TERMS

<b>TERM</b>	<b>DESCRIPTION</b>
<i>Baler</i>	A device that compresses waste into a mould to form bales which may be self-supporting or retained in shape by strapping
<i>Chute</i>	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)
<i>Chute Discharge</i>	The point at which refuse exits from the refuse chute
<i>Chute Discharge Room</i>	A secure, enclosed area or room housing the discharge and associated equipment for the refuse chute
<i>Collection Area/Point</i>	The identified position or area where garbage or recyclables are loaded onto the collection vehicle
<i>Compactor</i>	A machine for compressing waste into disposable or reusable containers
<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>Garbage</i>	All domestic waste (Except recyclables and green waste)
<i>Green Waste</i>	All vegetated organic material such as small branches, leaves and grass clippings, tree and shrub pruning, plants and flowers
<i>Hopper</i>	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
<i>L</i>	Litre(s)
<i>Liquid Waste</i>	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)
<i>LRV</i>	Large rigid vehicle described by AS 2890.2-2002 Parking facilities – Off-street commercial vehicle facilities as heavy rigid vehicle (HRV)
<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
<i>MUD</i>	A classification of housing designed to house residents in separate housing units.
<i>Recycling</i>	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
<i>SRV</i>	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) have been engaged to prepare the following waste management plan for the operational management of waste generated by the commercial development located at 187 Thomas Street, Haymarket NSW.

Waste management strategies and audits are required for new developments to provide support for the building design, and to 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. **Comply*** with all relevant council codes, policies, and guidelines.

To achieve these objectives, this OWMP 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, 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 is clearly communicated to all relevant stakeholders.

## REPORT CONDITIONS

The purpose of this report is to document an OWMP as part of a development application and 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 your 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 chute 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.

## DEVELOPMENT SUMMARY

This document provides the preliminary information for the waste management requirements for the development proposed at 187 Thomas Street, Haymarket, NSW, under the Local Government Area of The City of Sydney. The proposed development consists of one building containing 48 levels, and is intended for commercial activities including office space, retail shops, and hotel rooms.

All figures and calculations are based on area schedules as advised by our client and shown on architectural drawings. The information presented is subject to change and must be revised with any modifications to architectural plans or building tenancies.

## SITE LOCATION

The site is located at 187 Thomas Street, Haymarket NSW as shown in Figure 1. The development will have frontage to Thomas Street, Valentine Street, and Quay Street, with entryway access via Thomas Street and Quay Street.

*Figure 1. Site location*



## CITY OF SYDNEY

The operational management of general waste and recycling will be guided by the services and acceptance criteria of the City of Sydney (CoS) Council. All waste facilities and equipment are to be designed and constructed in compliance with the *Sydney Development Control Plan 2012*, City of Sydney Council's *Guidelines for Waste Management in New Developments 2018*, Council Advices, Australian Standards and statutory requirements.

This OWMP also considers CoS's Guideline for Site Specific Planning Proposals in Central Sydney so that the waste management practices outlined in this report also support the goals for achieving zero waste.

### COUNCIL OBJECTIVES

**Space** – to allocate sufficient areas within developments for the efficient access, storage and collection of waste and recycling;

**Access** – to ensure waste systems are easy to use and that collection vehicles are able to access buildings to remove waste safely and efficiently;

**Amenity** – to maintain a visually appealing streetscape and minimise the impacts of noise and odour from waste and recycling handling on building occupants, near neighbours and the local area;

**Safety** – to ensure safe practises for storage, handling and collection of waste and recycling;

**Services** – to provide guidance on the Council's expectations for delivering effective waste services including bin handling and collection points, and managing bulky, problem waste and stripout waste;

**Management** – to ensure clarify regarding the roles providing waste management systems for developments and to demarcate service provision.

## 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	<ul style="list-style-type: none"> <li>Ensuring that all waste service providers submit monthly reports on all equipment movements and waste quantities/weights;</li> <li>Organising internal waste audits/visual assessments on a regular basis; and</li> <li>Managing any non-compliances/complaints reported through waste audits.</li> </ul>
Building Manager or Waste Caretaker	<ul style="list-style-type: none"> <li>Ensuring effective signage, communication and education is provided to occupants, tenants and cleaners;</li> <li>Providing staff/contractors with equipment manuals, training, health and safety procedures, risk assessments, and PPE to control hazards associated with all waste management activities;</li> <li>Ensuring site safety for residents, children, visitors, staff and contractors;</li> <li>Abiding by all relevant OH&amp;S legislation, regulations, and guidelines;</li> <li>Assessing any manual handling risks and prepare a manual handling control plan for waste and bin transfers;</li> <li>Preventing litter and storm water pollution by taking necessary precautions (securing bin rooms, preventing overfilling of bins)</li> <li>General maintenance and cleaning of chute doors on each level;</li> <li>Cleaning and transporting of bins as required;</li> <li>Organising, maintaining and cleaning the general and recycled waste holding area;</li> <li>Organising both garbage and recycled waste pick-ups as required;</li> <li>Organising replacement or maintenance requirements for bins;</li> <li>Organising bulky waste collection when required; and</li> <li>Investigating and ensuring prompt clean-up of illegally dumped waste materials.</li> </ul>
Residents/Tenants	<ul style="list-style-type: none"> <li>Disposing of all garbage and recycling in the allocated waste chutes and/or mobile garbage bins (MGBs) provided;</li> <li>Ensuring adequate separation of garbage and recycling; and</li> <li>Compliance with the provisions of Council and the OWMP.</li> </ul>
Council or Private Waste Contractor	<ul style="list-style-type: none"> <li>Providing a reliable and appropriate waste collection service;</li> <li>Providing feedback to building managers/residents regarding contamination of recyclables; and</li> <li>Working with building managers to customise waste systems where possible.</li> </ul>
Gardening/Landscaping Contractor	<ul style="list-style-type: none"> <li>Removing all garden organic waste generated during gardening maintenance activities for recycling at an offsite location.</li> </ul>
Building Contractors	<ul style="list-style-type: none"> <li>Removing all construction related waste offsite in a manner that meets all authority requirements.</li> </ul>

## EDUCATION

Educational materials encouraging correct separation of general waste and recyclables must be provided to each tenancy by building managers to ensure effective management of waste. 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 building management provide information in multiple languages to support correct behaviours, and to minimise contamination in the communal waste bins.

Information should include:

- Descriptions of general waste and recyclables;
- How to dispose of bulky waste and any other special waste;
- Tenants' obligations to health and safety as well as building management; and
- How to correctly source separate waste and prevent contamination of bins.

## SIGNAGE

The building manager/caretaker is responsible for waste room signage including safety signage (APPENDIX C.2). Appropriate signage must be prominently displayed on doors, walls and above all bins, clearly stating what type of waste or recyclables is to be placed in the bin.

## WASTE MANAGEMENT

The waste generation rates used in this Waste Management Plan have been derived from the City of Sydney's *Guidelines for Waste Management in New Developments 2018* and NSW EPA's *Better practice guide for resource recovery in residential developments 2019*.

It is the responsibility of the building manager to monitor the number of bins required for the development. As such, bin types and quantities may require modification to accommodate actual waste generation rates.

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

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

## RETAIL (GENERAL) WASTE MANAGEMENT

The following table shows the estimated volume (L) of general waste and recyclables generated by the general retailers (non-food) on the ground level.

*Table 2. Bin requirements for general retailers*

Tenancy	Location	GFA m <sup>2</sup>	Waste Generation Rate (L/100m <sup>2</sup> /Day)	Generated Waste (L/Day)	Recycling Generation Rate (L/100m <sup>2</sup> /Day)	Generated Recycling (L/Day)	Food Waste Generation Rate (L/Day)	Generated Food Waste (L/Day)			
Retail A	GF	44	25	11	200	88	5	2.2			
Retail B	GF	23	25	6	200	46	5	1.2			
Collections			Bin Size (L)		240		Bin Size (L)		7		
			Bins/Day	Retail A	0.05	Bins/Day	Retail A	0.4	Bins/Day	Retail A	0.3
				Retail B	0.02		Retail B	0.2		Retail B	0.2

### BIN SUMMARY

Based on the estimated volume of waste generated by the general retail activities on the ground level, the recommended bin quantities and servicing frequencies for each retailer are as follows:

General Waste: 1 x 240L MGBs collected **1 x daily** (or as needed)

Paper/Cardboard Recycling: 1 x 240L MGBs collected **1 x daily** (or as needed)

Commingled Recyclables: 1 x 240L MGBs collected **1 x daily** (or as needed)

### WASTE DISPOSAL PROCEDURES

General retailers will be responsible for the collection and storage of general waste, recyclables, and food waste back of house during daily operations. 240L MGBs may be used for the storage of general waste and commingled recyclables, and 7L caddies may be used for the storage of food waste.

Nominated office staff or contracted cleaners will transport the general waste and recyclables from each waste receptacle (desk bins, tearoom bins), to the Waste Room on the basement level via the service lift. Bins may be emptied at the end of each trading day, or as needed.

General waste will be decanted into the Multipress Compactor using the eco-weighing bin lifter.

Paper/Cardboard recyclables will be decanted into the Multipress Compactor using the bin lifter or hopper.

Commingled recyclables will be decanted into the 1100L MGBs.

Food waste will be decanted into the WasteMaster food processor.

All bins should be cleaned after being decanted as needed. The staff or cleaners will return the bins to resume operational use.

## RETAIL (CAFE) WASTE MANAGEMENT

The following table shows the estimated volume (L) of general waste and recyclables generated by the cafes on the ground level.

*Table 3. Bin requirements for café retailers*

Tenancy	Location	GFA m <sup>2</sup>	Waste Generation Rate (L/100m <sup>2</sup> /Day)	Generated Waste (L/Day)	Recycling Generation Rate (L/100m <sup>2</sup> /Day)	Generated Recycling (L/Day)	Food Waste Generation Rate (L/Day)	Generated Food Waste (L/Day)			
Café A	GF	87	100	87	500	435	100	87			
Café B	GF	65	100	65	500	325	100	65			
Collections			Bin Size (L)		240		Bin Size (L)		120		
			Bins/Day	Café A	0.4	Bins/Day	Café A	1.8	Bins/Day	Café A	0.7
				Café B	0.3		Café B	1.4		Café B	0.5

### BIN SUMMARY

Based on the estimated volume of waste generated by the cafe activities on the ground level, the recommended bin quantities and servicing frequencies are as follows for each cafe:

General Waste: 1 x 240L MGBs collected **1 x daily**

Paper/Cardboard Recycling: 1 x 240L MGBs collected **1 x daily**

Commingled Recyclables: 1 x 240L MGBs collected **1 x daily**

Food Waste: 1 x 120L MGBs collected **1 x daily**

### WASTE DISPOSAL PROCEDURES

Food retailers will be responsible for the collection and storage of general waste, recyclables, and food waste back of house during daily operations. 240L MGBs may be used for the storage of general waste and commingled recyclables, and 120L MGBs may be used for the storage of food waste.

To empty the bins, cafe staff will be responsible for transporting the bins to the Waste Room on the basement level via the service lift.

General waste will be decanted into the Multipress Compactor using the eco-weighing bin lifter.

Paper/Cardboard recyclables will be decanted into the Multipress Compactor using the bin lifter or hopper.

Commingled recyclables will be decanted into the 1100L MGBs using the bin lifter.

Food waste will be decanted into the WasteMaster food processor via the bin lifter.

All bins should be cleaned after being decanted as needed. The staff or cleaners will return the bins to resume operational use.

## “INNOVATION” SPACE WASTE MANAGEMENT

### EACH INNOVATION LEVEL

The waste generation rates for the “innovation” activities are an average of office and childcare rates provided in the City of Sydney’s *Guidelines for Waste Management in New Developments 2018*. It is recommended that each level dedicated to the “innovation” activities (e.g. childcare, office space, print labs), should contain an interim waste storage room sufficient for one day’s generation of waste and recycling (including paper products).

The following table shows the estimated volume (L) of general waste and recycling generated by the innovation activities on each floor.

*Table 4. Bin requirements for each innovation level*

Innovation Activities	GFA m <sup>2</sup>	Waste Generation Rate (L/100m <sup>2</sup> /Day)	Generated Waste (L/Day)	Recycling Generation Rate (L/100m <sup>2</sup> /Day)	Generated Recycling (L/Day)	Food Waste Generation Rate (L/Day)	Generated Food Waste (L/Day)		
L1	1180	35	413	40	472	10	118		
L3-L4	2302	35	806	40	921	10	230		
L6-L7	1520	35	532	40	608	10	152		
Collections	Bin Size (L)		240	Bin Size (L)		240	Bin Size (L)		120
	Bins/Day	L1	1.7	Bins/Day	L1	2.0	Bins/Day	L1	1.0
		L3 & L4	1.7		L3 & L4	1.9		L3 & L4	1.0
		L6 & L7	1.1		L6 & L7	1.3		L6 & L7	0.6

### BIN SUMMARY

Based on the estimated volume of waste generated by the office activities, the recommended bin quantities and servicing frequencies on each innovation level are as follows:

#### LEVEL 1

General Waste: 2 x 240L MGBs collected **1 x daily**

Paper/Cardboard Recycling: 1 x 240L MGBs collected **1 x daily**

Commingled Recyclables: 1 x 240L MGBs collected **1 x daily**

#### LEVELS 3 & 4

General Waste: 2 x 240L MGBs collected **1 x daily**

Paper/Cardboard Recycling: 1 x 240L MGBs collected **1 x daily**

Commingled Recyclables: 1 x 240L MGBs collected **1 x daily**

#### LEVELS 6 & 7

General Waste: 2 x 240L MGBs collected **1 x daily**

Paper/Cardboard Recycling: 1 x 240L MGBs collected **1 x daily**

Commingled Recyclables: 1 x 240L MGBs collected **1 x daily**

## WASTE DISPOSAL PROCEDURES

Each innovation level will keep the above-listed bins in an interim storage room, as well as a food waste caddy located in the kitchen to collect food scraps.

Nominated office staff or contracted cleaners will transport the general waste and recyclables from each activity room waste receptacle (desk bins, tearoom bins, print room bins), to the interim waste storage rooms on each office level. General waste and recyclables will be deposited into the appropriate 240L MGB.

Contracted cleaners will also wheel a mobile bin to each level (e.g. 120L MGB), into which the kitchen food waste caddies will be decanted.

At the end of each trading day, or as required, nominated staff or contracted cleaners will transport the 240L MGBs from each interim waste room on the office levels, to the Waste Room on the basement level via the service lift. The mobile food waste bin will also be transported to the basement level via the service lift.

General waste will be decanted into the Multipress Compactor using the eco-weighing bin lifter.

Paper/Cardboard recyclables will be decanted into the Multipress Compactor using the bin lifter or hopper.

Commingled recyclables will be decanted into the 1100L MGBs using the bin lifter.

Food waste will be decanted into the WasteMaster food processor via the bin lifter.

All bins should be cleaned after being decanted as needed. The staff or cleaners will return the 240L MGBs to the interim waste rooms on the innovation levels to resume operational use.

## COMMERCIAL (OFFICE) WASTE MANAGEMENT EACH OFFICE LEVEL

Per the City of Sydney’s *Guidelines for Waste Management in New Developments 2018*, the office activities at this development requires an interim waste storage room sufficient for one day’s generation of waste and recycling (including paper products).

The following table shows the estimated volume (L) of general waste and recycling generated by the office staff on each floor.

*Table 5. Bin requirements for each office level*

Commercial/ Office	GFA m <sup>2</sup>	Waste Generation Rate (L/100m <sup>2</sup> /Day)	Generated Waste (L/Day)	Recycling Generation Rate (L/100m <sup>2</sup> /Day)	Generated Recyclables (L/Day)	Food Waste Generation Rate (L/Day)	Generated Food Waste (L/Day)		
L9-L21	1189	15	178	25	297	5	59		
L23-L35	1228	15	184	25	307	5	61		
L36	1115	15	167	25	279	5	56		
Totals	<b>3532</b>		<b>530</b>		<b>883</b>		<b>177</b>		
Collections	Bin Size (L)		240	Bin Size (L)		240	Bin Size (L)		120
	Bins/ Day	L9-L21	0.7	Bins/ Day	L9-L21	1.2	Bins/ Day	L9-L21	0.5
		L23-L35	0.8		L23-L35	1.3		L23-L35	0.5
		L36	0.7		L36	1.2		L36	0.5

### BIN SUMMARY

Based on the estimated volume of waste generated by the office activities, the recommended bin quantities and servicing frequencies on **each office level** are as follows:

General Waste: 1 x 240L MGBs collected **1 x daily**

Paper/Cardboard Recycling: 1 x 240L MGBs collected **1 x daily**

Commingled Recyclables: 1 x 240L MGBs collected **1 x daily**

### WASTE DISPOSAL PROCEDURES

Each office level will keep the above-listed bins in an interim storage room, as well as a food waste caddy located in the kitchen to collect food scraps.

Nominated office staff or contracted cleaners will transport the general waste and recyclables from each office receptacle (desk bins, tea room bins, print room bins), to the interim waste storage rooms on each office level. General waste and recyclables will be deposited into the appropriate 240L MGB.

Contracted cleaners will also wheel a mobile bin to each level (e.g. 120L MGB) to empty the kitchen food waste into.

At the end of each trading day, or as required, nominated staff or contracted cleaners will transport the 240L MGBs from each interim waste room on the office levels, to the Waste

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Room on the basement level via the service lift. The mobile food waste bin will also be transported to the basement level via the service lift.

General waste will be decanted into the Multipress Compactor using the eco-weighing bin lifter.

Paper/Cardboard recyclables will be decanted into the Multipress Compactor using the bin lifter or hopper.

Commingled recyclables will be decanted into the 1100L MGBs using the bin lifter.

Food waste will be decanted into the WasteMaster food processor via the bin lifter.

All bins should be cleaned after being decanted as needed. The staff or cleaners will return the 240L MGBs to the interim waste rooms on the office levels to resume operational use.

## RETAIL (RESTAURANT) WASTE MANAGEMENT

The following table shows the estimated volume (L) of general waste and recycling generated by the restaurant on Level 43.

*Table 6. Bin requirements for Level 43*

Sky Restaurant Location	GFA m <sup>2</sup>	Waste Generation Rate (L/100m <sup>2</sup> /Day)	Generated Waste (L/Day)	Recycling Generation Rate (L/100m <sup>2</sup> /Day)	Generated Recycling (L/Day)	Food Waste Generation Rate (L/100m <sup>2</sup> /Day)	Generated Food Waste (L/Day)
L37	672	100	672	500	3360	100	672
Collections	Bin Size (L)		240	Bin Size (L)	240	Bin Size (L)	120
	Bins/Day		2.8	Bins/Day	14.0	Bins/Day	5.6
	Collections/Day		2	Collections/Day	4	Collections/Day	3
	Total Bins		<b>1.4</b>	Total Bins	<b>3.5</b>	Total Bins	<b>1.9</b>

### BIN SUMMARY

Based on the estimated volume of waste generated by the restaurant activities on Level 43, the recommended bin quantities and servicing frequencies are as follows:

General Waste: 2 x 240L MGBs collected **2 x daily**

Paper/Cardboard Recycling: 2 x 240L MGBs collected **4 x daily**

Commingled Recyclables: 2 x 240L MGBs collected **4 x daily**

Food Waste: 2 x 120L MGBs collected **3 x daily**

### WASTE DISPOSAL PROCEDURES

Restaurant staff will be responsible for the collection and storage of general waste, recyclables, and food waste back of house during daily operations. 240L MGBs may be used for the storage of general waste and commingled recyclables, and 120L MGBs may be used for the storage of food waste.

Depending on the actual amount of waste generated by the restaurant once it becomes operational, it is anticipated that the bins will need to be emptied several times during the course of the day. To empty the bins, retail staff will be responsible for transporting the bins to the Waste Room on the basement level via the service lift.

General waste will be decanted into the Multipress Compactor using the eco-weighting bin lifter.

Paper/Cardboard recyclables will be decanted into the Multipress Compactor using the bin lifter or hopper.

Commingled recyclables will be decanted into the 1100L MGBs using the bin lifter.

Food waste will be decanted into the WasteMaster food processor via the bin lifter.

All bins should be cleaned after being decanted as needed. The staff or cleaners will return the bins to Level 43 to resume operational use.

## HOTEL WASTE MANAGEMENT

### EACH HOTEL LEVEL

Per the City of Sydney Council's *Guidelines for Waste Management in New Developments 2018*, the hotel accommodation at this development requires an interim waste storage room sufficient for one day's generation of waste and recycling.

The following table shows the estimated volume (L) of general waste and recycling generated by the hotel guests on each floor.

*Table 7. Bin requirements for each hotel level*

Tenancy Type	GFA m <sup>2</sup>	Waste Generation Rate (L/100m <sup>2</sup> /Day)	Generated Waste (L/Day)	Recycling Generation Rate (L/100m <sup>2</sup> /Day)	Generated Recycling (L/Day)	Food Waste Generation Rate (L/Day)	Generated Food Waste (L/Day)
Hotel	663	20	133	25	166	15	99.45
Collections	Bin Size (L)		240	Bin Size (L)	240	Bin Size (L)	120
	Bins/Day		0.6	Bins/Day	0.7	Bins/Day	0.8
	Collections/Day		1	Collections/Day	1	Collections/Day	1
	Total Bins		<b>0.6</b>	Total Bins	<b>0.7</b>	Total Bins	<b>0.8</b>

### BIN SUMMARY

Based on the estimated volume of waste generated by the hotel guests, the recommended bin quantities and servicing frequencies on **each habitable hotel level** are as follows:

General Waste: 1 x 240L MGBs collected **1 x daily**

Commingled Recyclables: 1 x 240L MGBs collected **1 x daily**

Food Waste: 1 x 120L MGB collected **1 x daily**

### WASTE DISPOSAL PROCEDURES

Each hotel room will be equipped with 1 x general waste bin, 1 x commingled recycling bin, and 1 x food waste bin/caddy.

Hotel staff will circulate through the hotel rooms performing cleaning duties as required. During this time, they will transport the general waste, recyclables, and food waste from each hotel room to the interim waste storage rooms on each level. There they will dispose of the waste and recyclables into the appropriate MGB. At the end of each trading day, or as required, hotel staff will transfer the MGBs from the interim storage rooms to the Waste Room on the basement level via the service lift.

General waste will be decanted into the Multipress Compactor using the eco-weighing bin lifter.

For commingled recyclables, staff will use the bin lifter to decant the 240L MGBs into the 1100L MGBs.

For food waste, staff will use the bin lifter to decant the 120L MGBs into the WasteMaster food processing unit.

## **OPERATIONAL WASTE MANAGEMENT PLAN**

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It is not anticipated that hotel guests will generate much paper and cardboard, however it will likely be generated by other hotel office/reception activities. Staff will store recyclable paper and cardboard near their workstation, and transport the recyclables to the Waste Room as needed. There they will access the Multipress Eco Carton Compactor with swipe card access and deposit the paper/cardboard into the unit.

## RETAIL (BAR) WASTE MANAGEMENT

The following table shows the estimated volume (L) of general waste and recycling generated by the bar area on Level 48.

*Table 8. Bin requirements for Level 55*

Pool/Bar Location	GFA m <sup>2</sup>	Waste Generation Rate (L/100m <sup>2</sup> /Day)	Generated Waste (L/Day)	Recycling Generation Rate (L/100m <sup>2</sup> /Day)	Generated Recycling (L/Day)	Food Waste Generation Rate (L/100m <sup>2</sup> /Day)	Generated Food Waste (L/Day)
L48	455	100	455	150	683	40	182
Collections		Bin Size (L)	240	Bin Size (L)	240	Bin Size (L)	120
		Bins/Day	1.9	Bins/Day	2.8	Bins/Day	1.5
		Collections/Day	2	Collections/Day	2	Collections/Day	2
		Total Bins	<b>0.9</b>	Total Bins	<b>1.4</b>	Total Bins	<b>0.8</b>

### BIN SUMMARY

Based on the estimated volume of waste generated by the pool and bar activities on Level 48, the recommended bin quantities and servicing frequencies are as follows:

General Waste: 1 x 240L MGBs collected **2 x daily**

Paper/Cardboard Recycling: 1 x 240L MGBs collected **2 x daily**

Commingled Recyclables: 1 x 240L MGBs collected **2 x daily**

Food Waste: 1 x 120L MGBs collected **2 x daily**

### WASTE DISPOSAL PROCEDURES

Bar staff will be responsible for the collection and storage of general waste, recyclables, and food waste back of house during daily operations. 240L MGBs may be used for the storage of general waste and commingled recyclables, and 120L MGBs may be used for the storage of food waste.

Depending on the actual amount of waste generated by the bar once it becomes operational, it is anticipated that the bins will need to be emptied several times during the course of the day. To empty the bins, staff will be responsible for transporting the bins to the Waste Room on the basement level via the service lift.

General waste will be decanted into the Multipress Compactor using the eco-weighting bin lifter.

Paper/Cardboard recyclables will be decanted into the Multipress Compactor using the bin lifter or hopper.

Commingled recyclables will be decanted into the 1100L MGBs using the bin lifter.

Food waste will be decanted into the WasteMaster food processor via the bin lifter.

All bins should be cleaned after being decanted as needed. The staff or cleaners will return the bins to Level 48 to resume operational use.

## WHOLE SITE WASTE MANAGEMENT WASTE GENERATION SUMMARY

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

*Table 9. Bin requirements for entire site*

Tenancy Type	Level	GFA m <sup>2</sup>	Waste Generation Rate (L/100m <sup>2</sup> /Day)	Compacted Waste (5:1)	Recycling Generation Rate (L/100m <sup>2</sup> /Day)	Cardboard Compactor (5:1)	Commingled Recyclables	Food Waste Generation Rate (L/100m <sup>2</sup> /Day)	Generated Food Waste (L/Day)
General retail	Ground	67	25	23	50	31	78	5	3
Café	Ground	152	100	213	500	709	1773	100	152
Innovation	1	1180	35	578	40	315	787	10	118
Innovation	3-4	2302	35	1128	40	614	1535	10	230
Innovation	6-7	1520	35	745	40	405	1013	10	152
Office	9-21	15457	15	3246	25	2576	6440	5	773
Office	23-35	15964	15	3352	25	2661	6652	5	798
Office	36	1115	15	234	25	186	465	5	56
Sky restaurant	37	672	100	941	500	3136	7840	100	672
Hotel	38-46	5967	20	1671	25	1392	3481	15	895
Roof Pool/Bar	48	455	100	637	150	637	1593	40	182
<b>TOTALS</b>		<b>44851</b>		<b>12768</b>		<b>12662</b>	<b>31656</b>		<b>4031</b>
Collections			Bin Size (L)	10000	Bin Size (L)	10000	1100	Waste Bin Size (L)	-
			Bins/Wk	1.3	Bins/Wk	1.3	28.8	Waste Bins/Wk	-
			Collections/Wk	2	Collections/Wk	2	3	Collections/Wk	-
			Total Waste Bins	<b>0.6</b>	Total Recycling Bins	<b>0.6</b>	<b>9.6</b>	Total Food Waste Bins	-

### BIN SUMMARY

Based on the estimated volume of waste generated by each of the activities from the entire development, the recommended bin quantities and servicing frequencies are as follows:

General Waste: 1 x 10m<sup>3</sup> MultiPress Compactor collected **2 x weekly**

Paper/Cardboard: 1 x 10m<sup>3</sup> MultiPress Compactor collected **2 x weekly**

Commingled Recyclables: 10 x 1100L MGBs collected **3 x weekly**

Food Waste: 1 x WasteMaster 400 serviced per agreed schedule

Bin sizes, quantities, and/or collection frequencies may be modified by the building manager once the proposed development is operational.

## WASTE COLLECTION PROCEDURES

The building manager will coordinate with a private waste collection contractor to service the general waste, recycling, and food waste collection systems on a regular basis.

On the designated day for general waste collection, an 8.3m hook-lift truck will enter the Loading Area on Basement Level 1 via the driveway from Quay Street. The driver will load the entire Multipress Compactor onto the vehicle and transport it to a licensed landfill facility. Once the compactor has been emptied, the driver will return the unit to the Waste Collection Area to resume operational use.

On the designated day for paper/cardboard collection, an 8.3m hook-lift truck will enter the Loading Area on Basement Level 1 via the driveway from Quay Street. The driver will load the entire Multipress Eco Carton Compactor onto the vehicle and transport it to a licensed resource recovery facility for recycling. Once the compactor has been emptied, the driver will return the unit to the Waste Collection Area to resume operational use.

On the designated days for commingled recycling collection, a rear-loading MRV will enter the Loading Area on Basement Level 1 via the driveway from Quay Street. The driver will empty the MGBs into the truck on-site. Once the bins have been serviced, the rear-load vehicle will exit the site in a forward direction.

The WasteMaster400 food waste processor will be serviced regularly on an agreed schedule by the contractor.

## BULKY & PROBLEM WASTE

A room or caged area will be made available for the storage of discarded bulky items and problem waste for recycling, such as e-waste and chemical waste. This room should have a minimum doorway width of 1.5m to allow for easy movement of large waste items in and out of the room. Based on the City of Sydney requirements, it is recommended that the bulky waste room is at least 16m<sup>2</sup> for this development.

## RE-USEABLE COMMERCIAL ITEMS

Space will be provided back of house or adjacent to the Bulky Waste Room for the storage of re-usable commercial items such as crates, pallets, kegs and stripout waste. The building manager will be responsible for ensuring that storage of these items in public places is completely avoided.

## 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.

## WASTE ROOM & EQUIPMENT SUMMARY

The areas allocated for waste storage and collection are detailed in the table below, and are estimates only. Final areas will depend on room and bin layouts.

Table 10. Waste room areas

Location	Bins/Equipment	Estimated Area Required (m <sup>2</sup> )	Actual Area Provided (m <sup>2</sup> )
Basement 1	2 x 10m <sup>3</sup> Multipress Compactor	25	TBD
	WasteMaster400	8	TBD
	10 x 1100L MGB (commingled recyclables)	26	TBD
	Bin lifter (or eco bin-lifter*)	2	TBD
	Bulky goods area	16	TBD
	Space for stripout waste	4	TBD
<b>Total Estimated Area Required</b>		81	TBD

\*The developer may choose to elect an eco bin-lifter, whereby each tenant is provided with their own swipe card to access the bin-lifter, weigh the materials, and decant into the compaction unit. This follows the user-pay principle so that each tenant is charged accordingly for the waste they dispose of. Refer to APPENDIX B.2.

The waste rooms have been calculated based on bin and equipment dimensions with an additional 50% of the GFA factored in for manoeuvrability. Refer to the summary of equipment in the table below.

Table 11. Equipment summary

Component	Part	Qty	Notes
Equipment A	10m <sup>3</sup> Multipress Compactor	2	See APPENDIX B.1 – please refer to supplier’s information
Equipment B	WasteMaster 400	1	See APPENDIX B.3 – please refer to supplier’s information
Equipment C	120-240L Bin Lifter	1	See APPENDIX B.2 – please refer to supplier’s information

## MOVEMENT AND TRANSPORTATION OF BINS

Transfer of waste and all bin movements require minimal manual handling. The operator must assess manual handling risks and provide any relevant documentation to building management.

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

Adequate space must be provided for movement of bins and bulky waste through doorways and passageways. Per the City of Sydney waste guidelines, the doors to the waste and recycling storage room are to provide a minimum clearance width of 900mm. However, EFRS recommends a minimum clearance of 1200mm-1500mm if feasible.

## 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.

## 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

## WASTE ROOMS

### CONSTRUCTION REQUIREMENTS

Waste room construction must comply with the minimum standards as outlined in the *Sydney Development Control Plan 2012*, 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* 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.

### 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 floor levels;
- The room must be mechanically ventilated;
- 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

### VENTILATION

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

- Mechanically - exhausting at a rate of 5L/m<sup>2</sup> floor area, with a minimum rate of 100L/s minimum; or
- Naturally - permanent, unobstructed, and opening direct to the external air, not less than one-twentieth (1/20) of the floor area

Mechanical exhaust systems shall comply with AS1668 and not cause any inconvenience, noise or odour problem.

## USEFUL CONTACTS

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

### **CITY OF SYDNEY CUSTOMER SERVICE**

Phone: 02 9265 9333

Email: [council@cityofsydney.nsw.gov.au](mailto:council@cityofsydney.nsw.gov.au)

### **SULO MGB** (MGB, Public Place Bins, Tugs and Bin Hitches)

Phone: 1300 364 388

### **CLOSED LOOP** (Organic Dehydrator)

Phone: 02 9339 9801

### **ELECTRODRIVE** (Bin Mover)

Phone: 1800 333 002

Email: [sales@electrodrive.com.au](mailto:sales@electrodrive.com.au)

### **RUD** (Public Place Bins, Recycling Bins)

Phone: 07 3712 8000

Email: [Info@rud.com.au](mailto: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](mailto:information@nacro.org.au)

### **PURIFYING SOLUTIONS** (Odour Control)

Phone: 1300 636 877

Email: [sales@purifyingsolutions.com.au](mailto:sales@purifyingsolutions.com.au)

### **MOVEXX** (Bin Movers)

Phone: 1300 763 444

### **AUSCOL** (Recycling Oils & Animal Fats)

Phone: 1800 629 476

### **ELEPHANTS FOOT RECYCLING SOLUTIONS** (Chutes, Compactors and eDiverter Systems)

44 – 46 Gibson Avenue

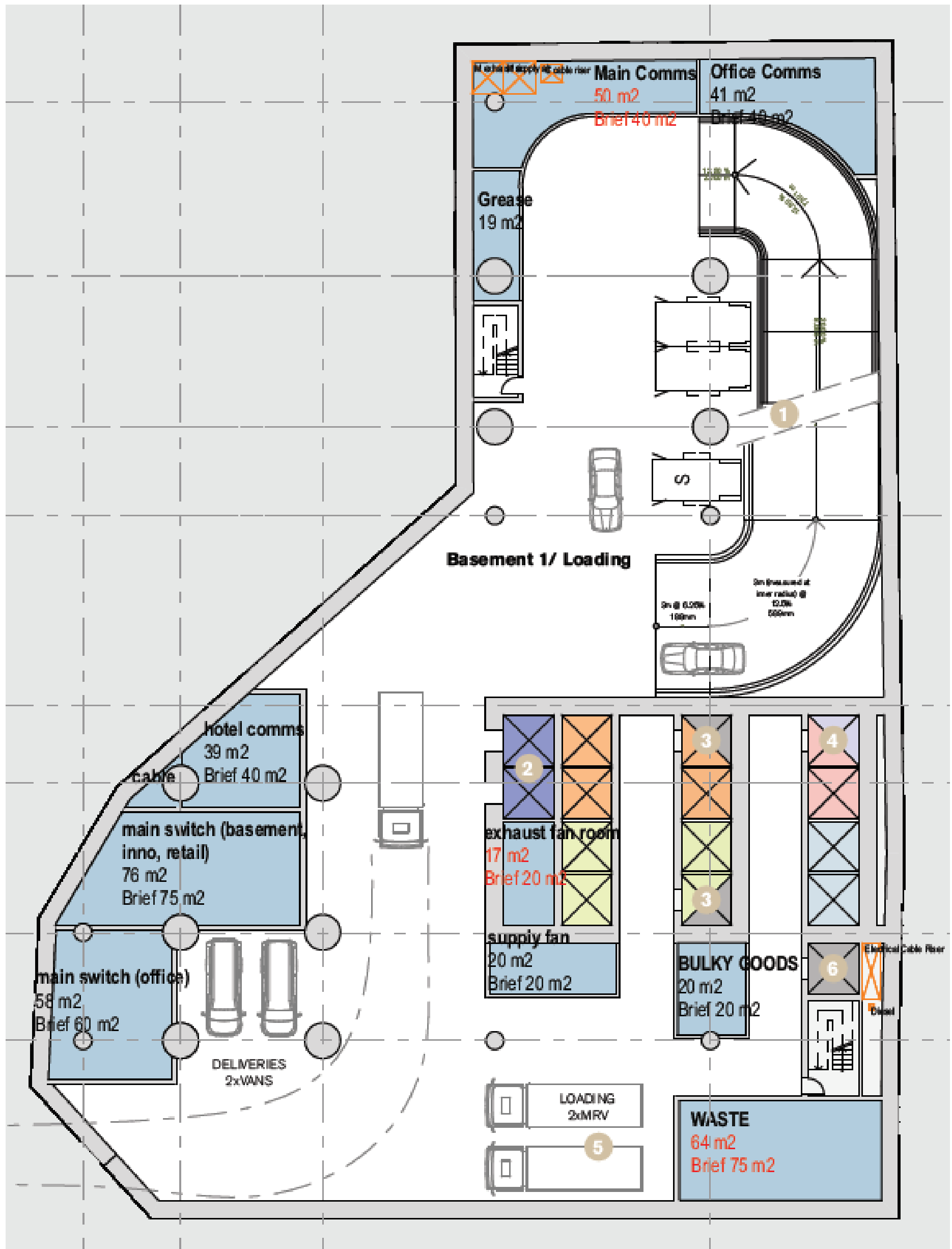
Padstow NSW 2211

Free call: 1800 025 073

Email: [info@elephantsfoot.com.au](mailto:info@elephantsfoot.com.au)

## APPENDIX A: ARCHITECTURAL DRAWINGS

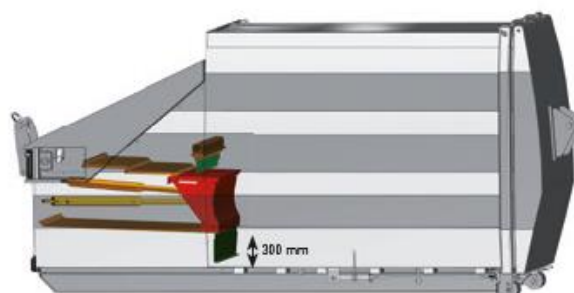
APPENDIX A.1 FLOOR PLAN: BASEMENT LEVEL 1



## APPENDIX B: EQUIPMENT

## APPENDIX B.1 MULTIPRESS COMPACTOR

### MULTIPRESS 1.0 Roll-off container



#### Special version as wet waste press

Mixed waste and also waste with a high moisture content can be ideally compressed. The sloping pressing floor and the special high level difference (300 mm Trashholder) between the pressing floor and the container floor guarantee that the equipment remains clean.

In addition, the **MULTIPRESS 1.0 roll-off container** is also available as an underground garage model.



Roll-off container	MP 10-1.0	MP 12-1.0	MP 14-1.0	MP 16-1.0
Volume Container	10 m <sup>3</sup>	12 m <sup>3</sup>	14 m <sup>3</sup>	16 m <sup>3</sup>
Length (without hook)	4960	5460	5960	6460
Length (with hook)	5200	5700	6200	6700
Width x height	1950 x 2440 mm	1950 x 2440 mm	1950 x 2440 mm	1950 x 2440 mm
Filling height	1270 mm	1270 mm	1270 mm	1270 mm
Volume per stroke	1 m <sup>3</sup>	1 m <sup>3</sup>	1 m <sup>3</sup>	1 m <sup>3</sup>
Height of press ram	550 mm	550 mm	550 mm	550 mm
Press opening W x H	1000 x 1450 mm	1000 x 1450 mm	1000 x 1450 mm	1000 x 1450 mm
Filling opening W x H	1580 x 1450 mm	1580 x 1450 mm	1580 x 1450 mm	1580 x 1450 mm
Compaction force	300 kN	300 kN	300 kN	300 kN
Pressing cycle	24 sec.	24 sec.	24 sec.	24 sec.
Motor	5,5 kW	5,5 kW	5,5 kW	5,5 kW
Fuse slow	16 A	16 A	16 A	16 A
Electric connection	400 V, 50 Hz	400 V, 50 Hz	400 V, 50 Hz	400 V, 50 Hz
Unladen weight	3390 kg	3550 kg	3720 kg	3880 kg
Container conical	conical à 80 mm	conical à 80 mm	conical à 80 mm	conical à 80 mm

*Refer to supplier's information and specification.*

## APPENDIX B.2 BIN-LIFTERS

### 120-240 Litre Binlifter

The single bin lifter is designed to safely empty wheelie bins into large dumpsters and compactors. With easy operating push button instructions, the bin lifter is complemented by a safety cage.



Features	120-240 litre bin lifter
Lifting capacity	140 kg
Bin compatibility	120 & 240 litre bins
Operation method	Automatic
Hydraulic	yes
Dimensions	850mm (W) x 1800mm (L)
Safety	Safety cage & control box
Emergency stop	yes
Tipping height	1350mm variable
Clearance	2650mm
Suitability in tipping into	bins , dumpsters and compactors
Power	240 volt, 10amp
Can it be customised?	yes
Weighing & data capture	no

*Refer to supplier's information and specification.*

## 120-240 Litre Eco Weighing Bin Lifter

The ECO bin lifter records user information just like our ECO compactors.

The ECO bin lifter weighs the bin and sends all the user/transaction details to the online database. The owner can then review all transaction details including who used it, time, weights and generate basic excel reports.

This model is designed to suit 120 & 240 litre wheelie bins.

All ECO information can be accessed via any personal computer, smart phone or tablet. Android and Apple devices can download the Elephants Foot app for instant access.



The process is simple.

1. Insert an authorised eco card into the bin lifter control panel
2. Place bin inside the bin lifter
3. Once outside the safety cage and the doors are closed, press start.
4. The bin will then be weighed and tipped
5. Once the bin is lowered, the doors will unlock and the card will be returned to the operator.
6. All data is uploaded to our online database.

Features	120-240 ECO weighing bin lifter
Lifting capacity	up to 140kg
Bin compatibility	120 & 240 litre bins
Operation method	Automatic
Hydraulic	yes
Dimensions	1300mm (W) x 2200mm (L)
Safety	Safety cage & control box
Emergency stop	yes
Tipping height	1450mm
Clearance	3500mm
Suitability in tipping into	bins , dumpsters and compactors
Power	3 phase, 20 Amp, 5 pin, D type circuit breaker
Can it be customised?	yes
Weighing & data capture	yes

*Refer to supplier's information and specification.*

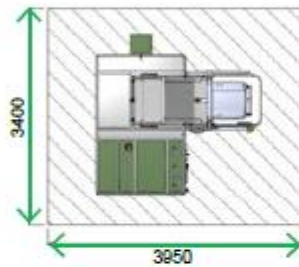
APPENDIX B.3 WASTEMASTER 400 FOOD WASTE PROCESSOR



**Front View** Hatch fully opened and bin lifter presented



**Side View** Hatch fully opened



**Plan View** of required working area



<b>Dimensions (L, W, H)</b>	2500 x 2705 x 2199	mm
<b>Working Area</b>	3400 x 3950	mm
<b>Machine Weight</b>	2200	kgs
<b>Maximum Drum Capacity</b>	550	kgs
<b>Total Loaded Weight</b>	2750	kgs
<b>Minimum Operating Area Requirement</b>	3400 x 3950	mm
<b>Power Supply</b>	3-Phase 400 V +/- 10% @ 32 50Hz 5 pin plug - 3 phases plus neutral plus earth	
<b>IP Rating</b>	54	
<b>Noise Level</b>	<85	dBA
<b>Air Outlet</b>	100mm ID	mm
<b>Comms Requirement</b>	3G SIM Network (optional)	

**Machine Specifications**

Specifications, appearance and equipment are subject to change without notice by reason of improvement. Hazard prevention measures have been removed from the photos featured in this document.



**To ensure safe operation, please consult the operator's manual before use.**

Refer to supplier's information and specification.

## APPENDIX C: WASTE MANAGEMENT PROVISIONS

## APPENDIX C.1 EXAMPLE BIN SPECIFICATIONS

### Australian standard sizes for mobile garbage bins (MGBs)

#### Standard measurements

Bin type	120L MGB	240L MGB	660L MGB	1100L MGB
Height	940 mm	1080 mm	1250 mm	1470 mm
Length	560 mm	735 mm	850 mm	1245 mm
Width	485 mm	580 mm	1370 mm	1370 mm



*SOURCE: City of Sydney's Guidelines for Waste Management in New Developments 2018*

## APPENDIX C.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](http://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



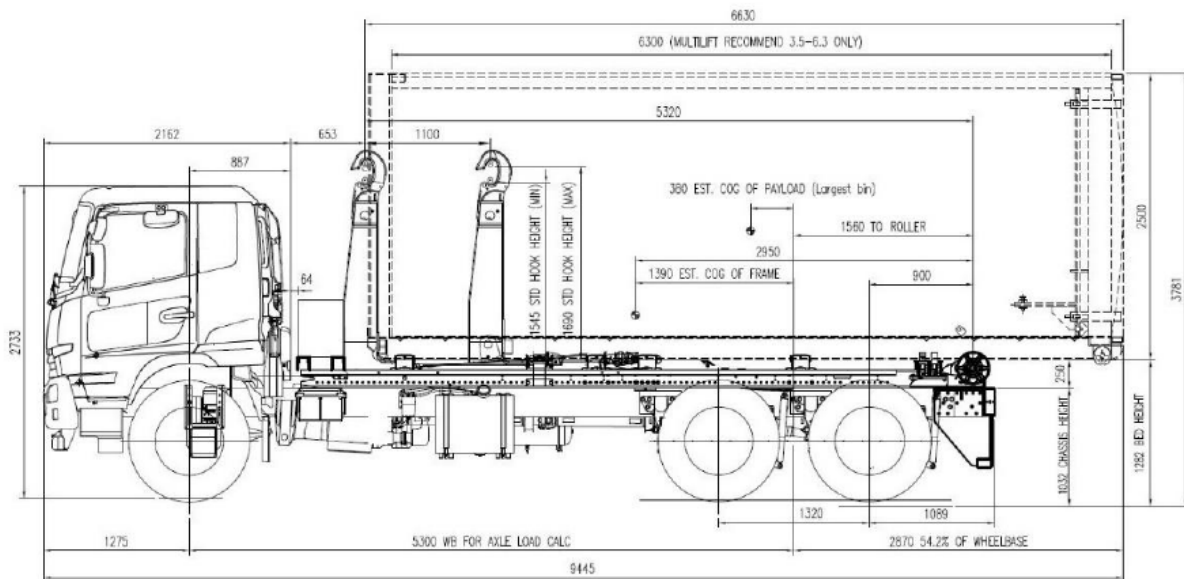
SOURCE: *Better practice guide for resource recovery in residential developments 2019*, NSW Environmental Protection Authority

## APPENDIX C.3 8.3M HOOK-LIFT VEHICLE

### 3.11.1 Hook Lift Collection Vehicle Specifications

Vehicle Class	Heavy Rigid Vehicle Dimensions
Overall Length (m)	8.3
Operational Length- Loaded (m)	9.5
Design Width (m)	2.8
Design Height (m)	3.7
Swept Circle (m)	21.6
Clearance (travel height) (m)	4.5
Roadway/ramp grade (max)	1:6.5 (15.4%)
Rate of change of grade (max)	1:16 (6.25%) in 7.0m of travel
Gross Weight (max tonnes)	28.0
Front Chassis Clearance	13 <sup>0</sup>
Rear Chassis Clearance	16 <sup>0</sup>

Table 12: Standard dimensions sourced from manufacture specifications



SOURCE: Penrith City Council Residential Flat Building Waste Management Guidelines

## APPENDIX C.4 EXAMPLE FOOD WASTE COLLECTION BINS



Apartment Style Compost bin – available from hardware stores

Suitable for:

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

**APPENDIX C.5 TYPICAL COOKING OIL CONTAINERS**

The screenshot displays the AUSCOL website interface. At the top left is the AUSCOL logo with the tagline "A GrainCorp business". To the right is a navigation menu with links for Home, About, Services, Our Parent Company, and Contact. Below the navigation is a yellow banner with the text "The RIGHT WAY for Cooking Oil Collection Systems".

The main content area features several product images and descriptions:

- Drums 205L:** An image of a green metal drum with a white lid and a silver drum next to it.
- Pour in Bulk Tank:** An image of a stainless steel bulk tank with a pouring spout.
- Oil Kaddy System:** An image of a white cylindrical tank on a metal cart with a pump handle.
- Eco Systems:** Two images of white cylindrical tanks on wheels, labeled "Eco System 300 Fixed" and "Eco System 300 Mobile".
- Direct-Connect to Fryer:** An image of a white unit with a control panel and a sign that reads "AUSCOL Direct Connect to Fryer USED COOKING OIL RECYCLING STATION".

On the right side of the page, there is a vertical navigation menu with the following items:

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

Below the "Pour in Bulk Tank" and "Oil Kaddy System" images are blue buttons labeled "View Brochure".