Western Sydney University – Bankstown City Campus
74 Rickard Rd Bankstown
Mixed Use Development

OPERATIONAL WASTE MANAGEMENT PLAN

13/08/2020
Report No. 100206
Revision H

Client

Western Sydney University
https://www.westernsydney.edu.au/
T 02 9852 5222 • **E** gateway@westernsydney.edu.au

Project Directors

Walker Bankstown Developments Pty Ltd.
Level 21 Govenor Macquarie Tower, 1 Farrer Place Sydney NSW 2000
T 02 8273 9600 •

Architect

Lyons Architects
http://www.lyonsarch.com.au/
T 03 9600 2818 • **E** lyons@lyonsarch.com.au

ELEPHANTS FOOT RECYCLING SOLUTIONS • **ABN** 70 001 378 294
44-46 Gibson Ave Padstow NSW 2211
www.elephantsfoot.com.au

T +612 9780 3500 • **F** +612 9707 2588
E info@elephantsfoot.com.au

SCOPE

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

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

REVISION REFERENCE

Revision	Date	Prepared by	Reviewed by	Description
A	21/06/2019	H Wilkes	A Armstrong	Draft
B	16/07/2019	H Wilkes	A Armstrong	Amendment
C	23/07/2019	H Wilkes	A Armstrong	Amendment
D	29/07/2019	H Wilkes	A Armstrong	Amendment
E	20/08/2019	H Wilkes	A Armstrong	Final
F	22/01/2020	H Wilkes	A Armstrong	Green Star Strategy Draft
G	24/07/2020	H Wilkes	A Armstrong	Amendment Draft
H	13/08/2020	H Wilkes	A Armstrong	Amendment Final

TABLE OF CONTENTS

LIST OF TABLES

TABLE OF FIGURES

GLOSSARY OF TERMS

TERM	DESCRIPTION
Baler	A device that compresses waste into a mould to form bales which may be self-supporting or retained in shape by strapping
Chute	A ventilated, vertical pipe passing from floor to floor of a building with openings as required to connect with hoppers and normally terminating at its lower end at the roof of the central waste room(s)
Chute Discharge	The point at which refuse exits from the refuse chute
Chute Discharge Room	A secure, enclosed area or room housing the discharge and associated equipment for the refuse chute
Collection Area/Point	The identified position or area where garbage or recyclables are actually loaded onto the collection vehicle
Compactor	A machine for compressing waste into disposable or reusable containers
Composter	A container/machine used for composting specific food scraps
Crate	A plastic box used for the collection of recyclable materials
Garbage	All domestic waste (Except recyclables and green waste)
Green Waste	All vegetated organic material such as small branches, leaves and grass clippings, tree and shrub pruning, plants and flowers
Hopper	A fitting into which waste is placed and from which it passes into a chute or directly into a waste container. It consists of a fixed frame and hood unit (the frame) and a hinged or pivoted combined door and receiving unit
L	Litre(s)
Liquid Waste	Non-hazardous liquid waste generated by commercial premises that is supposed to be connected to sewer or collected for treatment and disposal by a liquid waste contractor (including grease trap waste)
LRV	Large rigid vehicle described by AS 2890.2-2002 Parking facilities – Off-street commercial vehicle facilities as heavy rigid vehicle (HRV)
Mobile Garbage Bin(s) (MGB)	A waste container generally constructed of plastic with wheels with a capacity in litres of 120, 240, 360, 660, 1000 or 1100
MRV	Medium rigid vehicle
Putrescible Waste	Component of the waste stream liable to become putrid. Usually breaks down in a landfill to create landfill gases and leachate. Typically applies to food, animal and organic products.
Recycling	Glass bottles and jars – PET, HDPE and PVC plastics; aluminium aerosol and steel cans; milk and juice cartons; soft drink, milk and shampoo containers; paper, cardboard, junk mail, newspapers and magazines
SRV	Small rigid vehicle as in AS 2890.2-2002 Parking facilities – Off-street commercial vehicle facilities, generally incorporating a body width of 2.33

INTRODUCTION

Elephants Foot Recycling Solutions (EFRS) has been engaged to prepare the following waste management plan for Western Sydney University for the operational management of waste generated by the mixed use development. The site is located at 74 Rickard Road (being Lot 5 DP 777510). In addition, public domain works are proposed to Rickard Road, 70 Rickard Road (being part Lot 7 DP 777510) and access is proposed via 80 Rickard Road (being Lot 12 DP 566924).

Waste management strategies and auditing are a requirement for new developments to provide support for the building design, and promote strong sustainability outcomes for the building. It is EFRS's belief that a successful waste management strategy contains three key objectives:

i. ***Promote responsible source separation*** to reduce the amount of waste that goes to landfill, by implementing convenient and efficient waste management systems

ii. ***Ensure adequate waste provisions and robust procedures*** that will cater for potential changes during the operational phase of the development

iii. ***Compliance*** with all relevant council codes, policies, and guidelines.

To achieve these objectives, this WMP identifies the different waste streams likely to be generated during the operational phase of the development. Associated information includes: how the waste will be handled and disposed of, details of bin sizes/quantities and waste rooms, descriptions of the proposed waste management equipment used and information on waste collection points and frequencies.

It is essential that this waste management plan is integrated into the overall management of the building and clearly communicated to all relevant stakeholders.

The development for Western Sydney University Bankstown City Campus is designed to achieve a 5-star Green Star rating under Green Star Design and As Built V1.3. All disciplines have been coordinated to meet these targets. This report has been prepared to demonstrate how the site has met the credit criteria for Credit 8B Operational Waste, Prescriptive Pathways: Facilities.

REPORT CONDITIONS

The purpose of this report is to document a Waste Management Plan (WMP) as part of a development application and is supplied by EFRS with the following limitations:

- Drawings, estimates and information contained in this waste management plan have been prepared by analysing the information, plans and documents supplied by the client, and third parties including Council and government information. The assumptions based on the information contained in the WMP is outside the control of EFRS;
- The figures presented in the report are an estimate only – the actual amount of waste generated will be dependent on the occupancy rate of the building/s and waste generation intensity as well as the building managements approach to educating residents and tenants regarding waste management operations and responsibilities;
- The building manager will make adjustments as required based on actual waste volumes (if waste is greater than estimated) and increase the number of bins and collections accordingly;
- The report will not be used to determine or forecast operational costs or prepare any feasibility study or to document any safety or operational procedures;
- The report has been prepared with all due care however no assurance or representation is made that the WMP reflects the actual outcome and EFRS will not be liable to you for plans or outcomes that are not suitable for your purpose, whether as a result of incorrect or unsuitable information or otherwise;
- EFRS offer no warranty or representation of accuracy or reliability of the WMP unless specifically stated;
- Any manual handling equipment recommended should be provided at the recommendation of the appropriate equipment provider who will assess the correct equipment for supply;
- Design of waste management chute equipment and systems must be approved by the supplier.
- EFRS cannot be held accountable for late changes to the design after the WMP has been submitted to Council.
- EFRS will provide specifications and recommendations on bin access and travel paths within the WMP, however it is the architect's responsibility to ensure the architectural drawings meet these provisions.
- EFRS are not required to provide information on collection vehicle head heights, internal manoeuvring and loading requirements. These variables are considered to be within the applicable Traffic Consultants domain.
- Council are subject to changing waste and recycling policies and requirements at their own discretion.

DEVELOPMENT SUMMARY

The proposed development falls under the LGA of City of Canterbury Bankstown, and consists of:

- One building with 19 Levels and 2 basement levels, with
  - 21 650m^2 for university operations and facilities from the ground level to level 13
  - 2x food and beverage retail tenancies with a total GFA of 300m^2 located on the ground level.
  - University conference facilities on level 8
  - 4560m^2 for university/Education use from levels 14 to 18.

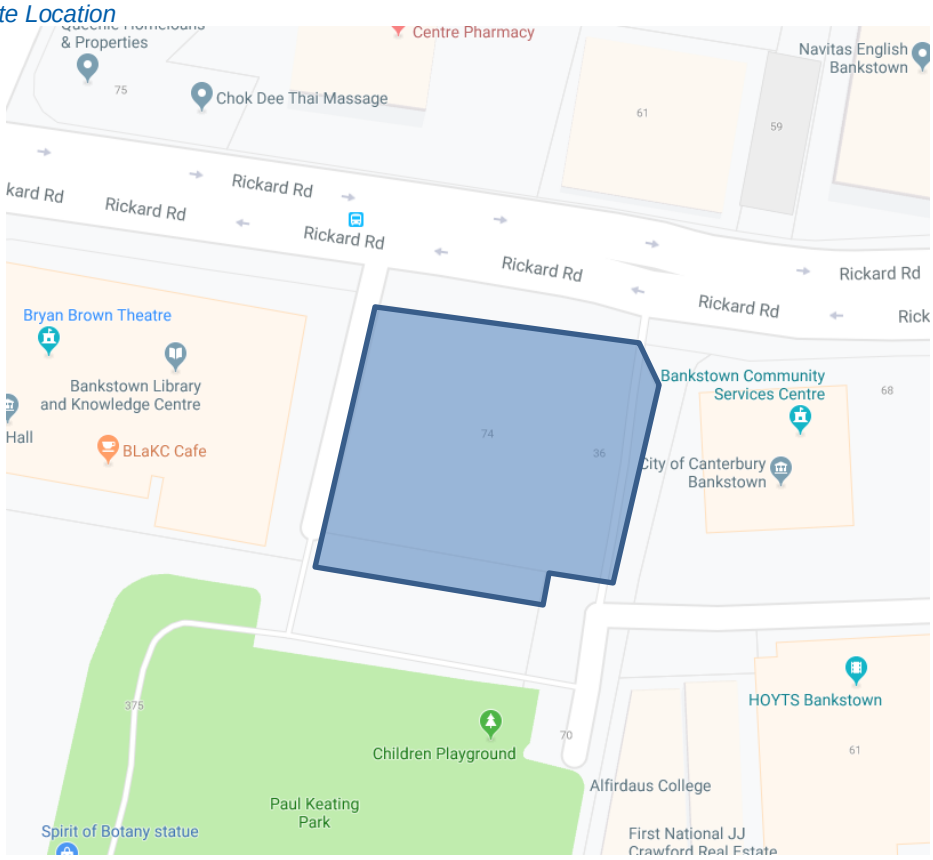
The building will be operated by Western Sydney University. All activities within the building will share bins, waste facilities and collections services. The building will also operate in accordance with Western Sydney University's current environmental management policies, plans and procedures.

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

SITE LOCATION

The site includes 74 Rickard Road (being Lot 5 DP 777510). In addition, public domain works are proposed to Rickard Road, 70 Rickard Road (being part Lot 7 DP 777510) and access is proposed via 80 Rickard Road (being Lot 12 DP 566924).

Figure 1 - Site Location



GREEN STAR

The development has been designed to achieve a 5-star Green Star rating under the Green Star Design and As Built V1.3 tool. Under Credit 8 Operational Waste, the development has chosen option 8B Prescriptive pathways: Facilities.

The waste management facilities within the development have been designed to achieve best practice waste management outcomes during operation. The waste management facilities are in place to collect and separate distinct waste streams and meet best practices access requirement for collection by the relevant waste contractor.

As development falls under the LGA of City of Canterbury Bankstown Council, , and The City of Canterbury Bankstown's *Bankstown Development Control Plan 2015 – Part B13 Waste Management and Minimisation* and *Waste Management Guide for New Developments* documents have been used as the relevant third-party best practice guidelines.

GREEN STAR CREDIT 8 OPERATIONAL WASTE CRITERIA ASSESSMENT

This operational waste management plan outlines the waste management design requirements and facilities within the building. Table 1 provides a review of green star credit 8B (Green Star Design & As Built 1.3) criteria as discussed in this report.

Table 1: Green Start Criteria Assessment

Requirements of Credit 8B Prescriptive Pathways	Operational Waste Management Plan Response
8B.1 Separation of Waste Streams Collection Bins or storage containers shall be provided for building occupants to use to allow for separation of all applicable waste streams. The following waste streams must be provided with separate bins or containers: • General waste going to landfill. • Recycling streams to be collected by the building's waste collection service, including paper and cardboard, glass, and plastic. These streams may be collected in separate bins or in the same bin where commingled recycling is available. Commingled recycling is permissible to the extent that is accepted by the waste collection service. For example, if glass and plastic are collected as commingled recycling, then paper and cardboard are still required to have a separate recycling bin or container. And; • At least one other waste stream This waste stream should further reduce waste being sent to landfill. This may include collecting any of the following waste types: organic, e-waste, batteries, etc. These bin or containers must be clearly marked for each stream to allow for the separation of the applicable waste streams. Bins or containers must be evenly distributed throughout the building.	WASTE MANAGEMENT PROCEDURES pg13- 15 identifies the waste streams and discusses their management to ensure separation. APPENDIX E.1 identifies examples of the intended source separation bins to be implemented within the building. APPENDIX E.2 identifies examples of the intended collection bins to be implemented within the waste room.
8B.2 Separation of Waste Streams A dedicated area for the storage and collection of the applicable waste streams shall be provided. The storage	ESTIMATED WASTE VOLUMES AND PROVISIONS and APPENDIX C.1 Pg10, discusses the calculation for number of bins

area must be sized to accommodate all bins or containers, for all applicable waste streams, for at least one collection cycle. The calculations use to demonstrate that an area provided is adequately sized to handle the recyclable waste streams specified must be based on: • Waste generated by the project; and • Collection frequency for each waste stream. The calculation for waste generation rates must be based on figures outlined within third-party best practice guidelines.	required for waste room based on waste generation and collection frequency. WASTE ROOM AREAS Pg17 and APPENDIX C.1 discusses the waste room configuration and sizing. APPENDIX A.1 identifies waste room location, equipment configuration and the location of the loading area.
8B.3 Access to Waste Storage Area Access to waste collection areas must adhere to best practices, as outlined within third-party best practice guidelines, in order for this requirement to be met.	COLLECTION AREA ACCESS 16Pg, discusses the access to bin holding area for waste collection. APPENDIX A.1 shows the bin moving route between the waste room and loading bay. Please note: the loading bay and waste collection vehicle access has been assessed by the Traffic Consultant. For further information regarding waste collection vehicle access to the site, please refer to the Traffic Report.

CITY OF CANTERBURY BANKSTOWN COUNCIL (BANKSTOWN CITY COUNCIL)

The development is within City of Canterbury Bankstown Council's jurisdiction. City of Canterbury Bankstown Council is the amalgamation of City of Canterbury Council and Bankstown City Council. At time of writing this waste management plan, the waste services and associated policies operate under the original council divisions.

Therefore, the garbage and recycling will be guided by the services and acceptance criteria of the Bankstown Council. All waste facilities and equipment are to be designed and constructed to be in compliance with the Bankstown City Council's *Bankstown Development Control Plan 2015 – Part B13 Waste Management and Minimisation,* and The City of Canterbury Bankstown's *Waste Management Guide for New Developments,* Australian Standards and statutory requirements.

COUNCIL OBJECTIVES

- To ensure development is designed to maximise resource recovery and encourage source separation of waste, reuse and recycling by ensuring development provides adequate and appropriate bin storage and collection facilities.
- To ensure development incorporates well–designed and responsive bin storage and collection facilities that are convenient and accessible to occupants.
- To maximise residential amenity and minimise adverse environmental and health related impacts associated with waste management such as odour from bin storage areas and noise from collection areas.
- To ensure bin storage and collection facilities are designed to integrate with and meet the minimum requirements for Council's domestic waste services.
- To ensure development facilitates all waste streams being handled, stored and collected in a manner to reduce risk to health and safety of all users including maintenance (such as caretakers), collection staff and contractors (and required vehicles and equipment).

COUNCIL REQUIREMENTS

Access – Ensure waste systems are easy to use and collection vehicles are able to access buildings to safely remove waste and recycling;

Safety – Ensure safe practises for storage, handling and collection of waste and recycling;

Pollution Prevention – Prevent stormwater pollution that may occur as a result of poor waste storage and management practises;

Noise Minimisation – Provide acoustic insulation to the waste service facilities or residential units adjacent to or above chutes, waste storage facilities, chute discharge, waste compaction equipment and waste collection vehicle access points;

Ecologically Sustainable Development (ESD) – Promote the principles of ESD through resource recovery and recycling leading to a reduction in the consumption of finite natural resources;

Hygiene – Ensure health and amenity for residents, visitors and workers in the City of Canterbury Bankstown

STAKEHOLDER ROLES AND RESPONSIBILITIES

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

Table 2: Stakeholder Roles and Responsibilities

Roles	Responsibilities
Western Sydney University	• Ensuring that all waste service providers submit monthly reports on all equipment movements and waste quantities/weights; • Organising internal waste audits/visual assessments on a regular basis; and • Manage any non-compliances/complaints reported through waste audits. • Conduct reviews of waste management procedures and waste management related sustainability goals.
Building Manager or Waste Caretaker	• Ensuring effective signage, communication and education is provided to occupants, tenants and cleaners; • Providing staff/contractors with equipment manuals, training, health and safety procedures, risk assessments, and PPE to control hazards associated with all waste management activities; • Ensuring site safety for students, children, visitors, staff and contractors; • Abiding by all relevant OH&S legislation, regulations, and guidelines; • Assessing any manual handling risks and prepare a manual handling control plan for waste and bin transfers; • Preventing storm water pollution by taking necessary precautions (securing bin rooms, preventing overfilling of bins) • Cleaning and transporting of bins as required; • Organising, maintaining and cleaning the general and recycled waste holding area; • Organising both garbage and recycled waste pick-ups as required; • Organising replacement or maintenance requirements for bins; • Organising bulky goods or other speciality collections when required; and • Investigating and ensuring prompt clean-up of illegally dumped waste materials.
Students, Staff and visitors	• Dispose of all garbage and recycling in the allocated MGBs provided; • Ensure adequate separation of garbage and recycling; and • Compliance with the provisions of Council and the WMP.
Cleaners and Waste Maintenance Staff	• Transporting of bins from their operational location to the collection bins as required; • Cleaning around bin storage areas; • Ensuring adequate separation of garbage and recycling; and • Acting in compliance with the Western Sydney University's Environmental Management Procedures regarding waste.
Private Waste Contractor	• Provide a reliable and appropriate waste collection service; • Provide feedback to building managers in regards to contamination of recyclables; and • Work with building managers to customise waste systems where possible.
Gardening/Landscaping Contractor	• Removal of all garden organic waste generated during gardening maintenance activities for recycling at an offsite location.
Building Contractors	• Removing all construction related waste offsite in a manner that meets all authority requirements.

EDUCATION

Western Sydney University and building management is responsible for creating, implementing and managing the waste management education process. Waste education within the building should be consistent with the waste education process implemented across all Western Sydney University campuses.

Information regarding waste and recycling policies should be provided to all staff, students and tenancies.

Educational material encouraging correct separation of garbage and paper recycling items should be provided on each bin. It is recommended that information is provided in multiple languages to support correct practises and minimise the possibility of contamination in the collective waste bins.

Waste management information should be available on the Office of Sustainability web page for staff and students. Waste management responsibilities for contractors should be covered in the compulsory university online induction course.

SIGNAGE

The building manager is responsible for waste room signage including safety signage (*see APPENDIX D.2*).

Appropriate signage must be prominently displayed on doors, walls and above all bins, clearly stating what type of waste or recyclables is to be placed in the bin underneath.

UNIVERSITY BUILDING WASTE MANAGEMENT

Multiple sources for waste and recycling generation rates have been used to calculate a representative estimation of the volumes of waste and recycling likely to be generated by the building in operation. Please refer to 0 for the full list of sources.

Calculations are based on generic figures. The volume of waste and recycling generated may differ according to the building's waste management practices.

ESTIMATED WASTE VOLUMES AND PROVISIONS

The following table shows the estimated volume (L) of garbage and recycling generated by the building in operation. A five-day operating week has been assumed.

It has also been assumed that all operations within the university building will share bins, waste room and collection service.

Table 3: Waste and Recycling Generation Calculations

Building Area	NLA (m^2)	Garbage Generation Rate (L/100m^2/day)	Generated Garbage (L/week)	Recycling Generation Rate (L/100m^2/day)	Generated Recycling (L/week)
Food and Beverage Retail Tenancies	300	175	2625	690	10350
Ground Level Open Space (University Street)	1331	5	332.75	10	665.5
University operations	19149	25	23936.25	3	2872.35
Conference Facilities	986	70	3451	225	11092.5
Offices for University/ Education Use	4590	16	3672	12	2754
TOTAL	**26356**		**34017**		**27734.35**

BIN SUMMARY

The recommended bins for the site are as follows:

General Waste: 8 x 1100L MGBs collected **daily (5 times weekly)**
Co-Mingled Recycling: 3x 1100L MGBs collected **three times weekly**
Carboard Recycling: 3x 1100L MGBs collected **three times weekly**
Paper Recycling: 3x 1100L MGBs collected **three times weekly**
Imaging Consumables: 1x Imaging consumables collection box collected **as required**

Western Sydney University's *Environmental Management Procedures* has been used to form the basis of the bins required for the building in operation.

It has been assumed the recycling generation rates applied to this development represents all recycling streams generated by the site. For the purpose of the bin calculations, it is assumed that a third of the recycling will be co-mingled, a third will be paper recycling and a third will be cardboard.

It is the responsibility of the building manager to monitor the number of bins required for the building. Waste volumes may change according to the building management, building users' activities and attitudes to waste disposal and recycling. The bin numbers, sizes and collection frequencies may need to be altered to suit the building operation. Seasonal periods that may alter waste and recycling generation i.e. public and university holidays should also be considered.

WASTE MANAGEMENT - BUILDING FACILITIES

All operations within the site will share bins, waste room and collection services. The retail and office tenancies will also implement the waste management practices in line with the operations of Western Sydney University. All personnel within the building must adhere to the waste management procedures outlined by Western Sydney University.

The waste room for the building is located on Basement level 1. The waste room will contain the waste, cardboard recycling, paper recycling and co-mingled recycling bins for collection. The building management, waste collection staff and cleaners will be the only personnel with access to the waste room. All transportation of waste and recycling must be co-ordinated with building management or cleaners.

Red lidded waste bins and yellow lidded co-mingled recycling bins will be placed throughout each space in the building for the collection of waste and co-mingle recycling generated in each space. Blue paper recycling bins will be placed within each office, workspace and study space, for the collection of paper recyclables. The students, staff and visitors will be responsible for placing their waste and recycling into the correct receptacle. The fullness of the source separation bins will be monitored by building management and cleaners.

At the end of the day, or as required, the cleaners contracted by the university will circulate around each space in the building and perform cleaning tasks. At this time, the cleaners will transport the waste and recycling streams to the waste room and place the waste and recycling streams into the appropriate collection bins.

CIRCULATION AREAS AND PUBLIC SPACES

It is recommended that high traffic areas such as the ‘university street’ on ground level, collaboration areas and circulation areas are supplied with suitably branded waste and recycling bins, where considered appropriate. Building management and cleaners will monitor use and ensure bins are exchanged and cleaned. Garbage and recycling receptacles should be placed in convenient location to encourage source separation and minimise littering.

STAFF FACILITIES AND TEA ROOMS

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

WASHROOMS

Sanitary bins for female restroom facilities must also be arranged with an appropriate contractor.

CONFERENCE FACILITIES

Events and functions held in the conference facilities are likely to cause a spike in waste and recycling generation. On days where there are events in the Conference Facilities, additional waste and recycling bins will be placed around the area.

Function staff will be responsible for monitoring bins through out the duration of the function. At the end of the day, or when the event has been completed the cleaners will empty the bins into the collection bins in the waste room.

UNIVERSITY/EDUCATION OFFICE SPACES

Receptacles for waste and recycling will be placed centrally throughout each space.

Office staff will be provided with a 'mini' desk bin for general waste. It is the responsibility of the staff to empty these bins each day into the larger general waste collection bins provided in the kitchens and common rooms.

FOOD AND BEVERAGE RETAIL WASTE MANAGEMENT

The retail tenants will be responsible for their own storage of garbage and recycling back of house (BOH) during daily operations. On completion of each trading day or as required, nominated retail staff or cleaners will transport their garbage and recycling to the waste room and place garbage and recycling into the appropriate collection bins.

Food handling for food cooked or prepared, served and consumed on site will produce a typical waste composition of food scraps from plates, packaging waste and some plastics.

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

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

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

WASTE OILS

Consideration should be given to the use of cooking oil collection systems. A single service provider may be used to reduce the amount of commercial traffic into the loading bay or around the precinct area. This should be measured against bulk delivery of oils where the same vehicle is used to remove containers of waste cooking oils (see APPENDIX E.1 for Typical Cooking Oil Collection System).

WASTE MANAGEMENT PROCEDURES

The following sections outline the waste management procedures for each waste stream likely to be generated in the building during operation. The sections outlined below are consistent with the waste management procedures outline in Western Sydney University's *Environmental Management Procedures* document.

Western Sydney University's *Environmental Management Procedures* applies to all university staff students and contractors and covers all waste streams generated at all university sites.

In the instance that the university's waste management procedures change, the operational waste management for the building should be reviewed and adjusted accordingly.

GENERAL WASTE

General waste refers to all waste that is not suitable for recycling and is to be disposed of in landfill.

Dedicated red labelled general waste bins will be provided in each space throughout the building.

All items not suitable for recycling should be placed in the red bin. This includes:

- Food scraps and food waste
- Soiled or wet napkins
- Soiled paper towel
- Pencil sharpening
- Metal binders and fasteners
- Photocopy paper packaging
- Plastic Cling Wrap
- Sandwich and plastic bags
- Brocken crockery
- Takeaway coffee cups
- Lolly/chip packets

RECYCLING – OFFICE PAPER AND PAPER PRODUCTS

Dedicated paper recycling bins for recyclable paper products will be provided at all desks and in photocopier rooms. The cleaners will be responsible for emptying the paper recycling bins from throughout the building into the blue paper recycling bins in the waste room.

Recyclable paper products include:

- Photocopy paper
- Printing paper
- Note and writing paper
- Manila folders
- Envelopes
- Newspapers and magazines
- Glossy brochures
- Textbooks

All confidential or sensitive material is to be shredded or placed in a security bin to be recycled. Secure paper bins will be brought down to the waste room by cleaners once weekly for collection by an appropriate contractor. After servicing has been completed, the cleaners will be responsible for returning the bins to their operational location.

RECYCLING – CARDBOARD

Cardboard bins for recycling will be provided in the waste room.

Cardboard should be flattened and left next to recycling bins for removal by contract cleaning staff. The cleaners will transport the cardboard to the bins in the waste room.

Polystyrene and plastic wrapping is to be removed from cardboard boxes prior to flattening. These should be bagged and left next to general waste collection bins.

Staff should liaise with cleaners and building management for assistance with disposing of large cardboard.

RECYCLING – CO-MINGLED (CANS, PLASTIC CONTAINERS AND GLASS CONTAINERS)

Dedicated co-mingled recycling bins will be provided in each space throughout the building. It is recommended that these bins are placed adjacent to waste bins to encourage correct source separation.

Items that can be place in the co-mingled recycling bins include:

- Glass bottles and jars
- Aluminium cans
- Steel tins
- Milk cartons and bottles
- Plastic bottles and recyclable plastics (labelled 1 to 7)
- Juice boxes
- Paper packaging and bags
- Plastic yogurt containers

Cleaning staff are responsible for ensuring co-mingle recycle is kept separated from general waste and is placed in the correct bin in the waste room

RECYCLING – IMAGING CONSUMABLES

Imaging consumables refers to non-paper recyclable items generated from paper and photo printing. This includes inkjet cartridges, laser toner cartridges, drum units and copier bottles. Imaging consumables must not be placed in standard garbage or recycling, as imaging consumables can potentially contaminate soil and surrounding water bodies if not disposed of correctly.

The building management will utilise the cartridge collection program run by Close the Loop.

Collection containers will be placed next to any printing equipment or printing facilities, for use by staff and students.

As required, cleaners or other nominated staff will empty the collection containers into the Imaging Consumables Collection Box located in the waste room.

Building management is responsible for monitoring the fullness of these collection box and contacting Close the Loop to collect imaging consumables for recycling.

BULKY WASTE (FURNITURE)

Bulky waste management within the building should be conducted in conjunction with Western Sydney University's furniture disposal procedures.

Western Sydney University's Office of Facilities Management is responsible for managing bulky waste and should be contacted if there is any surplus furniture. Building management or university staff should contact the Office of Facilities Management when there is furniture that is broken or no longer required.

Reusable furniture will be labelled and kept in storage or donated to a charitable organisation. Non – reusable furniture will be removed from the development by the Office of Facilities Management and sent to the University's recycling contractor for resource recovery.

E-WASTE

E-waste (electronic waste) refers to any equipment containing printed circuit boards. E-Waste must not be placed in standard garbage or recycling. E-Waste can potentially contaminate soil and surrounding water bodies if not disposed of correctly.

Western Sydney University's's IT Procurement is responsible for managing e-waste and arranging e-waste disposal with an e-waste recycling facility. Building management and staff can contact IT Procurement for assistance with e-waste disposal.

GREEN WASTE

Green waste generated from landscaped areas of the building will be removed by the designated maintenance contractor during maintenance of landscaped areas.

MANAGEMENT OF SPECIALITY WASTE STREAMS

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

Specialised waste streams include:

- Chemical Waste
- Liquid wastes
- Lightbulbs
- Batteries

MOVEMENT AND TRANSPORTATION OF BINS

The contracted cleaners will be responsible for transporting waste and recycling bins from their designated operational locations throughout the building to the collection bins located in the waste room on Basement Level 1. The cleaners are also responsible for returning the empty bins to resume operational use.

The building manager is responsible for any movement of the collection bins located in the waste room.

Transfer of waste and all bin movements should minimise manual handling. The building management must assess manual handling risks and provide any relevant documentation to building management. If required the building manager should contact a bin-tug, trailer or tractor consultant to provide equipment recommendations.

COLLECTION OF WASTE

A private contractor will be engaged to collect the general waste and recycling streams to an agreed schedule.

It is assumed that all operations within the building will share bins and waste room, therefore they will also share a collection service.

The waste collection vehicle will enter the site from the access road off of Rickard St and park in the designated loading area on basement level 1. The waste collection staff will service the bins directly from the waste room.

COLLECTION AREA ACCESS

It is EFRS'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 the collection vehicle (and other trucks if required) can enter and exit the building in a forward direction.

It is also, EFRS's understanding that the access the waste collection area adheres to best practices as outlined within Canterbury Bankstown Council, *Bankstown Development Control Plan 2015 – Part B13 Waste Management and Minimisation,* and The City of Canterbury Bankstown's *Waste Management Guide for New Developments*. For more information, please refer to the Traffic Report.

WASTE ROOM AREAS

It is recommended that the bins in the waste room are arranged so that all bins can be accessed without moving any other bins. This is to ensure the safety of staff or cleaners entering this room to dispose of waste and recycling.

Please refer to APPENDIX C.1 for the calculations for the minimum waste rooms area. Please note, calculations are an estimate only. The actual GFA of the waste room is determined the configuration of the room and equipment.

The areas allocated for waste storage and collection areas are detailed in Table 4 below. EFRS has review the waste room and equipment configuration shown in drawing Drawing No. A30-02, Rev 38 June2020 (APPENDIX A.1) and can confirm that the waste room is adequality sized for purpose.

Table 4: Waste Room Areas

Level	Waste Room Type	Equipment	Estimated Area (m^2)
B1	Waste Room (bin holding area & collection area)	8 x 1100L MGBs (waste) 3x 1100L MGBs (paper recycling) 3x 1100L MGBs (cardboard recycling) 3x 1100L MGBs (co-mingled recycling) 1x imaging consumables collection box (imaging consumables recycling)	*Minimum* 46.63

WASTE ROOM - CONSTRUCTION RECOMMENDATIONS

The waste room will be required to contain the following facilities to minimise odours, deter vermin, protect surrounding areas, and make it a user-friendly and safe area:

- Waste room floor to be sealed with a two-pack epoxy;
- Waste room walls and floor surface is flat and even;
- All corners coved and sealed 100mm up, this is to eliminate build-up of dirt;
- A minimum of a cold-water facility with hose cock must be provided for washing the bins;
- Any wastewater discharge from bin washing must be drained to sewer in accordance with the relevant water board. (Sydney water);
- Tap height of 1.6m;
- Storm water access preventatives (grate);
- All walls painted with light colour and washable paint;
- Equipment electric outlets to be installed 1700mm above floor levels;
- The room must be mechanically ventilated;
- Light switch installed at height of 1.6m;
- Waste rooms must be well lit (sensor lighting recommended);
- Optional automatic odour and pest control system installed to eliminate all pest types and assist with odour reduction – this process generally takes place at building handover – building management make the decision to install;
- All personnel doors are hinged, lockable and self-closing;
- Waste collection area must hold all bins – bin movements should be with ease of access;
- Conform to the building code of Australia, Australian standards and local laws; and
- Childproofing and public/operator safety shall be assessed and ensured

VENTILATION

Waste and recycling rooms must have their own exhaust ventilation system either Mechanically exhausting at a rate of 5L/m² floor area, with a minimum rate of 100L/s minimum. Mechanical exhaust systems shall comply with AS1668 and not cause any inconvenience, noise or odour problem. Or, Naturally with a permanent, unobstructed, and opening direct to the external air, not less than one-twentieth (1/20) of the floor area.

USEFUL CONTACTS

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

CITY OF CANTERBURY BANKSTOWN COUNCIL CUSTOMER SERVICE
Phone: (02) 9707 9000 Email: council@cbcity.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

RUD (Public Place Bins, Recycling Bins)
Phone: 07 3712 8000 Email: Info@rud.com.au

CAPITAL CITY WASTE SERVICES (Private Waste Services Provider)
Phone: 02 9399 9999

REMONDIS (Private Waste Services Provider)
Phone: 13 73 73

SITA ENVIRONMENTAL (Private Waste Services Provider)
Phone: 13 13 35

NATIONAL ASSOCIATION OF CHARITABLE RECYCLING ORGANISATIONS INC. (NACRO)
Phone: 03 9429 9884 Email: information@nacro.org.au

PURIFYING SOLUTIONS (Odour Control)
Phone: 1300 636 877 Email: sales@purifyingsolutions.com.au

MOVEXX (Bin Movers)
Phone: 1300 763 444

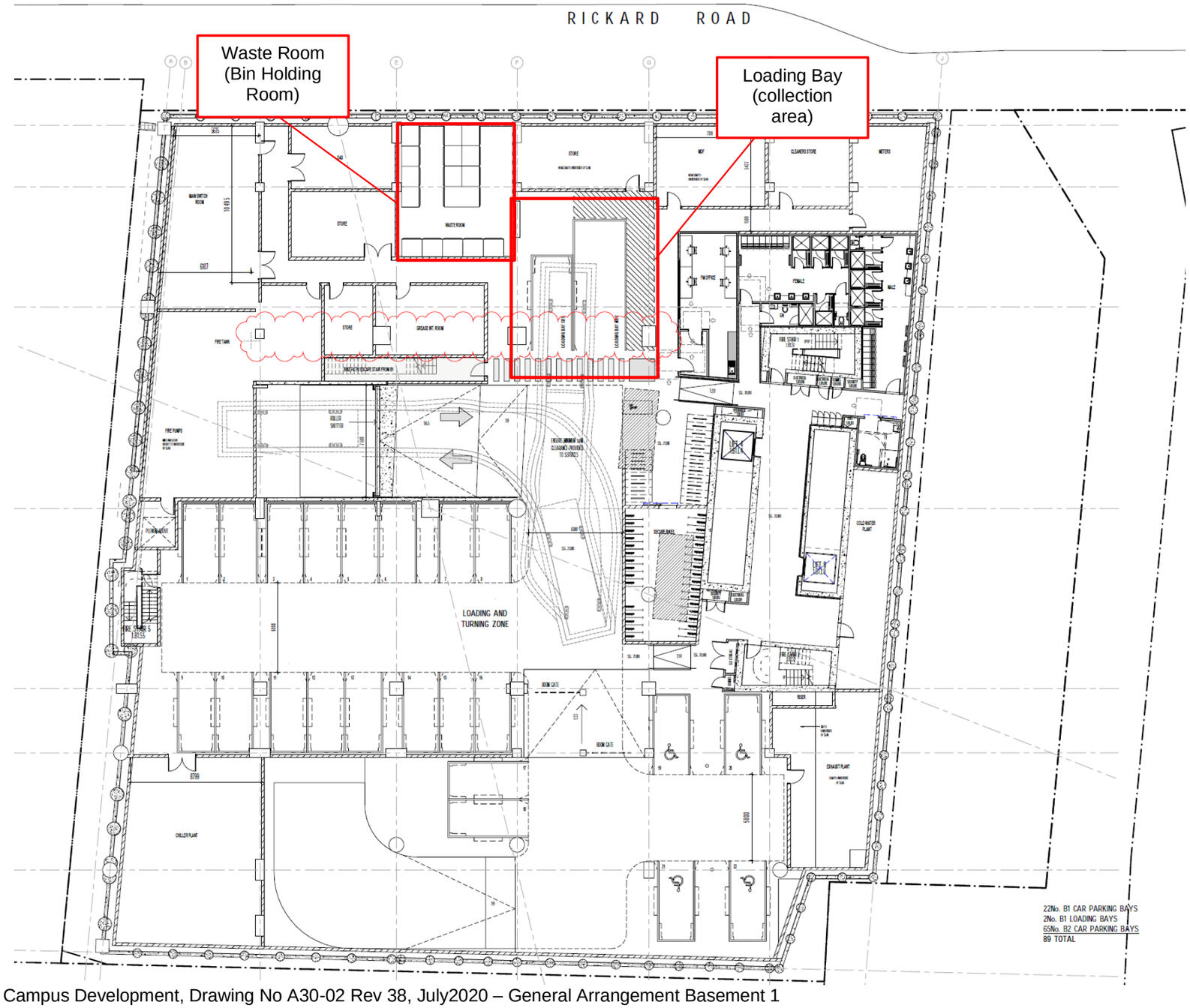
AUSCOL (Recyling Oils & Animal Fats)
Phone: 1800 629 476

Elephants Foot Recycling Solutions (Chutes, Compactors and eDiverter Systems)
44 – 46 Gibson Avenue
Padstow NSW 2211
Free call: 1800 025 073 Email: info@elephantsfoot.com.au

APPENDICES

APPENDIX A ARCHITECTURAL DRAWING EXCERPTS

APPENDIX A.1 BASEMENT LEVEL – WASTE FACILITIES



Source: Lyons, Bankstown City Campus Development, Drawing No A30-02 Rev 38, July2020 – General Arrangement Basement 1

APPENDIX B WASTE GENERATION SOURCES

The following table outlines the source of each waste and recycling generation rate applied the buildings areas to estimate the likely volumes of waste and recycling to be produced by there areas in operation.

Building Area	Name of waste & recycling generation rate	Source Document
Food and Beverage Retail Tenancies	Takeaway	Canterbury Bankstown Council, Bankstown Development Control Plan 2015*, Canterbury Bankstown Waste Management Guide For New Developments,* Sydney, Australia
Ground Level Circulation Space (University Street)	Cultural and Recreational services	State of NSW and the NSW Environmental Protection Authority (2019) *Better Practice Guide for Resource Recovery in Residential Developments*, Sydney, Australia
University Operations	Tertiary Education – Average	The NSW Environmental Protection Authority (2012) *Better Practice Guide for Waste Management and Recycling in Commercial and Industrial Facilities*, Sydney, Australia
Conference Facilities	Convention/conference/event centres (no accommodation)	City of Sydney (2018) *Guidelines for Waste Management in New Developments*, Sydney Australia
University/ Education Use	Offices	Canterbury Bankstown Council, Bankstown Development Control Plan 2015*, Canterbury Bankstown Waste Management Guide for New Developments,* Sydney, Australia

APPENDIX C ADDITIONAL CALCULATIONS

APPENDIX C.1 WASTE ROOM SPATIAL REQUIREMENT CALCULATIONS

Calculation Formula
GFA Required = Number of bins x equipment footprint x 1.6 for manoeuvring space

Equipment Footprint Ledged

Equipment	Dimensions (mm)	Equipment Footprint (m^2)
1100L MGBs	D 1245, W 1370, H 1470	1.70
Imaging Consumables Collection Box	D 530, W 450, H 870	0.24

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

Table 5: Waste Room Size Calculations

Waste Room Type	Equipment	Calculation	Minimum GFA required
Waste room	8 x 1100L MGBs (waste) 3x 1100L MGBs (paper recycling) 3x 1100L MGBs (cardboard recycling) 3x 1100L MGBs (co-mingled recycling) 1x Imaging Consumables Collection Box (imaging consumables recycling)	1.6 x((17x 1.70)+(1 x 0.24))	46.63m^2

APPENDIX D PRIMARY WASTE MANAGEMENT PROVISIONS

APPENDIX D.1 TYPICAL BIN SPECIFICATIONS

The most common bin sizes are provided below, although not all sizes are shown. These dimensions are a guide only and differ slightly between manufacturers.

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

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

Average dimension ranges for bulk bins over 1700L in capacity

Bulk bins greater than 1700L

Bin capacity)	1m^3	1.5m^3	2m^3	3m^3	4.5m^3	6m^3
Height (mm)	1000	910–1250	865–1000	1020–1580	1440–2014	1650
Depth (mm)	1000	905–1000	1300–1400	1470–1700	1605–1900	1900
Width (mm)	1400	1805–2010	1830–2000	1400–2010	1800–2010	2000
Approximate footprint (m^2)	1.4	1.63–2.01	2.4–2.8	2.1–3.4	2.9–3.8	3.8

Sources include TORO Waste Equipment, SUEZ, Signal Waste, Perth Waste and ACT Industrial

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

APPENDIX D.2 SIGNAGE FOR WASTE & RECYCLING BINS

Waste Signs

Signs for garbage, recycling and organics bins should comply with the standard signs promoted by the EPA (Environmental Protection Authority).

Examples of waste wall posters (EPA supplied)

Examples of bin lid stickers (EPA supplied)

Problem Waste Signs

The EPA has also produced a range of images and signs that can be used for problem wastes, such as fluoro globes and tubes, household and car batteries, e-waste and smoke detectors. To access these resources, contact the NSW EPA. Some examples are shown below.

Safety Signs

The use of safety signs for waste resource recovery rooms must comply with *AS1319 Safety signs for occupational environments*. Safety signs must be used to regulate and control safety related to behaviour, warn of hazards and provide emergency information, including fire protection information. Suitable signs should be decided for each development as required.

Example safety signs

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

APPENDIX D.3 TYPICAL COLLECTION VEHICLE INFORMATION

Australian Standards for turning circles for medium and heavy rigid class vehicles

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

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

APPENDIX ESECONDARY WASTE MANAGEMENT PROVISIONS

APPENDIX E.1 EXAMPLE SOURCE SEPARATION BINS

Example Paper and cardboard recycling (blue), Co-mingled recycling (yellow), Landfill recycling (red)

Source: *Source Separation Systems,* https://www.sourceseparationsystems.com.au/

Example Imaging Consumables Collection Box

Source: Plant Ark https://recyclingnearyou.com.au/cartridges4planetark/workplace

APPENDIX E.2 EXAMPLE COLLECTION BINS

APPENDIX E.3 COOKING OIL CONTAINERS

AUSCOL
A GrainCorp business

Home | About | Services | Our Parent Company | Contact

The RIGHT WAY for Cooking Oil Collection Systems

Drums 205L

Pour in Bulk Tank

View Brochure

Oil Kaddy System

View Brochure

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

Eco Systems

Direct-Connect to Fryer