Woolworths Kurri Kurri

Operational Waste Management Plan

January 2023

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1 Introduction

This Operational Waste Management Plan (OWMP) has been prepared by Waste Audit and Consultancy Services ('Waste Audit') for JNA Advisory Pty Ltd as project manager for the proposed redevelopment at Woolworths 174-178 Lang Street, Kurri Kurri NSW.

The OWMP provides descriptions of the following:

- Expected general waste, recycling, organic and clinical waste volumes, based on Cessnock Council's standard generation rates and operational data from other developments; future usage and floor area, and an expected commercial tenancy occupancy rate of 100%.
- Bin, equipment, and storage area sizing and construction requirements
- Collection vehicle specifications and servicing frequencies
- On-site handling and management practices
- Contractor collection and loading processes
- Ongoing management, monitoring, and reporting systems

2 Project Overview

The proposed redevelopment will involve the development of a Woolworths supermarket; demolition of existing structures and site works; part road closure, relocation and extension of existing laneway road; construction of two new commercial buildings with two specialty shops and new Woolworths supermarket store including car parking, "Direct to Boot" bays, signage, loading facilities and landscaping. The Woolworths Kurri Kurri is proposed to consist of approximately 4,621 sqm of retail Gross Lettable Area (GLAR) (3,399 sqm belonging to Woolworths) and 179 car spaces (inclusive of under-croft and on-grade car parking spaces).

The development's location off Lang Street Kurri Kurri, in NSW, in the Maitland City LGA, is shown below:

Figure 1: Site Location

3 Reference Documents & Standards

The following documents have been consulted in preparing this OWMP:

- Cessnock Council *Development Control Plan 2010 (DCP) Part C: General Guidelines Chapter 5: Waste Management and Minimisation*
- Cessnock Council *Development Control Plan 2010 (DCP) Part A: Introduction*
- City of Sydney *Guidelines for Waste Minimisation in New Developments 2018*

4 Operational Waste & Recycling Streams

4.1 Resource Streams

Each of these streams will require different operational management practices depending on the type of tenancy. Recommended systems are detailed in Section 5 of this report.

The following generation rates are taken from the Cessnock Council's *Chapter 5: Waste Management and Minimisation* and have been used to calculate the volumes of materials that will be produced from the development's operations:

Table 1: Materials Generation Factors

Material Stream	Tenancy Type	Generation Factor/Area Requirement
General Waste	Supermarkets	240 litres/100 m^2/day
	Retail General	50 litres/100 m^2/day
Mixed Recycling	Supermarkets	240 litres/100 m^2/day
	Retail General	50 litres/100 m^2/day
Food Organics	Supermarkets	25 litres/100 m^2/day
	Retail General	5 litres/100 m^2/day
Bulky Waste	Commercial/ Retail	4 m^2 for developments between 100 m^2 and 2,000 m^2 An additional 4m2 is required for each retail, accommodation or entertainment development over 2,000 m2.
Liquid Waste	Supermarket/ Commercial	The provider will service the Grease Traps at an interval determined by the local council or water authority and ensure that all schedules are complete.

Recycling LDPE

Plastic recyclables are bagged separately and either baled or compacted. The plastic is separated at the services providers Material Recovery facility and is recycled.

Organics

Organics to be re-used in one of the following ways:

- Provided to local farmers as stock feed
- Re-used as part of Foodbank and Food Harvest programs
- Diverted to Alternate Waste Treatment (AWT) facilities for use in clean power generation &/or fertiliser production.

Fat, Oil & Bone wastage

Fat and bone off cuts generated from the delicatessen / butcher areas in store is separated and collected by one of a number of companies. The material is used for a number of purposes including the production of tallow.

Fat and oil generated in the process of cooking chickens in store is stored and collected by a number of companies who recycle the oil for a range of uses.

The development will produce the following solid waste and recycling streams:

Table 2: Material Streams

Tenancy	Material Streams	Definition/Examples
Supermarkets	General Waste	Material that is either not recyclable or that should be disposed of in general waste bins
	Recycling	Clean cardboard, paper, glass bottles and containers, metal containers and foil, plastic bottles and containers
	Organics	Biodegradable material from both plant and animal
Specialty Shops/ Retail	General Waste	Material that is not recyclable or that should be disposed of in general waste bins
	Recycling	Clean cardboard, paper, glass bottles and containers, metal containers and foil, plastic bottles and containers
	Organics	Biodegradable material from both plant and animal

Each of the above streams will require different operational management practices depending on the type of tenancy. These are summarised in Section 5.

In addition, other recycling systems such as liquid waste; e-waste; batteries; mobile phones etc. may be required on an ad-hoc basis. Systems for these streams will be available upon request from site management.

4.2 Volumes, Bins & Collection Frequencies

Tables 3 through 7 show combined bin numbers, sizes, and collection frequencies, based on 7 days per week operation for all tenancies. Bin sizes are in litres.

Woolworths will use both compactor and 3000 & 1100 litre bins in an appropriate mix for paper/ cardboard, organics, comingled recycling and non-recyclable general waste.

Comingled recycling generated by the Woolworths further breaks down into predominantly Paper and Cardboard (PC). Approximately ¾ of all Comingled waste is recyclable PC, leaving recyclable bottles, tins and plastics in the remaining ¼.

Specialty retailers will use 1100 litre bins in an appropriate mix for paper/ cardboard, comingled recycling, organics and non-recyclable general waste.

All 1100 & 3000 litre bins will have castors to allow for movement over short distances, out for collection by the waste vehicle.

Tenancy areas have been calculated using the ‘actively’ waste generating GFA, including storage, in line with the breakdown for Woolworths and the two specialty retailers, on ground floor and lower ground.

Table 3: Weekly Materials Generation

Tenancy	GFA m^2	Litres/100m^2/Day[1]			Litres/Week Total		
		General	Recycling	Organic	General	Recycling	Organic
Woolworths	2,590	240	240	25	43,515	43,515	4,533
General Retail (>100 m^2)	650	50	50	5	2,275	2,275	228
Total	3,240				45,790	45,790	4,761

1 Standard waste generation rates as detailed in Part C: General Guidelines Chapter 5: Waste Management and Minimisation

Table 4: Woolworths Bin Numbers & Collection Frequencies

WOOLWORTHS	Litres/Week	Bin Size	No.	Collections/ Week	Capacity/ Week	Bin Footprint m^2
General Waste	43,515	3000	5	3	45,000	13.6
General Recycling	8,000	3000	1	3	9,000	2.7
Paper & Cardboard[3]	35,515	23m3 Compactor	1	Call in schedule	46,000	*Compactor
Organics	4,533	1100	3	2	6,600	5.1
Total	91,563		10	9	106,600	29.6
Storage Area – Dock Bin Area (Waste, organics & recycling)						> 40.0 m^2

3 Compactor has a standard compaction rate of approximately 4:1

Table 5: Specialty Shops Bin Numbers & Collection Frequencies

SPECIALTY SHOPS	Litres/Week	Bin Size	No.	Collections/ Week	Capacity/ Week	Bin Footprint m^2
General Waste	2,275	1100	1	3	3,300	1.7
General Recycling	2,275	1100	1	3	3,300	1.7
Organics	228	240	1	2	480	0.43
Total	4,778		3	8	7,080	3.83
Storage Area – Dock Bin Area (Waste, organics & recycling)						> 40.0 m^2

Appendix D provides details of all bins proposed to be used for storage of the development's operational general waste and recycling.

4.3 Storage Areas: General Requirements

Based on the predicted volumes and bin sizes, and proposed collection frequencies, the development's storage area sizing will be adequate for ongoing operational waste management requirements. The respective storage area will have the following features:

- Next to the building's loading bay, for easy access by site users and waste contractors
- The waste area should provide separate containers for the separation of general waste, recyclables and organics.
- Clear, colour-coded signage for the 3 different waste streams
- Well-lit with washable, non-permeable surfaces
- Suitably drained with a bin washing area
- The waste and recycling storage area is to be provided with an adequate supply of water for cleaning purposes with a hose cock
- The design shall, as much as possible restrict the entry of trespassers, vermin or other animals into the area.
- Waste and recycling areas are to be provided with artificial light controlled by switches located both outside and inside the storage area.
- Any compactors or mechanical devices, if permitted for the mechanical handling and storage of waste and recycling, are to be fitted with safety operating and cut-off systems.
- Any facet of the waste and recycling management system that is visible from outside the building is to be in keeping with the dominant design of the remainder of the development.

4.4 Bin Transfer & Collection

General retail tenants and cleaning staff will be responsible for bringing general waste, recycling material and clinical waste to the Lower Ground waste storage area via internal pathways each evening. On designated collection days (to be established with Either the building's *private waste collector* or *council requested waste service*), cleaning staff will be responsible for ensuring all bins are correctly presented for collection and that recycling bins are free of contaminants.

Woolworths: Paper and cardboard will be manually transported to the compactor, directly from the service lift, which access the loading area on Upper Ground Floor, as shown in Appendix A. General waste, comingled recycling and organics will likewise be manually transported to the loading dock 3000/ 1100/ 240L litre bins.

Woolworths Direct to Boot will transport their general waste and recycling manually via the internal passageway as the loading area is directly next door.

All bin movements will be performed outside standard building 'operational hours' to avoid internal congestion as much as is practicably possible. This travel path is fully internal and free of any steps, gradients, or level changes.

Collection vehicles for general waste, recycling and organics will access the loading bay as shown in Appendix B. All collections will be performed outside standard building operational hours to avoid congestion in this area.

- The option remains, for smaller retailers to choose either a private waste collector or apply to council and request a new waste service.

4.5 Collection Vehicle Details

Table 8 shows a range of standard vehicle sizes.

Table 8: Industry Standard Vehicle Sizes

Trucks	Height	Width	Length
Small Rigid Vehicle (SRV)	3.5m	2.3m	6.4m
Medium Rigid Vehicle (MRV)	4.5m	2.5m	8.8m
Heavy Rigid Vehicle (HRV)	4.5m	2.5m	9.5m
Hook-Lift Vehicle (HLV)	5.0m	2.5m	10.8m

The rear-lift MRV and front-lift HRV collection vehicles shown in Appendix D have the following key specifications:

- 12 m^3 to 18 m^3 capacity chamber
- 240l, 660l to 1100l and the 3.0 m^3 lifting capacity
- Ability to lift all bin sizes up to 3.0 m^3
- 4.5 m operating height

The maximum size of the largest size bin will be 3.0 m^3, well within the capacity of this vehicle. Vehicles will therefore be sufficient for the development's ongoing general waste and recycling collections.

The Hook-lift collection vehicle shown in Appendix D has the following key specifications:

- 4 m^3 to 40 m^3 container sizes
- 23 m^3 to 31 m^3 the most common sizes
- Ability to lift all stationary compactors
- 5.0 m operating height

The maximum size of the largest size compactor will be 23 m^3, well within the capacity of this vehicle.

The compactor will compact, store and transport predominantly cardboard from Woolworths.

A Hook-lift Truck, Front HRV and Rear MRV will therefore be sufficient for the development's ongoing general waste and recycling collections.

5 Management Systems

Table 9 shows proposed management practices for the development's operational general waste and recycling streams. All tenancies will be equipped with internal bins clearly differentiated through appropriate signage and colour coding to reflect the materials contained, with each stream located in a designated storage area, with large and clear signage to assist in easy identification by users.

Table 9: Management, Storage, & Collection Systems

Tenancy	Material Streams	Management, Storage, & Collection Systems
Woolworths	General Waste, Mixed Recycling and Organics	Supermarket and retail tenants and/or cleaning staff will be responsible for disposing of all material from their tenancies in the correct general waste or recycling bins in the bin storage area. The building's private waste contractor will collect these materials on a schedule to be set once the building is operational. Collections will take place outside standard business hours to avoid vehicle congestion in the loading dock area. The development's cleaning staff will maintain the organisation and cleanliness of the bin storage room and the collection area.
Specialty/ Retail	General Waste, Mixed Recycling and Organics	Retail tenants and/or cleaning staff will be responsible for disposing of all material from their tenancies in the correct general waste or recycling bins in the loading dock bin storage area. Either the building's *private waste collector* or *council requested waste service* will collect these materials on a schedule to be set once the building is operational. Collections will take place outside standard business hours, according with council guidelines, to avoid vehicle congestion in the loading dock area. The development's cleaning staff will maintain the organisation and cleanliness of the bin storage room and the collection area.

6 Waste Contractor Standards

To achieve and maintain best practice, the site's private waste contractor will be required to comply with the following service requirements:

- Reliable and efficient servicing, and meeting all agreed schedules
- Suitably sized collection vehicles to be able to access the building's loading dock
- Maintaining accurate tracking systems for all materials collected
- Working with the site to achieve continuous improvements in recovery rates
- Providing detailed monthly and annual reports on diversion and financial outcomes
- Maintaining current details of all processing facilities used

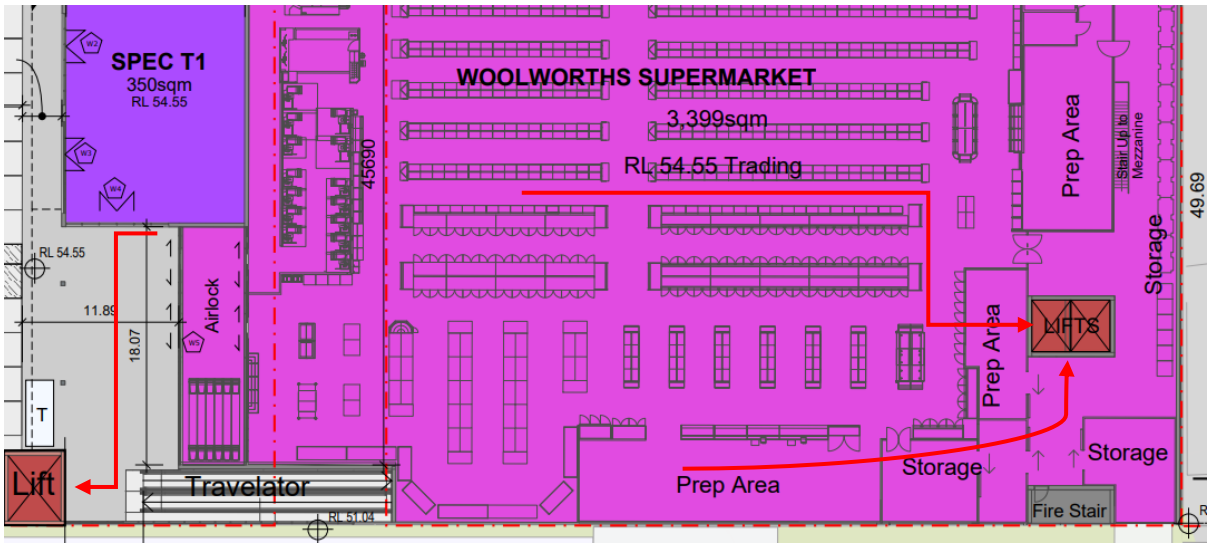
7 Tenant & Stakeholder Education

For the new systems to be successful, an education program will be required for the development's tenants. All occupants will receive instructions on correct waste disposal procedures on moving into the building, both tenants and cleaning staff will be trained in maintaining correct segregation of materials.

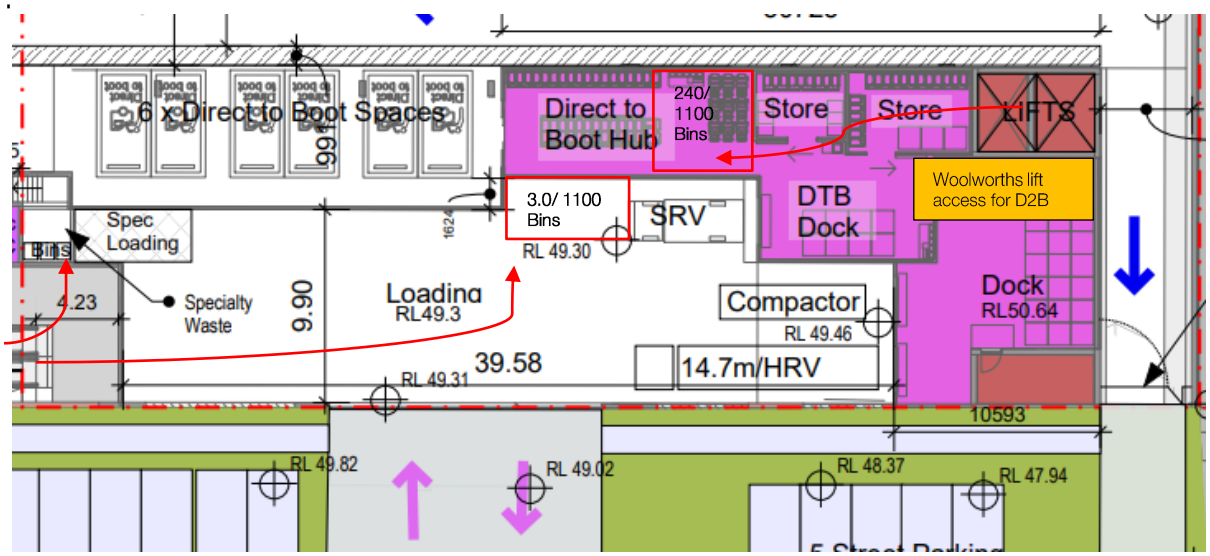
Appendix A: General Waste, Recycling Storage and Organics Movement

The drawing below shows the bin storage area and bin movement pathways from the Ground Level tenancies to the storage area.

Woolworths waste movement pathways



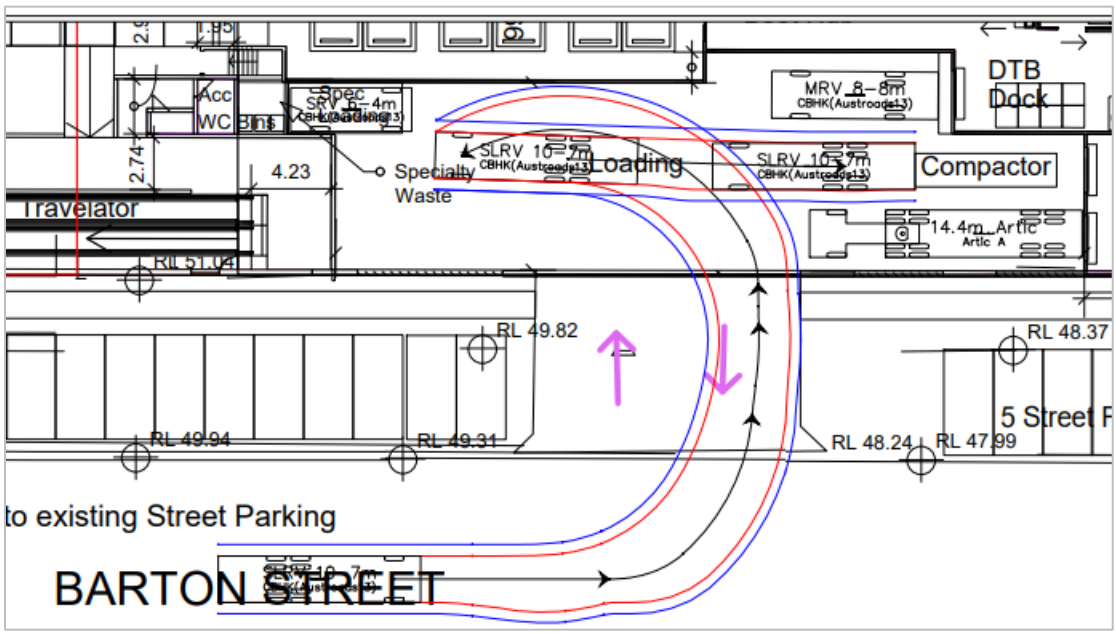
Lower Carparking Level: waste movement pathways for both Woolworths and Specialty retailers. Cleaners and retail staff will be responsible for moving the waste to the bin storage area.



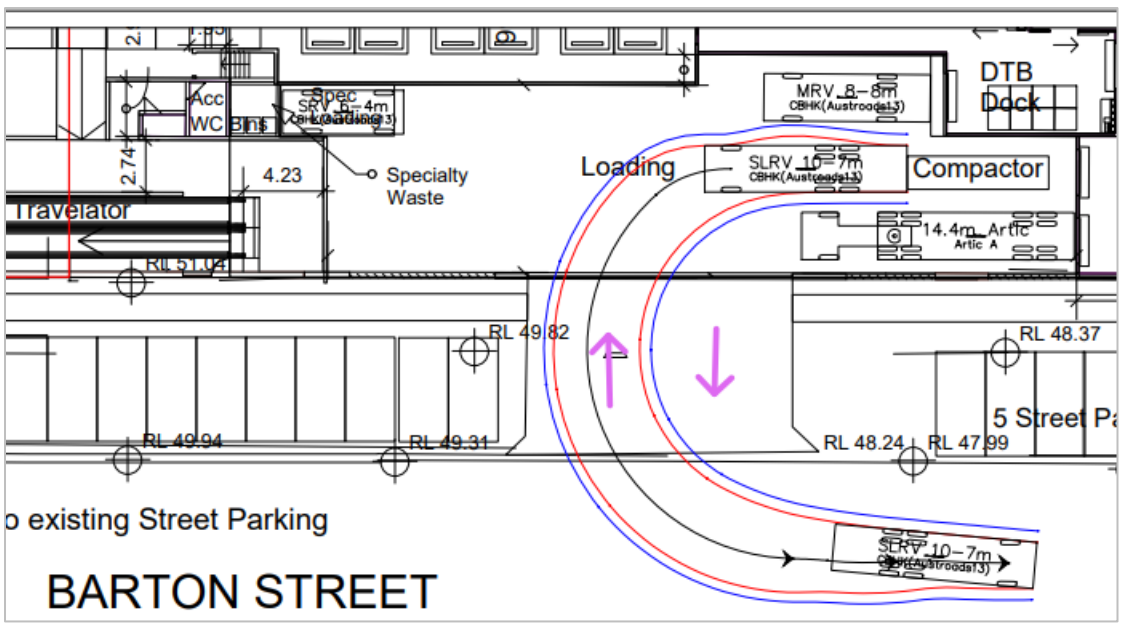
Appendix B: Collection Vehicle Paths

The drawing below is based on a maximum 11.0 metre for both Hook-lift and HRV waste collection vehicle.

Woolworths loading dock movement pathways for compactor vehicle entry



Woolworths loading dock movement pathways for compactor vehicle exit

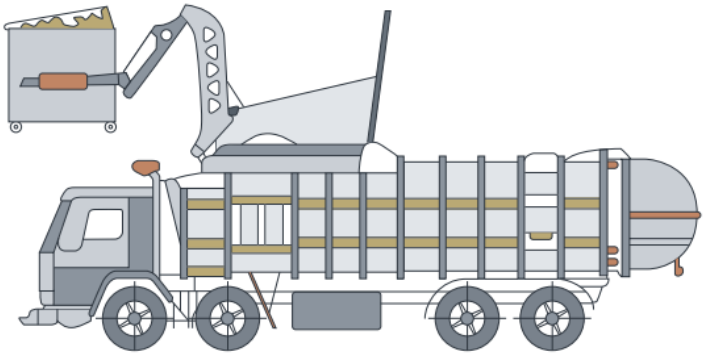


All other collection vehicles will require less overall room than the Hook-lift HRV and will therefore fit within the boundaries of these swept pathways. Further to this, bins have castors and are transportable to and from the vehicle.

Appendix C: Collection Vehicle Specifications

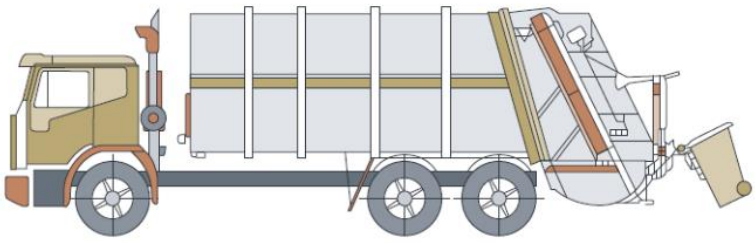
General Waste & Recycling

Front-lift loading collection vehicle



Front-lift loading collection vehicle	
Length overall	10.52m
Front overhang	1.51m
Wheelbase	5.84m
Rear overhang	3.17m
Turning circle kerb to kerb	22.10m
Turning circle wall to wall	23.66m
Travel height	3.82m
Clearance height for loading	6.1m

This is mainly used for collecting commercial and industrial waste, and is only suitable for bulk bins with front lift pockets (not MGBs).

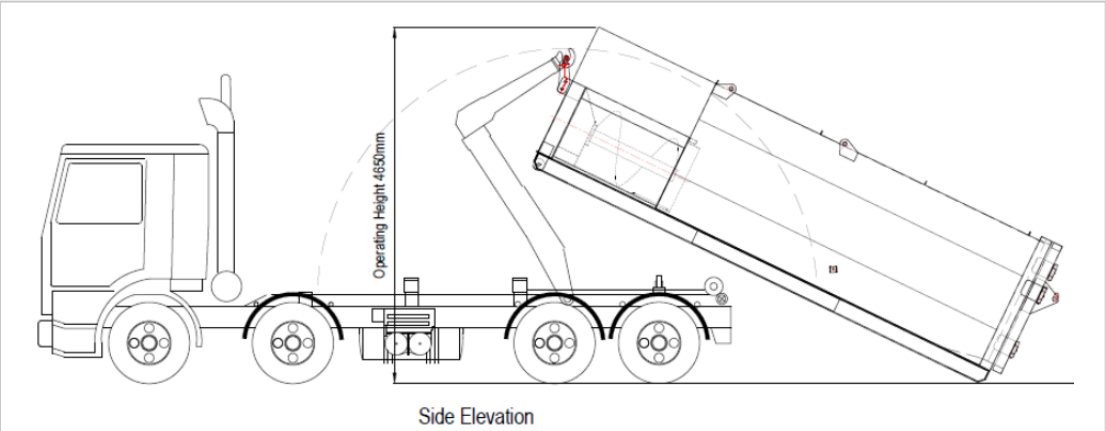


Rear loading collection vehicle

Rear loading collection vehicle	
Length overall	10.24m
Width overall	2.5m

Recycling: Cardboard and Paper

Hook Lift Compactor Collection Vehicle



Hook Lift Collection Vehicle	
Length Overall	10.8
Width Overall	2.5
Travel Height	5.0
Clearance Height (operating)	8.5
Turning Circle Kerb to Kerb	22.6

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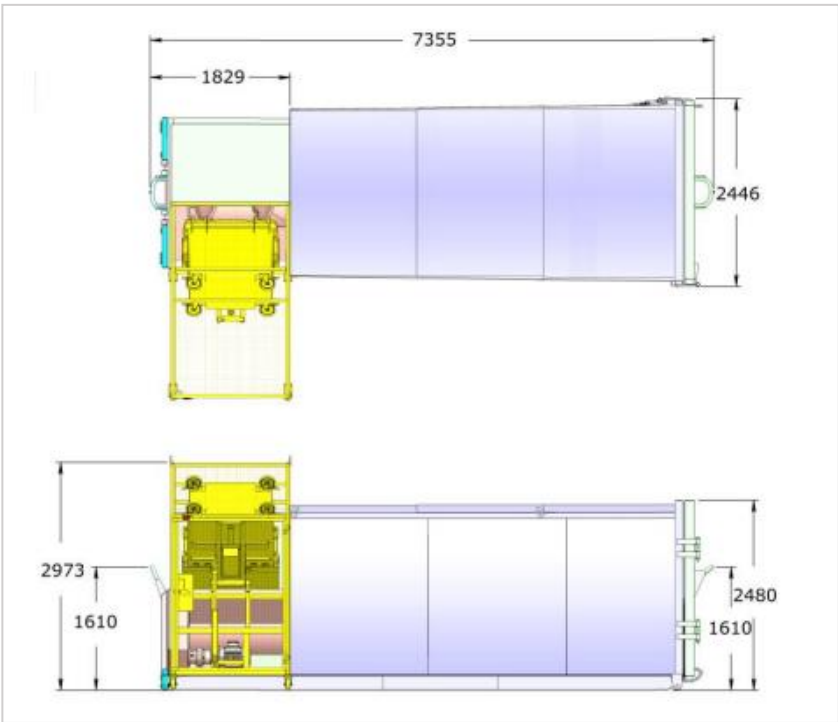
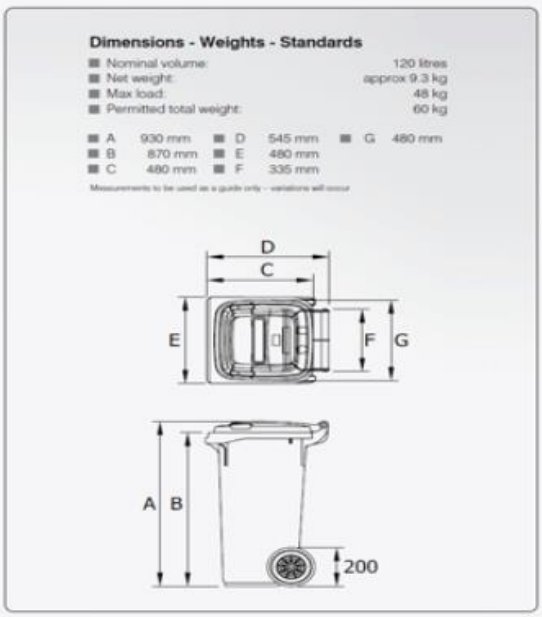
Compactor 23m3	
Capacity	23m3
Height	2.5
Width	2.5
Length	7.35
Compaction Ratio	4 to 1

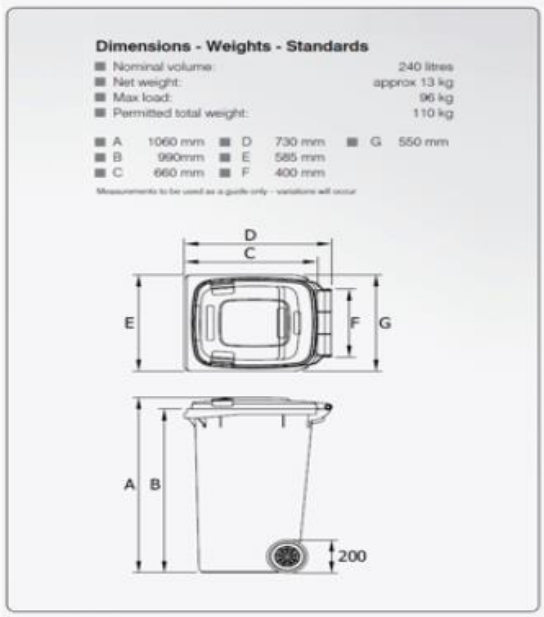


Appendix D: Bin Specifications

120-litre MGB



240-litre MGB



Appendix E: Tenancy & Storage Area Signage

The photographs below show examples of good practice in this regard:

The signage examples below are for illustration purposes only. Actual signage should include suitable site-specific branding.