



waste less, achieve more

332 Kalamunda Road, Maida Vale

Waste Management Plan

13 December 2021

Rev_0





waste less, achieve more

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Glossary of terms and acronyms

Cart	Wheeled, open top bin often used for bulky items such as cardboard
Commingled recycling	Common recyclables, mostly packaging; such as glass, plastics, aluminium, steel, liquid paper board (milk cartons). Commingled recycling may include paper but often, and particularly in offices, paper and cardboard are collected separately.
Compactor	In commercial buildings, industrial compactors are used to literally 'compact' or compress the waste material into a smaller volume to allow for optimal use of space.
General Waste	Material that is intended for disposal to landfill (or in some States, incineration), normally what remains after the recyclables have been collected separately.
MGB	Mobile Garbage Bin – A wheeled bin with a lid often used for kerbside collection of waste or recyclables. (Often called a 'wheelie bin').
MRB	Mobile Recycling Bin – A wheeled bin ("wheelie" bin) with a lid often used for kerbside collection of recyclables (similar to an MGB). Generally have a different colour body and/or lid to MGBs.
Organic waste	Separated food and/or 'green' material (e.g. grass clippings or vegetation prunings).
Recyclable	Material that can be collected separately from the general waste and sent for recycling. The precise definition will vary, depending upon location (i.e. systems exist for the recycling of some materials in some areas and not in others).
Recycling	Where a material or product undergoes a form of processing to produce a feedstock suitable for the manufacture of new products.
Reuse	The transfer of a product to another user, with no major dismantling or processing required. The term "reuse" can also be applied in circumstances where an otherwise disposable item is replaced by a more durable item hence avoiding the creation of waste (e.g. using a ceramic coffee mug in place of disposable cups).

1 Introduction

This Waste Management Plan (WMP) has been prepared for DevWest for the proposed new 4,100 m² retail centre, including speciality retail tenancies and a Woolworths supermarket, at 332 Kalamunda Road, Maida Vale.

This WMP has been prepared based on the following information:

- Architectural plans and area schedule from i2C received 1 December 2021
- Woolworths Supermarkets Blueprint Reference Pack 2021.1 Departmental Drawings: WA367 Compactor and detailed information about waste and recycling collection systems at other Woolworths stores
- City of Kalamunda – Commercial and Industrial Development Information Sheet (downloaded 20/10/2021)
- WALGA Commercial and Industrial Waste Management Plan Guidelines (2018)
- Green Star Office Design and As Built v1.3 credit 8.A requirements to guide good practice consideration in the design (note: the Green Star tool targeted is to be confirmed)
- Conversation and email correspondence with James Wickens, Manager Environmental Health and Community Safety – City of Kalamunda regarding council waste management requirements 5 November 2021

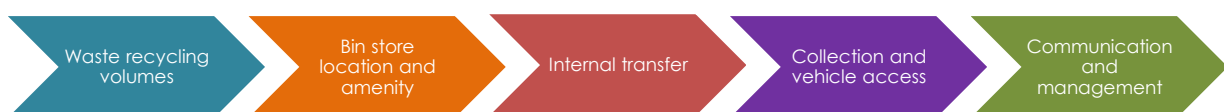
1.1 Context

For efficient and effective waste management, the collection and centralisation of waste and recyclables should be carefully considered at the building design phase. Key factors to consider at the design phase include:

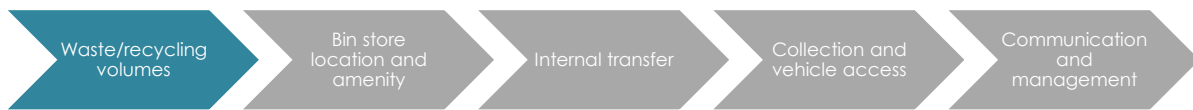
- The volumes of waste and recyclables likely to be generated during building operation
- Size of bin storage area
- Safety for all operatives involved in waste management
- Access to bins and storage areas from within the building
- Access for trucks for waste collection
- Local council requirements
- Amenity (odours and noise)
- The ongoing management of waste and recycling services

1.2 Key components of the WMP

This WMP consists of five core components. The following report will present detailed information on each of the following components.



2 Estimated waste and recycling volumes



2.1 Local government requirements for waste volumes and bin type

The WALGA Commercial and Industrial Waste Management Plan Guidelines (2016) have been used in addition to Encycle's experience and knowledge¹. Specifically, the generation rates used are presented below in Table 1. The final column presents Encycle Consulting's in-house estimate of the material streams present in the recycling stream based on our working experience of operational buildings in Perth.

Information regarding waste and recycling generation and collection frequencies at other similar sized supermarkets in Australia was also provided by Woolworths.

Table 1: Waste generation rates utilised for development

Premises type	Waste generation rate	Recycling generation rate	Percentage breakdown of recycling stream by material
Hairdresser	0.6 L /1m ² /day	0.3 L /1m ² /day	50% cardboard 10% soft plastics 40% commingled
Office	0.1 L /1m ² /day	0.1 L /1m ² /day	79% paper 14% cardboard 10% soft plastics 7% commingled
Retail <100m ²	0.5 L /1m ² /day	0.25 L /1m ² /day	50% cardboard 25% commingled 25% soft plastics
Retail >100m ²	0.5 L /1m ² /day	0.5 L /1m ² /day	50% cardboard 25% commingled 25% soft plastics
Supermarket	2.4 L /1m ² /day	2.4 L /1m ² /day	50% cardboard 25% soft plastics 25% commingled 20% of waste is organics
Takeaway	0.8 L /1m ² /day	0.4 L /1m ² /day	50% cardboard 40% commingled 10% cooking oil 10% of waste is organics 10% soft plastics
Gym	0.1 L /1m ² /day	0.1 L /1m ² /day	50% cardboard 40% commingled 10% soft plastics
Café	3 L /1m ² /day	2 L /1m ² /day	50% cardboard 40% commingled 10% soft plastics 10% cooking oil 20% of waste is organics

¹ Where no generation rate is provided by WALGA, Encycle have formulated generation rates based on experience of working with operational buildings in the Perth area and drawn from other relevant audit information

2.2 Number and type of bins required for development

Waste generation was calculated for the anticipated tenancies based on the square meters for each type. The rates set out in Table 1 have been applied to the anticipated tenancy types and areas as shown in Table 2 below.

Table 2: Waste rates applied for NLA (SQM) for development.

Waste Rate Applied	NLA (SQM)
Hairdresser	165
Offices or medical	115
Retail Area (Shops less than 100 m ²)	120
Takeaway	225
Gym	285
Café (unlicensed)	60
Supermarket (Woolworths)	2700
Retail Area (Shops over 100 m ²) (BWS)	150

2.2.1 Woolworths Tenancy

The bin numbers and their collection frequency for the Woolworths tenancies are shown in Table 3 and based on 2850 m², utilising rates (Table 1) and NLA (Table 2) for supermarket and retail areas.

When compared with the information provided by Woolworths obtained from other similar sized stores in Australia, the waste generation volumes calculated using the WALGA generation rates (as per Table 1) appear to be significantly higher than the waste data from existing supermarkets. Woolworths anticipate collection of generation waste every other day.

A compactor unit will be used for cardboard from the supermarket (size to be determined).

Table 3: Number of bins for Woolworths/BWS based on WALGA calculations

	Bin size (L)	Number of bins	Collection frequency
General waste	3m ³ skip	1	2 x Daily
Food waste	3m ³ skip	1	2 x weekly
Cardboard: Compactor – option 1	20 m ³	1	Every 10 days
Cardboard: Compactor – option 2	32 m ³	1	Every 17 days
Soft plastic	Bale press	2 x bales ~2 m ²	4 x weekly
Chicken fat	200 L steel drums	2	As required. Fortnightly/Monthly
Customer Returned Plastics (Redcycle)	Large Bags	1-2	Weekly

	Bin size (L)	Number of bins	Collection frequency
Food waste – Edible - Oz Harvest	Small collapsible food crates	Space provided	4 x weekly
Timber pallets	Stacked loose		As needed

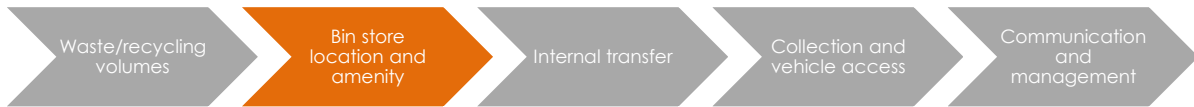
2.2.2 Specialty Tenancies

The bin numbers and their collection frequency for the commercial specialty tenancies are shown in Table 4 and based on total area of 1250 m², utilising rates (Table 1) and NLA (Table 2) for hairdressers, office or medical, retail areas, takeaway, gym and café areas.

Table 4: Number of bins to be stored in the commercial specialty tenancies bin store

	Bin size (L)	Number of bins	Collection frequency
General waste	660	4	3 x weekly
Commingled recycling	1100	2	Weekly
Cardboard	1100	2	Weekly
Soft plastic	660	1	Weekly
Used cooking oil	200	1	As required
Pallets, milk crates, bread crates	N/A	4 m ²	As required

3 Bin store location and amenity



3.1 Bin store location

The building will have two bin stores to allow for the separate storage and collection of:

1. Woolworths (including BWS) waste and recycling (bin store 1)
2. Commercial specialty tenancies waste and recycling (bin store 2)

The layout of the bin stores is shown in Figures 1 and 2 , with both bin stores located on ground level (refer Figure 3).

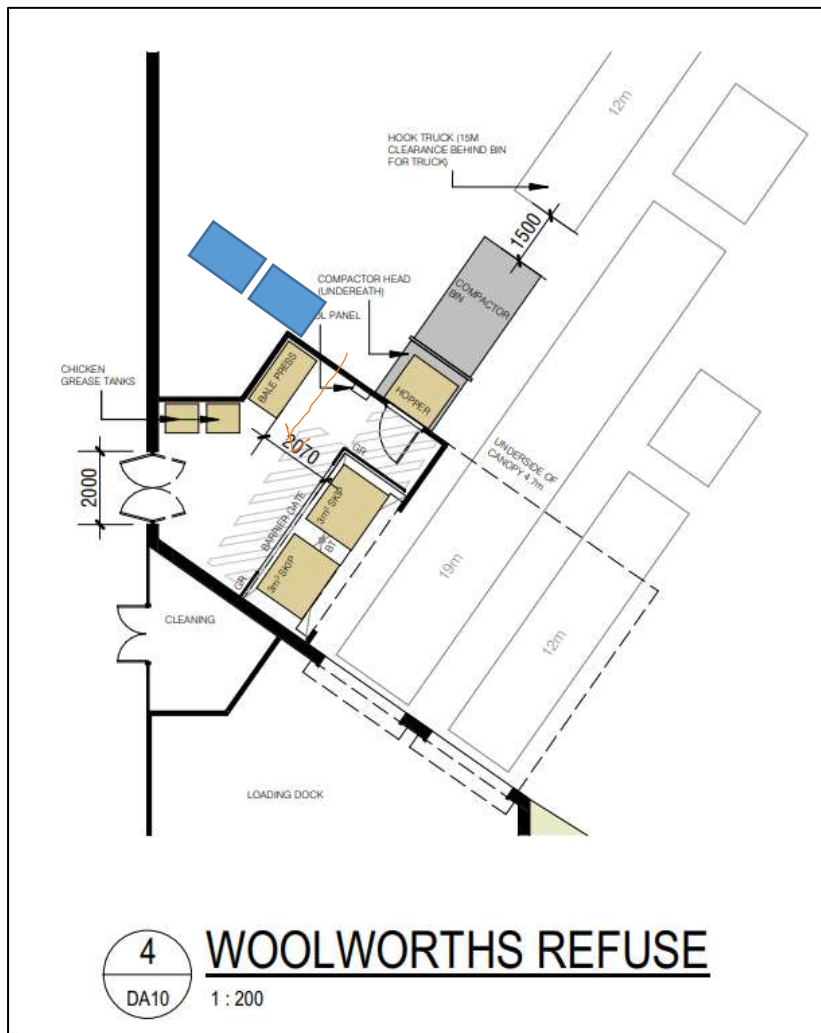


Figure 1: Woolworths bin store layout

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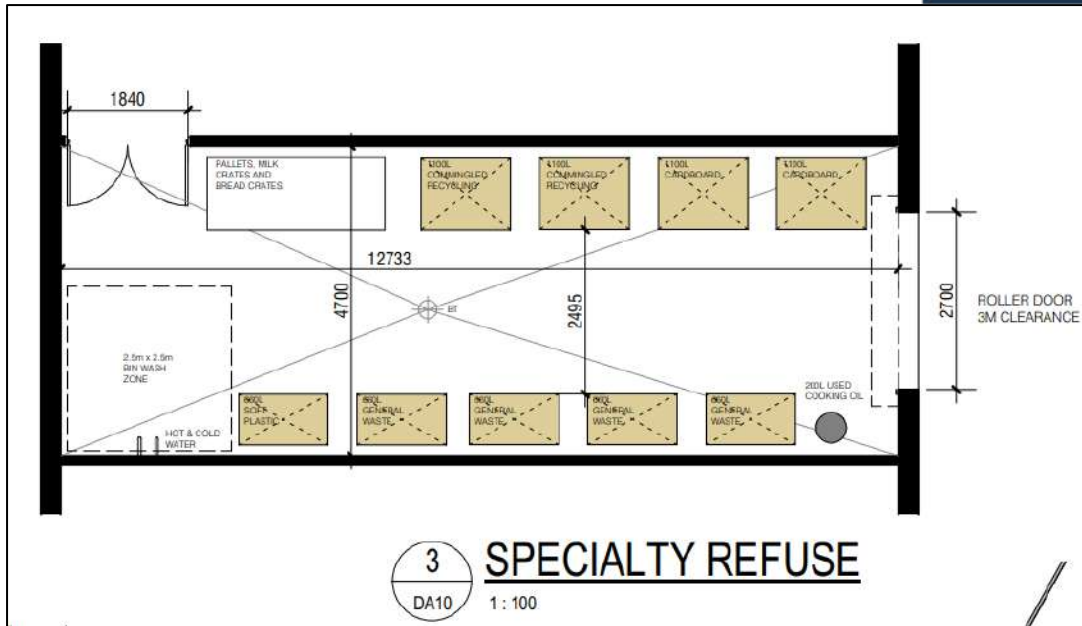


Figure 2: Specialty tenancies bin store layout

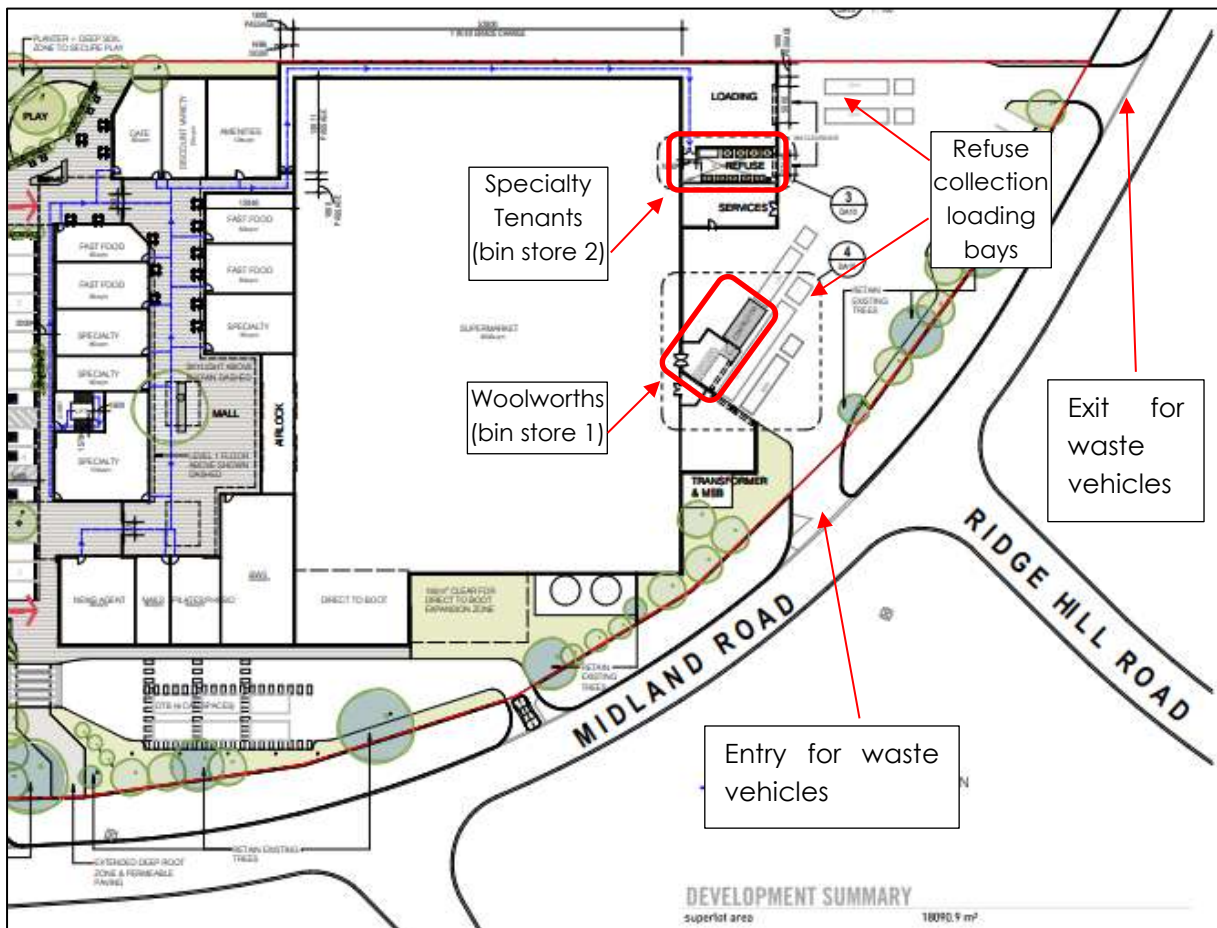
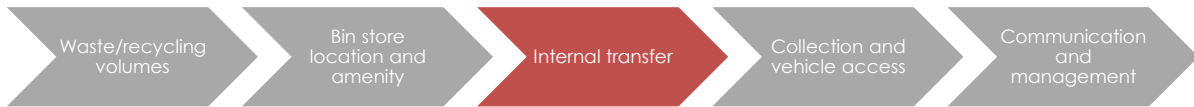


Figure 3: Ground floor plan showing the two bin stores

3.2 Bin store amenity

Bin Transfer	
Aisle door and lift width:	All doors, corridors and lifts on the transfer route are designed for the largest bin to fit through.
General health and safety:	Waste systems are designed to ensure that bins (particularly when full) are not required to be moved over any significant distances, up/down steep ramps (grade of slope <1:40) and definitely avoid stairs or other potential hazards.
	Manual handling of waste in garbage bags is excluded from the waste management systems where possible.
Bin stores	
Washing bins and waste storage area:	Impermeable floors grading to an industrial floor waste (including a charged 'water-trap' connected to sewer or an approved septic system), with a hose cock to enable bins and /or the enclosure to be washed out. 100 mm floor waste gully to waste outlet.
Bin store walls and ceilings:	All internal walls in bin stores will be cement rendered (solid and impervious) to enable easy cleaning. Ceilings will be finished with a smooth faced, non-absorbent material capable of being easily cleaned. Walls and ceilings will be finished or painted in a light colour.
Ventilation and odour:	The design of bin stores will provide for adequate separate ventilation with a system that complies with Australian Standard 1668 (AS1668). The ventilation outlet is not in the vicinity of windows or intake vents associated with other ventilation systems.
Doors:	Ventilated roller doors will be specified both internally and externally to enable bins to be easily wheeled into and out of the bin stores.
Vermin:	Self-closing doors to the bin stores will be installed to eliminate access by vermin
Lighting:	Bin stores will be provided with artificial lighting, sensor or switch controlled both internal/external to the room.
Noise:	Noise is to be minimised to prevent disruption to occupants or neighbours.
Fully Enclosed:	The bin stores will be fully enclosed and only be accessible by retail tenancy staff and the waste service provider.
Aesthetics:	The bin stores will be consistent with the overall aesthetics of the development.
Signage:	Visual aids and signage will be provided to ensure that the area works as intended.

4 Internal transfer



4.1 Transfer of waste from Woolworths tenancies

Staff from Woolworths/BWS tenancies will manually transfer waste and recyclables to the relevant bins in bin store 1. Staff will use service corridors, as shown in Figure 4 and safely marked out pathways to transfer waste and recyclables from the tenancies to the bin store within the ground floor BOH service area of the development.

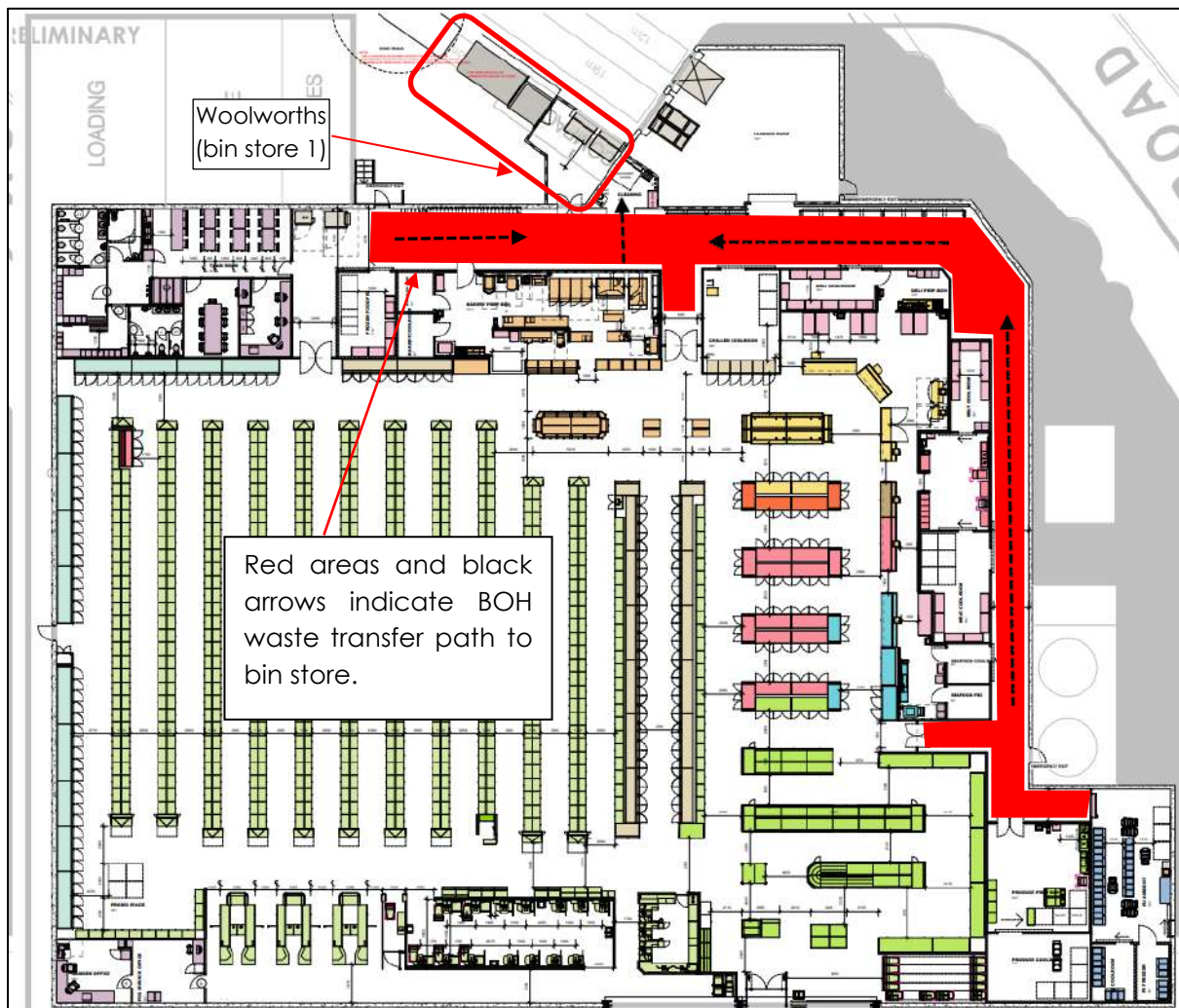


Figure 4: Woolworths waste transfer path to bin store 1

4.2 Transfer of waste from Specialty tenancies

Staff from the office, retail and food and beverage tenancies will manually transfer waste and recyclables to the relevant bins in bin store 2.

Staff will use service corridors and safely marked out pathways to transfer waste and recyclables from the individual specialty tenancies to the bin store within the ground floor BOH service area of the development.

Office cleaners will transfer the bins from the office floors to bin store 2 for collection via the lift.

Specialty tenancies waste transfer path to bin store 2 is shown in Figure 5.

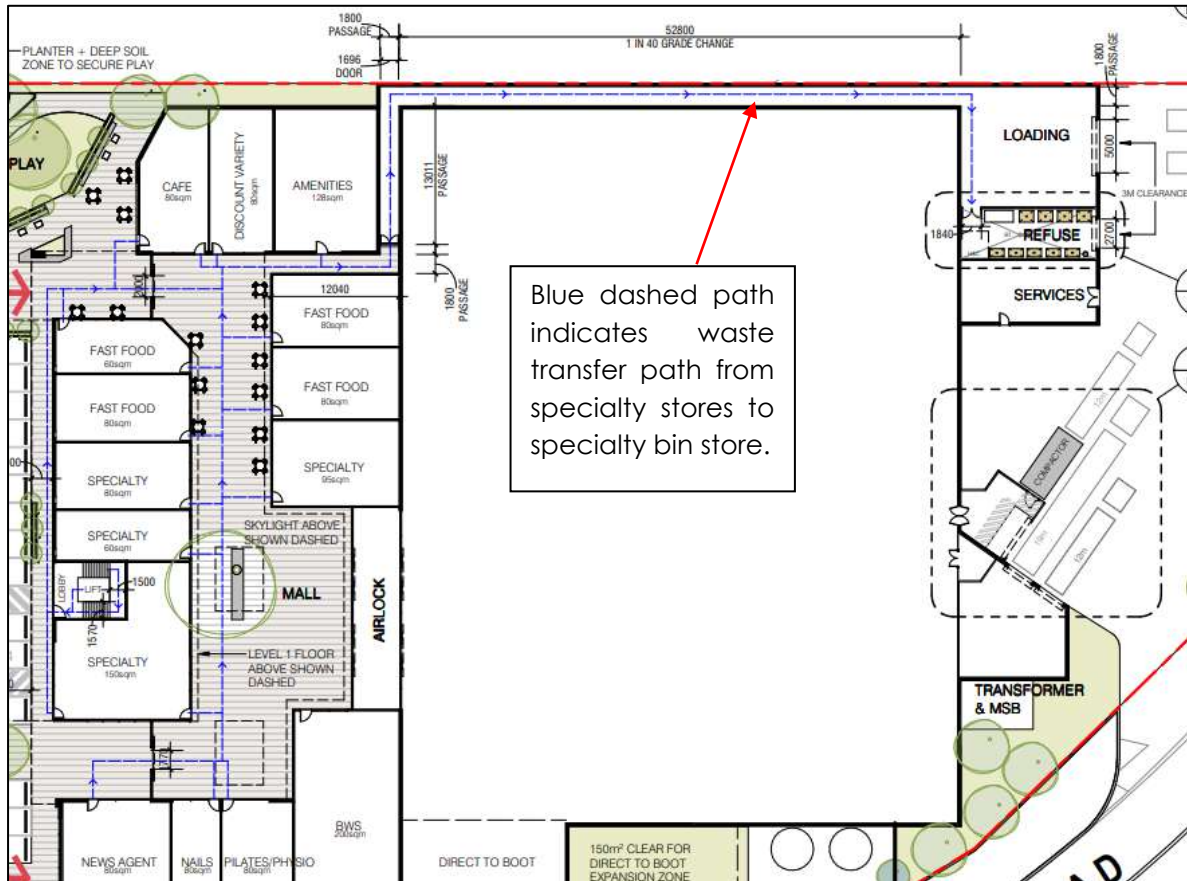
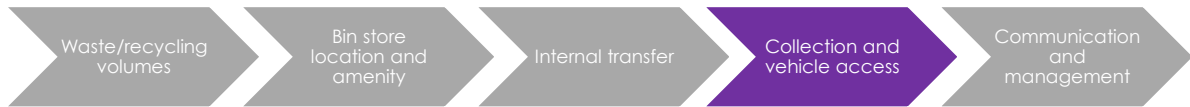


Figure 5: Specialty tenancies waste transfer path to bin store 2

5 Collection and vehicle access



Private service providers will undertake the commercial waste and recycling collections.

Swept path analysis for vehicle ingress and egress has been completed by Forth taking into consideration the specifications of the largest waste collection vehicles for each bin store and are shown below.

5.1 Woolworths tenancies – Bin store 1

On collection days a range of rear-lift, hook-lift, front-lift and flatbed vehicles will enter the building from Midland Road.

A height clearance of 4.7 m is provided to accommodate a range of waste and recycling vehicles.

Building management will move bins from the bin store and rotate them in order for waste operatives to service the bins with front lift arms as shown in Figure 6. The front lift vehicles servicing the supermarket bin store will drive in a forwards motion, complete a three point turn and pull forwards into the loading dock area adjacent to the bin store and compactor.

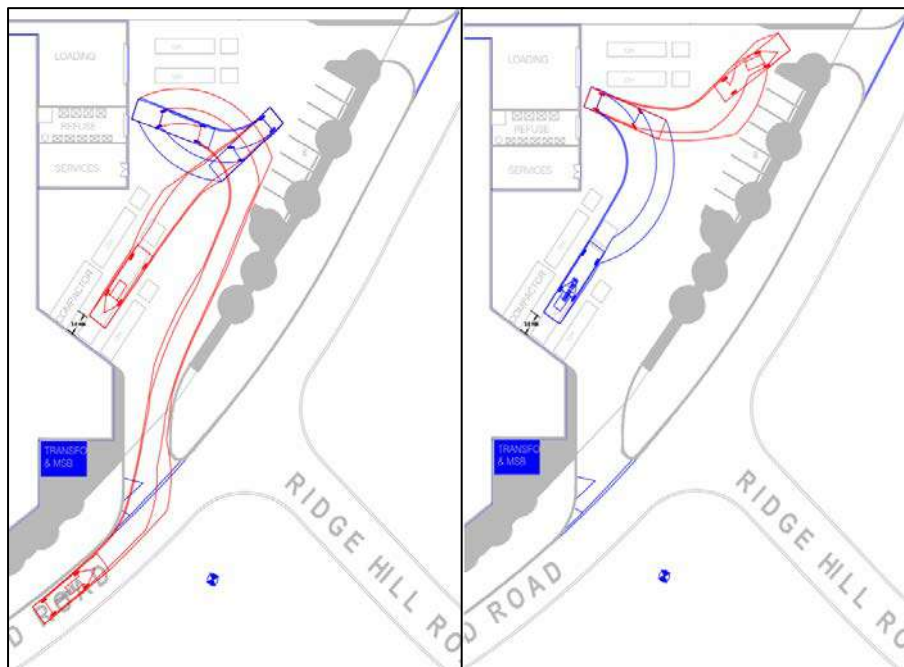


Figure 6: Swept path analysis showing access for front lift waste collection vehicles to bin store

The hook lift vehicles servicing the compactor bin will drive in a forwards motion, and then reverse to service the compactor bin as shown in Figure 7.

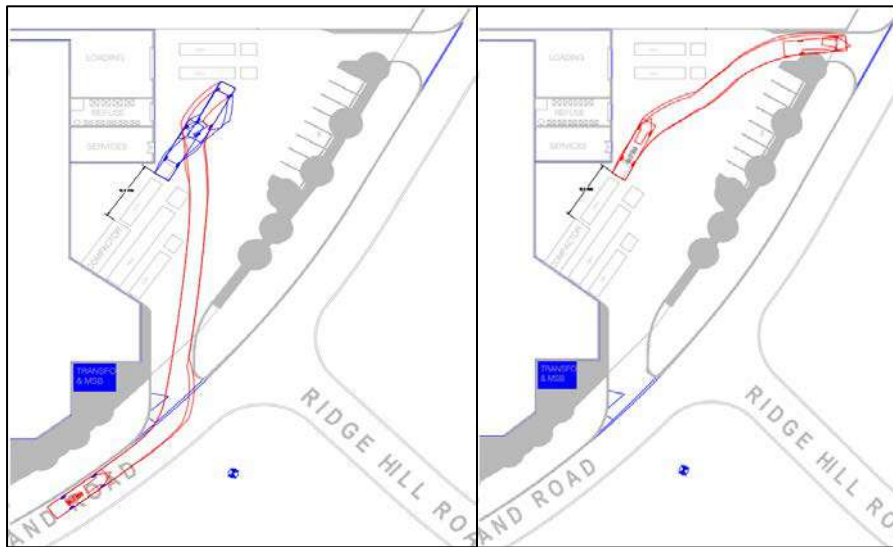


Figure 7: Swept path analysis showing access for hook lift waste collection vehicles to compactor bin

5.2 Specialty tenancies – Bin store 2

On collection days private waste service vehicles, including rear-lift trucks, will enter the building from Midland Road. The vehicles will drive in a forwards motion and reverse into the loading dock area adjacent to bin store 2. With assistance by the caretaker, the operatives will enter the bin stores to retrieve and service the bins.

Swept path analysis for vehicle ingress and egress for waste vehicles to bin store 2 is shown in Figure 8.

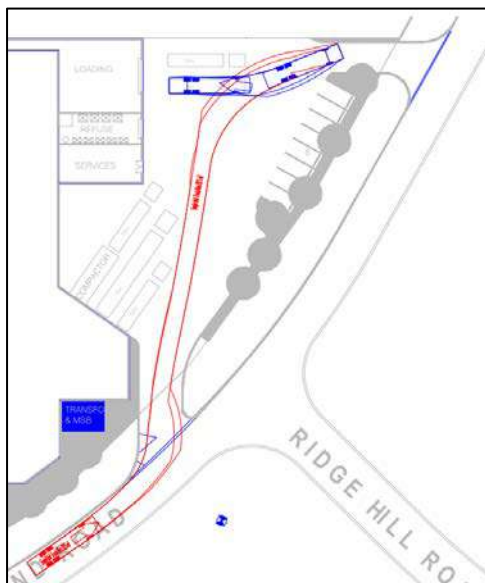
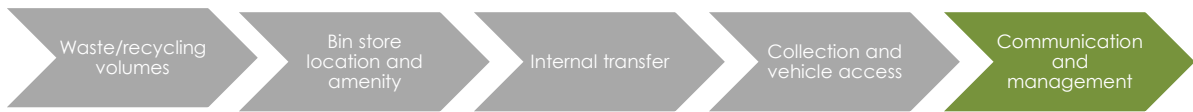


Figure 8: Swept path analysis showing access for waste collection vehicles to bin store 2

6 Ongoing communication and management



6.1 Management

The managing agent Realmark will be responsible for overseeing the waste management systems. The agent will train and inform relevant staff about their responsibility to work closely with the private service providers regarding the schedule for collection and presentation of bins. The staff members will be responsible for maintaining the bin stores in a clean and tidy condition at all times and ensuring bins are washed regularly.

6.2 Communication

All commercial tenants will be made aware through a body corporate document (or equivalent) of the waste and recycling systems and how they should be used. An operational Waste Management Plan suitable for presenting to building users, including how the plan should be communicated will be developed and implemented during both the initial occupation and ongoing management of the building.

Building management will be responsible for the continuing education of tenants on correct segregation of waste and recyclables to ensure successful performance of the waste management systems.