88 Newton Road, Wetherill Park – Single Level Development

Operational Waste Management Plan

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1. Executive Summary

This Operational Waste Management Plan (OWMP) has been prepared by Foresight Environmental on behalf of **Centuria Capital Limited** for the proposed 88 Newton Road, Wetherill Park – Single Level Development (identified as 94 Newton Road on the NSW Planning Portal).

The plan details how the proposed development will manage the waste and recycling generated during the ongoing operation of the development whilst adhering to the regulations as set out in the Fairfield Citywide Development Control Plan (DCP) 2013.

2. Overview of Development

2.1 Site Description

The site has an area of approximately 5.19 ha. It is located within the Wetherill Park Industrial Area and close to the junction of Newton Road and Victoria Street. The site is located between an existing drainage channel, Newton Road and other industrial land and has an irregular shaped allotment. It is broadly flat, with a minor fall in levels from south to north and west to east.

2.2 Description of the Proposed Development

Demolition of existing buildings and structures and construction of a single level warehouse or distribution centre as described in the table below:

Table 1 – Development Summary

DESCRIPTOR	PROJECT DETAILS
Total Gross Floor Area	30,250 m2
Uses	*Warehouse or distribution centre with ancillary offices*
Warehouse Gross Floor Area (GFA)	28,850 m2
Ancillary Office Gross Floor Area	1,400 m2 (1,300m2 office and 100m2 ancillary office)
Maximum Building Height	14.6m (excluding roof plant)

Car Parking	213 spaces provided
Access	Heavy Vehicles will enter the site via a dedicated entry in the southeastern corner of the site. A Heavy Vehicle exit is proposed in the northeastern corner of the site. A single entry / exit driveway for cars is proposed off Newton Road. The driveway will be sufficiently distanced from the heavy vehicle exit to the north.
Operations	24 hours per day, seven days per week
Ancillary Uses	Office space and loading docks

3. Operational Usage

The following table shows the development area profile. The Gross Floor Area (GFA) of the waste generating areas have been used to estimate a waste profile for the development in Section 4.

The usage breakdown by area is as follows:

Table 2 – Area Breakdown: GFA of development

AREA	GFA (m^2)
Warehouse	28,850
Office – 2 Levels	1,400
Dock Office	100
TOTAL	**30,350**

4. Operational Waste Generation Estimate

The waste generated from 88 Newton Road comes from two main areas: the warehouse and offices. The following tables in this section detail the projected waste profile for these areas. For the purposes of estimating a waste profile for the development, the GLA of the waste generating components is used in conjunction with Foresight Environmental's extensive database of actual operational data from similar developments/assets for the waste estimates in the following section.

The waste estimates are made up of the following streams, which are derived based on the information provided, the Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities and Foresight Environmental's benchmark data from similar developments. The following streams are recommended to be implemented throughout the facility for everyday operational waste:

- Dry Mixed Waste (masonry materials, plastic packaging)
- Paper & Cardboard
- Mixed recycling (plastics, glass, aluminium)
- Landfill
- Timber (inc. pallets)

In addition to the above "common" streams, the following streams are likely to be generated in a more ad-hoc manner during the ongoing operation of the facility:

- E-waste
- Battery recycling
- Toner cartridge recycling
- Polystyrene
- Equipment and lamps/globes that may contain mercury

4.1 Warehouse Waste

The following tables summarise the expected quantities and composition of waste and recyclables generated through the ongoing operation of the development. Amenities waste is included in these estimates.

Table 3 – Warehouse Waste Generation Estimate

MATERIAL STREAM	KG/WEEK	L/WEEK	KG/DAY	L/DAY
Dry Mixed Waste	942	11,250	135	1,607
Paper & Cardboard	5,107	35,632	730	5,090
Mixed Recycling	57	1,757	8	251
Landfill	603	2,412	86	345
Timber	792	4,749	113	678
TOTAL	**7,501**	**55,801**	**1,072**	**7,972**

4.2 Offices

The following tables summarise the expected quantities and composition of waste and recyclables generated through the ongoing operation of the offices within the development.

Table 4 – Office Waste Generation Estimate

MATERIAL STREAM	KG/WEEK	L/WEEK	KG/DAY	L/DAY
Paper & Cardboard	37	602	7	120
Mixed Recycling	5	82	1	16
Landfill	40	383	8	77
Food Waste (Organics)	16	56	3	11
TOTAL	**98**	**1,122**	**20**	**224**

Table 5 – Dock Office Waste Generation Estimate

MATERIAL STREAM	KG/WEEK	L/WEEK	KG/DAY	L/DAY
Paper & Cardboard	2.7	43.0	0.5	8.6
Mixed Recycling	0.4	5.8	0.1	1.2
Landfill	2.9	27.3	0.6	5.5
Food Waste (Organics)	1.1	4.0	0.2	0.8
TOTAL	**7.0**	**80.2**	**1.4**	**16.0**

5. Waste Management Systems

The following table shows the recommended bin systems required in the waste storage area. All waste from the warehouse (including amenities), and the offices (including the Dock Office) will go the main waste storage area (Figure 1).

Table 6 – Indicative recommended equipment and collection Frequency Warehouse + Offices

Waste Stream	Bin Type	Bin Size (m^3)	No. of bins	Collection Frequency	Weekly Capacity (L)	Estimated volume/ Week (L)	Footprint per bin (m^2)	Total footprint (m^2)
Dry Mixed Waste*	FEL	3	2	2	12,000	11,250	2.72	5.44
Paper & Cardboard	FEL	4.5	4	2	36,000	36,277	2.90	11.59
Mixed Recycling	MGB	0.66	2	2	2,640	1,844	1.05	2.10
Landfill	MGB	0.66	2	2	2,640	2472	1.05	2.10
Timber**	FEL	1.5	2	2	6,000	4,749	1.63	3.26
Bin Wash							4.00	4.00
Bulky Waste							8.00	8.00
TOTALS					**59,280**	**56,594**		**36.49**
							Including 50% additional space for manoeuvring	**54.73**
							Current spatial provision from design	**58.00**

* Dry Mixed Waste includes masonry materials, plastic packaging, etc, and will be collected together and sorted at a dry waste facility (TBD).
**Timber Waste includes pallets - undamaged pallets will be stored separately and stacked in the bulky storage area as these will be collected by distributors for reuse. The provision for this bin is purely for any damaged pallets – may not actually be required (TBD once operational). Note: See Appendix 1 and 2 for FEL and MGB specifications.

6. Waste and Recycling Storage Areas

The areas detailed in Section 5 above (Table 6) indicate the total footprint and spatial requirements for the waste storage area. The waste storage area is 58m^2 which is adequate space (Figure 1). Bulky waste will be kept within the waste storage area.

6.1 Warehouse Waste Storage Area

The figure below shows the location of the waste storage area on the hardstand outside the warehouse. This location has been selected for the storage of waste as it within proximity to the warehouse entrance/exits while still allowing flow for vehicles/access around the hardstand.

Figure 1: Indicative Layout of the required bin systems within waste storage area

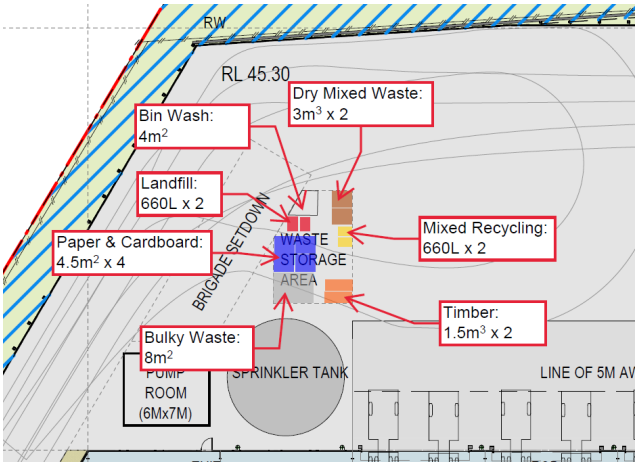
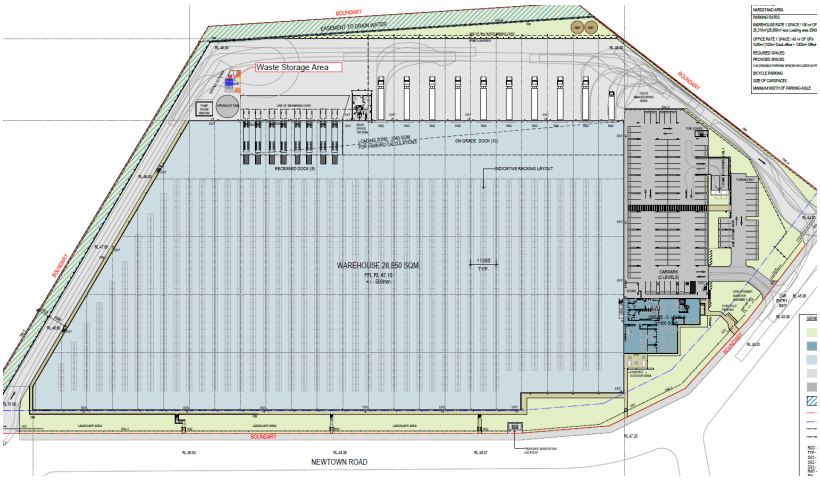


Figure 2: Warehouse waste storage area location in context



6.2 Waste Storage Area Amenity

The main waste and recycling storage area will have the following features:

- Vermin and Odour Prevention:
    - Cleaners are to ensure that bin lids are closed when unattended.
- Noise: Noise will not be an issue due to the location of the waste storage area away from public areas.
- Floor: Structural concrete slab with smooth epoxy topping finish with coved wall and floor junctions. Graded drains to approved sewer connections – fitted with an in-floor dry basket arrestor approved by Sydney Water Corporation
- Water Supply: cold tap and hose connection servicing graded bin wash areas

- Signage: clear signage identifying the various streams and appropriate use will be prominently displayed (see section on signage below)

6.3 Signage

All waste and recycling streams will be differentiated with clear signage on all bins within the waste storage area. Below are examples of appropriate signage incorporating textual information, pictures, and colour-coding to communicate the message.

Figure 3: Stream Appropriate Signage

7. Onsite Management Protocols

7.1 Internal Movement of Waste

The sections below outline the onsite management protocols for the transfer of bins to the waste storage area/loading/collection zone. The details provided outline a high-level management procedure for the movement of waste internally amongst the different areas.

7.1.1. Warehouse

As the tenant is unknown at present, it will be up to the future operators to determine the movement of waste internally. The internal movement of waste refers to how waste generated within the development during operation will travel from its point of origin to the main waste storage area. Depending on the type of operation that utilises the space, this might result in larger, front-loading bins (FELs) kept and filled in the warehouse and moved to the main waste storage area once full and collected on a weekly basis, or another possibility is an increased quantity of smaller mobile garbage bins (MGBs) being used and collected more frequently.

Due to the size of the development, forklifts might prove beneficial, so larger bins are recommended - 0.7m^3 FEL bins that can be transported by a forklift. Due to the lower estimates of landfill and mixed recycling, smaller 240L bins will be placed within the warehouse that can be transported by trolley. Bins are recommended to be placed throughout the warehouse so at least one bin from each stream is on either side of the warehouse for ease of access.

The estimates predict that there would need to be the following number of 0.7m3 FEL bins within the warehouse:

- 2 x Dry Mixed Waste
- 7 x Cardboard & Paper
- 2 x Timber

The estimates predict that there would need to be the following number of 240L bins within the warehouse:

- 2 x Landfill
- 2 x Mixed Recycling

Dry mixed waste and paper and cardboard, and timber bins would need to be transported to the main waste storage area and decanted into the larger bins **once per day** and landfill and mixed recycling **every second day**. This would be the responsibility of facility staff (see Appendix 3 for forklift bin specifications).

7.1.2. Warehouse - Waste Streams and Protocols

During staff induction, warehouse staff will be made aware of the waste storage area location. The expected materials generated at the warehouse during operation and expected onsite management protocols are listed below.

Table 7 – Management Protocol for waste streams and equipment on site

WASTE STREAM	MANAGEMENT PROTOCOL
Dry Mixed Waste	All Dry Mixed Waste will be disposed of by warehouse staff into bins located in waste storage area, which will then be collected by appointed waste contractor and taken to an appropriate Dry Waste recycling facility.
Paper & Cardboard	All Cardboard will be disposed of by warehouse staff into bins located in the waste storage area, which will then be collected by appointed waste contractor and taken to an appropriate Paper & Cardboard recycling facility.
Mixed Recycling	All Mixed Recycling material will be disposed of by warehouse staff into bins located in the waste storage area, which will then be collected by appointed waste contractor and taken to an appropriate Mixed Recycling recycling facility.
Landfill	All Landfill (including organics) will be disposed of by warehouse staff into bins located in the waste storage area which will then be collected by appointed waste contractor and taken to an appropriate processing facility
Timber	All broken Timber Pallets will be disposed by warehouse staff directly in the Front Lift bin provided in the Waste Storage Area. This bin should only be used for broken Timber Pallets.
Pallets	All unbroken Timber Pallets that are still fit-for-purpose should be stacked neatly ready for reuse or collection by suppliers in the bulky storage area.

7.1.3. Office Spaces

The following office spaces are spread across the development:

- Two levels of office space
- Dock Office

All office waste, including the dock office, will go to the main waste storage area (Figure 1). From the two levels of offices in the east, waste will be transferred from the offices through the warehouse (Figure 4), most easily by a multisort trolley (Figure 5).

As all the offices will be generating a minimal amount of waste, these estimates have been incorporated into the warehouse waste equipment and collection frequency (Table 7).

Figure 4: Internal movement of waste from Offices to waste storage area

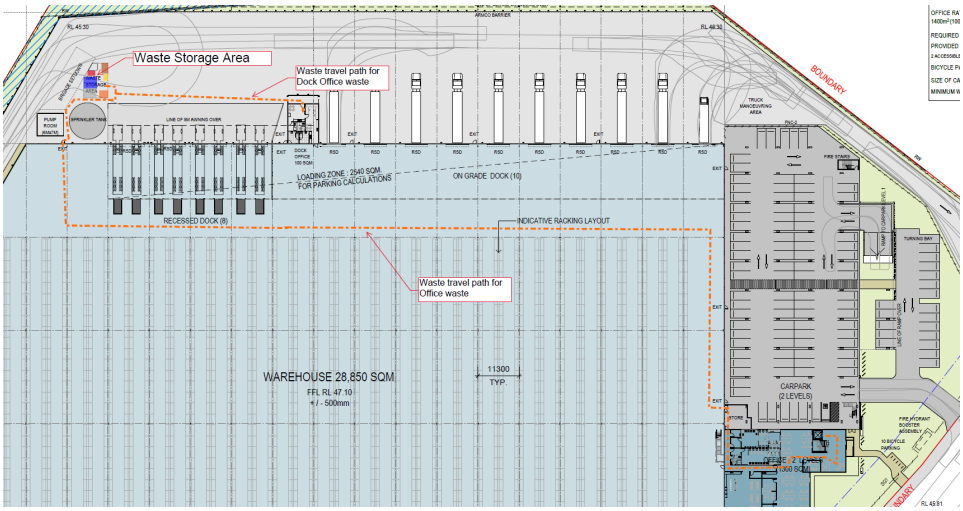
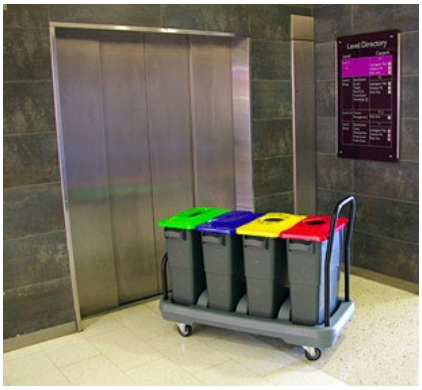


Figure 5: Example of multisort trolley



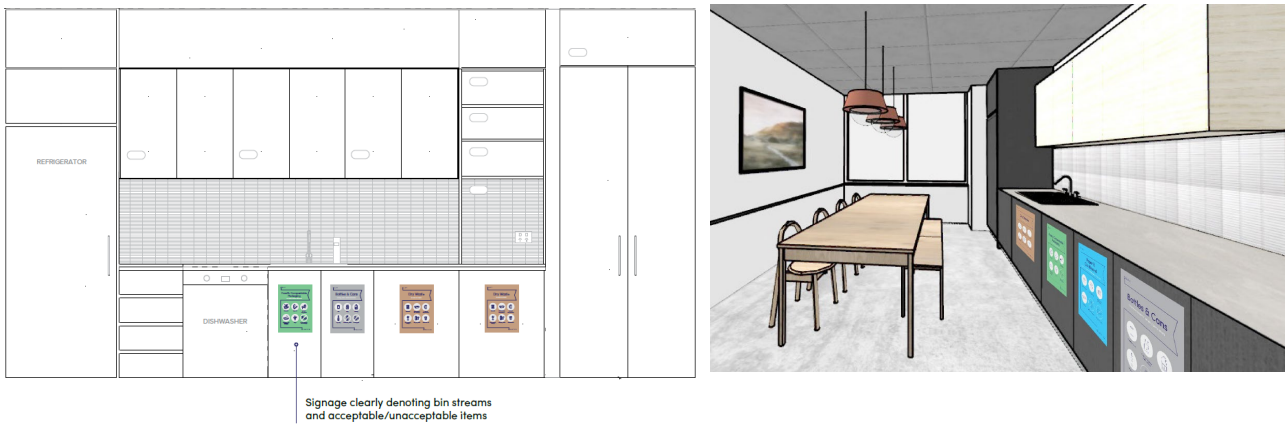
7.1.4. Office Spaces – Waste streams and protocols

It is expected that all office spaces will implement centralised bin hubs throughout their fit-out in appropriate areas, using the waste streams detailed above. Office spaces will collect organics as a separate stream to help keep this waste out of landfill. Establishing centralised bin-hubs for the management of all relevant waste streams will typically drive better staff practices – by requiring staff to interact with the centralised systems, they are forced to make a choice as to which bin they dispose their materials into, within a common area that is shared by co-workers. Additionally, the common contamination issues associated with individual desk bins or multiple bins throughout a workspace are significantly reduced through a centralised bin-hub approach.

Facility management can choose to implement freestanding bin hubs or conceal bins within cabinetry throughout their fit-out. Regardless of the approach, it is recommended that signage is clearly displayed throughout on bins or on cabinetry doors to ensure clear, consistent messaging is achieved throughout. Bin hubs can be housed within cabinetry or can stand alone in appropriate locations – operator preference. Typically, bins are approximately 70L in volume which provides sufficient capacity and ease of handling for cleaners.

The following figures provides examples of freestanding bin hubs with appropriate signage.

Figure 6: Recommended best practice signage displayed on cabinetry fronts



The following figure provides examples of freestanding bin hubs with the recommended bin/stream configuration and appropriate signage.

Figure 7: Freestanding bin hub configuration

Staff will be responsible for depositing their waste and recyclables into the appropriate bin throughout the day. Office staff/cleaning staff will then be responsible for collecting all bins liners from the bin hubs at the end of each day (or as required) and transferring all materials for disposal into the larger bins in the warehouse waste storage area.

Management may consider adding a small organics caddy to staff kitchens to capture food waste from these areas.

Figure 8: Example of a kitchen caddy for the capture of organic material in office kitchen areas

The following table defines the protocols in place to manage materials generated from the office.

Table 8 – Management Protocol for waste streams and equipment in offices

WASTE STREAM	MANAGEMENT PROTOCOL	ACCEPTABLE ITEMS	NOT ACCEPTABLE ITEMS
Paper & Cardboard	Staff will flatten all bulky Cardboard material to be stored in a designated area within the office. Staff/cleaners will collect this material and dispose of it into the Cardboard bin within the corresponding warehouse Waste Storage Area.	Office Paper, Envelopes, Manilla Folders, Newspapers, Magazines, Cardboard	Plastic bags, food, waxed carboard, polystyrene, food-soiled cardboard
Mixed Recycling	Staff will dispose of all Mixed Recycling into their Bin Hub systems within the office. Office staff/cleaners will dispose of these materials into the Dry Mixed Waste bin within the corresponding warehouse Waste Storage Area.	Empty glass, aluminium, plastic, steel bottles/cans/containers	All other items
Landfill	Staff will dispose of all Landfill into their Bin Hub systems within the office. Office staff/cleaners will dispose of these materials into the Landfill bin within the corresponding warehouse Waste Storage Area.	Putrescible waste (non-hazardous)	Hazardous materials such as batteries, E-waste and liquids
Food Organics	Staff will dispose of all Organics into an organics caddie bin system within the office. Office staff/cleaners will dispose of these materials into the 120L Organics bins within the corresponding warehouse Waste Storage Area.	Food Scraps, Coffee Grounds, tea bags, flowers, herbs & garden trimmings.	Plastic including straws, butter sachets, Australian certified compostable packaging (AS 4736), cling wrap, meat packaging. Biodegradable bags, polystyrene cups, grease trap waste, aluminium foil, coated cardboard, metal

7.1.5. Additional Material Streams

The following protocols are in place to manage additional streams.

Table 9 – Management Protocol for additional streams

WASTE STREAM	MANAGEMENT PROTOCOL
Paper hand towel recycling	To reduce waste generation volumes, a paper hand towel free system in bathrooms should be considered. Replacing hand towel with a system such as the 'Airblade' produced by Dyson [1] or the "Jet Towel" produced by Mitsubishi Electric [2] may prove to be more environmentally (and economically) efficient than a paper hand towel system. If a paper hand towel system is chosen, then it should be confirmed with the appointed waste contractor whether soiled hand towel waste is accepted in the paper or cardboard recycling streams – if not this material will be collected by cleaners and deposited into the general waste 3M FEL's in the waste storage area.
Toner cartridge recycling	To minimise toner cartridge waste, all printers should be set to double sided printing as a default. Printers and photocopiers that have refillable toner cartridges should be installed, which are refilled as part of the supply agreement. Where cartridges are generated, recycling systems should be implemented. Typically, a free service provided by Planet Ark for example is sufficient – this system will consist of a large cardboard box located within the print rooms which will be collected by Planet Ark upon request.
E-Waste	An E-waste collection service should be set up either quarterly or biannually depending on volumes generated. Staff will be required to leave their E-waste in a designated area during an E-waste collection period. Cleaners will then transfer the material to the waste storage area where it will be collected directly by a specialist contractor upon request. Measures should be taken to avoid generating E-waste and take-back programs with the supplier or reuse programs with charities or schools are encouraged.

8. Collection

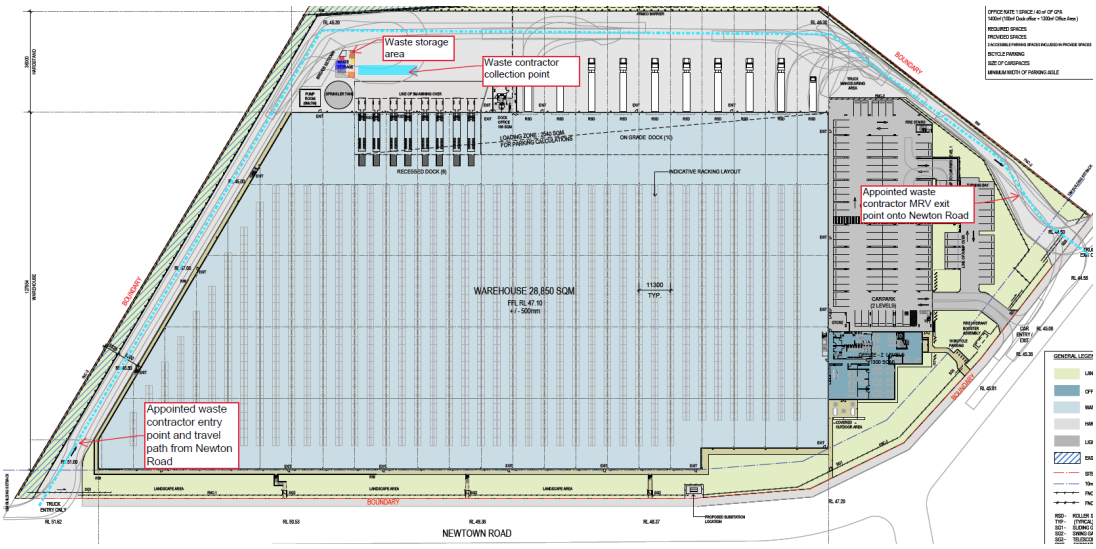
8.1 Collection Points

Table 6 in Section 5 above detail the suggested collection frequency for all waste and recycling streams as well as the total footprint of the recommended equipment. A private waste contractor will be able to access the site from the truck entry point on Newton Road, drive through the development in a forward direction and service the waste storage area, then exit the development back on to Newton Road (Figure 9). The appointed waste contractor will be able to conduct collection by stopping in the loading zone and accessing

[1] Information gathered from http://www.dysonairblade.com.au/
[2] Information gathered from http://www.mitsubishielectric.com/bu/handdryer/products/index.html

the waste storage area. The waste contractor will enter the area to collect full bins, then transfer full bins back to the truck for emptying. Empty bins will then be returned to the waste storage area. It is noted that there are no height restrictions over the waste collection area.

Figure 9: Waste contractor site access, loading dock travel path & swept paths



8.2 Collection Vehicles

Waste truck specifications will vary slightly between private waste contractors however, as a guide, all streams and bins recommended in this report would typically be collected by a similar MRV rear lift waste truck. The following figures show the indicative specifications of the collection vehicles which will be used by the appointed waste contractor to collect waste and recycling from the site.

Figure 10: Medium rigid rear-lift truck dimensions

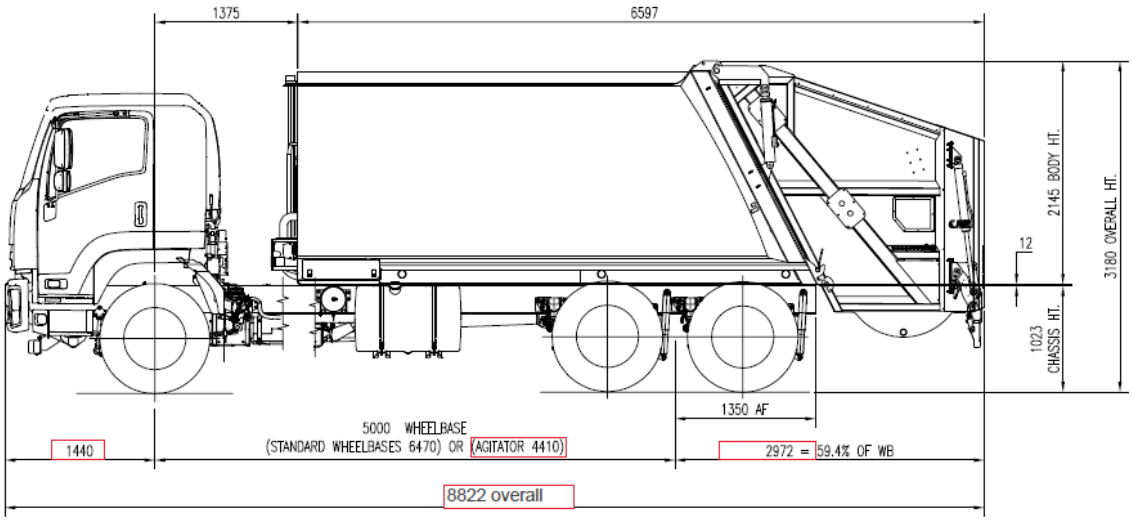
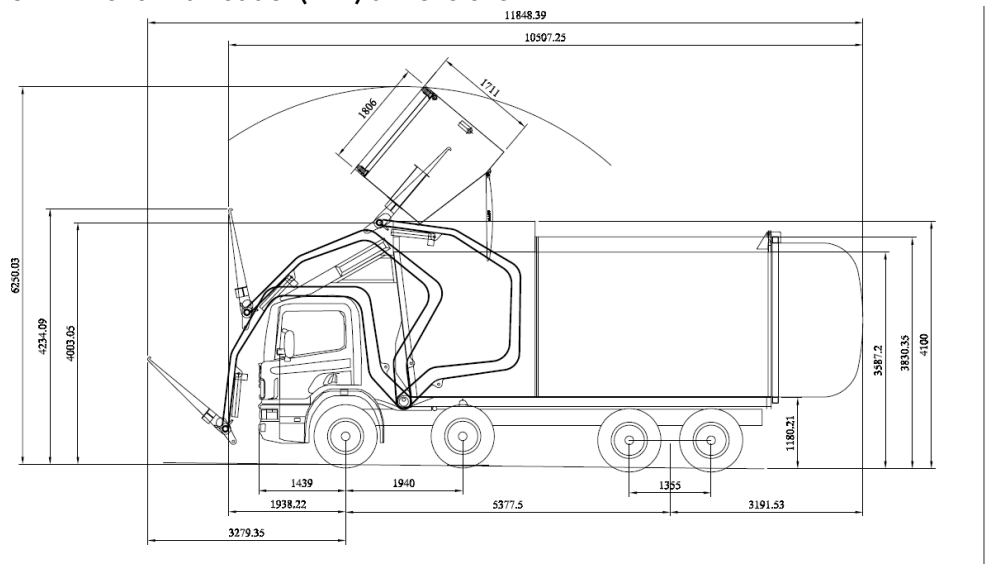


Figure 11: Front End Loader (FEL) dimensions



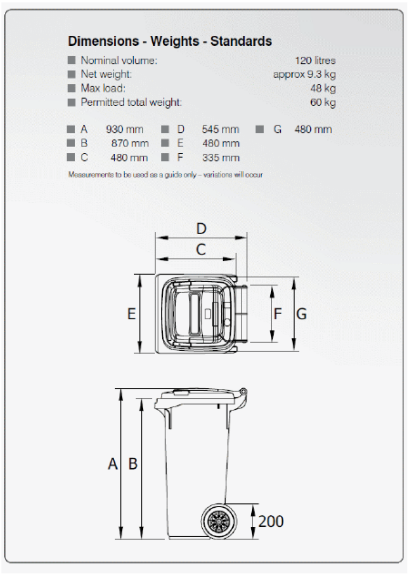
9. Conclusion

The details of this waste management plan confirm that the waste facilities and operational strategy for 88 Newton Road, Wetherill Park adequately cater for the asset's operational waste management requirements.

Appendix

Appendix 1: MGB Specifications

120L MGB



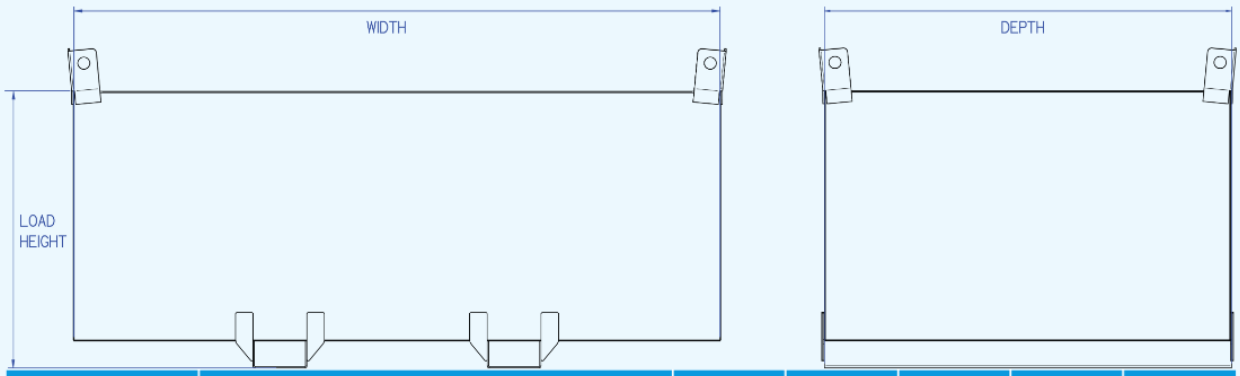
660L MGB

Appendix 2: FEL Bin Specifications

Container specifications

Capacity	1.5m³	3.0m³	4.5m³
Depth	0.905m	1.505m	1.605m
Width	1.805m	1.805m	1.805m
Height	0.910m	1.225m	1.570m

Appendix 3: Forklift Bin Specifications



ITEM CODE	DESCRIPTION	CAPACITY	WIDTH	DEPTH	LOAD HEIGHT	FORK SPACING
FB333	Fork lift bin 900x900x1000 (3x3x3)	$0.7m^3$	900mm	900mm	1000mm	880mm