PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

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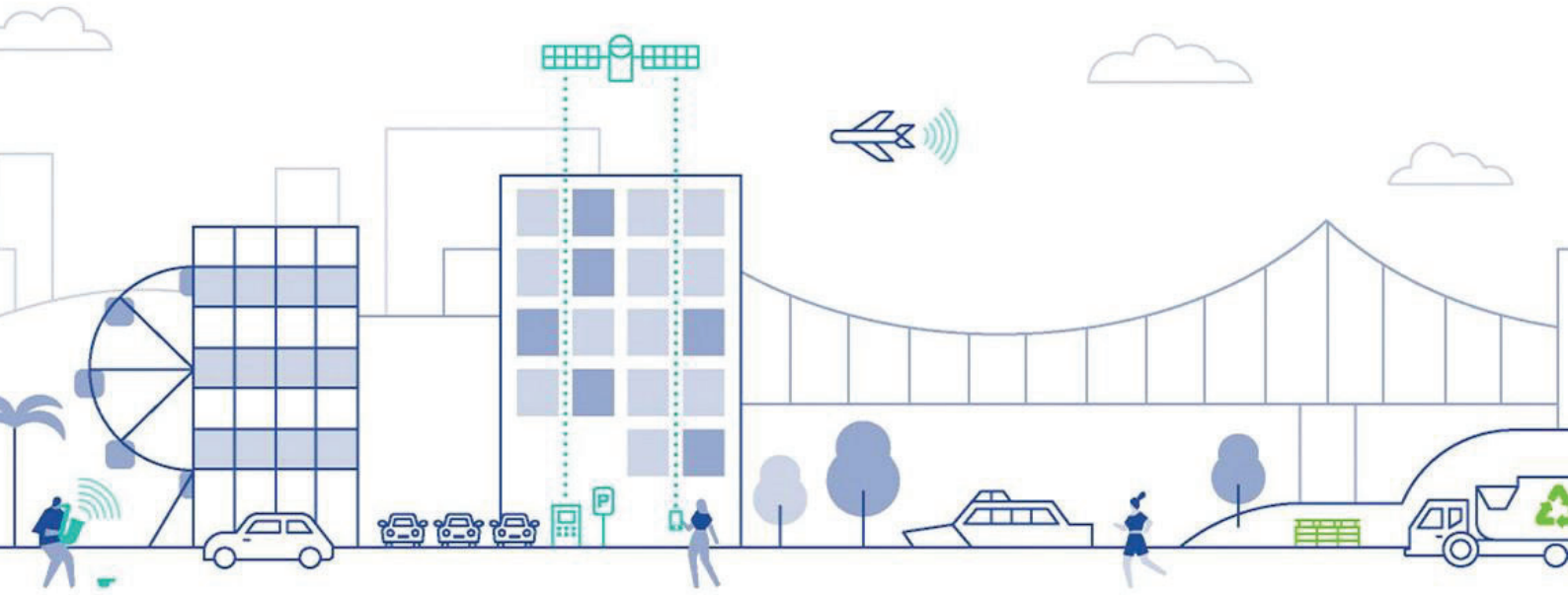
Queensland Government

Operational Waste Management Plan

Proposed Residential Development

At Lot 3, Yeronga PDA, Yeronga

On Behalf of Brisbane Housing Company Limited



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Revision Record

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Executive Summary

This document is an Operational Waste Management Plan (OWMP) developed for proposed residential development to be located at Lot 3, Yeronga PDA, Yeronga.

The purpose of the OWMP is to provide compliance and design information relating to the handling, storage, and collection of refuse within the proposed development. Compliance relates to the alignment with the relevant sections (2,3 and 4) of the Brisbane City Council's (BCC) Refuse Planning scheme policy as a requirement of approval from Economic Development Queensland (EDQ). The content of the OWMP is written with the purpose of providing a guide for the design, construction and operational phase of the development and therefore may be updated to include detailed information as required for each phase.

A summary of the proposed development and waste management processes are outlined below:

- Proposed equipment:

Waste Stream	Bin and Equipment Requirements	Services Per Week
General Waste	3 x 1100L	2 x Services per week
Commingled Recycling	8 x 1100L	2 x Services per week
General Waste	Waste Initiative WastePac 660/1100L bin press (*or equivalent)*	

- Refuse collection:
  - Refuse will be collected by either Private or Council's appointed contractor utilising Rear Loading RCV.
  - Refuse collection is based on a maximum of 4 days of storage between collections for all refuse streams which equates to 2 service per week.
  - All refuse collections will occur at the temp refuse store on the basement level; the temp refuse store is accessible via the driveway off Maidenhair Place. The refuse collection vehicles will perform a single reverse manoeuvre into the site from the Maidenhair Place Cul-de-sac and exit the site in forward gear once the collections service has been performed.
- Refuse storage:
  - All refuse will be stored in stream separated bulk bins located in the refuse disposal and temp refuse store located on the basement level.

- Refuse transfer:
  - Building management / caretaker will transfer the bins from the refuse disposal room to the temp refuse store either on or before collection.
  - The contractor will collect the bins from the temp refuse store and return them after servicing the bins.
  - Building management staff / caretaker will be responsible for all bin rotations between the refuse disposal room and the temp refuse store as required.
- Refuse disposal:
  - Receptacles for storage of at least one days' worth of waste and recycling will be provided in each residential tenancy. Once full or as required, residents will transfer refuse to the refuse disposal room located on basement level.
  - Refuse is disposed by residents via the lifts to access basement level. The refuse disposal room will house one general waste and one commingled recycle bin to accommodate stream separation by residents.

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1 Introduction

1.1. Background

TTM Consulting has been engaged by Brisbane Housing Company Limited to prepare an Operational Waste Management Plan to support the residential development located at Lot 3 Yeronga PDA, Yeronga. It is understood that a development application will be lodged with Economic Development Queensland (EDQ) and is required to satisfy the requirements of the Brisbane City Council (BCC) Refuse Planning Scheme Policy.

1.2. Scope

The content of this OWMP is intended to provide information in reverse order to the typical movement of waste streams from disposal to collection. The reverse order provides context for refuse collection, storage and transfer. Information on refuse disposal and collection points is given for each use within the development. The recommendations in this report relate to the operational phase of the development only. Additional requirements for refuse management during or after demolition or construction phases are not included and require a dedicated plan.

The items covered within the OWMP are described in Table 1.1. The key information for council approval can be found in Section 2.

Table 1.1: Scope Items

Item	Description
Refuse streams	Identification of refuse streams & anticipated development refuse volumes likely to be produced
Refuse separation	Recommendations for appropriate segregation methods for each refuse stream
Refuse collections	Assessment of refuse collection vehicle (RCV) access and manoeuvring
Refuse storage	Detailed analysis of refuse storage facilities and design
Refuse transfer	Assessment of refuse transfer between refuse storage and collections areas
Refuse disposal	Recommendations for refuse disposal within the development
Refuse management equipment	Identification of recommended and optional refuse management systems and equipment
Refuse management operations	Recommendations for operational efficiency and ongoing management, including refuse minimisation, tenant education and safety
Building design	Recommendations for design of refuse management facilities

Detailed information such as site plans and drawings, development specified and recommended refuse management equipment, common refuse signage as well as a list of terms and abbreviations are provided in the appendices. The recommendations in this OWMP relate to the operational phase of the development. Additional requirements for refuse management during or after demolition or construction phases are not included and require a dedicated plan.

The provisions outlined in this OWMP are considered appropriate for this type of development. It is noted that the refuse rooms are suitably sized to accommodate the refuse generated and number of bins proposed based on standard storage and collection methods. The refuse rooms can also accommodate options for alternate equipment and disposal methods.

1.3. Regulatory Considerations

1.3.1. Council's Refuse Planning Scheme

The plan satisfies BCC's requirements by providing the following information:

- Type and quantity of refuse materials to be generated during the occupancy of the proposed site.
- Refuse collection, storage, transfer and disposal arrangements during occupancy of the completed development.
- Recommended operational requirements for the operational phase of the development, and design requirements for the building and refuse management facilities.

As this development is a residential use site, TTM has referred to BCC requirements as outlined in the Refuse PSP under section 2,3 and 4 as these sections are related to the Residential Uses. Additionally, the development meets the requirements of AO32 of the Multiple Dwelling Code. Table 1.2 demonstrates the refuse management items addressed to align with BCC's Refuse PSP requirements.

Table 1.2: OWMP Compliance Checklist

BCC SC6.26 Refuse Planning Scheme Policy		
Item	**Requirement**	**Compliance / Comment**
Section 2 – General Requirements		
(1)	A written design proposal for waste collection is to be provided giving full details of the number of refuse bins and the storage and collection areas.	Details provided in this OWMP
(2)	The collection of refuse is to be considered during the planning phase of development. This includes the physical manoeuvring area for the refuse collection vehicle and the bin storage areas and collection points. Access for other road users including pedestrians, cyclists, motorists and other service providers (e.g. postal) is to be maintained.	Considerations provided within this OWMP
(3)	Uses with high trip-end densities provide a transport impact assessment report in accordance with the Transport, access, parking and servicing planning scheme policy with an assessment of refuse storage and collection included.	Refer to submitted Traffic Report.
(4)	The waste collection system is to achieve the following outcomes: a. both the customer and service provider can access the bin storage area and collection point conveniently; b. the location, design and operation of the bin storage and collection system do not have unreasonable adverse acoustic, odour or visual impacts on the development, surrounding properties or the streetscape; c. the supply and servicing of either mobile garbage bins or bulk bins or refuse compactors complies with the requirements of this planning scheme policy.	 Complies Complies – Collection service will be undertaken on the site. Complies
Section 3 - Access and Manoeuvrability		
(1)	If refuse collection is from an on-site bin storage area for multiple dwellings or from mobile garbage bins located throughout a development, the pavement/carriageway trafficked by the refuse collection vehicle is a minimum 6.5m wide.	Complies
(2)	For detached dwellings on rear lots, pavements/carriageways trafficked by a refuse collection vehicle have a minimum width of 5.5m.	N/A
(3)	The pavement/carriageway has a minimum crossover width of 6.5m and is free from overhanging gardens or trees.	Complies
(4)	If the collection point is at the kerbside of the internal private road, it is preferred that mobile garbage bins are placed in front of each dwelling. If there are short dead-end streets off the main internal circulating road, sufficient level areas are to be provided	N/A

	beside the main internal circulating road (near the intersection) for a collection point for the mobile garbage bins required for those dwellings.	
(5)	Turning and manoeuvring facilities for refuse collection vehicles are provided to meet design requirements for the vehicles identified in Table 3.	Complies See Traffic report for details.
(6)	Subdivision layouts are to provide for the safe and efficient operation and manoeuvring of a side loading refuse collection vehicle. Layouts that require a refuse collection vehicle to reverse more than two truck lengths are to be avoided. If a temporary turnaround is provided, an easement in favour of BCC for this purpose will be required over any turning area located within private property. The temporary turnaround is to be constructed to a standard that is satisfactory to Council.	N/A
(7)	Adequate lift clearances are provided to overhanging trees and wires in accordance with Table 3.	Complies Min 3.6m clearance is provided.
(8)	For MGB's, if it is necessary to wheel them to a collection point from a bin storage area: (a) the distance does not exceed 50m; (b) for a retirement facility, the distance does not to exceed 25m; (c) the mobile garbage bin transfer path is free of steps or other obstructions and does not exceed a 1:14 grade.	N/A
(9)	In instances where the gradient of the on-site manoeuvring area is greater than 5% (1:20), the pad that the collection vehicle will stand on while accessing refuse bins at the collection point, is to have a maximum gradient of 2% (1:50).	Complies RCV will stand on a relatively flat grade for servicing.
Section 4 - Residential Refuse Collection		
(1)	Residential development is to provide sufficient capacity for 240L of refuse and 240 or 340L of recycling per dwelling, allowing for one collection per week.	Complies
(2)	Residential development is to utilise kerbside collection where the locations for both the bin storage area and kerbside collection point can be appropriately accommodated in accordance with section 4.1.	N/A – Greater than 10 dwellings
(3)	a) On-site collection of bulk bins is provided for development comprising greater than 10 dwellings. b) the development comprises greater than 10 dwellings; or where the road verge is not properly shaped to the standard 1:50 gradient and a minimum of 2.5m wide or where the longitudinal road gradient is greater than 1:10.	Complies
(4)	Refuse and recycling collection for a mixed-use development ensures residential and commercial bins are stored separately with separate access to each.	N/A – Residential Site only
Section 4.1 - Kerbside Collection (MGB's) – Greater than 10 dwellings, kerbside collection is not proposed		
Section 4.2 – On-site Collection (Bulk Bins) – This section applies to Residential services		
(1)	In accordance with section 4, development will avoid adverse impacts to residents, pedestrians and roads users by limiting the number of collections required per week while ensuring sufficient refuse and recycling capacity is provided to meet the needs of residents. Table 1 provides details of bulk bin volumes and the number of standard 240L kerbside bins their capacity is equivalent to. These are to be used when identifying the required refuse arrangements.	Complies – 2 services per week proposed.
(2)	The type of refuse service that is to be used (domestic or commercial) is identified, including whether the refuse collection vehicle is to be front loading, side loading or rear loading (sufficient height must be available).	Complies – Rear loading RCV proposed
(3)	A written design proposal for waste collection is to be provided, giving full details of the proposed system, bin sizes, number of bins, storage and collection areas, frequency of collection and the refuse collection vehicle size. Table 2 provides the dimensions and types of bulk bins.	Complies – Details provided in this OWMP.

(4)	The manoeuvring of the refuse collection vehicle is undertaken in a safe and efficient manner, without detrimental impacts to pedestrian amenity or safety, Council or private infrastructure or the function of the road network.	Complies
(5)	For multiple dwelling developments fronting a local, neighbourhood, district or suburban road, the RCV may enter the site in a reverse gear in a single movement. An onsite dedicated pedestrian route is provided and is separate from the required vehicle manoeuvring area to ensure pedestrian safety is protected. The pedestrian route is to provide access from the site's frontage to the development and will have a minimum width of 1.2m. The refuse collection vehicle is to leave the site in a forward gear.	Complies – New internal road will be constructed with access from district road.
(6)	For multiple dwellings developments fronting an arterial road, or where the refuse collection vehicle cannot reverse onto the site in a single movement, the refuse collection vehicle must enter and leave the site in a forward gear.	N/A
(7)	All entry and exit points are of a width and design that allows for sufficient ingress and egress for the refuse collection vehicle including a 6.5m crossover.	Complies
(8)	To maximise safety, the distance required for refuse collection vehicles to reverse on-site is minimised. Where on-site turnaround of the refuse vehicle cannot be achieved, the bin storage area and collection point is located within 30m of the street frontage.	Complies
(9)	Access for a refuse collection vehicle to the collection point is maintained at all times.	Complies
(10)	The required vertical and horizontal clearances are provided for the service to operate safely and efficiently. Operational clearance dimensions are shown in Table 3 for various types of collection arrangements.	Complies
(11)	Bulk bins of 1.1m³ or less are positioned so that collection personnel do not have to move them more than 5m. If a gradient is evident, speed bumps are provided to stop bulk bins from rolling away from the collection point.	Complies
(12)	Bulk bins of 1.5m³ or more are positioned so that front-lift refuse vehicles can drive directly to the container without relocating the bulk bin. If this cannot be achieved due to physical constraints, then the bulk bins are not moved more than 3m from the storage to the collection point.	N/A – 1.1m³ bins proposed
(13)	The storage areas for bulk bins are: (a) contained in an enclosure or room of sufficient size for the bulk bin quantity required; (b) easily accessible for residents and for the required servicing of bins; (c) screened from neighbouring properties for odour, amenity and noise; (d) protected from the environment; (e) provided with natural or temperature-controlled ventilation if in an enclosed room; (f) kept clear of obstructions, such as fixed bay separators, that impede the ability to change from existing bin sizes or which otherwise limit future refuse collection options; (g) kept clear of other amenities such as air-conditioning units, hot water systems or electrical hubs where located in a bin room.	Complies
(14)	If a refuse or recycling chute is provided: (a) it is to be constructed to allow refuse to fall into the centre of the bin; (b) it is to have a door / lid to ensure clean changeover of bins; (c) separate chutes and bulk bins are to be used for each waste stream; (d) the room containing the chute and bin or compactor excludes all but authorised personnel.	N/A – Refuse Chutes not provided.
(15)	Environmental best practices may also include the installation of a trapped waste connection to the sewer system and providing a roof canopy over the designated storage area.	Complies – Fully enclosed storage, drainage point connected to sewer provided.
Section 5 – Non-Residential Refuse Collection – N/A Residential Development Only		

1.4. Site Location

The site is located at Lot 3 Yeronga PDA, Yeronga, as shown in Figure 1.1. The site is located on the western side of the new road Maidenhair Place which runs adjacent to Park Road to the west. All vehicular access will be from Maidenhair Place.

Figure 1.1: Site Location
Source: Nearmap image dated 13/07/2022

1.5. Development Summary

The proposed development is a 5-storey building comprising of basement parking and 5 levels of residential apartments. Table 1.3 provides a summary of the development in relation to refuse generating areas for use with the refuse calculations provided in Section 2.1

Table 1.3: Development Summary

Level	Description	Measure
Basement	Residential Carparking	N/A
Ground Floor	5 x Studio Apartment 6 x 1 Bedroom Apartment 1 x 2 Bedroom Apartment	12 Apartments
Level 2	6 x Studio Apartment 7 x 1 Bedroom Apartment 2 x 2 Bedroom Apartment	15 Apartments
Level 3-4	5 x Studio Apartment 7 x 1 Bedroom Apartment 2 x 2 Bedroom Apartment	28 Apartments
Level 5	5 x Studio Apartment 8 x 1 Bedroom Apartment 1 x 2 Bedroom Apartment	14 Apartments
Total		**75 Apartments**

2 Refuse Management

This section provides the detailed refuse calculations and describes the arrangements for the collection, storage, transfer and disposal of refuse within the development. This includes associated bin quantities, storage capacities, equipment details, collection frequencies and site access details.

2.1. Refuse Calculations

The generation rates used for the calculation of residential refuse produced have been applied based on rates required by Brisbane City Council to achieve compliance. It should be noted that these rates are standardised generation rates and not site specific however, give an estimation on the maximum potential waste generation. Site specific auditing will be required to establish actual refuse generation of this site and enable refinement of waste strategy and refuse equipment utilised.

Table 2.1: BCC Generation Rates

Type	Measure	General Waste	Combined Recycling
Residential	L / Unit / Week	240	240

Table 2.2: Refuse Calculations

Level	Measure	Quantity	General Waste L/Week	Commingle Recycling L/Week
All Levels	Units	75	18,000	18,000
Total Weekly Volumes (L / Week)			**18,000**	**18,000**
Total Weekly Compacted Volumes (L / Week)			**6,000***	**N/A**
Volumes per Day (L / Day)			**857***	**2,571**
Volumes per Collection (L / Collection)			**3,000***	**9,000**
Collection and Equipment Details	Collections per Week		2	2
	Storage Capacity		4 Days	4 Days
	Equipment Size		1100L	1100L
	Equipment Quantity Required		3	8

*General waste compacted at average 3:1 ratio

A collection frequency of 2 collections per week or 4 collections per fortnight has been established in line with approved developments of a similar size and commentary provided in pre-lodgement advice.

2.2. Refuse Bins and Equipment Requirements

Table 2.3 and Table 2.4 below outlines the number of bins and additional equipment required for the development. As waste volumes may vary according to the development occupants' attitudes to waste disposal and recycling, bin numbers and sizes may need to be altered to suit the building operation. The table shows the maximum number of bins and equipment expected.

Table 2.3: Bin Requirements

Refuse Stream	Bin / Equipment - Type or Size	Bins Required
General Waste	1100L	3
Commingled Recycling	1100L	8

Table 2.4: Additional Equipment

Description	Quantity	Notes - See Appendix B.1 for detail
Waste Initiative WastePac 660/1100L bin press (*or equivalent)*	1	Will achieve an average compaction ratio of 3:1 (General Waste Only)
Bin Tug / Mechanical Aid	1	A registered vehicle fitted with commercial towing equipment may be used. Used to assist with transfer of bins from basement to the temporary storage point.

2.3. Refuse Room Requirements

The refuse storage areas are broken into two areas: a refuse disposal room and temp refuse store. Building management staff / caretaker will be responsible for monitoring the bins in the refuse disposal room and the rotation of bins between the rooms when required or deemed suitable. A CCTV monitoring system may be considered to alert building management staff / caretaker when rotation is required.

The refuse disposal room provides a convenient immediate disposal point for residents for the disposal of general waste and commingled recycling. The refuse disposal room also houses the 1100L bin press and towing equipment. A Chain link mesh partition or similar will be installed around the 1100L bin press for the safe access to the refuse disposal room and to prevent unauthorised access and use.

All remaining bulk bins will be stored in within the temp refuse store on basement level for collection. The temp refuse store will house all bins awaiting collection and additionally, the spare bins required for the refuse disposal room.

The refuse rooms are sufficiently sized to accommodate all of the bins and equipment required in provided in Table 2.3 and Table 2.4. Figure 2.1 below shows a potential configuration for the refuse room. The configuration and size of the refuse room is provided to ensure bins are accessible or easily rotated.

The refuse area also has the following features in order to minimise odours, deter vermin, protect surrounding areas, and make it a user-friendly and safe area:

- Doors wide enough to allow for the easy removal of the largest container to be stored.
- Adequate artificial lighting.
- Not located adjacent to or within any habitable portion of a building or place used in connection with food preparation (including food storage).
- Permits unobstructed access for removal of the containers to the service point.
- Does not have any steps or lips.
- Is enclosed on all sides except for the entrances to ensure bins are not visible from a public place, neighbouring properties, passing vehicles or pedestrian traffic external to the site.
- Is of sufficient size to accommodate the bins with sufficient clearance around the combined bin area.
- Is positioned away from entrances to shops or residential premises.
- The height of the bin storage area allows for waste bins to be opened and closed.
- The floors to be graded to fall to a drainage point.
- Drainage points connected to sewer in accordance with trade waste requirements.
- A hose cock provided inside the room for cleaning bins and the rooms.
- The walls, ceilings, floors and equipment are to be designed and constructed of impervious material with a smooth finish to allow for easy cleaning.
- Is designed to minimise their visual impact on the surrounding areas.
- Is naturally or mechanically ventilated.

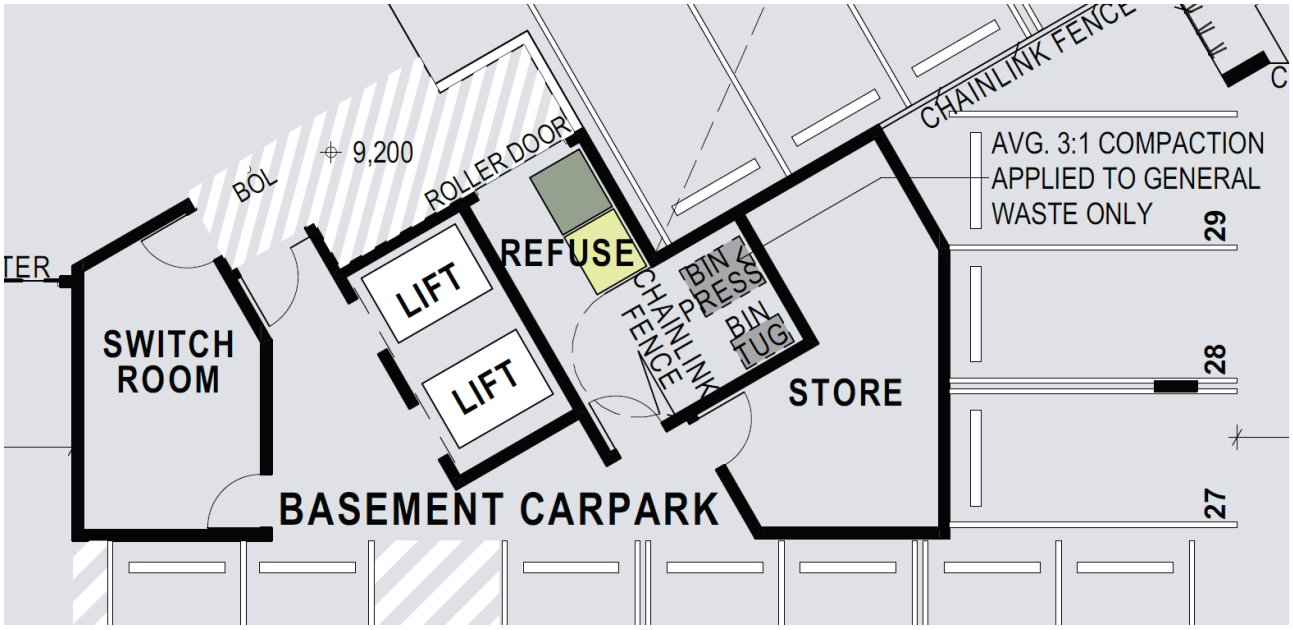


Figure 2.1: Refuse Disposal Room Layout

Source: Ultralinea, Project: Affordable Housing Development Park Road Yeronga, Drawing: Plans Basement Plan, Drawing Number: SK 202 Rev: A

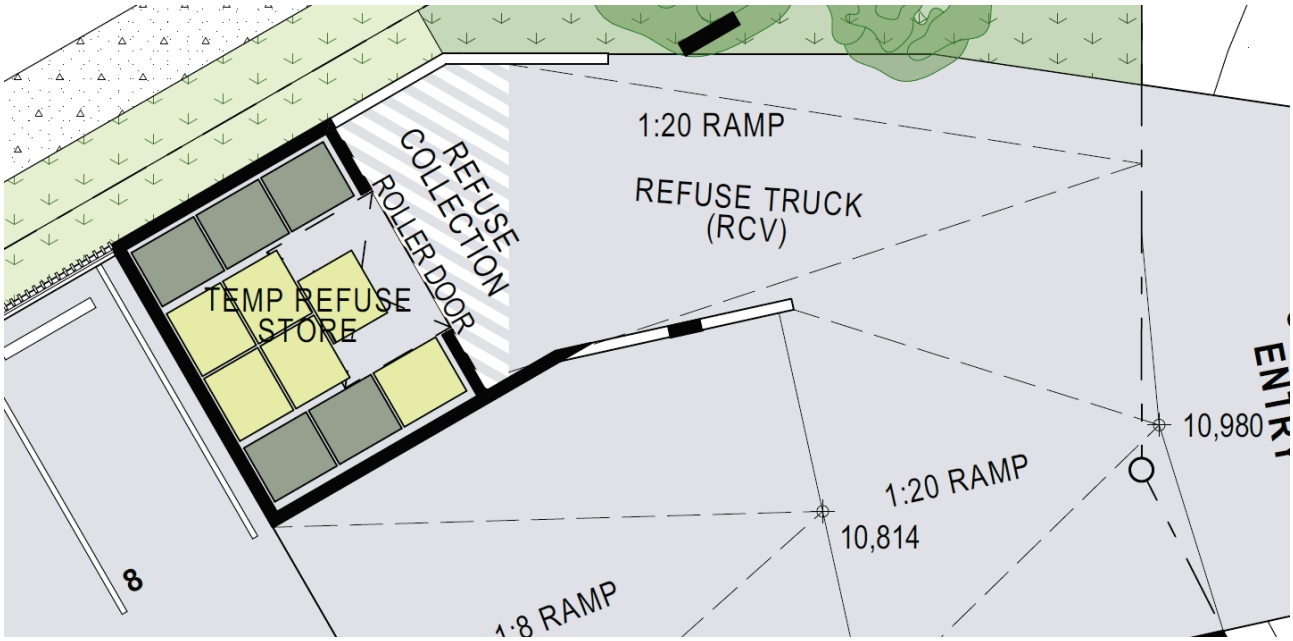


Figure 2.2: Temp Refuse Store

Source: Ultralinea, Project: Affordable Housing Development Park Road Yeronga, Drawing: Plans Basement Plan, Drawing Number: SK 202 Rev: A

2.4. Refuse Transfer

Prior to the collection service, building management staff / caretaker will be required to ensure all bins requiring service are presented within the temp refuse store for collection by the contractor. A mechanical aide will be used to reduce manually handling input in transferring bins via the basement car park driveway and up the 1:8 driveway ramp. A bin tug may be used or alternatively, a registered vehicle fitted with commercially available towing equipment may be used to facilitate to transfer of bins. A spatial allowance has been provisioned for a bin tug within the refuse disposal room if required.

Minimal transfer is required by the collecting contractor to move bins to and from the bin storeroom to the RCV lifting mechanism for servicing.

The refuse transfer path has been designed to allow for:

- The bins to be transferred via hard stand pathway.
- Allows bins to be easily manoeuvred.
- Does not impede traffic flow.
- Does not extend through any habitable parts of a building or food premises.
- Does not have any lips, stairs or steps for bins to be manoeuvred easily.

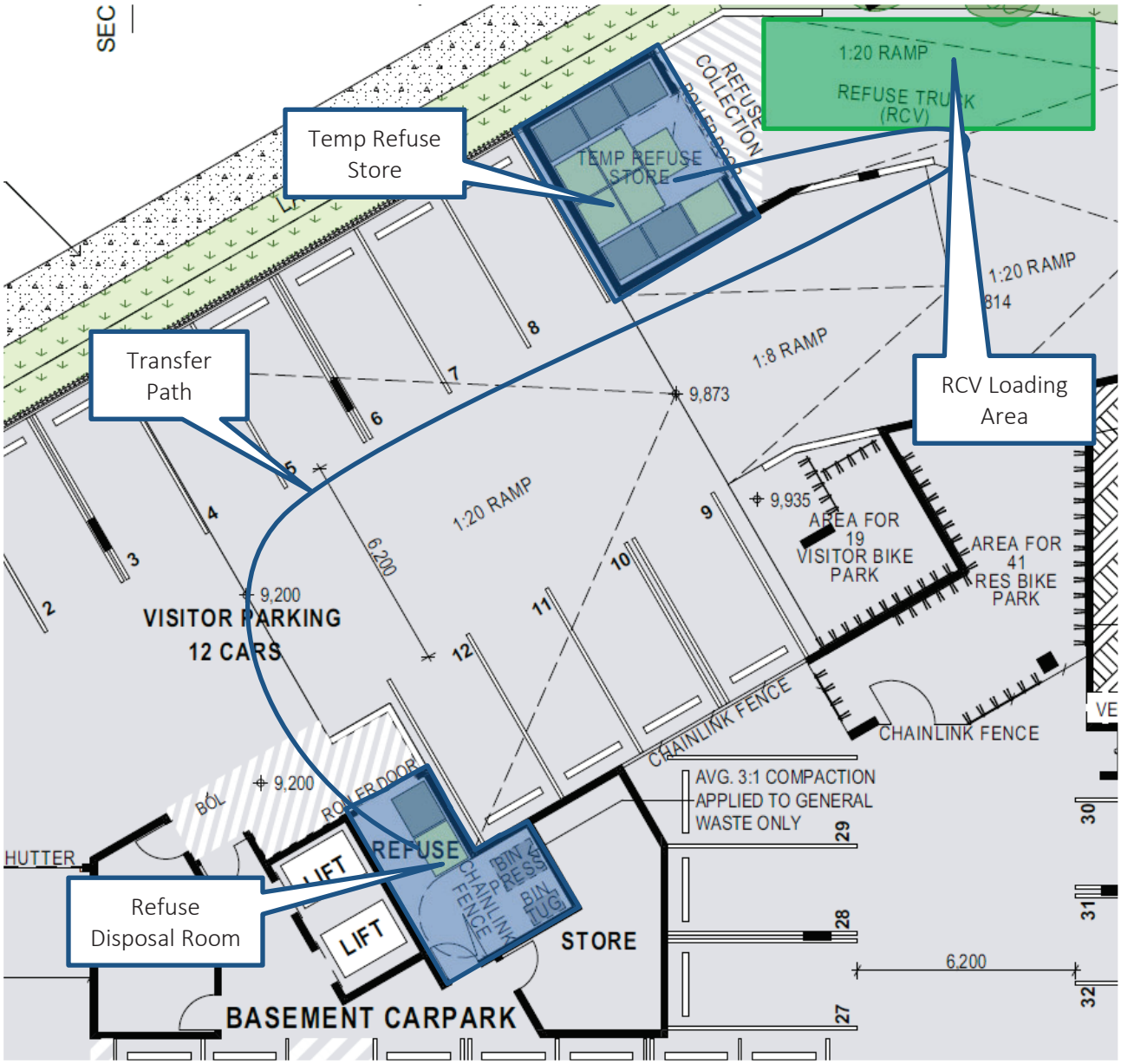


Figure 2.3: Refuse Transfer Path and RCV Servicing Area

Source: Ultralinea, Project: Affordable Housing Development Park Road Yeronga, Drawing: Plans Basement Plan, Drawing Number: SK 202 Rev: A

2.5. RCV Arrangements and Bin Servicing Areas

Either a Private or Council's appointed contractor will collect of all refuse utilising rear loading RCV. RCV's will enter the site via the driveway crossover provided on Maidenhair Place frontage by performing a single reverse manoeuvre from Maidenhair Place and stop in the RCV loading bay on ground level. RCV's will exit the site in a forward gear once the collection has been performed.

All refuse will be collected directly from the temp refuse store adjacent to the RCV loading bay. Once the bins have been serviced, they will be returned to the temp refuse store where building management staff / caretaker will clean bins as required and manage the rotation of bins back to the refuse disposal room as part of ongoing operations.

Further details on vehicle access and on-site manoeuvring can be found in the traffic report.

The bin servicing area / loading bay has been designed with the following features:

- Has sufficient access and clearance for the waste and recycling collection vehicles to service the bins, including no overhead obstructions.
- Allows bins to be serviced safely while minimising the impediment to vehicle movements during servicing.
- Is clearly separated from car parking bays, footpaths and pedestrian access.
- Is devoid of stairs, lips or ramps and allows bins to be manoeuvred easily.
- Does not block the entry and exit to the property.
- Is not adjacent to a kitchen or eating area for public use.
- Is over 5m from any door, window or fresh air intake within the development or any adjoining site.
- Is screened sufficiently to minimise the view of bins from neighbouring properties or passing vehicles and pedestrian traffic external to the site.
- Is positioned away from entrances to shops or residential premises.

3 Recommended Operational Requirements

3.1. Refuse Disposal

The tables in this section summarise general recommended disposal arrangements for frequently generated and infrequently generated refuse for each use within the development. Section 3.1.1.1 describes the frequently generated refuse streams that are generated in high volumes for any given period and require significant capacity for storage prior to collections. Section 3.1.2 describes the infrequently generated refuse streams that are generated in relatively low volumes, and where minimal provision for storage can be easily managed by collection frequency.

3.1.1.1. Residential Refuse

Bins will be provided for each residency. After each day or as required, refuse will be transferred by residents to the refuse disposal room located adjacent the resident lift and in the basement level and is accessible via doorways on either side. Residents will decant refuse into the appropriate stream separated bulk bins. Building management will assist in the disposal of refuse generated in communal areas. Further details are provided in Table 3.1.

Table 3.1: Disposal of Residential Waste

Refuse Stream	Disposal Details
WASTE	
General Waste	Depending on the type of operations of the individual tenancies, different wastes may be produced. Waste bins should always be lined with bags and the bags tied before removal. Waste bins should be accompanied by a recycling bin in order to facilitate separation of general waste and recycling. Residential Apartments Residents will have receptacles within their individual units for collection and storage of at least one day of general waste. Bins are typically placed under the kitchen sink. Additional bins can be placed in other areas as required. Communal Spaces General waste from the communal spaces (e.g. recreational areas) may include small quantities of food waste, food packaging, drink bottles etc. General waste bins of an appropriate size to accommodate at least one day of waste should be located within the respective areas. Additional bins may be provided for special events.
Organic (Food) Waste	While BCC does not currently offer a food organics collection service to multiple unit dwellings, commercial options are available at additional cost. Separating organic or food waste from general waste is recommended to reduce the total amount of general waste produced. Apartment style equipment such as an organic household composter or worm farm is available for use where practical and space allows. Composting should be arranged with the building caretaker.

RECYCLING	
Residential Commingled, including • glass • aluminum • steel cans • tins • cardboard • semi rigid plastics	Items for recycling must not be bagged and disposed in loose form. This can be done by decanting the materials from the individual receptacles into the commingled recycling bins. Residential Apartments Residents will have receptacles within their individual units for collection and storage of at least one day of recycling. Recycling bins are typically placed under the kitchen sink next to the general waste bin. Additional recycling bins can be placed in other areas as required. Recycling bins will usually be used for all recycling materials (commingled recycling). However, residents are encouraged to make use of the container refund scheme and separate eligible containers from the commingled recycling material (see below). Communal Spaces Recycling from the communal spaces (e.g. residential recreation areas) may consist of recyclable drink containers, food packaging, (clean) paper, cardboard etc. Recycling bins should be located next to waste bins within this area. Extra bins may be provided for special events.
	Container deposit / refund schemes are currently in place in Queensland. Various models exist including bottle return facilities and (automated) reverse vending machines. Occupants should be encouraged to separate containers that qualify for the schemes from the waste or recycling streams, and send back to a return points. Storage space or dedicated bins within the units or refuse rooms can be provided. For the proposed developments, consideration should be given to placement of a reverse vending machine on site for disposal.

3.1.2. Infrequent Waste

Table 3.2: Disposal of Infrequently Generated Waste

Refuse Stream	Disposal Details
Green Waste	Green waste is not typically produced from this type of development other than from surrounding landscaped areas or potted plants. Green waste is usually removed by the designated maintenance contractor. The engaged contractor will be required to send this material to a composting or resource recovery facility rather than to a landfill.
Hard Waste / Bulky Goods	Hard waste may be stored in a designated room which should be located on the basement level with easy access to the temporary bin storeroom or RCV loading bay. Alternatively, collections can be coordinated, and hard waste / bulky goods moved to the loading dock or a designated area for removal prior to collection. When storing bulky goods in a loading dock, it is recommended that items are placed on a pallet for easy loading via a pallet jack or forklift onto the RCV.
Hazardous Waste (paints, batteries and cartridges) **Electronic Waste**	Where applicable, occupants usually make their own arrangements for the disposal of specialised or hazardous waste and electronic waste such as recycling of toner cartridges and batteries. Please refer to BCC and QLD government websites for disposal options. It is an expectation that the building management assist with disposal of hazardous, electronic or liquid waste and any paint or chemicals as required and requested. Hazardous waste must be handled with due care, separated and securely stored for collection by a specialist waste contractor. Please refer to local BCC and QLD government websites for further information.

3.2. On-going Management

The tables below are not for assessment purposes, instead for the demonstration of required tasks during the operational phase of the development and therefore intentionally left blank.

Responsibilities have to be assigned for all on-going refuse management operations. This is generally done by a building manager, staff and / or cleaners. The following lists (Table 3.3 to Table 3.9) are designed to help managing responsibilities and monitor the refuse operations in order to maintain efficient services and a safe environment.

Table 3.3: General Refuse Management Checklist

Objectives	Checked	Remarks
Organise temporary additional bins or collections to cater for additional waste generated during initial resident move in.		
Organising of weekly pick-ups for all refuse streams.		Liaise with private contractors and BCC as required.
Managing daily bin transfers between refuse storage / collection areas if required.		
Check bin fill levels and rotate / swap bins as required		

3.2.1. Safety

Transferring refuse bins and using refuse management equipment are considered hazardous tasks. Therefore, contractors must ensure that a full risk assessment of equipment, surfaces and related gradients is complete. The contractor must provide procedural documentation to appropriate personnel prior to delivery of equipment and occupancy of the development.

Table 3.4: Safety Checklist

Objectives	Checked	Remarks
Abiding by all relevant occupational health and safety legislation, regulations and guidelines to ensure site safety for residents, visitors, staff and contractors.		
Assessment of any manual handling risks and preparation of a manual handling control plan for waste and bin transfers.		
Provision of equipment manuals, training, health and safety procedures, risk assessments and personal protective equipment to staff / contractors in order to control hazards associated with all waste management activities.		

3.2.2. Signage

All receptacles, bins and other refuse management equipment will have adequate signage. Standard signage will be provided in and around waste collection and storage areas and should be colour coded in accordance with AS 4123.7 – 2006 Mobile waste containers (see Appendix C).

Table 3.5: Signage Checklist

Objectives	Checked	Remarks
Ensuring compliance of signage with government local council regulations.		Use signage provided by BCC if available
Ensuring that labelling on bins, refuse room etc. is appropriate and clear and easy to read and updated if required.		

3.2.3. Cleaning and Maintenance

Regular cleaning and maintenance of all refuse management facilities is important to maintain a safe and hygienic environment for residents, visitors, staff and contractors.

Table 3.6: Cleaning and Maintenance Checklist

Objectives	Checked	Remarks
General cleaning of all refuse holding and transfer areas including • Refuse bins, rooms and storage areas • Refuse transfer areas including lifts and staircases • Any other refuse management equipment		Frequency depends on refuse generation and building operation.
Coordination of specialised cleaning contractors as required.		
Maintenance and servicing of refuse management equipment as per schedule.		Frequency as per manufacturers recommendation and warranty requirements.
Coordination of specialised equipment contractors as required.		

3.2.4. Refuse Minimisation

Refuse minimisation is an important part of any site operation, it is strongly recommended that building management are actively involved in encouraging and assisting residents to follow the refuse hierarchy. At a minimum, the following should be implemented. Additional refuse minimisation options can be found in Appendix B.

Refuse minimisation requires regular reviewing to ensure operational sustainability of refuse volumes, equipment and economic feasibility. It is recommended that refuse weights and movements are noted and reviewed. An external review is usually conducted 12 to 18 months after the implementation of the plan.

Table 3.7: Refuse Minimisation Checklist

Objectives	Checked	Remarks
Encourage residents to regularly review grocery quantities to avoid over-ordering and food waste.		
Consideration of secondary and recycled materials where possible.		
Encouraging refuse minimisation through education and signage (see below).		
Reduce refuse through continuous monitoring and review (see below).		

3.2.5. Education and Communication

On-going education is important to ensure people continue to use the facilities as originally intended and to avoid ongoing contamination of recoverable refuse streams. Building management should be involved in education of residents and encouraging resident participation in recycling activities. All body corporate and leasing contracts should contain clauses pertaining to waste management arrangements and use of any associated equipment.

Table 3.8: Education and Communication Checklist

Objectives	Checked	Remarks
Communication of refuse management arrangements to residents, staff and contractors as required.		
Consideration of reward opportunities for any successes e.g. local shopping discounts.		

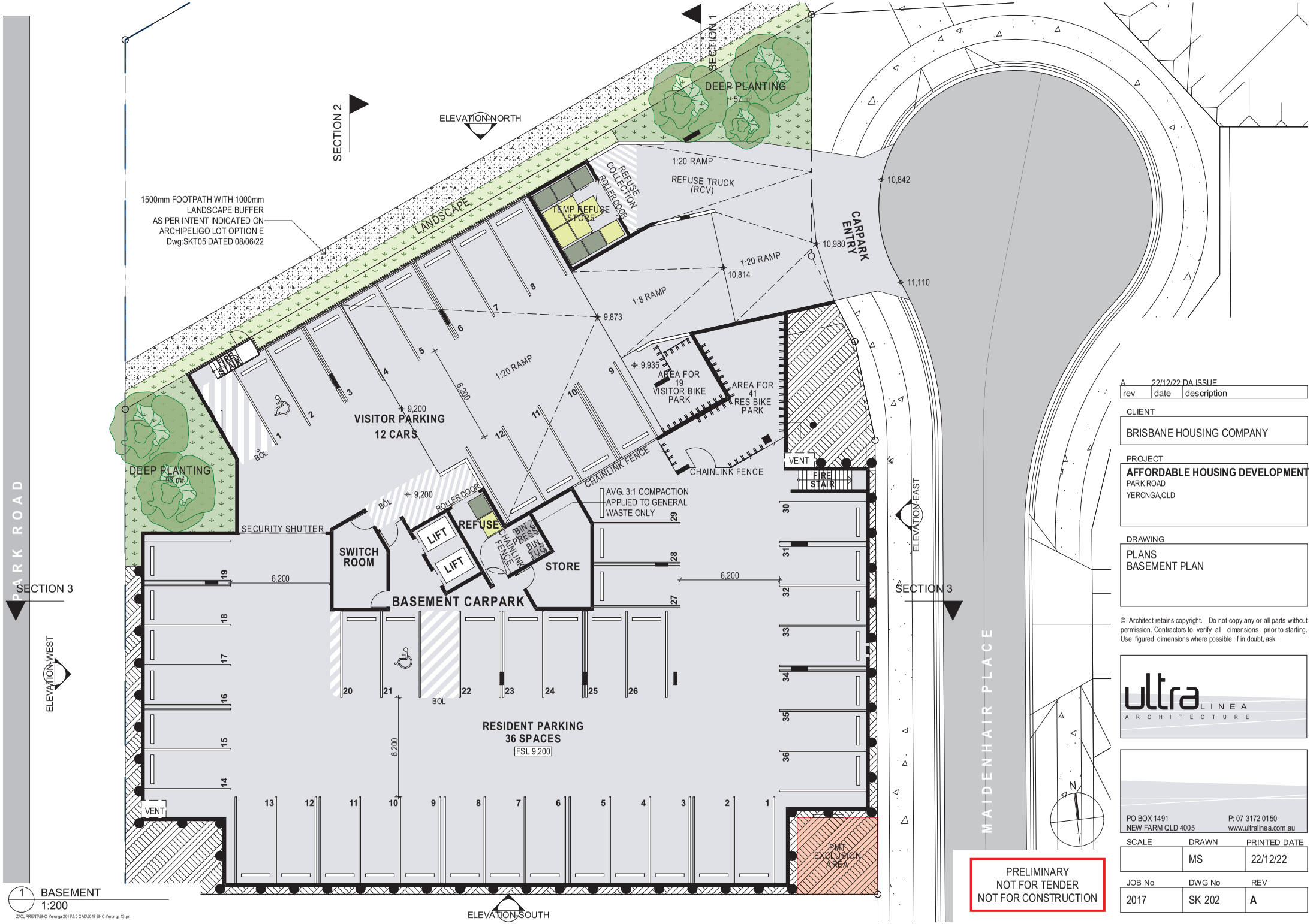
3.2.6. Monitoring and Review

Regular monitoring and inspections of waste and related equipment and facilities from the development should be conducted by building management or designated staff for maintenance and sustainability.

Table 3.9: Monitoring and Review Checklist

Objectives	Checked	Remarks
Continual monitoring of equipment uses and scheduling to ensure best operational outcomes.		
Regular review of refuse management equipment and facilities such as bin volumes, refuse storage capacities and stormwater management arrangements.		

Appendix A Site Plans and Drawings



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A	22/12/22	DA ISSUE

CLIENT
BRISBANE HOUSING COMPANY

PROJECT
AFFORDABLE HOUSING DEVELOPMENT
PARK ROAD
YERONGA,QLD

DRAWING
PLANS
BASEMENT PLAN

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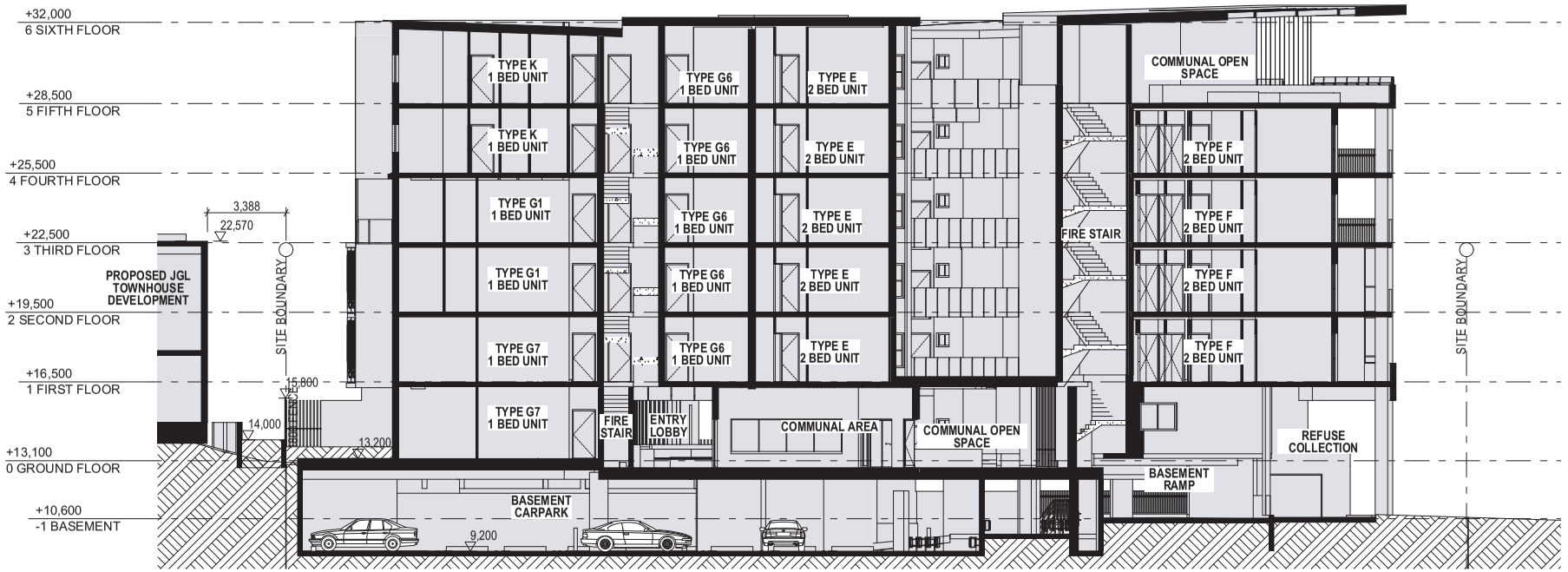

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PROJECT

AFFORDABLE HOUSING DEVELOPMENT
PARK ROAD
YERONGA,QLD

DRAWING

SECTIONS
SECTION 1

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Appendix B Systems and Specifications

B.1 Development Specified Refuse Equipment

The table below provides contextual examples of the development specific equipment and is not intended to provide an exhaustive list of all potential options of the required equipment.

Equipment	Waste Streams	Examples	Information
Residential Unit Bins	General waste and recycling	 	Various options and sizes. Built and standalone bin available. Examples: https://www.bunnings.com.au
Communal Area Bins	General waste, recycling, food waste, paper / cardboard		Various options and sizes available. Tenant to supply depending on preference and space available. Example: 60L metro bins Dimensions approx. 559 x 279 x 635mm (L x W x H) Examples: https://www.spacepac.com.au
1100L Bins	General waste, recycling, paper / cardboard		Dimensions approx. 1070 x 1240 x 1330mm (L x W x H) (dimensions depend on contractor) Examples: http://www.justwheeliebins.com.au, https://www.australianwaste management.com.au
660/1100L Bin Press	General waste, paper / cardboard	 	Achieves an average compaction / waste reduction ratio of 3:1. Requires 415vpower supply. Example: https://wasteinitiatives.com.au /products/waste-compactors https://www.materialshandling.com.au-/products/bin-press-compactor/
Bin Towing Equipment	General waste, recycling, food waste, paper / cardboard	 	Assisted transfer of refuse Examples: http://ev.spacepac.com.au /categories/tugger, https://mgplastics.com.au/tow-hook-system-kit-for-1100l-plastic-bins.html

B.2 Typical Refuse Management Equipment

Appendices B.2 – B.6 provide general refuse management options for education and consideration purposes and are not limited to the specific requirements of this development.

Systems	Waste Streams	Examples	Information
Organics Household Composting, Worm Farm, Digesters	Food waste / organics	 	Organics / food waste separation, composting and digesting; household-type and commercial grade equipment available Examples Urban Composter https://www.urbancomposter.com.au Closed Loop https://closedloop.com.au/upcycling-products ORCA https://www.feedtheorca.com
Food Waste Processing, Storage and Disposal	Food waste / organics	  	Volume reduction and organics / food waste recycling through food waste separation and macerating Examples: Pulpmaster Food Processing and Storage https://pulpmaster.com.au Under-sink food waste macerators and disposers https://www.insinkerator.com.au (household type macerators) https://insinkerator.emerson.com (commercial-grade macerators)
Cooking oil storage and recycling	Used cooking oil	 	Cooking oil recycling Example: https://www.cookers.com.au Cooking oil delivery, used oil collection and provision of required equipment

Systems	Waste Streams	Examples	Information
			
Bunded pallets	Liquid Waste		Spill containment, e.g. for waste cooking oil containers Example: https://www.tradeenviro.com.au/bunded-pallets https://www.materialshandling.com.au/products/bunded-pallet
Compactors / bin presses	General waste		Volume reduction through refuse compaction Examples: Stationary compactor, range between 10000L to 35000L https://www.wastech.com.au/products/compactors Litter bin compactor https://www.solarbins.com.au/features/big-belly-solar-bin Under-chute compactor https://www.wastech.com.au/products/chutes/ecopac-compactor Bin press https://wasteinitiatives.com.au/products/waste-compactors
Balers	Paper / cardboard, plastics		Volume reduction of paper, cardboard, plastics by compaction (baling) Examples: https://www.miltek.com.au/balers-and-compactors https://www.wastech.com.au/products/balers https://wasteinitiatives.com.au/product/vertical-balers/wastepac-60

Systems	Waste Streams	Examples	Information
			
Trolleys	General waste, recycling, food waste, paper / cardboard		Assisted manual transfer of refuse Examples: https://rubbermaidcommercial.com.au/products/waste-management/mega-brute https://www.materialshandling.com.au/products/deluxe-compact-cleaning-carts

B.3 Refuse Transfer and Disposal Methods

Method	Examples	Description
Manual transfer / disposal	   	**Manual transfer** is simply the process of physically carrying waste bags, food waste receptacles or recycling boxes and crates without assistance. From a safety perspective, this is acceptable for small quantities and initial disposal into refuse chutes, refuse compartments or, in the case of ground level activities, directly into the refuse storage room. • **Waste** material should be bagged prior to any transfer from apartments, suites, offices, back-of-house areas etc. to waste storage compartments or rooms. • **Food waste** should be placed in receptacles such as a caddy style bin or bucket which will not allow leakage during transfer. • **Recycling** material should be placed in boxes or crates prior to transfer. • **Cardboard and paper** items can be placed within another cardboard box for transfer. Examples: https://www.alamy.com
Assisted manual transfer		**Assisted manual transfer** includes the use of any wheeled container, wheelie bin or trolley with a capacity to carry refuse items with a combined weight of 20kg and above. The equipment bares the weight of the material, but it still requires physical force and or balance to move the bin or trolley. From a safety perspective, this type of equipment should be a minimum requirement for transfer of material greater than 20kg and when transferring between individual levels to the refuse storage room or loading areas. Use of enclosed or caged equipment will also eliminate 'litter or leakage trails' which can occur when using open or unsealed equipment. Examples: http://www.justwheeliebins.com.au, https://rubbermaidcommercial.com.au, https://www.materialshandling.com.au

B.4 Refuse Volume Minimisation Options

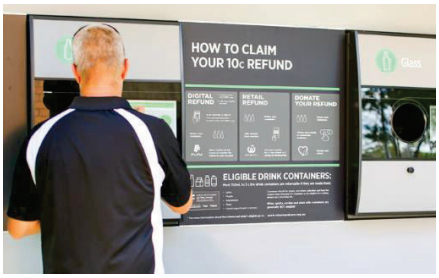
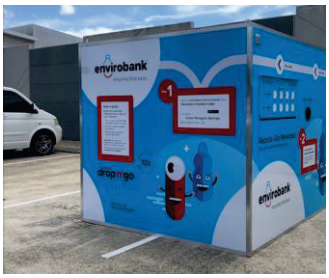
Refuse Volume Minimisation Options – Waste

Systems	Description
Food rescue	OzHarvest and Second Bite are food rescue organisations working throughout Australia. The organisation collects surplus foods from businesses (including Woolworths, Coles, Goodman Fielder and other smaller companies) and redistributes the foods to welfare agencies. They provide regular scheduled collections or ad-hoc / on call collections, and they have refrigerated vehicles. Other accepted items include fresh fruit and vegetables, tinned goods, cold meats and deli items, and readymade meals (which will only be accepted frozen). Where food rescue organisations are available, consideration may be given to suitable space for the temporary storage of food stuffs, including dry storage and the placement of a small fridge if cold room space is not available. There is no associated collections cost. Hence, it can be considered a zero-cost option for disposal of what would otherwise be food waste, and it supports the community at the same time.   Sources: www.ozharvest.org, www.secondbite.org
Composting	Food waste composing is an option of reducing the amount of general waste going to landfill where organic waste can create methane gas due to anaerobic digestion, which contributes to global warming. Systems of different scales exist from small benchtop composters for individual households or apartments to commercial size systems. Examples are shown below. The process usually involves breaking down organic food scraps through natural processes. This includes systems such as worm farms or composters where microbes break down the food waste, with or without the aid of compost additives. The composted products are rich in nutrients and good bacteria, and they can be added to flower bed or gardens. Most food wastes and other organic (garden) material can be composted including meat, fish, vegetables, fruit, dairy, coffee or wilted flowers. However, large bones, excessive liquids such as cooking oil or seafood shells should not be placed in the composers.  Sources: https://www.urbancomposter.com.au, https://closedloop.com.au/upcycling-products, https://www.feedtheorca.com
Food waste separation and collection	When considering separation of organic food waste, the handling and potential for volume reduction should also be considered. As an example, the **Pulpmaster** system can be used to reduce the stored volume of food waste produced, and to prepare the material for re-use. Typically, the system is placed in proximity to sink areas in the kitchen, particularly where food preparation waste or plate scrapings can be easily disposed. This provides a fully sealed transfer system for storage and collection. Pulping systems can also be placed back-of-house spaces for

Systems	Description
	restaurants and cafes or placed within a refuse room for centralisation to multiple users. Pulped food waste is pumped into holding tanks for storage and collection via a 50mm pipe and collected by a liquid vacuum tanker. The images below provide visual context of the connection from pulping machine to storage tank and the option for decanting 120L bins into the machine via a bin lifter and auger feed. The tank may be up to 20m away from the pulping machine. The distance is increased when including vertical drops from upper levels of the building. The storage tank may be up to 30m from a loading area, with the only requirement being a service pipe with camlock end connection placed within proximity of the loading area. Collections are completed by a vacuum tanker which may range in size depending on the size of the storage tanks and the distance of the tank from the loading area.      Source: http://pulpmaster.com.au
Waste Conversion	Converting waste by reducing its volume and weight means less material to be disposed of, which results in fewer refuse collection vehicle kilometres. This allows cost savings in logistics and has a positive environmental effect due to less fuel used per amount of waste to be disposed. As an example, OMPECO provide a solution for converting general and medical waste into a sterilised, dehydrated ground material as shown below. The process involves loading the sterilisation chamber with waste material and crushing / shredding of the material by rotors to produce a fine ground. During the process, the material is heated by friction to 100˚C which causes the moisture in the waste material to evaporate. After evaporation, the material is heated further to sterilisation or pasteurisation. The ground material is then cooled down to be unloaded from the converter. The final product has excellent long-term handling and storage properties, the it has up to 80% less volume and 50% less weight than the original waste material. It can be used in waste to energy systems as it is comparatively dry with a high calorific value.    Source: http://www.ompeco.com/italian/language/en/home-2/#
Waste compaction	Various compaction equipment exists for reducing the volume of (general) waste. As a result, less bins and / or fewer bin collections and service vehicle trips are required, which helps to reduce costs and environmental impact.

Systems	Description
	Examples of typical waste compaction equipment include the following: • Under chute compactors can be installed in developments with waste chutes. This allows to compact waste material before it is discharged from the chute into the waste bins. • Bin presses can be used to annually compress waste material in bins of different sizes. • For public spaces, litter bins are available with a built-in compaction mechanism that reduces the volume of waste material in the bins. An innovative example is the solar compactor shown below. Energy produced by a solar panel on top of the bin is used to operate a fill level sensor and automated internal compaction mechanism, allowing up to eight times more waste to be stored in the bin before collection is required. In addition, notification about the fill level of the bins can be sent out in order to monitor bins and manage collection frequencies.  Sources: https://www.wastech.com.au/products/compactors, https://www.wastech.com.au/products/chutes/ecopac-compactor, https://wasteinitiatives.com.au/products/waste-compactors, https://www.solarbins.com.au/features/big-belly-solar-bin
Charity donations	A good way of minimising waste is to reuse items that are still good to use. Several charity organisations exist that accept items such clothing, shoes, bedding, books, toys, furniture, kitchenware and other household items. The donated items must not be torn, damaged or broken. Electrical appliances such as white goods are usually not accepted. Common organisations operating in Australia include Saint Vincent de Paul Society (Vinnies) and Lifeline (see images below). Items can be placed into the organisations' charity / donation bins located in various public spaces such as near community or shopping areas. Alternatively, they can be dropped off at the organisations' shops during opening hours. Refer to https://www.lifeline.org.au or https://www.vinnies.org.au for further information. For larger developments and precincts where large amounts of donation items can be expected, the placement of charity bins within the development should be taken into consideration.   Sources: https://www.vinnies.org.au, https://lifelinesouthcoast.org.au

Refuse Volume Minimisation Options – Recycling

Systems	Description
Container deposit schemes	Container deposit / refund schemes are currently in place in several states in Australia. Various models exist including bottle return facilities and (automated) reverse vending machines. Residents, tenants, staff and cleaners should be encouraged to separate containers that qualify for the schemes from the waste or recycling streams, and return them to one of the return points. Storage space or dedicated bins within tenancies, apartments or communal areas should be provided. For larger developments or precincts where large amounts of empty containers are expected, consideration may be given to an on-site return point. The return points should be located near recycling bins so that cardboard boxes or plastic bags that have been used to transfer the empty containers to the return point can be disposed appropriately. This can prevent cluttering of the area around the return point. The images below show a typical return point and containers that commonly qualify for a deposit refund.    Sources: https://returnandearn.org.au, https://envirobank.com.au/bottle-and-can-recycling-queensland, https://www.containersforchange.com.au/how-it-works
Glass crushing	Bottle crushers can reduce back-of-house and refuse room storage volumes by up to 80%. The machines are quiet and efficient. The inclusion of a glass crusher may either be designed into bar or kitchen areas, placed in back-of-house areas, or a machine may take the place of an existing recycling bin within a refuse storage room. Scanners are also being developed for these machines for scanning of bottles prior to crushing to align with government bottle return schemes. The images below show a typical setting of a glass crusher in a bar.    Sources: http://www.insideenterprises.com.au/bottlecycler/index.html, http://www.bottlecycler.com

B.5 Refuse Management Equipment Suppliers

Waste Management Equipment	Balers	Compactors	Shredders	Glass Crushers	Chutes	Bin Tugs / Trailers	Trolleys / Manual Handling Equipment	Bin Lifters / Tippers	Bin Rotation	Weighing Systems	Spill Containment, Spill Response, Absorbents, Drain Protection	Food Waste Management / Vacuum Systems, Pulping, Digestors	Composting	Waste Cooking Oil Systems	Smoking Management	Bins (General), Bin Stands	Bin Cleaning Equipment	Sorting Equipment
Elephants Foot Recycling Solutions http://www.elephantsfoot.com.au	✓	✓		✓	✓			✓	✓	✓								
Waste Initiatives https://wasteinitiatives.com.au	✓	✓	✓	✓														✓
Wastech http://wastech.com.au	✓	✓	✓		✓			✓										
Pakmor http://pakmor.com.au	✓	✓	✓					✓		✓								
Miltek http://www.miltek.com.au	✓	✓																
BottleCycler http://www.bottlecycler.com				✓														
Materials Handling https://www.materialshandling.com.au						✓	✓	✓			✓					✓	✓	
Spacepac http://ev.spacepac.com.au						✓	✓											
Spacepac Solutions http://www.spacepac.com.au						✓	✓								✓	✓		
Draffin https://draffin.com.au								✓							✓	✓		
Electrodrive / Lift Master http://www.electrodrive.com.au						✓		✓										
Absorbenviro http://www.absorbenviro.com.au											✓							
Trade Environmental http://www.tradeenviro.com.au											✓							
Spillstationaustralia www.spillstation.com.au											✓							

Waste Management Equipment	Balers	Compactors	Shredders	Glass Crushers	Chutes	Bin Tugs / Trailers	Trolleys / Manual Handling Equipment	Bin Lifters / Tippers	Bin Rotation	Weighing Systems	Spill Containment, Spill Response, Absorbents, Drain Protection	Food Waste Management / Vacuum Systems, Pulping, Digestors	Composting	Waste Cooking Oil Systems	Smoking Management	Bins (General), Bin Stands	Bin Cleaning Equipment	Sorting Equipment
Pulpmaster http://pulpmaster.com.au												✓						
Australian Vacuum Systems http://www.australianvacuumsystems.com.au												✓						
Meiko https://www.meiko.com.au												✓						
Closed Loop Organics https://closedloop.com.au/upcycling-products,													✓					
Compost Revolution https://compostrevolution.com.au													✓					
Urban Composter https://www.urbancomposter.com.au													✓					
ORCA Digester https://www.feedtheorca.com													✓					
Cookers https://www.cookers.com.au														✓				
Rubbermaid https://rubbermaidcommercial.com.au/products/waste-management							✓				✓				✓	✓		
Sulo http://www.sulo.com.au							✓						✓			✓		
Australian Waste Management https://www.australianwastemanagement.com.au/products								✓								✓		

B.6 Refuse Management Service Providers

Specialist Waste Services	Food Waste	Waste Cooking Oil	Hazardous Waste	Liquid Waste	Electronic Waste	Industrial Waste	Construction & Demolition Waste	Waste Water	Secure Document Destruction
Cleanaway * https://www.cleanaway.com.au		✓	✓				✓	✓	
JJ Richards * https://www.jjrichards.com.au		✓	✓	✓		✓	✓	✓	
Veolia * https://www.veolia.com/anz			✓	✓	✓		✓	✓	✓
Suez * https://www.suez.com.au				✓	✓		✓	✓	
SecondBite https://www.secondbite.org	✓								
OZ Harvest https://www.ozharvest.org	✓								
Cookers https://www.cookers.com.au		✓							
ToxFree https://www.toxfree.com.au			✓		✓	✓			
AceWaste https://www.acewaste.com.au			✓			✓			

Appendix C Refuse Signage

C.1 Refuse Signage

All waste stream signage used should be colour coded to be compliant with *AS 4123.7–2006 Mobile waste containers – Part 7: Colours, markings and designation requirements.*

Waste signage guideline are provided by the Queensland government: https://www.qld.gov.au/environment/pollution/management/waste/recovery/recycling/signage.

General Refuse Signage

Other Refuse Signage

Colour coding as per AS 4123.7-2006

Mixed (Commingled) Recycling	*PMS 108*
General waste (landfill)	*PMS 032C*
Organics	*PMS 15-0343*
Paper and cardboard recycling	*PMS Process Blue C*
Soft Plastics	*PMS 1655*
Used Cooking Oil	*Grey*

C.2 Other Refuse, Facility and Safety Signage

Various signage including refuse area, safety and facility signage should be arranged through certified signage providers. Example signs can be found at http://www.signblitz.com.au, https://www.wayout.com.au or https://www.smartsign.com.

Example Refuse Room Signage

Example Facility Signage

Example Safety Signage

Appendix D Terms and Abbreviations

In this OWMP, a term or abbreviation has the following meaning unless indicated otherwise:

TERM	ABBREVIATION	DEFINITION
Equipment		
Bin (Refuse Bin)		A plastic or steel container for disposal and temporary storage of waste or recycling items. Various types and sizes exist for different items and purposes. Examples include residential unit bins, bulk bins, MGB, steely bins and specialised for medical waste or cigarette butts.
Bin Storage Area		An enclosed area designated for storing on-site refuse bins or a refuse compactor within the property.
Bulk Bin		A galvanized or steel bin receptacle that is greater than 360L in capacity generally ranging from 1.00m³ to 4.50m³ used for the storage of refuse that is used for on-site refuse collection.
Bulk Mobile Garbage Bin	Bulk MGB	A plastic (polypropylene) receptacle that is greater than 360L in capacity generally ranging from 660L to 1100L used for the storage of refuse.
Collection Point		An identified position where refuse bins are stored for collection and emptying. The collection point can also be the bin storage area.
Compactor		A receptacle that provides for the mechanical compaction and temporary storage of refuse. It allows to reduce bin numbers and collection frequency.
Composter		A container or machine used for composting specific food scraps and/or organic materials.
Food Waste Recycling System		Defined as a vacuum or pump-based system for shredding, macerating or pulping of food waste. The food waste is transferred through pressure (service) pipes to sealed liquid storage tanks.
Green Waste		All vegetated organic material such as small branches, leaves and grass clippings, tree and shrub pruning, plants and flowers.
Liquid Waste		Non-hazardous liquid waste generated by commercial premises should be connected to sewer or collected for treatment and disposal by a liquid waste contractor (including grease trap waste).
Mobile Garbage Bin	MGB	A plastic (polypropylene) bin or bins used for the temporary storage of refuse that is up to 360L in capacity and may be used in kerbside refuse collection or on-site collection.
Putrescible Waste		Putrescible waste is the component of the waste stream liable to become putrid and usually breaks down in a landfill to create landfill gases and leachate. Typically applies to food, animal and organic products.
Recycling		Recycling contains all material suitable for re-manufacture or re-use, e.g. glass bottles and jars; plastics such as PET, HDPE and PVC; aluminium aerosol and steel cans and lids; milk and juice cartons; soft drink, milk and shampoo containers; paper, cardboard, junk mail, newspapers and magazines.
Refuse		Refuse is material generated and discarded from residential and commercial buildings including general waste, recyclables, green waste and bulky items.
Refuse Storage Room		An area identified for storing on-site MGBs or Bulk Bins within the property.
Refuse Tolley		A cart on wheels that can be used to collect smaller quantities of refuse from different areas or rooms of a building or site, and wheel the collected refuse to a (bulk) bin storage area where it is disposed. Refuse trolleys are commonly used in hotels or offices.
Regulated Waste		Regulated waste is waste prescribed under legislation as regulated waste.

TERM	ABBREVIATION	DEFINITION
Transfer (Manual Transfer)		Manual transfer means physical transfer of refuse material and associated bulk bins or trolleys without assistance.
Waste		Waste is referred to as refuse material with the exclusion of recycling, green waste, hazardous waste, special waste, liquid waste and restricted solid waste.
Waste (General Waste)		General waste is generally referred to as material free of any actual or apparent contamination such as pathological / infectious, radioactive materials and / or hazardous chemical. Reporting use is for material considered to be free of food waste.
Wheelie Bin		A MGB of up to 360L, usually with 2 wheels for easy transfer. A common type is a 240L wheelie bin used for kerbside collection in many residential areas.
Measures		
Cubic Metre	m^3	Volume in cubic metre(s) related to refuse management equipment.
Ground Floor Area	GFA	The GFA of all storeys of a building is measured from the outside of the external walls or the centre of a common wall. It is commonly measured in square metres.
Kilogram	kg	Kilogram(s) related to refuse weight.
Litre	L	Litre(s) related to refuse volumes.
Square Metre	m^2	Square metre(s) related to refuse areas.
Ton	T	Ton(s) related to refuse weight.
Collection Vehicles		
Body Truck		A conventional heavy vehicle with a covered loading area. It is generally not specifically designed for emptying the content of bins into the truck during refuse collections, but can be used to carry entire (full) bins for servicing by bin swap-over.
Refuse Collection Vehicle	RCV	A vehicle specifically designed for collecting and emptying refuse bins and refuse compactors.
Rear-End-Loading Refuse Collection Vehicle	REL RCV	A truck specially designed to collect municipal solid waste and recycling, typically 240L wheelie bins to 1100L bulk bins, from rear loading mechanism and haul the collected waste to a solid waste treatment facility.
Tank Truck		An RCV that is specifically designed to collect liquid wastes such as waste cooking oil and food waste pulp. The waste is typically pumped from a waste storage tank into the truck via a hose. Liquid waste management equipment is often provided by the contractor who collects the waste and operates the truck.