

ATTACHMENT B OPERATIONAL WASTE MANAGEMENT PLAN

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

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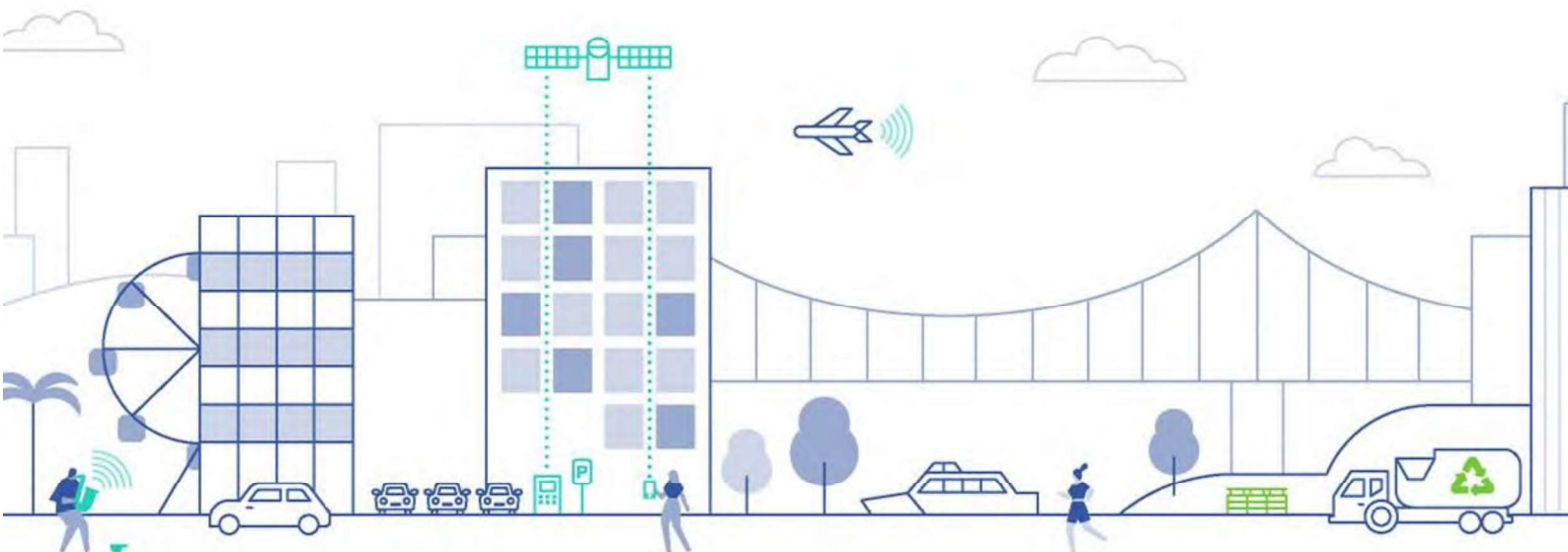


Operational Waste Management Plan

Proposed Commercial Development

At 39 Mayne Road, Bowen Hills

On behalf of Cushman and Wakefield



About TTM

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Revision Record

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Executive Summary

This document is an Operational Waste Management Plan (OWMP) developed for a proposed commercial development to be located at 39 Mayne Road, Bowen Hills.

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 5) of the Brisbane City Council's (BCC) Refuse Planning scheme policy and complies with A063. Point 1 and 2 of the 9.3.3 Centre Mixed Use Code. 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.

- Proposed equipment:

Refuse Stream	Bin / Equipment Required	Service Frequency
General Waste	1 x 1100L	3 Times per week
Commingled Recycling	1 x 1100L	3 Times per week

- Refuse collection:
 - All refuse will be collected by private contractor using Rear Loading RCV.
 - Service frequency is based on a maximum 3 services per week or 6 services per fortnight.
- Refuse storage:
 - Refuse will be housed in a screened exterior enclosure.
 - Separate storage is provided for hazardous and regulated wastes.
- Refuse transfer:
 - Collecting contractor will collect bins directly from the storage enclosure for servicing and returned once the service is complete.
- Refuse disposal:
 - Bins will be provided throughout the building. After each day of operation or as required, refuse will be transferred by staff / cleaners to the refuse room and decanted into the appropriate bulk bins or moved to the appropriate storage area.

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1 Introduction

1.1. Background

TTM Consulting has been engaged by Cushman and Wakefield to prepare an OWMP to support the proposed commercial development located at 39 Mayne Road, Bowen Hills. It is understood that a development application will be lodged with Brisbane City Council (BCC).

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 the refuse collection, storage, and transfer. Information on refuse disposal and collection points is given for each use within the development. 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 report are explained in Table 1.1. The key information for Council approval can be found in Section 2.

Table 1.1: Scope Items

Item	Explanation
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 including site plans and drawings, recommended refuse management equipment and system specifications, 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 will 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 material 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 is a non-residential use site, TTM has referred to BCC requirements as outlined in the Refuse PSP under section 2,3 and 5 as these sections relate to non-residential uses. Table 1.2 demonstrates the refuse management items addressed to align with BCC's Refuse PSP requirements. This also meets the acceptable outcomes as described with A063.1 and .2 of the 9.3.3 Centre Mixed Use Code.

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.	Traffic Report has been submitted with DA
(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.	N/A
(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 beside the main internal circulating road (near the intersection) for a collection point for the mobile garbage bins required for those dwellings.	N/A
(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 flat grade for servicing.
Section 4 - Residential Refuse Collection – Not Applicable Commercial Site Only		
Section 4.1 - Kerbside Collection (MGB's) - Not Applicable Commercial Site Only		
Section 4.2 – On-site Collection (Bulk Bins) – This section applies to Residential services – Not Applicable Commercial Site Only		
Section 5 – Non-Residential Refuse Collection		
(1)	The requirements for refuse bins or refuse compactors for non-residential development will be assessed case by case, based on the type and amount of waste generated by the development, which is dependent on the operational activities of the development.	OWMP – Provides the details for assessment
(2)	Sufficient information is provided to demonstrate that refuse collection can occur in an efficient and safe manner on site without adverse impact on amenity (acoustic, odour or visual impacts) and pedestrian and vehicular traffic.	Complies – Services are performed within site standing on driveway.
(3)	This information may include evidence from a refuse collection contractor to demonstrate that collection will occur outside normal service/delivery or business times, where seeking permission to allow a refuse collection vehicle to use service bays or parking spaces on the site for access.	Commercial Contractor to be confirmed and to complete a site risk assessment
(4)	If proposing to use clearances less than the minimum vertical clearances in Table 3, a written confirmation from the proposed waste collection contractor giving full details of the proposed system, bin sizes, number of bins, frequency of collection and the refuse collection vehicle size is to be provided.	N/A – full size BCC spec RCV used for design purposes.
(5)	If the gross floor area of a freestanding food and drink outlet, shop or office is less than 200sqm a dedicated service bay is not required for a refuse collection vehicle.	N/A
(6)	Provision is made for on-site refuse collection for Short-term accommodation if an accommodation hotel or motel.	N/A
(7)	Where disposal of industrial or commercial liquid waste by discharge to a road tanker, the road tanker is to be wholly on-site during collection.	Complies – Vacuum Tankers are able to stand wholly on-site
(8)	The storage areas for industrial bins are to be either within a building or enclosure.	Complies – Bins are stored within an enclosure

1.4. Site Location

The site is located at 39 Mayne Road, Bowen Hills, as shown in Figure 1.1. The property description is Lot 6 on SL12311. The site has vehicular access points from Mayne Road, Edgar Street and Pace Street.



Figure 1.1: Site Location

Source: Queensland Globe, 2022

1.5. Development Summary

The proposed development is a vehicle service workshop. The development will see changes made to an existing building including the addition of exterior shelters constructed from shipping containers and container domes.

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

Description	Measure
Office	849m ² GFA
Workshop	803m ² GFA
Open Yard – Car Storage	5,120m ² GFA
Total Refuse Generating Area	1652m²

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 commercial refuse produced have been applied based on rates recommended by Brisbane City Council to achieve compliance. It should be noted that these rates are standardise generation rates and not site specific however, give an estimation on the maximum potential waste generation. Site specific auditing once operational will be required to establish actual refuse generation of this and enable refinement of waste strategy and refuse equipment employed.

Table 2.1: BCC Provided Generation Rates

Type	Measure	General Waste	Combined Recycling	Days of Operation
Commercial Office	L / 100m ² / Day	10	20	6
Industry (Workshop)	L / 100m ² / Day	50	50	6

Table 2.2: Commercial Refuse Calculations

Description	Area	Measure	General Waste L/Week	Commingle Recycling L/Week
Office Space	849	GFA (m ²)	509	1,019
Workshop	803	GFA (m ²)	2,409	2,409
Total Weekly Volumes (L / Week)			2,918	3,428
Volumes per Day (L / Day)			486	571
Volumes per Collection (L / Collection)			973	1,143
Collection and Equipment Details	Collections per Week		3	3
	Storage Capacity		3 Days	3 Days
	Equipment Size		1100L	1100L
	Equipment Quantity Required		1	1

A maximum commercial collection frequency of 3 times per week or 6 times per fortnight has been established to be compliant with BCC'S un-documented maximum 'low-frequency servicing' requirement.

2.2. Refuse Bins and Equipment Requirements

Table 2.3 and Table 2.4 below outline 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 required and equipment expected.

Table 2.3: Bin Requirements

Refuse Stream	Bin / Equipment - Type or Size	Bins Required
General Waste	1100L	1
Commingled Recycling	1100L	1

Table 2.4: Additional Equipment

Description	Quantity	Notes – See Appendix B.1 for Details
Refuse / Cleaner Trolleys	TBD	To assist in transfer of refuse to storage area.

2.3. Refuse Storage

All refuse will be stored within stream separated bulk bins located in a screened external storage enclosure. The storage enclosure will be positioned on the southern side of the existing building adjoining the boundary.

The storage area has been separated for the provision of storage for hazardous and regulated waste to ensure separation from the general waste stream as required by the Environmental Protection Regulation 2019. Sewer connected drains will not be installed in Regulated and liquid waste storage areas, rather these storage areas will be bunded to prevent spills.

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 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 gated entrance 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 combine area.
- Is positioned away from entrances to shops or residential premises.
- The height of the bin storage area allows for the waste bins to be opened and closed.
- A hose cock provided inside the room in the dedicated bin wash area for cleaning bins and rooms.
- The walls, 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 ventilated.

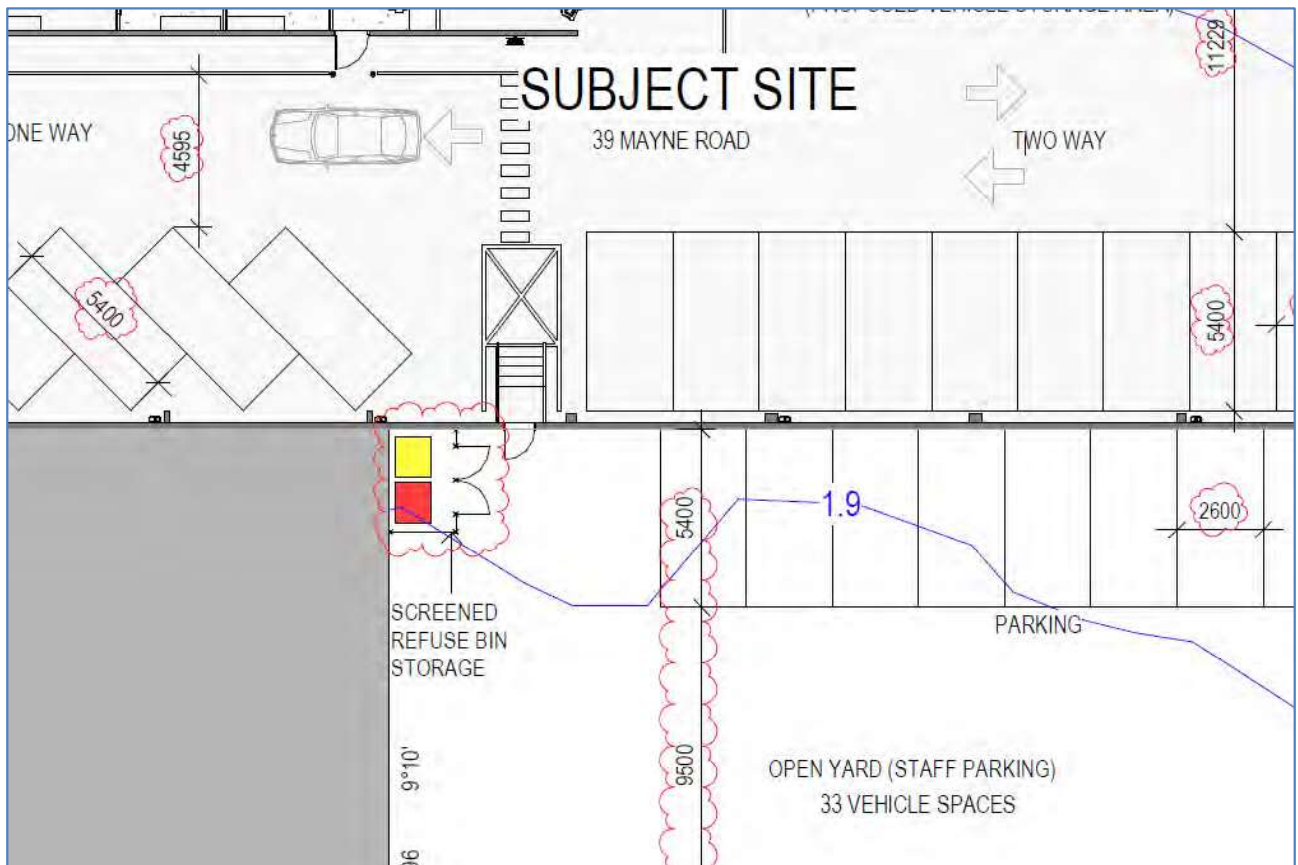


Figure 2.1: Refuse Enclosure Location

Source: ERA Architects, Project: Brisbane BMW, Drawing: TP-04, Date:20.01.22, Plan: Proposed Site Plan

2.4. Refuse Transfer

The collecting contractor will collect bins directly from the storage enclosure for service, minimal transfer is required to manoeuvre bins from the enclosure to the RCV lifting mechanism

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.

2.5. RCV Arrangements and Bin Servicing Areas

All refuse will be collected by rear loading RCV's by private contractor. RCV's will enter site in a forward gear via the crossover provided on Edgar Street, turn to the right once inside the site and perform a single reverse manoeuvre to position the RCV in close proximity to the refuse enclosure. RCVs will stand in the driveway and service the bins required, return the bins to the refuse enclosure, circulate the site and exit in a forward gear via the exit only gate onto Pace Street.

Full details on vehicle access and on-site manoeuvring can be found in the traffic report submitted with the development application.

The type of vehicles allocated, and demand will be subject to final design. The collection days and frequency form a part of the contract between building management and the preferred contractor and is agreed to based on both the building contractors' business requirements.

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.
- Is clearly separated from car parking bays, footpaths, and pedestrian access.
- Does not block the entry and exit 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 vehicle and pedestrian traffic external to the site.

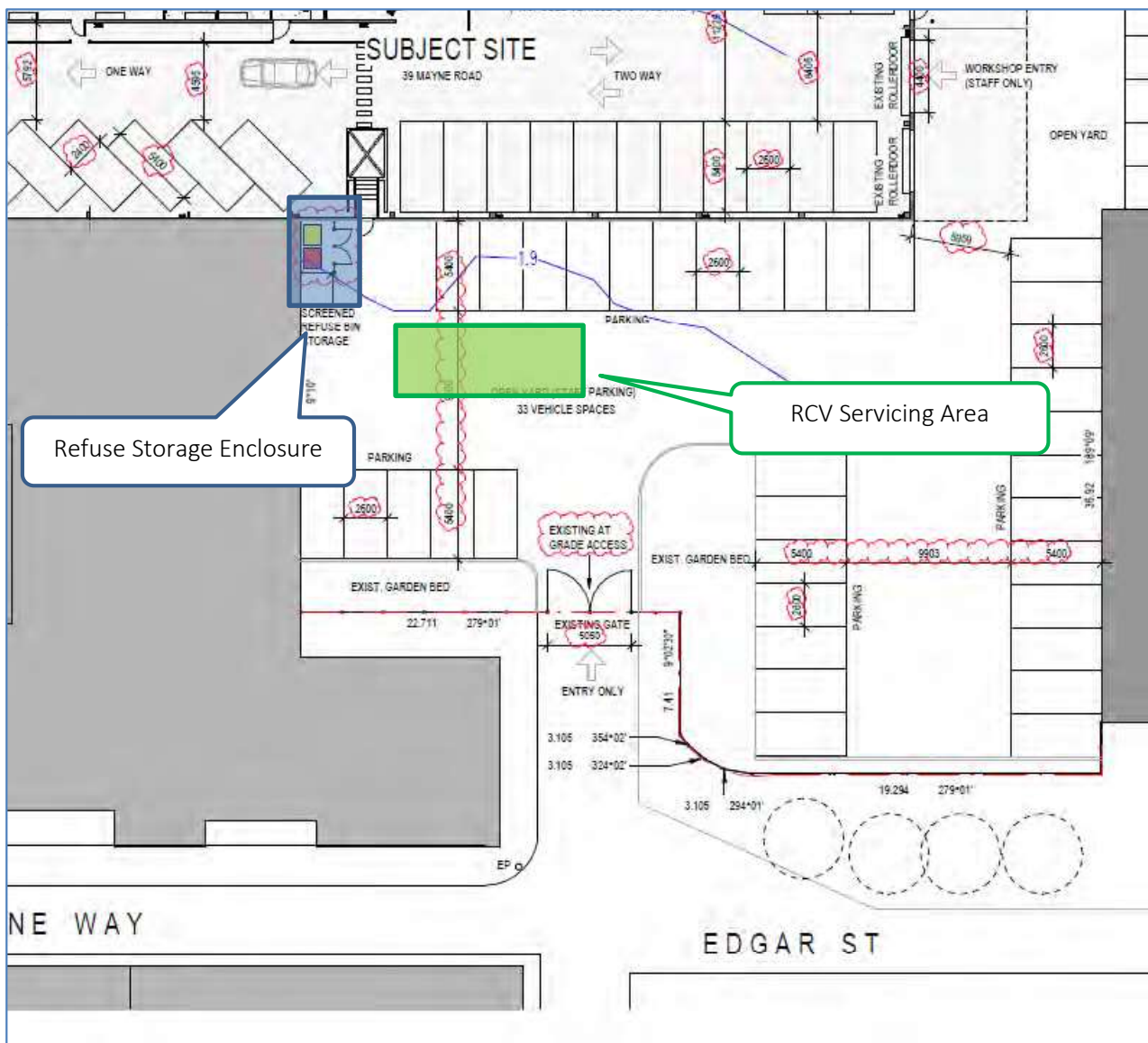


Figure 2.2: RCV Servicing Area

Source: ERA Architects, Project: Brisbane BMW, Drawing: TP-04 , Date: 20.01.22, Plan: Proposed Site Plan

3 Recommended Operational Requirements

3.1. Operational Equipment Summary

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 describes the frequently generated refuse streams that are generated in high volumes for any given period and require significant capacity for storage collections. Section 3.1.2 to 3.1.4 describes the infrequently generated refuse streams that are generated in relatively low volumes, and where minimal provision for storage can be easily be managed by collection frequency.

3.1.1 Frequently Generated Refuse.

Bins will be provided throughout the building. After each day of operation or as required, refuse will be transferred by staff / cleaners to the refuse room and decanted into the appropriate bulk bins or moved to the appropriate storage area. Further details are provided in Table 3.1.

Table 3.1: Disposal of Frequently Generated Waste

Refuse Stream	Disposal Details
WASTE	
General Waste	Different wastes may be produced by the different area uses throughout the building. General waste bins should always be lined with bags and the bags tied before removal. General waste bins should be accompanied by a recycling bin in order to facilitate separation of general waste and recycling. Signage should be provided to encourage source separation and prevent hazardous waste being disposed of incorrectly. For general waste, bins of at least 60L capacity should be located in staff areas (such as desks, eating areas, offices etc) or back-of-house. Larger bins can also be placed in areas of the tenancy where high volumes of waste are likely to be generated.
RECYCLING	
Retail Commingled, including • glass • aluminum • steel cans • tins • paper • small cardboard • semi rigid plastics	Different recycling materials may be produced by the different area uses throughout the building. 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 a larger container / bin on a trolley for transport to the refuse storage area. Signage should be provided to encourage source separation. For commingled recycling material bins of at least 60L capacity should be located in staff rooms, or back-of-house. Larger bins can also be placed in areas of the tenancy where high volumes of recyclable material is likely to be generated. 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.

Cardboard / Paper and Plastic Film	Cardboard / paper and plastic film should be disposed separately from commingled recycling if large quantities are expected. Cardboard and plastics must not be mixed. They must be stored individually (and baled individually if applicable). Where possible, large cardboard boxes and plastic film or packaging should be removed from the refuse stream prior to going into the building or individual tenancies. This involves decanting at the delivery bay and providing trolleys or stackable containers for use in transporting the decanted goods to each level. Where this material does make it into the building, a bin, trolley or mobile container should be placed for disposal. Cardboard, plastic film and packaging should not be placed on floors in refuse rooms or compartments. When already placed in a bin or trolley, this material is easily transferred to the refuse room and decanted into the appropriate bin or baling equipment. For operational efficiency, consideration can be given to placing fixed bins within the building, and staff / cleaners circulating with a mobile bin or trolley to each level decant the fixed bins before returning to the refuse room to dispose of the material into the bulk bins.
Secure Destruction Paper	Offices often produce large amount of secure destruction paper / confidential paper documents which need to be disposed separately from general recyclable cardboard / paper. Special 240L bins are typically placed within the office areas for disposal of secure destruction paper. The bins are collected from within the building by the appropriate contractor and replaced by empty bins. Alternatively, staff / cleaners may take the bins to the refuse room prior to collection.

3.1.2. Regulated Waste

This information comes from the motor vehicle workshop requirements for motor vehicle workshops – It should be noted the use of this site, wont generate these items, it has been included for information purposes, and can be removed if required.

Table 3.2: Disposal of Regulated Waste

Refuse Stream	Disposal Details
Regulated waste includes: - oily rags - oil filters - waste oils - solvents - coolant - caustic brake fluid - fuel - batteries - tyres	Regulated waste must not be placed in a bin or skip for disposal to landfill. Regulated waste must be handled with due care, separated and securely stored for collection by a specialist waste contractor. Please refer to local and QLD government websites for further information. Regulated waste can be recycled in some areas. Your waste contractor or local Council can provide advice on the Regulated waste collection network in your area. Ensure regulated wastes are separated and removed for disposal by a licensed waste transporter. When organising for the disposal of hazardous waste, service station operators are responsible for classifying it and ensuring that: - The transporter is appropriately licensed. - The waste is being sent to a facility that can lawfully take it. - All collection receipts are kept. The common types of liquid wastes generated around service station workshops are: - Waste oils, coolant and solvents (e.g. thinners) - Paints - Acids and alkalis - Oil/water separator waste liquid. Waste Oil All containers must be drained of all residue oil before they can be recycled. Wherever possible, waste oils should be recycled. Waste oils should be collected in a secure, clearly labelled drums or tanks that are stored in an undercover and bunded area. Liquid wastes that are flammable are classified as 'hazardous wastes'. Only some types of liquid wastes may be discharged to the sewer. A trade waste permit must be obtained from your water Authority or the local Council, before disposing any trade waste to the sewer.

Refuse Stream	Disposal Details
	Do not mix different liquid wastes. Different liquids are treated differently in recycling and disposal, so mixing these together can complicate waste disposal and make the management more expensive. Paints Wastes from paint removal operations include used thinners from chemical stripping and inorganic wastes from media blasting. Excess paint / residue must not enter the stormwater or sewerage system Oil Filters Best practice management of oil filter wastes involves the use of a mechanical crusher to remove and recover most of the oil they contain. The free oil removed from the filter must be contained, managed and stored separately from the filters. Drained and mechanically crushed oil filters (not containing free liquids) are then classified as solid waste. Some metal recyclers may accept the crushed filters for scrap metal, or they can be placed in a bin or skip for disposal to landfill. Solvents Solvents are hazardous to the environment and are often flammable and volatile materials. Waste solvent is primarily generated from cleaning equipment and parts. Solvents should be stored in tightly sealed containers in an enclosed area of cabinet. Solvents must not enter the stormwater or sewerage system and should be collected by a designated contractor. Coolants Improper disposal of used coolant, such as radiator fluid, can result in contamination of soils, groundwater or stormwater and is hazardous to the environment and should not be dumped illegally any water bodies. Coolants should be stored in drums and containers on a sealed, bunded and undercover area. Coolants should not be mixed with any other liquid wastes and should be collected and treated separately. Batteries Some batteries contain lead, lead sulphate, lead dioxide and sulphuric acid, all of which can be very harmful to the Environment and is mandatory to not end up in landfill. A designated contractor must collect and recycling old batteries. Used batteries should only be broken up, or have their contents tipped out, at facilities that specialise in this work. Used batteries should be stored on a spill tray under cover or in a bunded area to ensure acid or lead corrosion does not drain into the stormwater system or contaminate the soil. Metals / parts Clutch, brakes and gaskets that do not contain asbestos can be disposed of to landfill, although some parts may be suitable for recycling.

Bunding

To ensure best practice, it is recommended that regular reviews of all operations and storage facilities to prevent all types of spills from running into stormwater are conducted. Containers should be tightly sealed and regularly inspected for leaks.

Bunds should be provided for all hazardous wastes to prevent any spill from entering drains, sewerage or stormwater. All bunds should be collected by designated contractors.

Spills and Spill Response

Spills can also pose significant hazards to the environment and an emergency response procedure should be provided.

In the event of a spill, any leaks must be quickly contained to prevent it reaching stormwater, the sewer or causing other contamination. Management should also be notified and areas should be evacuated if necessary. PPE must always be used and training provided to all staff.

3.1.3. Electronic Waste

Separation of e-waste is encouraged to keep out of landfill. The Australian Government has created the National Television and Computer recycling scheme for small businesses from 2011. Companies who manufacture / import e-waste products are liable and responsible for the whole life cycle of their products.

Further details are outlined in Table 3.3.

Table 3.3: Disposal of E-Waste

Refuse Stream	Disposal Details
Electronic Waste	E-waste items such as computers, monitors, keyboards, printers, televisions, and scanners can be recycled. However, these items should not be placed in recycling bins. There are four organisations that recycle computers and computer accessories under the scheme such as Ecycle Solutions, TechCollect, Sustainable Product Stewards Pty Ltd and The Activ Group Solutions Pty Ltd (Ecoactiv). Mobile phones, batteries, chargers and accessories can be recycled at a MobileMuster collection point or via most transfer stations. Where applicable, tenants usually make their own arrangements for the disposal of electronic waste. It is an expectation that the building management assist with disposal electronic waste as required and requested. Please refer to BCC and QLD government websites for further information and disposal options.

3.1.4. Infrequent Waste

Table 3.4: 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 near the refuse area. Alternatively, collections can be coordinated, and hard waste / bulky goods moved to the loading area or a designated area for removal prior to collection. When storing bulky goods near a loading area, it is recommended that items are placed on a pallet for easy loading via a pallet jack or forklift onto the RCV.

3.2. On-going Management

The tables below are not assessable as part of the development application 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 3.5 to Table 3.11) are designed to help managing responsibilities and monitor the refuse operations in order to maintain efficient services and a safe environment.

Table 3.5: General Refuse Management Checklist

Objectives	Checked	Remarks
Organising of weekly pick-ups for all refuse streams.		Liaise with private contractors and as required.
Managing daily bin transfers between refuse storage / collection areas if required.		
Check bin fill levels and rotate / swap bins as required.		

3.2.2. Safety

Transferring refuse bins and using 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 the delivery of equipment occupancy of the development.

Table 3.6: 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.		

3.2.3. 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 Appendices).

Table 3.7: Signage Checklist

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

3.2.4. 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 3.8: Cleaning and Maintenance Checklist

Objectives	Checked	Remarks
General cleaning of all refuse holding and transfer areas including • Refuse rooms and storage areas • Refuse bins • Refuse transfer areas including lifts and staircases • Refuse chutes and hopper doors • 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 depends on equipment and building operation.
Coordination of specialised equipment contractors as required.		

3.2.5. Refuse Minimisation

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

Refuse minimisation required 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 3.9: Refuse Minimisation Checklist

Objectives	Checked	Remarks
Regular review of material quantities to avoid over-ordering.		
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).		

3.2.6. Education and Communication

On-going education is important to ensure people continue to use the facilities as originally intended. All body corporate and leasing contracts should contain clauses pertaining to waste management arrangements and use of any associated equipment.

Table 3.10: Education and Communication Checklist

Objectives	Checked	Remarks
Communication of refuse management arrangements to staff and contractors as required.		
Consideration of promotional opportunities for any successes e.g. awards programs.		

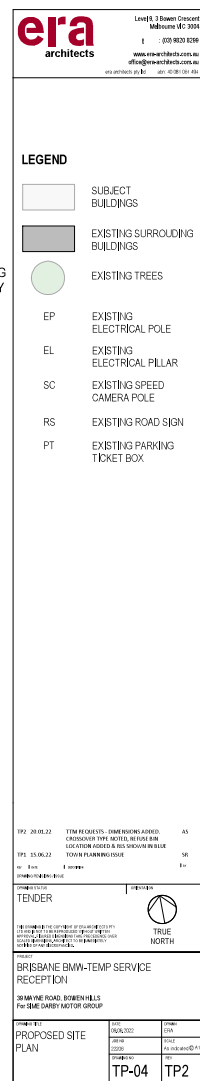
3.2.7. Monitoring and Review

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

Table 3.11: 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



Appendix B Systems and Specifications

B.1 Specified Refuse Equipment

Equipment	Waste Streams	Examples	Information
Back-of-house bins	General waste, recycling, food waste, paper / cardboard		Various options and sizes available. Example: 60L multisort bins https://www.sourceseparationsystems.com.au/product/multisort
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.australianwastemanagement.com.au
Refuse / Cleaners Trolleys	All Streams		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
Bunded pallets	Liquid Waste		Spill containment, e.g. for waste oil containers Example: https://www.tradeenviro.com.au/bunded-pallets https://www.materialshandling.com.au/products/bunded-pallet

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 project.

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 bears 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 composting 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 composters.  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 / Tipplers	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											✓							

Waste Management Equipment	Balers	Compactors	Shredders	Glass Crushers	Chutes	Bin Tugs / Trailers	Trolleys / Manual Handling Equipment	Bin Lifters / Tipplers	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
Trade Environmental http://www.tradeenviro.com.au											✓							
Spillstationaustralia www.spillstation.com.au											✓							
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							✓						✓			✓		

Waste Management Equipment	Balers	Compactors	Shredders	Glass Crushers	Chutes	Bin Tugs / Trailers	Trolleys / Manual Handling Equipment	Bin Lifters / Tipper	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
Australian Waste Management https://www.australianwastemanagement.com.au/products								✓								✓		

B.6 Refuse Management Service Providers

	Food Waste	Waste Cooking Oil	Hazardous Waste	Liquid Waste	Electronic Waste	Industrial Waste	Construction & Demolition Waste	Waste Water	Secure Document Destruction
Specialist Waste Services									
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 1.00m ³ to 4.50m ³ 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 Trolley		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.
Waste Collection Vehicle	WCV	A vehicle specifically designed for collecting and emptying refuse bins and refuse compactors.
Rear-End-Loading Waste Collection Vehicle	REL WCV	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 WCV 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.