

Waste Management Plan

304-322 Main Street, Lilydale

ADVERTISED

Prepared for
304-322 Main Street Pty Ltd
21 February 2024

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1 INTRODUCTION

1.1 OVERVIEW & DEVELOPMENT DESCRIPTION

This Waste Management Plan (WMP) has been prepared by *Movendo Pty Ltd* in support of a planning permit application for a multi-level mixed-use development on a site at 304-322 Main Street, Lilydale.

The site has frontages to Main Street and Hardy Street and is located within the Lilydale Major Activity Centre. The proposed application includes demolition of an existing building and the construction of a new multi-level structure with a range of proposed uses, as detailed in Table 1.

Table 1: Proposed Development Components

Development Component	Space Proposed
Childcare Centre	1,297 m ² (internal) and 921 m ² (external) of gross floor area (130 children)
Food & Drink	248 m ² of gross floor area
Shop	300 m ² of gross floor area (labelled 'Pharmacy' on development plans)
Medical Centre	1,020 m ² of gross floor area (labelled 'GP Practice/Radiology/Precision Health' on development plans)
Office	1,395 m ² of gross floor area

In general, this report's recommendations are consistent with Council's Community Waste and Resource Recovery Plan 2023–2030.

1.2 SCOPE

This WMP has been developed based on the building layout drawings and includes the following:

- Calculation of weekly waste and recyclable volumes
- Provision of recommendations for storage / movement of waste / recyclables within the building and bin sizes
- Provision of recommendations for waste collection

The WMP is also based on the following conditions:

1.2.1 INCLUSIONS

- On-going use of the premises.
- Calculations are based on drawings and information supplied by Pitch Architecture + Design
- Waste volume figures are estimates only and will be influenced by the tenancies' disposition toward waste disposal and recycling and by the development's occupancy rate.

1.2.2 EXCLUSIONS & QUALIFICATIONS

Hard rubbish and green/garden wastes. Disposal shall be arranged by the Operator via appropriate contractors. All recommendations and equipment shall comply with Council codes, BCA, Australian Standards, and EPA statutory requirements.

1.3 TYPES OF WASTE GENERATED

The following types of waste are most commonly generated within a development of this type and with the proposed mix of uses:

- General landfill rubbish;
- Recyclables such as glass, paper, cardboard, cartons, plastics with ID Codes 1 to 7, steel & aluminium cans;
- Compostable organic material (food scraps);
- Hard rubbish such as broken furniture and large objects; and
- Sundry waste types such as electronic waste and cartridges.

1.4 WASTE MANAGEMENT SUMMARY

- The development's Operator, as defined below, shall be responsible for managing the waste system and for developing and implementing adequate safe operating procedures.
- Waste shall be stored in an appropriately designed Bin Room within the development's ground floor.
- Users shall dispose sorted waste into designated collection bins.
- A private contractor shall provide weekly waste collection services.
- Waste shall be collected at an on-site waste collection point located adjacent to the Bin Room. The collection private contractor shall co-ordinate with the development's Operator to ensure appropriate timing for the transfer of bins between the Bin Room and the adjacent collection point.

Location, Equipment, and System Used for Managing Waste

The waste management system is summarised as follows:

- All tenancy spaces have provisions for plastic lined bins for the temporary holding of garbage and recyclables.
- Communal Bin Room at Ground Floor Level.

The various collection waste-streams are summarised as follows:

- Garbage: General waste shall be placed in tied plastic bags and stored within bins.
- Recycling: All recyclables shall be commingled into a single type of collection bin (for paper, cardboard, glass, aluminium, steel, and plastics). If required, separate glass bins shall be provided.
- Green Waste & Hard Waste: Garden organics shall be collected and disposed by the future landscape maintenance contractor, appointed by the Operator. The Operator will also arrange hard rubbish disposal by appropriate contractors.
- Organics/Food Waste (FOGO): The Operator will promote participation in organics recovery by ongoing User education. In the provision of garbage MGBs, adequate space for substitution of garbage bins with 1,100L MGBs for organics will be provided. Users shall place selected compostable waste into Organics bins, subject to service availability. Approved compostable liners shall be considered for these bins and associated receptacles.
- Other Infrequent Waste Streams: E-waste, liquid and other wastes (polystyrene, batteries, paint, chemicals, etc) shall be disposed by Users directly. They must not be disposed in landfill. The Operator will provide information to Users on the use of any Council offered drop-off points and collection days.

1.5 GLOSSARY

Operator: refers to the Owners Corporation / building manager, who shall manage site operations (via staff and contractors, if required).

User: refers to tenants, who shall utilise the waste system.

2 COMMERCIAL WASTE MANAGEMENT

2.1 WASTE GENERATION RATES

Table 2 lists the waste generation estimates for the commercial components of the development in accordance with the waste generation rates commonly used in metropolitan Melbourne and are based on the “business as usual” waste generation rates for each space type in the development:

Table 2: Waste Generation Rates – Commercial

Space Type	Rubbish Generation Rate	Commingle Recyclables Generation Rate
Retail (Pharmacy)	10 Litres/100 m ² /day	10 Litres/100 m ² /day
Child Care	50 Litres/100 m ² floor area/day	50 Litres/100 m ² floor area/day
Food & Drink	150 Litres/100 m ² /day	150 Litres/100 m ² /day
Medical Centre	10 Litres/100 m ² /day	10 Litres/100 m ² /day
Office	10 Litres/100 m ² /day	10 Litres/100 m ² /day

2.2 COMMERCIAL WASTE GENERATED

The total waste estimates shown in Table 3, have been calculated by applying the rates in Table 2 to the respective floor areas. expressed in uncompacted cubic metres per week, are summarised as follows. Refer to the enclosed waste generation in the appendix calculations for further detail.

Table 3: Waste Generated by the Development

Space Type	Rubbish Generated	Commingle Recyclables Generated
Shop (Pharmacy) (300 m²) Usage: 6 days per week	180 Litres per week	180 Litres per week
Child Care (1,297 m² internal area) Usage: 6 days per week	3,891 Litres per week	3,891 Litres per week
Food & Drink (248 m²) Usage: 6 days per week	744 Litres per week	744 Litres per week
Medical Centre (1,020 m²) Usage: 5 days per week	510 Litres per week	510 Litres per week
Office (1,395 m²) Usage: 5 days per week	698 Litres per week	698 Litres per week
Total per week	6,023 Litres per week	6,023 Litres per week
Bin Type & Quantity to be Provided	Six x 1,100L bin (if collected weekly, by private waste collection contractor)	Six x 1,100L bin (if collected weekly, by private waste collection contractor)

The proposed development features a commercial waste Bin Room with an area of 112.11 m². This satisfies the minimum space requirement of 21.84m² (to accommodate **twelve 1,100L bins** – six for ‘general rubbish’ and six for ‘recyclables’) shown in Table 3 – which will allow a **single weekly collection**).

2.3 BIN TYPES, BIN ROOM & NUMBER OF BINS

A Bin Room is provided in the development's ground floor, in proximity to the lift and stairs, as shown in Figure 1. It is located and designed for convenient access by tenants. The design and construction of the room and any equipment will conform to the Building Code of Australia, Australian Standards, and local laws. The room will be suitably illuminated (to provide comfort, safety, and security to Users). The access doors shall feature keyless opening. The room is generously dimensioned with a floor area of 112.11 square metres which is well in excess of the 21.84m² required by the development's proposed Twelve 1,100L bins (as previously described). The bins will be stored against each of the Bin Room's side walls (as shown by the boxes in Figure 1) allowing a generous corridor space for User access with comfortable functionality within the Bin Room. Typical specifications for the proposed 1,100-Litres bins are shown in Table 4.

In summary, with a weekly collection, the total bin requirement will be Twelve 1,100 litre bins (half for each of the general waste and recyclables streams). The area required in the basement Bin Room for these bins is 21.84m², based on the bin dimensions for 1,100 Litres. There is generous space to accommodate these bins, in the proposed ground floor Bin Room.

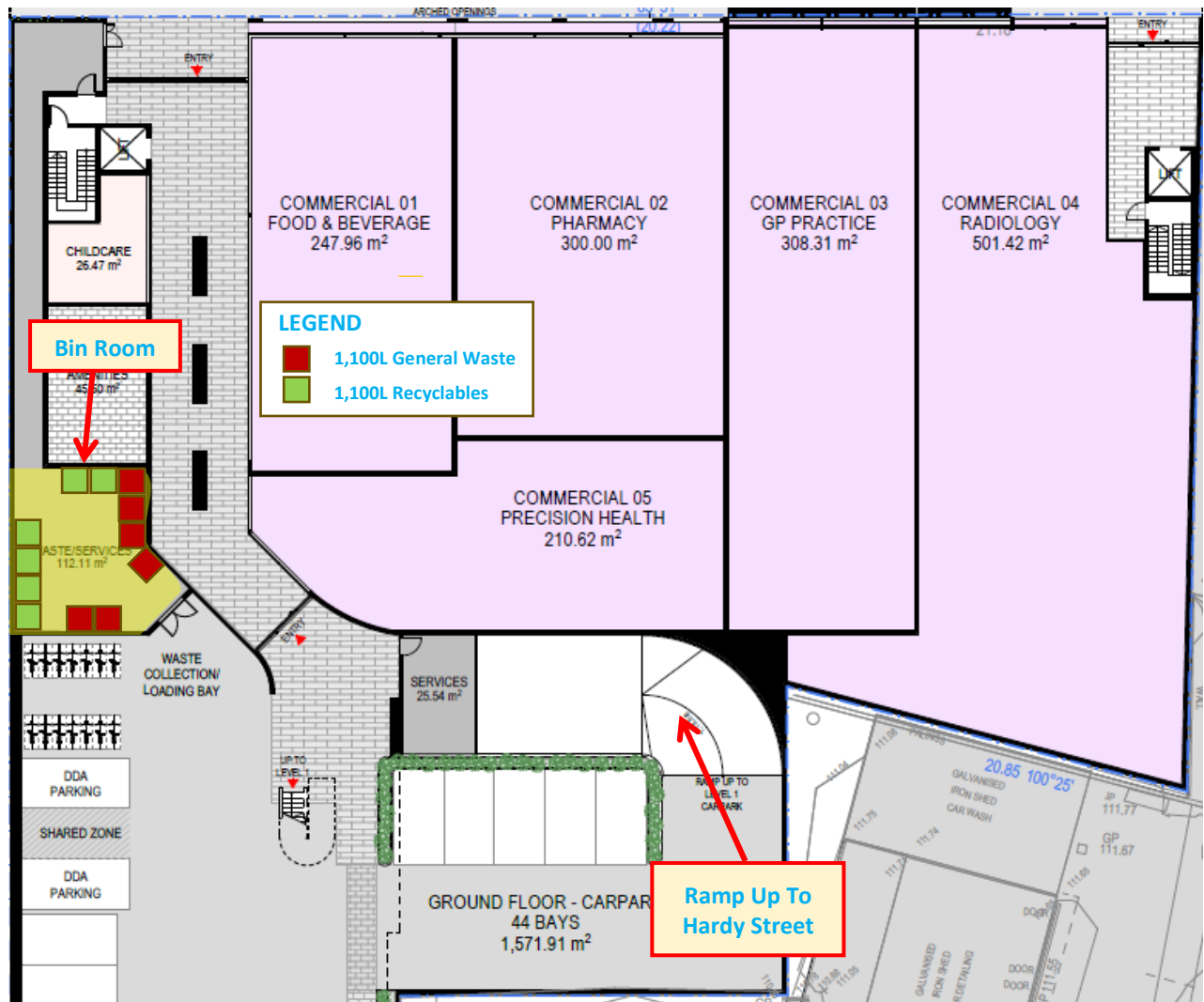


Figure 1: Location of Bin Room Enclosure
(extract from Ground Floor drawing TP9-103 by Pitch Architecture + Design)

Table 4: Quantity and Typical Dimensions of Proposed Bins for the Development

Bin Storage Type	Capacity	Quantity Provided	Area Required
	1,100 Litres per bin	6 general waste	Average Bin Dimensions are: Height 1.5m Width 1.4m Depth 1.3m
		6 commingled recycling	Floor area required: 1.82m ² /bin
		(weekly Pickup)	Total floor area required for 1,100L Bin Storage: 21.84m² (see Figure 2)
		<u>Private Contractor</u>	

2.4 ORGANICS/FOOD WASTE

The development's total waste generation, on a weekly basis, was calculated in section 2.2 of this report and is equivalent to Six (6) x 1,100 Litres bins for general waste and Six (6) x 1,100 Litres bins for recyclables. The overall weekly total is therefore Twelve (12) bins. No separate consideration has been made for the separate collection of "Food Organics and Garden Organics" (FOGO) Waste.

If FOGO Waste is collected (separate to general waste) general guidance in terms of bin quantities is available from Sustainability Victoria (based on their "Victorian Statewide Garbage Bin Audit – Food Waste 2016"). Sustainability Victoria, in the 2016 audit, analysed the type of items in a residential garbage bin, including food waste. The waste composition identified in residential waste streams will not necessarily apply to this commercial development – given the mix of uses proposed; though some of the uses (particularly the Food & Drink and the Child Care premises) are expected to generate a steady amount of FOGO waste. The Sustainability Victoria audit found that approximately 35 per cent of a residential garbage bin is made of food waste. If this proportion is taken as general guidance, then it is possible that the Six general waste bins could change to Four general waste and Two FOGO bins – if Organics/Food Waste is collected.

2.5 WASTE STREAMS & DISPOSAL TO INTERNAL BIN ROOM

Waste shall be sorted on-site by the various Users (tenancies) into the following streams and associated bins: (a) Garbage (General Waste); and (b) Commingled Recycling. Each stream has associated bins. If Organics/Food Waste is separately collected, it will require substitution of some Garbage (General Waste) bins in the communal bin room with FOGO bins. To assist with garbage separation, Users will be instructed to separate recycling waste from garbage waste and dispose of recyclables, as required, into the appropriate 1,100 litre recycling bins located in the bin storage enclosure at basement level. Specifically, Users will be instructed as follows:

2.5.1 GARBAGE

All tenancy spaces have provisions for plastic lined bins for the temporary holding of garbage. These bins have a minimum capacity consistent with their waste generation characteristics. The number and size of bins is sufficient to allow for the disposal of waste once per day. Individual bins have a capacity no greater 60 litres. Garbage shall be placed within tied plastic bags prior to transferring into the collection bins. Once these bins are full; cleaning staff and/or tenants shall dispose of this waste into the larger 1,100 litre garbage bins located in the ground level storage area.

2.5.2 RECYCLING

The tenancy spaces have provisions for plastic lined bins for the temporary holding of recycling. These bins have a minimum capacity consistent with their waste generation characteristics. The number and size of bins is sufficient to allow for the disposal of waste once per day. Individual recycling bins and paper bins (to be provided and located as a minimum near photocopiers and stationary cupboards) have a capacity no greater 60 litres. Once these bins are full; cleaning staff and/or tenants are instructed to dispose of this commingled recycling within the appropriate larger 1,100 litres bin in the ground level waste storage enclosure.

Cardboard shall be flattened and recycling containers un-capped, drained, and rinsed prior to disposal into the appropriate bin. Bagged recycling is not permitted.

2.5.3 MEDICAL WASTE

Any infectious or potentially infectious waste (as defined by EPA) will be placed in containers colour coded yellow for infectious wastes and orange for potentially infectious wastes. Any prescribed wastes which leave the premises will be disposed of in accordance with Environmental Protection Authority (EPA) requirements to the satisfaction of the Responsible Authority.

Medical waste shall remain within storage areas in the medical centre and only be moved during collections. Collections will be performed by a transporter licensed by the Environment Protection Authority (EPA) to collect and transport such waste; bins will be transported in transit vans.

2.6 SIGNAGE

The 1,100 litre bins in the basement level bin enclosure will be suitably signposted to ensure it is apparent to tenants which is recycling and which is general waste, as well as possibly FOGO bins.

Signage will be placed throughout the development to direct Users to the basement Bin Room. Visual prompts stuck to the bins, similar to those in Figure 2, facilitate the proper disposal of different waste types. Signage will be based on design guidance found in the Sustainability Victoria website: www.sustainability.vic.gov.au.



Figure 2: Examples of Point of Disposal Signage

2.7 WASTE COLLECTION

Waste collection arrangements are as follows:

1. The waste collection shall be carried-out by 'small' garbage trucks which will be rear-lift vehicles (nominally 6.4m long, 2.1m high, and 6.4 tonnes gross vehicle mass). These vehicles need a 2.5 metre high clearance when lifting 1100L bins at the collection point outside the Bin Room.
2. The collection will take place fully within the site, by a private contractor, from an area located adjacent to the ground floor Bin Room, as shown in Figure 3. The travel path to this area has sufficient vertical clearance. The floor-to-floor height is 3.9 metres for Ground-Floor to First-Floor and 3.6 metres for First-Floor to Second-Floor. These dimensions are well above the minimum required.
3. Trucks will drive into the site from Hardy Street and to the 'waste collection' area in a forward manner. Upon reaching the designated pick-up point they will reverse in order for the rear of the truck to face the Bin Room. and allow trucks to undertake rear loading of bins (which will be 'wheeled-up' from the Bin Room, as required).
4. Collection staff shall have access to the Bin Room and will transfer bins to the 'waste collection' area (after the truck is in position) and return bins back to the Bin Room.

In conformity with Council's requirements, the waste collections will take between 7am to 8pm Monday to Saturday, and 9am to 8pm Sundays, as required. During collections, the private waste collector shall protect the acoustic amenity by minimising noise during the collection.

In summary, under the proposed arrangement:

- The storage of bins prior to collection will, at all times, remain in the dedicated ground floor Bin Room.
- The bins are rolled out after the arrival of the waste collection truck for pick up.
- The building Operator will co-ordinate with the collection contractor the transfer of the general waste, recycling bins and FOGO (as required) from the Bin Room to the adjacent collection point – to coincide with the arrival of the collection contractor for the respective waste stream.
- Garbage trucks will enter from Hardy Street and drive to the Bin Room in a forward direction.
- Upon arrival at the bin collection point, trucks will turn left for a short distance into parking aisle and position themselves for a short reverse manoeuvre.
- After the completion of bin collection activities, bins will be immediately returned inside the Bin Room. Waste trucks will then drive out from the ground floor to the first floor in a forward direction until they are 'straight' and can subsequently drive out onto Station Street in a forward direction.

The truck waste collection arrangements are shown in Figure 3.

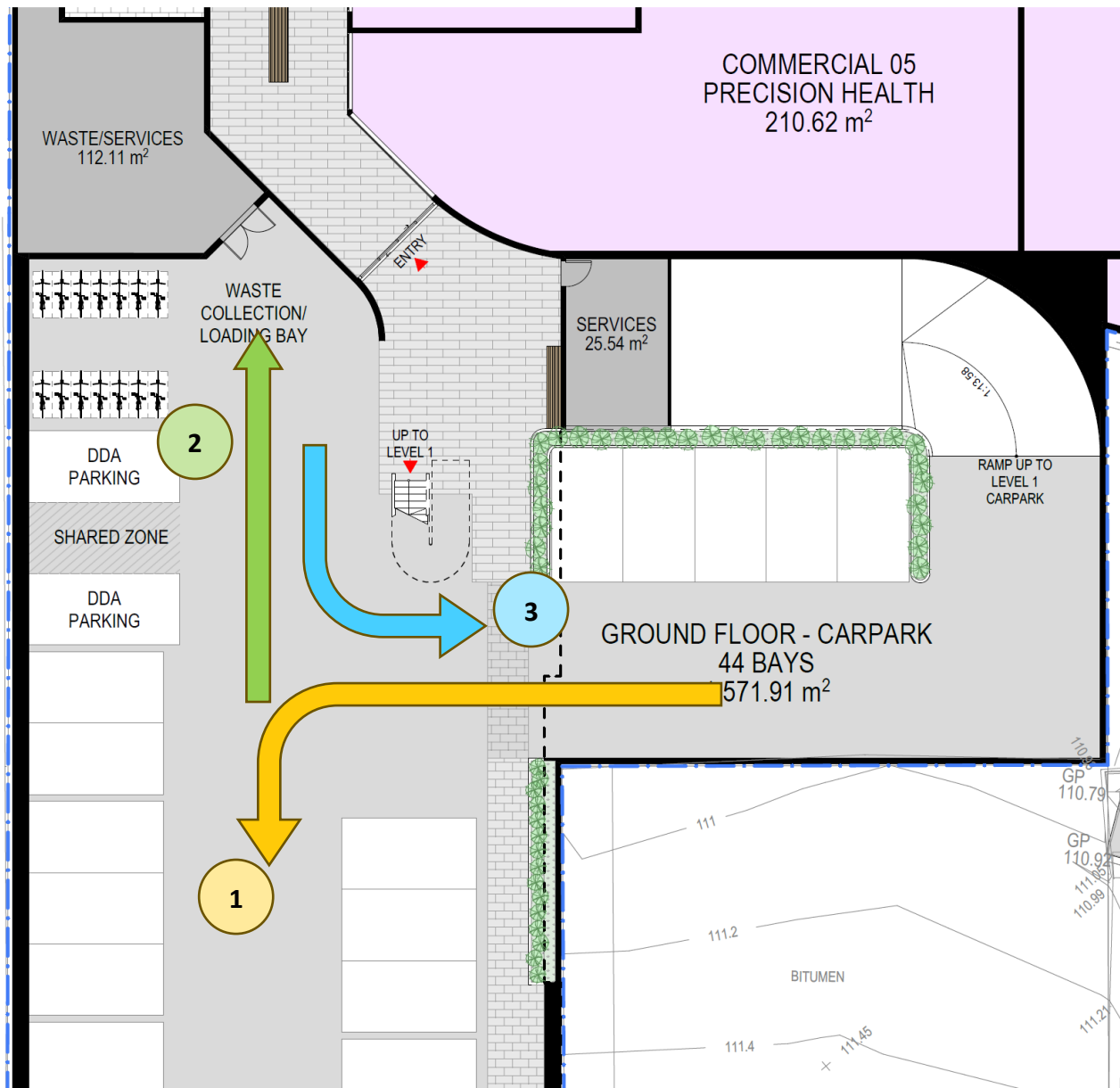


Figure 3: Bin Collection Arrangements – Manoeuvres by Small Garbage Truck

Step 1 – Drive in Forward Direction from First Floor (Hardy Street) Level to Ground Floor. Upon arrival to the ground floor area, trucks will turn left for a short distance into parking aisle and position themselves for a short reverse manoeuvre.

Step 2 – Reverse Towards the Bin Room.

Step 3 – Drive out from Ground Floor to First Floor (after completion of bin pick-up) in a Forward Direction.

3 OPERATIONAL CONSIDERATIONS

3.1 DURING DISPOSAL

Users are instructed to ensure that all internal general rubbish bin bags from the development are tied up securely before being placed in the general waste bins in the waste storage enclosure. Users are also asked to ensure that recyclables are not disposed of in plastic bags and are flattened before being placed in bins to minimise waste volumes.

3.2 MAINTENANCE

Users are instructed to keep the waste storage enclosure clean to avoid the generation of odours, litter, vermin within and around the site, as well as minimise the risk of stormwater pollution. The Operator is responsible for ensuring that the bins in the waste storage room are suitably maintained, kept clean and any damaged or stolen bins are repaired/ replaced. The Operator is also responsible for upkeep of both the waste storage room and the external collection area. The bin collection area will be regularly cleaned (as necessary) by the Operator. Any maintenance work required for the waste storage room and the external collection area will be performed by the Operator and/or in co-ordination with Council with respect to the external kerbside area in Station Street.

3.3 STANDARDS & COMPLIANCE

The waste storage area is suitably ventilated to prevent odours pervading the surrounding area. The Operator is responsible for ensuring that the area remains clean to allow for ready access and to avoid the attraction of vermin.

3.3.1 VENTILATION

Ventilation will be provided in accordance with Australian Standard AS1668.2.

3.3.2 WASHING AND VERMIN PROTECTION

A third-party bin washing service will be engaged to perform regular bin washing services. Bin washing contractors will be required to use a mobile bin washing vehicle and retain all wastewater to within their washing apparatus and not impact on the drainage provisions of the site and avoid stormwater pollution.

3.3.3 NOISE REDUCTION

The waste storage area meets BCA, EPA and AS2107 acoustic requirements, as appropriate, with operational hours and collection times assigned to minimise acoustic impact on surrounding premises.

3.4 SUSTAINABILITY AND WASTE AVOIDANCE/REUSE/REDUCTION INITIATIVES

The Environment Protection Act 2017 includes principles of environment protection and guidance for waste management decision making. Also, the Sustainability Victoria Act 2005 established Sustainability Victoria as the statutory authority for delivering programs on integrated waste management and resource efficiency.

From a design perspective, the development shall support the acts by providing an adequate waste system with ability to sort waste.

The Operator shall promote the observance of the Acts (where relevant and practicable) and encourage Users to participate in minimising the impact of waste on the environment. For improved sustainability, the Operator shall consider the following:

- Observe the waste hierarchy in the Environment Protection Act 1970 (in order of preference): a) waste avoidance, b) reuse, c) recycle, d) recovery of energy, e) treatment, f) containment, and g) disposal.
- Peruse the Sustainability Victoria website: www.sustainability.vic.gov.au.
- Participate in Council and in-house programs for waste minimisation.
- Establish waste reduction and recycling targets; including periodic waste audits, keeping records, and monitoring of the quantity of recyclables found in landfill-bound bins (sharing results with Users).

3.5 WASTE MANAGEMENT PLAN REVISIONS

For any future appropriate Council request, changes in legal requirements, changes in the development's needs and/or waste patterns (waste composition, volume, or distribution), or to address unforeseen operational issues, the Operator shall be responsible for coordinating the necessary WMP revisions, including (if required):

- A waste audit and new waste strategy.
- Revision of the waste system (bin size/quantity/streams/collection frequency).
- Re-education of Users or other contractors.
- Revision of the services provided by the waste collector(s).
- Any necessary statutory approval(s).

4 CONCLUSIONS

4.1 WASTE MINIMISATION STRATEGIES

The Operator (the development's Body Corporate) is responsible for the education of Users (tenants) in the practices of waste reduction/minimisation to divert waste from landfill. This will be achieved in line with the following Yarra Ranges Shire Council Waste Hierarchy Principle, shown at Figure 4. The Waste Hierarchy Principle ranks waste disposal options from most preferable to least preferable. It is represented as an inverted triangle, the larger portions representing the options that should be selected more frequently and disposal being a last option.

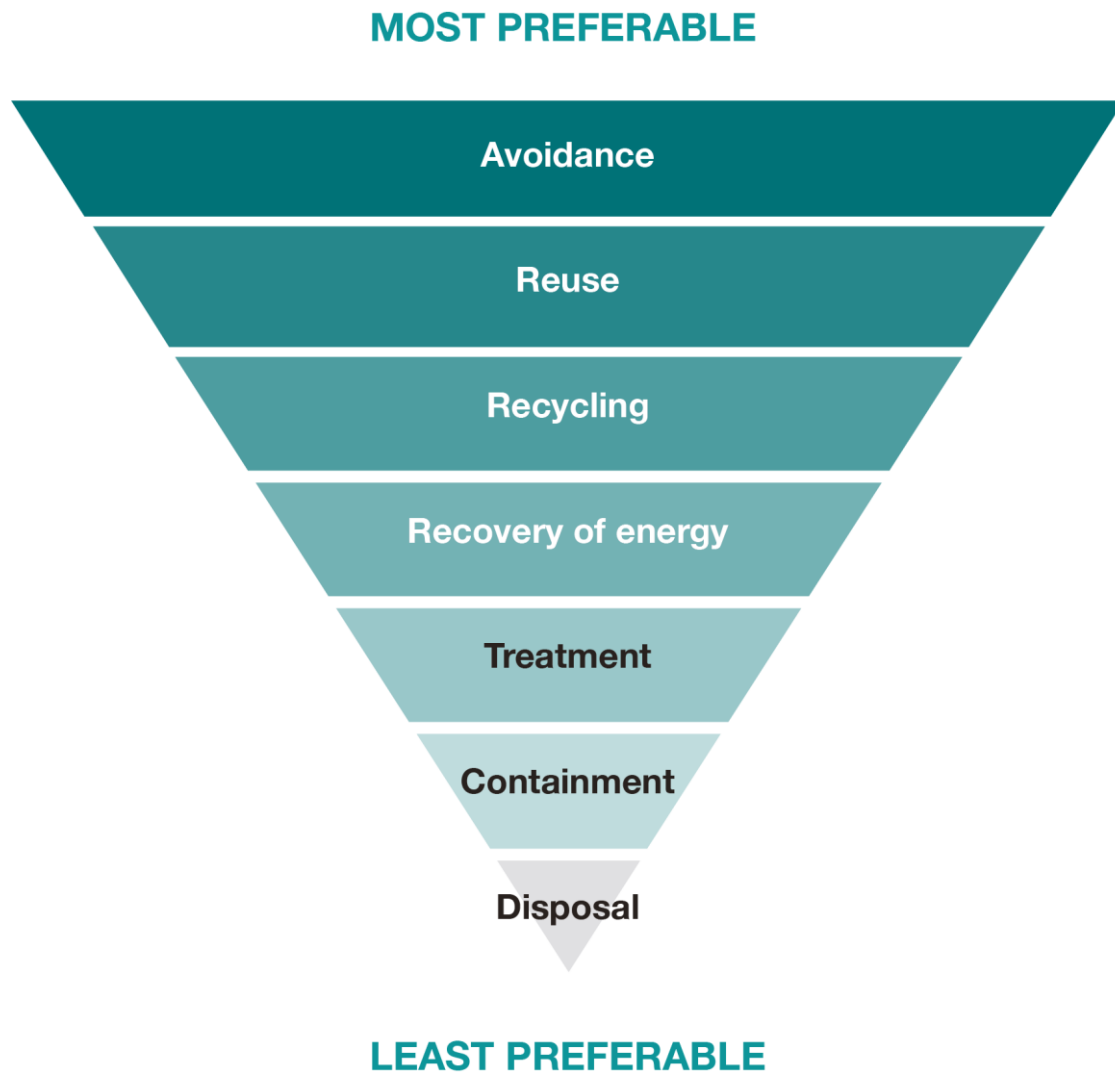


Figure 4: Waste Hierarchy Principle

The Operator will engage Users through waste education and encourage Users to choose upper options from the waste hierarchy wherever possible. To this end, the Operator will:

- Document and distribute details of the waste management system that is in place on site to all Users.
- Encourage waste separation practices by all Users.
- Label all bins and colour code them – stating types of waste that can be deposited.

Any future change to regulatory requirements or to the development's waste generation rates will require the Operator to conduct a waste audit and revise the waste management system that is in place accordingly.

4.2 KEY RECOMMENDATIONS

- Signage / usage labels for the garbage, recycling and FOGO bins will be arranged, as required, by the Operator.
- Waste transfer and shifting bins shall require the minimum possible manual handling. The Operator will assess manual handling risks as per regulatory requirements and provide appropriate documentation to stakeholders.
- Items unsuitable for disposal via garbage or recycling bins would need to be disposed with the assistance of the Operator; this would include large, heavy, and liquid waste items.
- The Bin Room will be kept vermin proof.
- The Bin Room shall be ventilated in accordance with Australian Standard AS 1668.2.
- To avoid vermin, the Operator shall keep the Bin Room clean and wash bins at least once a fortnight.
- The Operator will monitor bins and adjust collection frequencies as required.
- The Operator shall source and enter into a service agreement for waste collection services. The Operator will be responsible for all payments and costs associated with the waste collection service provided by the waste collection contractor.
- Litter management: a daily walk-through of the basement level Bin Room will form part of the Operator's responsibility to ensure no litter is present.
- The hours during which waste and recycling is collected will be consistent with the Council's Local Laws and EPA requirements, as detailed in this WMP.

4.3 SUPPLEMENTARY INFORMATION

- The Operator shall observe local laws and ensure that bins aren't overfilled or overloaded.
- Waste incineration devices are not permitted, and offsite waste treatment and disposal shall be carried-out in accordance with regulatory requirements.
- For bin traffic areas, either level surfaces (smooth and without steps) or gentle ramps are recommended, including a roll-over kerb or ramp.
- The Operator and waste collector shall observe all relevant OH&S legislation, regulations, and guidelines. The relevant entity shall define their tasks and:
 - Comply with Worksafe Victoria's Occupational Health and Safety Guidelines for the Collection, Transport and Unloading of Non-hazardous Waste and Recyclable Materials (June 2003).
 - Assess the Manual Handling Risk and prepare a Manual Handling Control Plan for waste and bin transfers (as per regulatory requirements and Victorian COP for Manual Handling).
 - Obtain and provide to staff/contractors equipment manuals, training, health and safety procedures, risk assessments, and adequate personal protective equipment (PPE) to control/minimise risks/hazards associated with all waste management activities. As a starting point, these documents and procedures shall address the preliminary items shown in Table 5.

Table 5: Preliminary Hazard Assessment

Task	Hazard	Control Measures
Sorting waste & cleaning the waste system	Bodily puncture. Biological & electrical hazards	Personal protective equipment (PPE). Develop a waste-sorting procedure
Bin manual handling	Sprain, strain, crush	PPE, staff training. Maintain bin wheelhubs. Limit bin weight. Provide mechanical assistance to transfer bins
Bin transfers & emptying into truck	Vehicular strike, rollover	PPE. Develop a Hazard Control Plan for transfers & collections. Maintain visibility.

Note: The above shall be confirmed by a qualified OH&S professional who shall also prepare site-specific assessments, procedures, and controls

4.4 LIMITATIONS

The purpose of this report is to document a WMP, as part of a Planning Permit Application.

This report is based on the following conditions:

- Operational use of the development (excludes refurbishment/construction stages).
- Drawings and information supplied by the project architect.
- The figures presented in this report are estimates only. The actual amount of waste will depend on the development's occupancy rate and waste generation intensity, the Users' disposition toward waste and recycling, and the Operator's approach to waste management. The Operator shall make adjustments, as required, based on actual waste volumes (if the actual waste volume is greater than estimated, then the number of bins and/or the number of collections per week shall be increased, STCA).
- This report shall not be used to determine/forecast operational costs, or to prepare feasibility studies, or to document operational/safety procedures.