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<i>waste management plans for all urban developments</i>	E leo@leighdesign.com.au I www.leighdesign.com.au

WASTE MANAGEMENT PLAN

**Proposed Development:
25-49A Best Street, Fitzroy North, Victoria**

**Prepared for:
Piedimonte Development Pty Ltd**

<u>Document Control</u>
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WASTE MANAGEMENT SUMMARY

- The 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 within the development (hidden from external view).
- Users shall sort their waste and dispose garbage and recyclables via chutes and/or directly into collection bins.
- Waste shall be collected within the development. The collection contractor shall transfer bins between the waste areas and the truck.
- A private contractor shall provide waste collection services.

GLOSSARY

Operator: refers to the Owners Corporation and/or Facility Management, who shall manage site operations (via cleaners, staff and contractors, if required).

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

1 SPACE AND SYSTEM FOR WASTE MANAGEMENT

1.1 Development Description and Use

This development shall consist of residential apartments and commercial tenancies. The number of residences and commercial floor-areas are stated in Table 1 (below).

1.2 Estimated Garbage and Recycling Generation

The following table summarises the waste estimate (m³/week):

Table 1: Waste Estimate

Waste Source	Base Qty (est.)	Garbage	Commingled Recycling	Food Organics
Apartments (1 bed)	No. of units = 6	0.24	0.36	0.02
Apartments (2 bed)	No. of units = 36	1.80	2.88	0.18
Apartments (3 bed)	No. of units = 16	0.96	1.60	0.10
Townhouses	No. of units = 8	0.64	0.96	0.06
Supermarket	area (m ²) = 2339	21.05	45.46	2.11
Liquor	area (m ²) = 614	0.43	5.71	0.04
Café	area (m ²) = 351	3.69	1.97	0.00
Office	area (m ²) = 324	0.23	0.24	0.00
TOTAL (m³/wk)		29.03	59.18	2.51

Note: Waste figures are based on adjusted Sustainability Victoria Guidelines.

1.3 Collection Services

Based on the anticipated waste volume, a private contractor shall be required to collect waste. The operator shall choose a waste collection provider, negotiate a service agreement, and pay for these services.

Notes:

- Every rateable tenement is liable to pay for municipal charges irrespective of the level of collection services provided by Council.
- Thirty days prior to occupation, the operator shall organise a site meeting with Council's Waste Management Coordinator and demonstrate adequate implementation of this Waste Management Plan.

1.4 Location, Equipment, and System Used for Managing Waste

The waste management system is summarised as follows:

- Apartment receptacles for garbage and recycling.
- Tenancy receptacles at internal areas.
- Two Garbage Chutes and two Recycling Chutes (in pairs), each with residential level intakes and Apartment Bin Store discharges.
- One diverter chute for garbage and recycling, with Ground level intakes and Townhouse Bin Store discharge, including intake controls and split discharge for two bins.
- Two Apartment Bin Stores and a Townhouse Bin Store located at Basement Level 2.
- Commercial Bin Store located at Basement Level 1.
- Supermarket Cardboard Baler located at Ground Level.
- Collection bins (kept within the above waste storage areas - refer to Table 2).

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 loose paper, cardboard, glass, aluminium, steel, and plastics).

Note: The supermarket shall allow for recycling of plastic-wraps/bags. Also, a cardboard baler shall be provided.

Green Waste: Based on minor landscaping, minimal garden waste generation is anticipated (however, the operator shall engage a contractor, if required).

Food Organics: Food waste shall be placed in Food Organics bins. These bins shall be collected by a specialist contractor for offsite composting. Approved biodegradable paper liners are recommended for Food Organics bins.

Other Waste Streams: The disposal of hard/electronic/liquid and other wastes (polystyrene, batteries, paint, chemicals and detox items, etc) shall be organised with the assistance of the operator.

These items (including e-waste) shall remain within the development until the operator arranges a private collection from the subject land in accordance with requirements from the relevant authority. In particular e-waste must not be disposed in landfill.

The following table summarises bin quantity/capacity, collection frequency, and area requirements (based on Table 1):

Table 2: Bin Schedule and Collection Frequency

Waste Source	Waste Stream	Bin Qty	Bin Litres	Collections per Week	Net Area m ²
Apartments (shared bins)	Garbage	3	660	2	3.6
	Recycling	3	660	2	3.6
	Food Organics	1	240	2	0.5
	Hard Waste	-	-	At Call	2.5
Townhouses (shared bins)	Garbage	1	660	2	1.2
	Recycling	1	660	2	1.2
	Food Organics	1	120	2	0.5
	Hard Waste	-	-	At Call	1.5
Commercial (shared bins)	Garbage	8	1,100	3	12.8
	Cardboard (baler and 5 pallets)			3	13.5
	Mixed Containers	2	240	3	1.0
	Food Organics	3	240	3	1.5
	Hard/Other Waste	-	-	At Call	3.0
Net Waste Storage Area (excludes circulation), m²:					46.4

Notes:

- The operator shall organise hard waste collections (as required).
- Private bins and the cardboard baler shall be sourced by the operator (either purchased from a supplier or leased from the collection contractor).
- Subject to stakeholders' preference/capability (and as built constraints), bin sizes and quantities can be changed. Also, recyclables can be either commingled or split into bins for separate recycling streams.

1.5 Planning Drawings, Waste Areas, and Management of the Waste System

The plans illustrate approximately 300m² for onsite waste storage, as required by the above schedule.

Notwithstanding the above, collection days shall be staged appropriately and the operator shall stipulate procedures for effective management of the available space.

1.6 Collection Bin Information

The following bins shall be utilised (see Sect. 4.4 for signage requirements):

Table 3: Bin Details

Capacity (litres)	Height (mm)	Width (across front, mm)	Depth (side on, mm)	Empty Weight (kg)	Average* Gross Weight (kg)
120	930	480	545	10	26
240	1060	585	730	13	45
660	1250	1240	780	43	130
1100	1330	1240	1070	65	210

Notes:

- * = Average Gross Weight is based on domestic waste studies (which vary subject to locality and waste-type). Expect greater weight for wet or compacted waste.
- Use the above details as a guide only – variations will occur. The above is based on Sulo plastic (HDPE) flat-lid bins.
- For 1100L bins, flat lids are recommended (instead of dome lids). However, the operator shall consult with the waste collection contractor to specify and select the appropriate lid.
- Bins that receive waste under the chute shall be protected to withstand loads from waste falling at high speed and the operator shall bear the cost of replacing damaged bins.

Table 4: Yarra Colour Coding

Bin	Garbage	Commingled Recycling
Lid	Green	Yellow
Body	Green	Green

Note: For private bins, AS4123.7 bin colours can be adopted. Private bins shall be labelled to identify the waste generator and site address.

2 ACCESS FOR USERS, COLLECTORS, AND COLLECTION VEHICLES

2.1 User Access to Waste Facilities

Residents shall dispose sorted garbage and recyclables via chutes (available at each apartment level), in accordance with instructions from the chute supplier. The operator shall assist residents to dispose large cardboard items and any other wastes unsuitable for chute disposal.

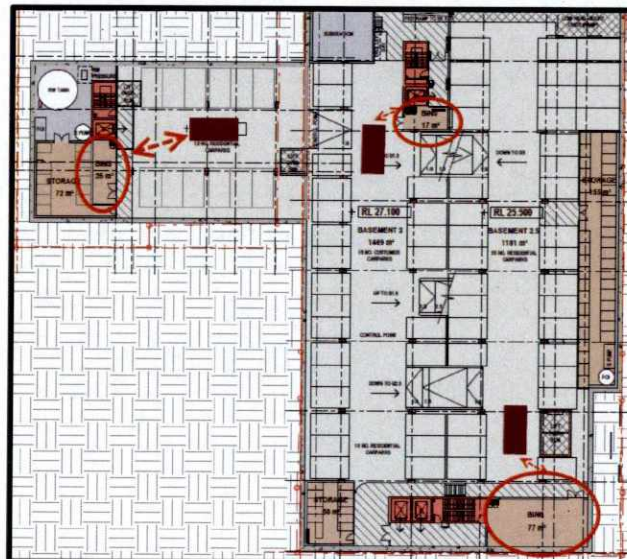
Supermarket staff shall dispose sorted waste into collection bins located within their designated waste areas (if required, using a suitable trolley and lifts). Trained staff shall load cardboard into the baler and operate the unit.

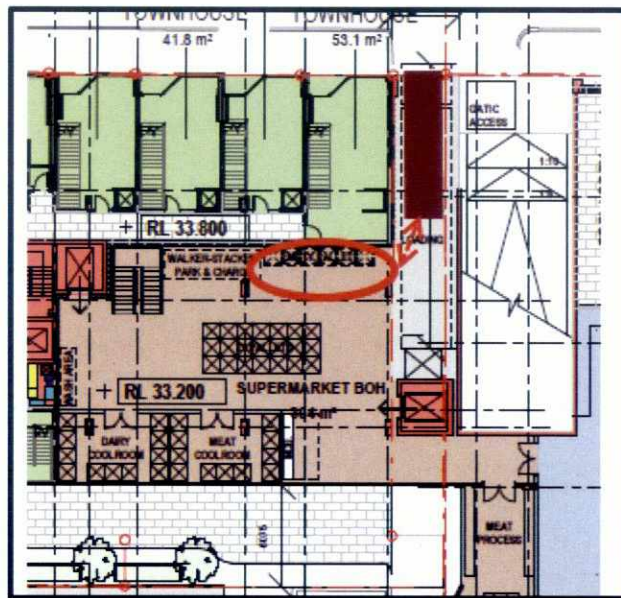
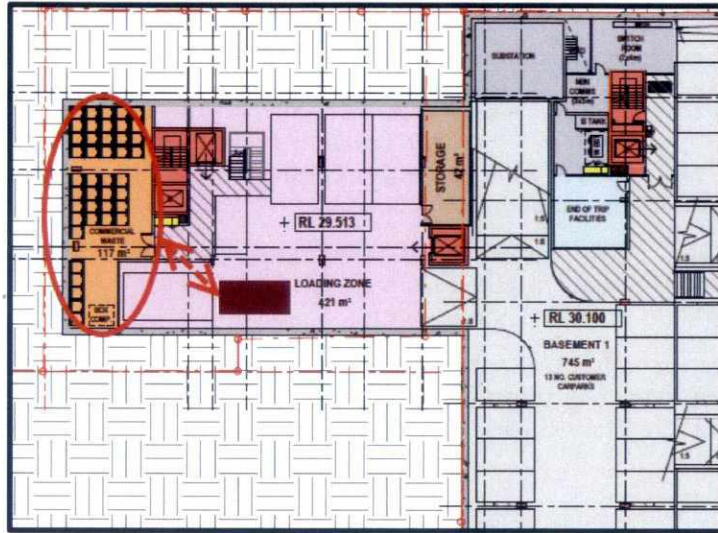
Note: The operator shall have access to the Bin Stores to rotate the bins, ensuring that empty bins are available along the circulation area so that users are able to reach them. Also, the operator shall monitor the filling of the bin under the chutes and change these when full.

2.2 Collection Arrangements and Access to Waste Facilities

- A private contractor shall collect waste on within the onsite Loading Bays at Ground and Basement 1 Levels and within the internal carpark at Basement Level 2.
- Collection staff (driver and assistant) shall have access to the waste areas and transfer bins to the truck and back to the storage areas.
- Waste bins (120/240/660/1100L) shall be collected by rear-lift vehicles (nom. 6.4m long, 2.1m high, and 6.4 tonnes gross vehicle mass, needing a 2.3m height clearance when collecting 660L bins and needing a 2.5m height clearance when collecting 1100L bins).
- Cardboard bales shall be collected by rear-lift vehicles (nom. 8.8m long, 4m operational height, and 24 tonnes gross vehicle mass).

The collection points are illustrated as follows – NTS (Basement Level 2, Basement Level 1 and Ground excerpts, in that order):





Note: planning drawings take precedence over the above extracts.

3 AMENITY, LOCAL ENVIRONMENT, AND FACILITY DESIGN

3.1 Noise Minimisation Initiatives

- Collection bins shall feature rubber wheels for quiet rolling during transfers.
- Chutes and waste areas shall meet BCA and AS2107 acoustic requirements.
- Local laws shall be observed for all operations in public and private areas. In particular, note the requirements of Yarra's Environmental Local Law Part B, Sect. 10, and Part C, Sect. 17-29, which can be found at: www.yarracity.vic.gov.au
- As specified in Council's Local Law No. 3, waste shall not be collected between: 8pm Sunday and 7am the following Monday; 8pm on any day between Monday and Friday inclusive and 7am on the following day; or 8pm any Saturday and 9am the following Sunday. Also, the waste collector shall protect the acoustic amenity by minimising noise during the collection.

3.2 Litter Reduction and Prevention of Stormwater Pollution

The operator shall be responsible for:

- Promoting adequate waste disposal into the bins (to avoid waste-dumping).
- Securing the waste areas (whilst affording access to users/staff/contractors).
- Preventing overfilled bins, keeping lids closed and bungs leak-free.
- Abating any site litter and taking action to prevent dumping and/or unauthorised use of waste areas.
- Requiring the collection contractor to clean-up any spillage that might occur when clearing bins.

The above will minimise the dispersion of site litter and prevent stormwater pollution (thus avoiding impact to the local amenity and environment).

3.3 Ventilation, Washing, and Vermin-Prevention Arrangements

Waste areas shall feature:

- Ventilation in accordance with Australian Standard AS1668. For chute ventilation, a fan with riser to a rooftop exhaust shall be utilised.
- Tight-fitting doors (all other openings shall have vermin-proof mesh or similar).
- Impervious flooring (also, smooth, slip-resistant, and appropriately drained).
- A graded bin wash area, hosecock, hose, and a suitable floor-waste connected in accordance with relevant authority requirements (alternatively, the operator shall engage a contractor to conduct off-site bin washing). The bin and wash areas may overlap, as stored bins can be moved so that a bin can be washed.
- A water-flushing nozzle with accessible water cock shall be provided at the head of each chute. Include a floor waste and hosecock near each chute outlet.

The operator shall regularly clean waste areas/equipment. Also, access doors and bin-lids shall be kept closed.

3.4 Design and Aesthetics of Waste Storage Areas and Equipment

Waste shall be placed within collection bins and stored in designated onsite areas (hidden from external view). Following waste collection activities, bins shall be returned to the storage areas as soon as practicable.

Waste facilities shall be constructed of durable materials and finishes, and maintained to ensure that the aesthetics of the development are not compromised. These facilities and associated passages shall be suitably illuminated (this provides comfort, safety, and security to users, staff, and contractors). Access doors shall feature keyless opening from within.

Chutes shall be sized and designed as recommended by a reputable chute manufacturer (chutes are proprietary items). The chute supplier shall fix safe-operating instructions to each intake-door and place a warning sign on each chute outlet.

For improved safety, each chute outlet shall be shrouded with a suitable rubber skirt and designed to minimise the effect of falling waste into the associated bin (and to stop dispersion of debris). Also, access to each chute outlet shall be restricted to trained personnel only (this area shall be suitably fenced and kept locked).

The cardboard baler shall include appropriate safety features to ensure safe operation. Access to the baler shall be restricted to trained personnel only.

The design and construction of waste facilities and equipment shall conform to the Building Code of Australia, Australian Standards, and local laws.

4 MANAGEMENT AND SUSTAINABILITY

4.1 Waste Sorting, Transfer, and Collection Responsibilities

Garbage shall be placed within tied plastic bags prior to transferring into the collection bins or chutes. Cardboard shall be flattened and recycling containers un-capped, drained, and rinsed prior to disposal into the appropriate bin/chute. Bagged recycling is not permitted.

Refer to Section 2 for waste transfer requirements and collection arrangements.

4.2 Facility Management Provisions to Maintain & Improve the Waste System

The operator shall manage site operations (refer to the glossary in page 2).

It shall be the responsibility of the operator to maintain all waste areas and components, to the satisfaction of users, staff, and the relevant authority (users shall maintain their internal waste receptacles).

The operator shall ensure that maintenance and upgrades are carried-out on the facility and components of the waste system. When required, the operator shall engage an appropriate contractor to conduct services, replacements, or upgrades.

4.3 Arrangements for Protecting Waste Equipment from Theft and Vandalism

It shall be the responsibility of the operator to protect the equipment from theft and vandalism. This shall include the following initiatives:

- Secure the waste areas.
- Label the bins according to property address.
- Waste shall be collected within the subject site.

4.4 Arrangements for Bins/Equipment Labelling and Ensuring Users and Staff are Aware of How to Use the Waste System Correctly

- The operator shall provide appropriate signage for the bins. Signage is available at the following internet address: www.sustainability.vic.gov.au.
- The operator shall publish/distribute "house rules" and educational material to:
 - Inform users/staff about the waste management system and the use/location of the associated equipment (provide the summary in page 2 of this report).
 - Improve facility management results (lessen equipment damage and chute blockages, reduce littering, and achieve cleanliness).
 - Advise users/staff to sort and recycle waste with care to reduce contamination of recyclables.

4.5 Sustainability and Waste Avoidance/Reuse/Reduction Initiatives

The *Environment Protection Act 1970* 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 and staff 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/staff).

4.6 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 Waste Management Plan 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/staff.
- Revision of the services provided by the waste collector(s).
- Any necessary statutory approval(s).

5 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. Should ramp gradients, bin weight, and/or distance affect the ease/safety of bin transfers, the operator shall consider the use of a suitable tug.
- 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 following:

Task (to be confirmed)	Hazard (TBC)	Control Measures (TBC)
Sorting waste and 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. Maintain bin wheel-hubs. Limit bin weight. Provide mechanical assistance to transfer bins
Chute discharge and baler operation	Strike & debris from falling waste, and crush/strike/cut by moving bin system and shear points	PPE, staff training, signage and warning system, maintain access restrictions. Include a suitable curtain/skirt around the discharge zone of the chute and a locked mesh fence around the baler
Bin transfers and emptying into truck	Vehicular strike, run-over	PPE. Develop a Hazard Control Plan for transfers and collections. Maintain visibility. Use a mechanical bin-tipper
Truck access (reversing & manoeuvring)	Vehicular incident, strike, run-over	PPE. Use a trained spotter. Develop a truck-manoeuving and traffic-control procedure

Note: The above shall be confirmed by a qualified OH&S professional who shall also prepare site-specific assessments, procedures, and controls (refer to Section 6).

6 CONTACT INFORMATION

City of Yarra (local Council), ph 03 9205 5555

Waste Wise Environmental (private waste collector), ph 1300 550 408

Kartaway (private waste collector), ph 1300 362 362

FJP Safety Advisors Pty Ltd (OH&S consultant), ph 03 9255 3660

Warequip (tug supplier – for bin transfers), ph 1800 337 711

Sabco Commercial (supplier of cleaner's trolleys), ph 1800 066 522

Sulo MGB Australia (bin supplier), ph 1300 364 388

One Stop Garbage Shop (bin supplier), ph 03 9338 1411

ASI JD MacDonald Pty Ltd (chute supplier), ph 03 8558 7200

Elephant's Foot (chute supplier), ph 02 9780 3500

Wastech Engineering Pty Ltd (chute and baler supplier), ph 1800 465 465

Note: The above includes a complimentary listing of contractors and equipment suppliers. The stakeholders shall not be obligated to procure goods/services from these companies. Leigh Design does not warrant (or make representations for) the goods/services provided by these suppliers.

7 LIMITATIONS

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

This report is based on the following conditions:

- Operational use of the development (excludes demolition/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 user's 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.