



# Leigh Design

waste management plans for all urban developments

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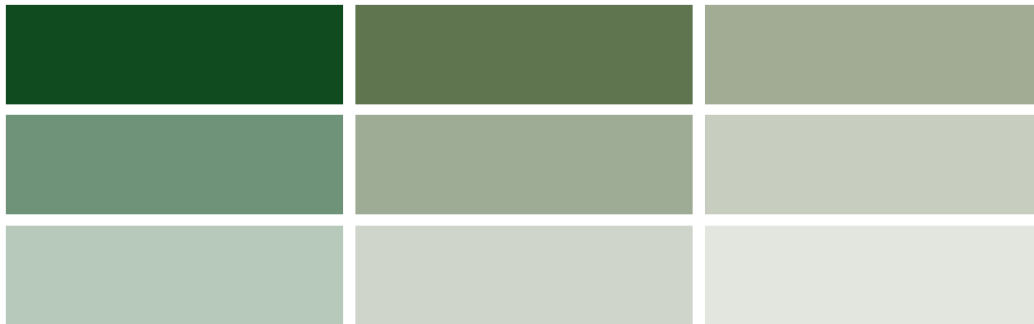
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# Waste Management Plan



## Proposed Development:

**5-9 Gordon Avenue, Chatswood, New South Wales**

## Prepared for:

**LFD Chatswood Unit Trust**

## Document Control

Report Date: 26 April 2024 (supersedes all prior reports)

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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 safe operating procedures.
- Waste shall be stored within the development (hidden from external view).
- Users shall deposit sorted waste into the chute and into designated collection bins.
- Waste shall be collected within the subject land. The collection contractor shall transfer bins between the Bin Stores and the truck.
- Council shall collect residential waste.
- A private contractor shall collect commercial waste.

### **GLOSSARY**

**Operator:** refers to the Owners Corporation, who shall manage site operations (via the Building Manager, 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 (refer to Table 1).

The initial Waste Management Plan (WMP) dated 2-5-23 was based on the 2006 Willoughby City Council Development Control Plan (DCP), which is deemed to remain applicable given that the WMP was lodged before 4-10-23 when Council adopted its new 2023 DCP.

This WMP includes enhancements of the initial report, whilst retaining compliance with the 2006 DCP. Where possible, enhancements have been adopted to achieve a greater waste capacity as per the general trend of the 2023 DCP. These include:

- An increased residential recycling capacity of 80L/week/apartment. For garbage, a rate of 100L/week/apartment has been adopted. These rates are considered adequate for apartment buildings with shared bins.
- For commercial waste, the number of garbage bins has been doubled, which is considered ample for a café, shop, and offices with communal bins.

### **1.2 Estimated Waste Generation**

The following table summarises the waste estimate:

Table 1: Waste Estimate

<b>Waste Source</b>	<b>Base Qty (est.)</b>	<b>Garbage</b>	<b>Org.</b>	<b>Recycling</b>
Apartments	No. of units = 64	6400	640	5120
Retail (cafe)	area (m <sup>2</sup> ) = 218	1526	458	1831
Retail (shop non-food)	area (m <sup>2</sup> ) = 94	329	0	329
Office	area (m <sup>2</sup> ) = 925	648	0	648
<b>TOTAL (Litres/Week)</b>		<b>8903</b>	<b>1098</b>	<b>7928</b>

Note: Waste figures are based on Willoughby Council 2006 DCP with increased residential recycling. For the café, rates from the Department of Environment and Climate Change have been adopted. Also, an allowance for organic waste has been included.

### **1.3 Collection Services**

Residential Waste: Council shall provide waste services for the residential component of the development.

Commercial Waste (retail/office): 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.

#### **1.4 Location, Equipment, and System for Managing Waste**

The waste management system is summarised as follows:

- Apartment receptacles for garbage, recycling, and organics.
- Tenancy receptacles at internal areas.
- Waste receptacles located at amenity areas.
- Residential Recycling Alcoves with bins at all residential levels.
- Garbage chute with residential level intakes and Residential Bin Store discharge. A bin-index shall be provided for automatic bin changes under the chute.
- Residential and Commercial Bin Stores located at Ground Floor.
- Collection bins (kept within the Bin Stores and Recycling Alcoves - see 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 paper, cardboard, glass, aluminium, steel, and plastics).

Vegetation Waste: Garden organics shall be collected and disposed by the landscape maintenance contractor.

Organics/Food Waste: It is understood that Council does not currently require organic waste separation. However, if required in future, the Operator shall liaise with Council and private collectors concerning the provision of bins for organics (refer to Table 2).

Bulky & 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. E-waste must not be disposed in landfill.

Residential bulky waste shall be kept in the Residential Bin Store and collected by Council. Commercial bulky waste shall be kept within each tenement and removed by a private contractor. At-call services shall be provided for bulky waste.

The cafe tenant shall arrange the storage of used cooking oil and its collection by a recycler. The Operator shall organise Grease Interceptor Trap servicing.

Also, the office manager shall arrange for the appropriate disposal of secured paper and toner/printer cartridges.

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

Table 2: Bin Schedule and Collection Frequency

<b>Waste Source</b>	<b>Waste Stream</b>	<b>Bin Qty</b>	<b>Bin Litres</b>	<b>Collections per Week</b>	<b>Net Area m<sup>2</sup></b>
Residential (shared Council bins)	Garbage	3	1,100	2	4.8
	Recyc. Collection*	21	240	1	10.5
	Recyc. Spares*	3	240	-	1.5
	Future Organics	3	240	1	1.5
	Bulky/Other Waste	-	-	TBA	2.4
Retail/Commercial (shared private bins)	Garbage	2	1,100	3	3.2
	Future Organics	1	240	2	0.5
	Recycling	1	1,100	3	1.6
<b>Net Waste Storage Area (excludes circulation), m<sup>2</sup>:</b>					<b>26.0</b>

Notes:

- \* = an average 21 residential recycling bins are anticipated to be collected each week. Whilst a recycling bin shall be provided at each residential level (L2-25), these bins are not expected to be full each week since the number of apartments at each level varies between 1 and 3.
- Council shall provide residential bins (supply cost applies).
- Private bins 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 drawings illustrate sufficient space for onsite bin 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

<b>Capacity (litres)</b>	<b>Height (mm)</b>	<b>Width (across front, mm)</b>	<b>Depth (side on, mm)</b>	<b>Empty Weight (kg)</b>	<b>Average* Gross Weight (kg)</b>
240	1080	585	735	13	45
1100	1470	1370	1070	65	210

Notes:

- Bin sizes based on the Willoughby Council DCP.
- \* = 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.
- Also, bins that receive waste under the chute shall be reinforced to withstand loads from waste falling at high speed.

Table 4: Willoughby Colour Coding

<b>Bin</b>	<b>Garbage</b>	<b>Commingled Recycling</b>	<b>Green Waste</b>
Lid	Red	Yellow	Lime
Body	Green	Green	Green

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

## **2 ACCESS FOR USERS, COLLECTORS, AND COLLECTION VEHICLES**

### **2.1 User Access to Waste Facilities**

Residents shall dispose garbage via the chute (available at each apartment level), in accordance with instructions from the chute supplier. Recyclables shall be placed into collection bins (available at apartment levels). For all other materials (organics, bulky waste, e-waste, and all other wastes), residents shall transfer sorted waste directly to their Bin Store (access via lift/stairs).

Commercial tenants shall dispose sorted waste into collection bins located within their Bin Store (if required, using a suitable trolley and the lift).

Similarly, the Operator shall maintain waste receptacles from amenity areas.

The Operator shall:

- Rotate the bins within the Residential Bin Store so that users are able to reach the bins and shall change the bins under the chute (bin-index) when full.
- For residential recycling collections, the Operator shall transfer full bins between the upper-level Recycling Alcoves and the Residential Bin Store using the lift. Residents shall be advised of the scheduled day for recycling collections so that they are aware that the recycling bin associated with their apartment level shall be unavailable during collection times.

### **2.2 Collection Arrangements and Access to Waste Facilities**

- In coordination with the garbage collection, the Operator shall temporarily close-off the chute's discharge damper and isolate the bin-index to allow safe access to the garbage bins by the waste collector.
- Waste shall be collected at the onsite Loading Bay.
- Collection staff shall have access to the Bin Stores and transfer bins to the truck and back to the stores.
- The waste collection shall be carried-out by rear-lift vehicles (nom. 10.5m long, 4m operational height, and 24 tonnes gross vehicle mass).
- Council vehicles must be provided unimpeded access to the Delivery Bay.
- Private waste collections shall occur at a different time to Council's.

### **3 AMENITY, LOCAL ENVIRONMENT, AND FACILITY DESIGN**

#### **3.1 Noise Minimisation Initiatives**

- Collection bins shall feature rubber wheels for quiet rolling during transfers.
- The waste system and collections shall meet relevant acoustic requirements.
- Local laws shall be observed for all operations in public and private areas.
- Municipal waste collections shall take place as per Council's timing/schedule.
- For private services, the waste collector shall protect the acoustic amenity by minimising noise during the collection, adhering to the NSW Protection of the Environment Operations (Noise Control) Regulation.

#### **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.
- Adequate vermin-proofing and tight-fitting doors.
- Impervious flooring (also, smooth, slip-resistant, and appropriately drained). Also, impervious walls shall be provided near each chute discharge.
- 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 suitable contractor to wash bins in a mobile bin-wash vehicle). 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.

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

Chutes, associated shafts, and discharge area/bin-index shall be sized and designed as recommended by a reputable chute manufacturer (chutes/indexes and associated equipment are proprietary items). The chute supplier shall fix safe-operating instructions to each intake-door and place a warning sign on each chute outlet and bin-index.

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 and bin-index shall be restricted to trained personnel only (this area shall be suitably fenced and kept locked). The Operator shall train staff and waste collectors concerning hazards associated with the chute discharge area and bin-index.

## **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 chute. Cardboard shall be flattened and recycling containers uncapped, drained, and rinsed prior to disposal into the appropriate bin/chute. Bagged recycling is not permitted.

Refer to Section 1.4 for all other waste streams and details of the waste system. Also, Section 2 outlines waste transfer requirements and collection arrangements.

### **4.2 Facility Management Provisions Including Maintenance & Improvements**

The development's owner/applicant shall appoint an Operator whilst providing the planning permit, this report, and any other relevant documentation associated with the waste system.

The Operator shall be responsible for managing the waste system and for developing and implementing safe operating procedures (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 onsite Loading Bay (waste shall not be placed for collection outside the site boundary).

### **4.4 Communication Strategy - Arrangements for System Labelling and Ensuring Users and Staff are Aware of How to Use the System Correctly**

- "NO STANDING" and "DANGER" signs must be fixed to the external face of the waste and recycling room/s and communal bin area/s.
- The operator shall provide appropriate signage for the bins. Signage is available at the following internet address:  
<https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/business-government-recycling/standard-recycling-signs>
- 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 how to sort waste with care to minimise contamination of various waste streams.
- For user safety when disposing waste, the Operator shall develop and provide safety instructions.

#### **4.5 Sustainability and Waste Avoidance/Reuse/Reduction Initiatives**

New South Wales' Waste Avoidance and Resource Recovery Act promotes waste avoidance and sets targets for increasing the recovery rate of solid waste for reuse and recycling.

The operator shall promote the observance of the above legislation 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:

- Perusal of the EPA Website: [www.epa.nsw.gov.au](http://www.epa.nsw.gov.au).
- Consideration of state's Waste Hierarchy (in order of preference): 1) waste avoidance, 2) resource recovery (reuse/recycle), and 3) waste disposal.
- Participation in council and in-house programs for waste minimisation.
- Establishment of 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:
  - Abide by all relevant OH&S legislation, regulations, and guidelines.
  - Ensure the collector's compliance with NSW WorkCover Code of Practice for Collection of Domestic Waste.
  - Address the manual handling risk for waste and bin transfers (as per the National Code of Practice for Manual Handling).
  - Observe the NSW WorkCover Code of Practice for risk assessments. 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:

<b>Task (to be confirmed)</b>	<b>Hazard (TBC)</b>	<b>Control Measures (TBC)</b>
Sorting/disposing waste and cleaning the waste system	Bodily puncture. Biological & electrical hazards	Personal protective equipment (PPE). Develop a waste-sorting procedure
Waste/bin manual handling	Sprain, strain, crush	PPE, staff training. Maintain bin wheel-hubs. Limit waste/bin weight. Provide mechanical assistance to transfer bins
Chute discharge and bin-index 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 bin-index
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**

**Willoughby City Council** (local Council), ph 02 9777 1000

**Cleanaway** (private waste collector), ph 131339

**Veolia** (private waste collector), ph 132955

**Shred-X** (office paper recycler), ph 1300 747 339

**PuraAir** (odour control equipment supplier), ph 1300 972 736

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

**Electrodrive** (tug & trailer supplier – for bin transfers), ph 1300 934 471

**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

**Wastech Engineering** (chute supplier), ph 1800 465 465

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

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

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 Development Application.

This report is based on the following conditions:

- Ongoing use of the development (excludes demolition/construction phases). In particular, for occupation and fit-out phases, the Operator shall determine specific waste procedures.
- 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 patronage, occupancy rate, 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.