Leigh Design

waste management plans for all urban developments

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Waste Management Plan

Proposed Development:

202 Bushland Drive, Taree, New South Wales

Prepared for:

AJA Developments

Document Control

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TABLE OF CONTENTS

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 place sorted waste into their respective collection bins.
- Waste shall be collected within the subject land.
- A private contractor shall provide waste collection services.

GLOSSARY

Operator: refers to the owner(s) and/or Owners Corporation, who shall manage site operations via the site manager, cleaners, and contractors (whilst delegating waste management responsibilities of each tenancy to the associated commercial tenant/occupier).

User: refers to commercial tenants (occupiers), who shall utilise the waste system.

1 SPACE AND SYSTEM FOR WASTE MANAGEMENT

1.1 Development Description and Use

This development shall consist of commercial tenancies (refer to Table 1).

1.2 Estimated Waste Generation

The following table summarises the estimate for major waste streams:

Table 1: Waste Estimate

Waste Source	Base Qty (est.)		Garbage	Recycling
T1 Retail Showroom	area (m^2) =	1500	1050	2625
T2 Retail Showroom	area (m^2) =	800	560	1400
T3 Retail Showroom	area (m^2) =	800	560	1400
T4 Retail Showroom	area (m^2) =	1430	1001	2503
T5 Retail Showroom	area (m^2) =	2400	1680	4200
T6 Retail Showroom	area (m^2) =	870	609	1523
T7 Retail Showroom	area (m^2) =	630	441	1103
T8 Retail Showroom	area (m^2) =	630	441	1103
T9 Retail Showroom	area (m^2) =	630	441	1103
T10 Retail Showroom	area (m^2) =	1200	840	2100
T11 Retail Showroom	area (m^2) =	1500	1050	2625
T12 Retail Showroom	area (m^2) =	900	630	1575
T13 Retail Showroom	area (m^2) =	900	630	1575
T14 Retail Showroom	area (m^2) =	900	630	1575
T15 Gym	area (m^2) =	1500	2100	1575
T16 Retail Showroom	area (m^2) =	2000	1400	3500
TOTAL (Litres/week)			**14,063**	**31,483**

Note: Since it appears that Council's DCP does not have generation rates for the above uses, the above waste estimate is based on NSW EPA guidelines.

1.3 Collection Services

Waste shall be collected privately. The Operator shall choose a waste collection provider, negotiate a service agreement, and pay for these services.

Note: Every rateable tenement is liable to pay for municipal charges irrespective of the level of collection services provided by Council.

1.4 Location, Equipment, and System for Managing Waste

The waste management system is summarised as follows:

- Tenancy receptacles at selected internal areas.
- Collection bins as listed Table 2, kept within each lot as shown in the drawings.

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). Alternatively, the Operator may consider separating recyclables into bins for cardboard and other bins for all other recyclables.

Food and Green Waste: Garden organics shall be collected and disposed by the landscape maintenance contractor. Based on retail/gym uses, minor organic waste generation is anticipated.

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

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	Collection Frequency	Net Area m^2
T1 Retail (dedicated bins)	Garbage	1	1,500	1/week	2.3
	Recycling	1	3,000	1/week	3.5
	Hard/Other/E-Waste	-	-	At Call	1.5
T2 Retail (dedicated bins)	Garbage	1	1,500	1/week	2.3
	Recycling	1	1,500	1/week	2.3
	Hard/E-Waste	-	-	At Call	1.5
T3 Retail (dedicated bins)	Garbage	1	1,500	1/week	2.3
	Recycling	1	1,500	1/week	2.3
	Hard/Other/E-Waste	-	-	At Call	1.5
T4 Retail (dedicated bins)	Garbage	1	1,500	1/week	2.3
	Recycling	1	3,000	1/week	3.5
	Hard/Other/E-Waste	-	-	At Call	1.5
T5 Retail (dedicated bins)	Garbage	1	3,000	1/week	3.5
	Recycling	1	4,500	1/week	3.8
	Hard/Other/E-Waste	-	-	At Call	1.5
T6 Retail (dedicated bins)	Garbage	1	1,500	1/week	2.3
	Recycling	1	3,000	1/week	3.5
	Hard/Other/E-Waste	-	-	At Call	1.5

Waste Source	Waste Stream	Bin Qty	Bin Litres	Collection Frequency	Net Area m^2
T7 Retail (dedicated bins)	Garbage	1	1,500	1/week	2.3
	Recycling	1	1,500	1/week	2.3
	Hard/Other/E-Waste	-	-	At Call	1.5
T8 Retail (dedicated bins)	Garbage	1	1,500	1/week	2.3
	Recycling	1	1,500	1/week	2.3
	Hard/Other/E-Waste	-	-	At Call	1.5
T9 Retail (dedicated bins)	Garbage	1	1,500	1/week	2.3
	Recycling	1	1,500	1/week	2.3
	Hard/Other/E-Waste	-	-	At Call	1.5
T10 Retail (dedicated bins)	Garbage	1	1,500	1/week	2.3
	Recycling	1	3,000	1/week	3.5
	Hard/Other/E-Waste	-	-	At Call	1.5
T11 Retail (dedicated bins)	Garbage	1	1,500	1/week	2.3
	Recycling	1	3,000	1/week	3.5
	Hard/Other/E-Waste	-	-	At Call	1.5
T12 Retail (dedicated bins)	Garbage	1	1,500	1/week	2.3
	Recycling	1	3,000	1/week	3.5
	Hard/Other/E-Waste	-	-	At Call	1.5
T13 Retail (dedicated bins)	Garbage	1	1,500	1/week	2.3
	Recycling	1	3,000	1/week	3.5
	Hard/Other/E-Waste	-	-	At Call	1.5
T14 Retail (dedicated bins)	Garbage	1	1,500	1/week	2.3
	Recycling	1	3,000	1/week	3.5
	Hard/Other/E-Waste	-	-	At Call	1.5
T15 Gym (dedicated bins)	Garbage	1	3,000	1/week	3.5
	Recycling	1	3,000	1/week	3.5
	Hard/Other/E-Waste	-	-	At Call	1.5
T16 Retail (dedicated bins)	Garbage	1	1,500	1/week	2.3
	Recycling	1	4,500	1/week	3.8
	Hard/Other/E-Waste	-	-	At Call	1.5
Net Waste Storage Area (excludes circulation), m^2:					**113.8**

Notes:

- Bins shall be sourced by the Operator (either purchased from a supplier or leased from the collection contractor). Also, the Operator may consider adopting an equivalent number of rear-lift bins instead of the above front-lift ones.
- 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 (such as separating recyclables into front-lift bins for cardboard and 240L bins for all other recyclables).

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

The drawings shall illustrate sufficient space for onsite bin storage, as required by the above schedule.

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)
240	1060	585	730	13	45
1500 FLB	1280	2050	970	~300	500
3000 FLB	1580	2050	1500	~400	800
4500 FLB	1930	2050	1650	~500	1100

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 flat-lid bins and Wastech front-lift bins (FLB).
- For front-lift bins, consider counter-weight lids (for ease of opening) and swivel / brake-lockable / rubber-lined castors (for ease of transfers to/from the truck). In particular, 4500L bins with tapered sides should be adopted for a reduced height when tipping waste into the bins.

Table 4: AS 4123.7-2006 Plastic Bin Colour Coding

Bin	Garbage	Recyclables	Green Waste
Lid	Red	Yellow	Lime Green
Body	Dark Green / Black	Dark Green / Black	Dark Green / Black

Note: 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

Commercial tenants shall dispose sorted waste into their collection bins (if required, using a suitable trolley).

2.2 Collection Arrangements and Access to Waste Facilities

- A private contractor shall collect waste within the subject land (at designated loading areas).
- Collection staff (driver and assistant) shall have access to the bins.
- Plastic wheelie bins (240L) shall be collected by rear-lift vehicles (nom. 8.8m long, 4m operational height, and 24 tonnes gross vehicle mass).
- Front-lift bins (1500, 3000, and 4500L) shall be collected by front-lift trucks (nom. 11m long, 6.5m operational height, and 30 tonnes gross vehicle mass).
- Due to their weight, front-lift bins need to be stored in a position that minimises the task of shifting these to the truck (level and smooth hard-wearing surfaces are required, with adequate doors). Should bins require shifting to the collection vehicle, the Operator shall consider providing mechanical assistance via a suitable tug (refer to Sections 5 and 6).

3 AMENITY, LOCAL ENVIRONMENT, AND FACILITY DESIGN

3.1 Noise Minimisation Initiatives

- The waste system and collections shall meet relevant acoustic requirements.
- Local laws shall be observed for all operations in public and private areas.
- 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 practices and avoiding waste-dumping (see Sect. 4).
- 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

Waste areas shall feature:

- Ventilation as per Australian Standard AS1668 and adequate vermin-proofing.
- Impervious flooring (also, smooth, slip-resistant, and appropriately drained).
- A graded bin wash area, hot and cold mixing hosecocks, 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.

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.

4 MANAGEMENT AND SUSTAINABILITY

4.1 Waste Sorting, Transfer, and Collection Responsibilities

Garbage shall be placed within tied plastic bags prior to transferring into collection bins. Cardboard shall be flattened and recycling containers un-capped, drained, and rinsed prior to disposal into the appropriate bin. 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 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 subject land (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

- The Operator shall provide appropriate signage for the bins. Signage is available at the following internet address: www.epa.nsw.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, reduce littering, and achieve cleanliness).
  - Advise users/staff how to sort waste with care to minimise contamination of various waste streams.
- For safety when disposing waste and shifting bins, the Operator shall develop and provide safety instructions.

4.5 Sustainability and Waste Avoidance/Reuse/Reduction Initiatives

The 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.
- 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:

Task (to be confirmed)	Hazard (TBC)	Control Measures (TBC)
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 Use a powered device to tip smaller bins/receptacles into bulk collection bins. Provide direct access for collection vehicle to each Front Lift Bin
Bin transfers and collections. User access to waste areas	Vehicular strike/run-over (and equipment hazards listed above)	PPE. Develop a Hazard Control Plan. Maintain visibility. Use a mechanical bin-tipper. Designate the driveway and waste areas as Shared Zones
Truck access (reversing & manoeuvring)	Vehicular incident, strike, run-over	PPE. Use a trained spotter. Develop a truck-manoeuvring 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

Mid-Coast Council (local council), ph 02 7955 7777

JR Richards & Sons (private waste collector), ph 1300 579 278

Eco-Safe Technologies (odour control equipment supplier), ph 03 9706 4149

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 (wheelie bin supplier), ph 1300 364 388

Wastech Engineering (FLB supplier 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. Also, this report is solely for the client identified on the cover page. Leigh Design Pty Ltd accepts no any responsibility for any third party who may rely upon this document.

This report is based on the following conditions:

- Operational/ongoing use of the development (excludes demolition/construction phases). In particular, for occupation and fit-out phases, owners shall determine specific waste procedures.
- Drawings and information supplied to us.
- 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 resident'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.