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waste management plans for all urban developments

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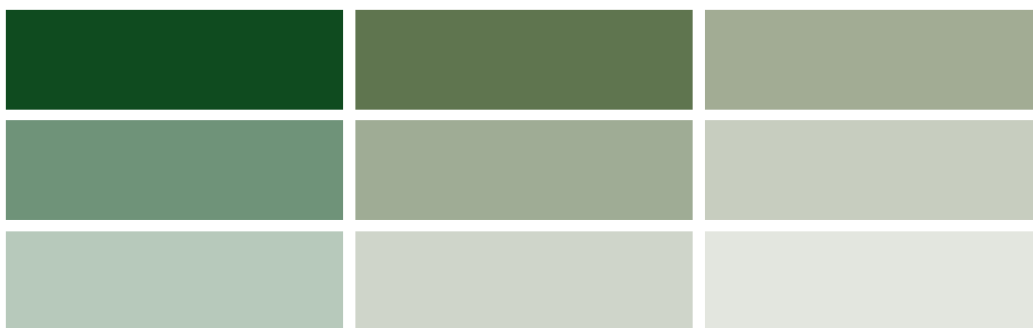
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Waste Management Plan



Proposed Development: Level 2 Extension
4-6 Niangala Close, Belrose, New South Wales

Prepared for:
HMC Capital

Document Control

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<u>TABLE OF CONTENTS</u>	
SECTION	PAGE No.
Waste Management Summary.....	2
Glossary.....	2
1 Space and System for Waste Management	3
2 Access for Users, Collectors, and Collection Vehicles.....	6
3 Amenity, Local Environment, and Facility Design	7
4 Management and Sustainability	9
5 Supplementary Information	11
6 Contact Information.....	12
7 Limitations.....	12

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 dispose of sorted waste into the baler, compactors, and collection bins.
- Centre Management waste shall be collected at the onsite Loading Bays.
- A private contractor shall provide waste collection services.

GLOSSARY

Operator: refers to the Centre Management, who shall manage site operations (via cleaners, staff and contractors, if required).

User: refers to 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 retail additions at Level 2 of the existing centre (refer to Table 1). The existing waste system in Dock 2 shall be adjusted to accommodate added waste from the proposed additions.

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
Existing Centre	-	85.20	109.59
Additional Showroom	area (m ²) = 570	0.40	1.00
Additional Showroom	area (m ²) = 560	0.39	0.98
Additional Café	area (m ²) = 340	2.38	2.86
TOTAL (m³/wk)		88.37	114.42

Notes:

- Figures from the existing facility have been estimated from the capacity of the current waste system.
- Waste figures for the proposed additions are based on NSW EPA guidelines.
- For Food & Beverage (F&B), the café with cooking rate has been adopted. F&B tenements include take-away shops, fast food outlets (food court), restaurants, and cafes (with and without cooking).

1.3 Collection Services

As per current practice, waste shall continue to be collected privately (costs to be borne by the Operator).

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 Used for Managing Waste

The waste management system is summarised as follows:

- Tenancy receptacles at internal areas.
- Public waste receptacles located at selected areas.
- Loading Bays, Bin Areas, and Compactor located at Lower Ground Level.
- Collection bins (kept within the Bin Areas - refer to Table 2).

The various collection waste-streams are summarised as follows:

Garbage: General waste shall be placed in tied plastic bags for collection in Garbage Compactors.

Recycling: All recyclables shall be sorted onsite into the following collection bins: 1) Paper/Cardboard; and 2) Other recyclables (glass, aluminium, steel, and plastics).

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

Food Organics: F&B tenants shall separate organic waste (a small caddy shall be employed at each tenement). Approved compostable liners shall be considered for bins and caddies. The Operator shall provide a suitable food waste system.

Other Waste Streams: Hard/electronic/liquid and other wastes (polystyrene, batteries, paint, chemicals and detox items, etc) shall be kept within each tenement. Users shall organise a private collection from within the subject land. E-waste must not be disposed in landfill.

F&B tenants shall arrange the storage of used cooking oil and its collection by a recycler. The Operator shall organise Grease Interceptor Trap servicing.

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 Frequency	Net Area m ²
Dock 1	Garbage (3:1)	25m ³ Compactor		14 days	32.0
	Cardboard (3:1)	25m ³ Compactor		14 days	32.0
	Mixed Containers	1	660	7 days	1.2
Dock 2	Garbage (3:1)	23m ³ Compactor		14 days	32.0
	Cardboard (3:1)	30m ³ Compactor		14 days	40.0
	Mixed Containers	2	660	7 days	2.4
	Cardboard (baler and 2 pallets)			7 days	9.0
Dock 4	Garbage (3:1)	23m ³ Compactor		14 days	32.0
	Cardboard (3:1)	30m ³ Compactor		14 days	40.0
	Mixed Containers	1	660	7 days	1.2
Net Waste Storage Area (excludes circulation), m²:					221.8

Notes:

- (3:1) denotes the nominal compaction ratio.
- Tenants shall consider adopting wheelie bins and trolleys for waste transfers to the compactor and collection bins. The Operator shall consider providing a bin-lifter for the compactor and collection bins.
- The compactor and collection bins shall be sourced by the Operator in accordance with specifications from the waste collector. The Operator shall be responsible for ongoing maintenance, cleaning, and replacements. Also, the Operator may consider changing the mix of bins, compactors, and balers to suit.
- Subject to stakeholders' preference/capability (and as built constraints), bin sizes and quantities can be changed. Also, the Operator shall add bins for food waste (or either a digester or a macerator).

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.

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)
240	1060	585	730	13	45
660	1250	1240	780	43	130

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) bins and Wastech front-lift bins (FLB).

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. For Food Waste / organics bins, AS 4123.7 bins have a Burgundy lid and a Dark Green or Black body.

2 ACCESS FOR USERS, COLLECTORS, AND COLLECTION VEHICLES

2.1 User Access to Waste Facilities

Tenants shall dispose sorted waste into the compactors, baler, and collection bins (if required, using a suitable trolley/bin and the lift). Similarly, the Operator shall maintain waste receptacles from amenity areas and transfer waste on behalf of the public. In particular, the extended tenancies a Level 2 shall dispose waste at the waste system in Dock 2.

Trained staff shall operate the compactors and the baler.

Note: The Operator shall have access to the Bin Areas to rotate the bins, ensuring that empty bins are available along the circulation area so that users are able to reach them.

2.2 Collection Arrangements and Access to Waste Facilities

- A private contractor shall collect waste onsite Loading Bays.
- Plastic wheelie bins (240/660L) shall be collected by rear-lift vehicles (nom. 8.8m long, 4m operational height, and 24 tonnes gross vehicle mass). A similar size truck shall collect cardboard bales.
- Compactors (and/or associated containers) shall be collected by a matching hook-lift vehicle (11 m long, approx. 4.5m collection height with articulated hooks and chamfered compactors, approx. 4.0m driving height, and 30 tonnes gross vehicle mass). The truck needs to be aligned with the longitudinal axis of the compactor and prop 1m in front.
- Compactor design shall take into consideration height clearances at the collection point and along truck travel zones. Also, compactor clearing shall occur during off-peak waste disposal periods.
- The Operator shall utilise a suitable pallet truck for bale transfers.
- Truck access and the location of the existing waste system shall be retained.

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.
- 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.
- 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.

The compactor shall be washed off-site at regular intervals (increasing the wash frequency during warm months). Odour control equipment and/or a refrigerated garbage compactor shall be considered. Also, compactors require suitable floor drainage.

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.

The baler, compactors and bin lifters shall be designed as recommended by a reputable manufacturer (these units are proprietary items). The supplier shall provide training to all users and include appropriate safety features and operating instructions to ensure safe operation and prevent unauthorised use. Access to waste storage, collection and compaction areas shall be restricted to trained personnel only.

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 compactor. Cardboard shall be flattened and recycling containers un-capped, drained, and rinsed prior to disposal into the appropriate compactor. 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 onsite Loading Bays.

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.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 to sort and recycle waste with care to reduce contamination of recyclables.

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 New South Wales Environment Protection Authority 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 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, staff training. Maintain bin wheel-hubs. Limit 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
Compactor/baler operation	Crush/strike/cut and shear points	PPE, staff training, signage and warning system, maintain access restrictions
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

Northern Beaches Council (local council), ph 02 9942 2111

SUEZ/SITA (private waste collector), ph 131335

Veolia (private waste collector), ph 132955

Visy (private waste collector), ph 13 84 79

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

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

Electrodrive Pty Ltd (tug & trailer supplier – for bin transfers), ph 1800 333 002

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

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

Wastech Engineering (compactor 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 Development 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.