19-23 The Corso, Manly NSW

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Operational and Construction Waste Management Plan

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1 Introduction

This Waste Management Plan (WMP) has been prepared on behalf of Iris Capital to accompany a Development Application for 19-23 The Corso, Manly. The development consists of approximately 213 m2 of retail space and 12 apartments and associated infrastructure.

Northern Beaches Council *Manly Development Control Plan 2013 (and specifically Part 3, 3.8 Waste Management*), *Northern Beaches Council's Waste Management Guidelines* and other Authority's requirements haves been referred to in the development of the recommended equipment/systems.

In addition, the following publications have been consulted for guidance as to waste management for this type of development:

- City of Sydney *Guidelines for Waste Management in New Developments 2018*
- Department of Environment and Climate Change *NSW Better Practice Guide for Waste Management in Multi-Unit Dwellings 2008*
- NSW EPA *Better practice guide for resource recovery in residential developments 2019*

Waste audit and management strategies are recommended for new developments to provide support for the building design and promote strong sustainability outcomes for the building. All recommended waste management plans will comply with council codes and any statutory requirements.

The Operational and Construction Waste Management Plans address the appropriate segregation, containment and disposal of waste required with waste avoidance being the primary focus. To assist building management in achieving effective waste and recycling management, this waste management plan has three key objectives:

To assist building management in achieving effective waste and recycling management, this waste management plan has three key objectives:

i. **to minimise the environmental impacts of the operations of the development** – this will be achieved by ensuring maximum diversion of waste from landfill; correct containerisation and transport of materials; correct segregation of materials into appropriate management streams; awareness among residents and staff of waste avoidance practices.

ii. **to minimise the impact of the management of waste within the development on local residents** – this will be achieved by ensuring waste is managed so as to avoid odour and litter and collected during suitable times.

iii. **to ensure waste is managed so as to reduce the amount landfilled and to minimise the overall quantity generated** – this will be achieved by implementing systems that assist residents and staff to segregate appropriate materials that can be recycled; displaying signage in all relevant areas to remind and encourage avoidance and recycling to staff; and through associated signage in the commercial areas to reinforce these messages.

Management strategies reflect current best-practice requirements, and relevant Sections of the *Protection of the Environment Operations Act 1997* and the NSW Environment Protection Authority *Waste Classification Guidelines, Part 1: Classifying Waste*, as well as consideration of industry best practice for this type of development.

Section 143 of the Protection of the Environment Operations Act 1997 requires waste to be transported to a place that can lawfully accept it. It will be the responsibility of the site developers to ensure all contractors clearly specify where all wastes are to be transported, the capacity of the nominated facilities to receive/manage the waste and to ensure that reports on management aspects (types, quantities and disposal pathways) are provided.

2 Waste Generation

2.1 Waste Streams

Based on the development profile, the following waste streams would be expected:

- General waste
- Commingled recycling
- Paper & cardboard recycling

It is not expected that significant quantities of garden waste will be generated. The appointed gardener will be required to manage this waste by disposal at a composting facility.

2.2 Waste Generation Estimates

2.2.1 Residential

Council requires that 10 x 240 litre mobile garbage bins be provided for, with these being serviced twice per week[1]. The numbers per stream as advised by Council are:

- 4 x 240 litre mobile garbage bins for waste
- 3 x 240 litre mobile garbage bins for paper recycling
- 3 x 240 litre mobile garbage bins for commingled recyclables

Therefore, based on this requirement, calculation of waste/recycling generation is not required.

The footprint for these 10 x 240 litre mobile garbage bins is approximately 3.52 m^2, and with an allowance of 30% for bin movement, the waste storage area would need to be approximately 5.9 m^2.

2.2.2 Retail

Based on Northern Beaches *Waste Management Guidelines: Chapters 3-7 Ongoing Management*, the retail aspect of the development will generate[2] per week:

- 533 litres – general waste (requiring 3 x 240 litre mobile garbage bins)
- 533 litres – recyclables (requiring 3 x 240 litre mobile garbage bins)

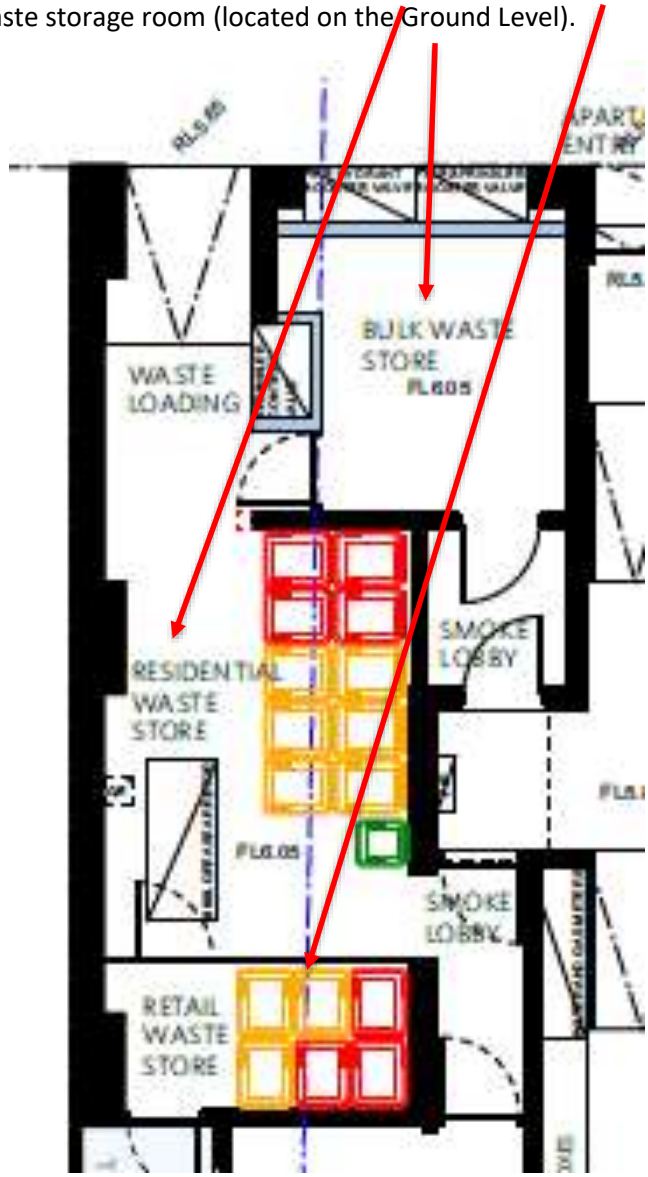
[1] Northern Beaches Council.
[2] This is calculated on the basis that the retail premises operate 5 days per week.

The footprint for these 6 x 240 litre mobile garbage bins is approximately 2.64 m^2, and with an allowance of 30% for bin movement, the waste storage area would need to be approximately 3.5 m^2.

3 Waste Management System

Based on the volume of waste/recyclables generated and the twice weekly collection service for waste and weekly for recyclables, as well as the requirement for 31 x 240 litre mobile garbage bins, the following illustrates the location and size of the waste storage room.

The following illustrates the location of both the residential and retail waste (bin) rooms and the bulky waste storage room (located on the Ground Level).



3.1 Waste Storage Room Design

All storage area will be constructed in accordance with the Council's requirements and Department of Environment and Climate Change NSW *Better Practice Guide for Waste Management in Multi-Unit Dwellings 2008*.

Based on Council's requirements, the waste bin storage room is located within 6.5 metres of the front property boundary.

The dedicated path and doorways for movement of the 240 litre MGB from the waste room to the property boundary is slip proof, free of obstructions and 1200mm wide.

Based on this, the storage areas will be constructed to:

- Permit easy, direct and convenient access for the users of the facility.
- Permit easy transfer of bins to the collection point if relocation of bins is required.
- Permit easy, direct and convenient access for authorised person (ie., residents building management and service providers only).
- Are locked with only residents, building management and service providers having keys to enable access.
- With smooth impervious base to enable cleaning;

The waste and recycling bins will be colour coded and clearly signed. Each stream will be located in a designated area. This will assist in easy identification of correct bins by cleaners and staff.

Examples of waste room colour coding

The waste room will contain the following to minimise odours, deter vermin, protect surrounding areas, and make it a user-friendly and safe area:

- waste room floor to be sealed;
- waste room walls and floor surface is flat and even;
- all corners coved and sealed 100mm up, this is to eliminate build-up of dirt;
- all walls painted with light colour and washable paint;
- equipment electric outlets to be installed 1700mm above floor levels;
- the room must be mechanically ventilated;
- light switch installed at height of 1.6m;
- waste rooms must be well lit (sensor lighting recommended);
- all personnel doors are hinged, self-closing and lockable;

- waste collection area must hold all bins – bin movements should be with ease of access;
- conform to the Building Code of Australia, Australian Standards and local laws; and
- childproofing and public/operator safety shall be assessed and ensured.

Occupational Health and Safety issues such as slippery floors in waste rooms and the weight of the waste and recycling receptacles will need to be monitored. Building management will monitor the bin storage area and will attend to all spills as they occur.

3.2 Waste Management System

Signage will be a crucial element of the waste management system. Appendix A contains examples of signage. These are the type of signs that should be used throughout the community facility and waste storage area(s).

In addition, signage can be obtained from NSW EPA at: https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/business-government-recycling/standard-recycling-signs.

All garden waste and landscaping will be managed by an outside contractor with all maintenance/landscaping provided by contractors. As a component of the service contract, the appointed contractor will be required to demonstrate how such waste will be managed so as to reduce disposal of material to landfill.

To ensure that wastes and recyclables are managed correctly (ie., deposited into the correct container):

- Residents will be provided with information on the proper disposal of wastes and recyclables – that is correct segregation requirements.
- To assist, residents will be provided with separate bins for waste and recyclables. These bins should have a capacity of 30 litres for general waste and 15 litres for recyclables (ie., 2 days' worth of generation).
- Residents will be encouraged to maximise the separation of general waste and mixed recyclables to aid the proper disposal of all materials.
- As indicated residents will be responsible for transporting waste/recyclables from their apartment to the interim waste/recycling storage areas located on each floor and then deposit into the correct MGB. This will be achieved by education programs, colour coded bins and signage in the bin holding areas.
- Similarly, retail tenants will also be responsible for ensuring wastes and recyclables are transported to their dedicated waste room.
- Both waste rooms will be separately locked so as to ensure residents or retail tenants do not deposit waste/recyclables into the incorrect waste room.

- General waste bins will be distinguished by having a red lid and the commingled recycling bins have a yellow lid.
- In keeping with best practice sustainability programs, all waste areas and waste and recycling bins will be clearly differentiated through appropriate signage and colour coding to Australia Standards to reflect the materials contained.

4 Waste Management Education

All residents and tenants will receive information regarding the waste collection systems including how to use the system, which items are appropriate for each stream and collection times. Appropriate signage and updated information will also be provided, as well as receiving feedback on issues such as contamination of the recycling stream or leakage of the recyclables into the general waste. Building management will have the responsibility for these tasks.

All waste receptacles will be appropriately signed and additional room signage is usually provided from most waste contractors during implementation of the waste contract. Examples of signage are included in Appendix A.

It is recommended that all signs should:

- Clearly identify the waste/recycling stream;
- Use correct waste/recycling stream colour coding;
- Identify what can and cannot be disposed of in the receptacle; and
- Include highly visual elements to accommodate for individuals with inadequate English literacy.
- As part of the resident and tenant induction and welcoming process, a waste and recycling toolkit will be provided. This toolkit will include the details of each of the systems in place; acceptance criteria for each stream and how each stream is managed.

5 Construction Waste Management Principles

5.1 Waste Management Principles

The following waste hierarchy will be used as a guiding principle:

Avoid and Reduce

Minimise the production of waste materials in the construction process by:

- Assessing and taking into consideration the resultant waste from different design and construction options
- Purchasing materials that will result in less waste, which have minimal packaging, are pre-cut or fabricated.
- Not over ordering products and materials

Reuse

Ensure that where ever possible, materials are reused either on site or offsite.

- Identify all waste products that can be reused
- Put systems in place to separate and store reusable items
- Identify the potential applications for reuse both onsite and offsite and facilitate reuse

Recycling

Identify all recyclable waste products to be produced on site.

- Provide systems for separating and stockpiling of recyclables
- Provide clear signage to ensure recyclable materials are separated
- Process the material for recycling either onsite or offsite

Note: In some cases, it may be more economical to send the unsorted waste to specialised waste contractors who will separate and recycle materials at an offsite location.

Disposal

Waste products which cannot be reused or recycled will be removed and disposed of. The following will need to be considered:

- Ensure the chosen waste disposal contractor complies with regulatory requirements
- Implement regular collection of bins

Section 143 of the Protection of the Environment Operations Act 1997 requires waste to be transported to a place that can lawfully accept it. It will be the responsibility of the site developers to ensure all contractors clearly specify where all wastes are to be transported, the capacity of the nominated facilities to receive/manage the waste and to ensure that reports on management aspects (types, quantities and disposal pathways) are provided.

5.2 Liquid Waste

Liquid waste may be produced on site for environmental control measures such as:

- Site and vehicle cleaning
- Dust control waste

The following measures will be taken to minimise the impact of liquid waste:

- Ensure water is used in moderation and no taps are left continuously running
- Use any grey water produced on site for irrigation or for dust suppression
- Only discharge clean water into storm water

5.3 Stormwater Pollution Prevention

All actions will be undertaken to avoid pollution entering stormwater drains and for litter generation. The following will be initiated:

i. Prior to commencement of any works a Safe Work Method Statement will be completed and reviewed to determine potential for stormwater pollution and/or litter generation

ii. The proponent (contractor), will need to develop a management strategy to manage the potential for these issues to be realised

iii. Site inspections will be conducted during the working day to monitor potential for stormwater pollution generation and where identified, works will cease until appropriate controls are implemented

iv. Waste water and storm water will be managed and disposed of in accordance with Water Authority requirements.

5.4 Litter Management

i. Daily site inspections will be conducted to identify litter, remedy the situation and investigate the cause so as to reduce the potential for the issue to occur in the future.

ii. Sufficient quantities of bins (and/or bin space), will be made available so as to avoid dumping of materials outside bins

iii. All waste/recycling bins will have covers so as to ensure that wastes cannot be blown out during windy conditions. This will also apply to relevant stocks of materials to be used in construction.

iv. Personnel will be allocated the role of litter management in that they will periodically inspect the site and surrounds for litter and if identified collect and dispose of it.

5.5 Records

Records will be kept of all wastes and recyclables generated and either used on site, or transported off–site during the construction stages of the development.

It will be a condition of appointment that all waste/recycling contractors involved in the construction stages provide these records, and that they also contain details of the facilities that the materials are transported to.

These records will be made available to Council on request.

5.6 Waste/recyclables storage (on-site)

All waste and recycling materials will be stored in bins provided by the appointed contractor(s). These bins will be appropriately coloured and signed to indicate what materials are to be deposited into them and located so as to maximise the recovery of reusable/recyclable materials.

As construction activities progress, the designated bins will be moved so as to maximise the collection of materials that will be diverted from landfill. This will also involve relocating signage advising as to correct waste management.

5.7 Waste/recyclables treatment (on-site)

There will be no treatment of wastes or recyclables on-site except for possible removal of contaminants prior to forwarding to off-site recyclers.

6 Construction Waste Profile

6.1 Overview

The following summarises the types, quantities and management systems for construction materials that may be generated during construction.

The quantity of waste materials to be generated onsite are estimates and therefore the systems that will be put in place need to incorporate flexibility to allow for variation in the total quantities generated. Active site management during the construction phase will ensure all waste/recyclable materials are disposed of appropriately and that all waste receptacles are of sufficient capacity to manage onsite activities.

Finalisation of the system(s) that will be implemented for the recovery of materials and for disposal of others to landfill will occur following appointment of contractor(s). A component of the appointment will be that contactors will be required to provide data as to the disposal pathway (eg., materials, volumes and final disposal site), as well as a validation process for this information.

The appointed contractor(s) will also be responsible for sourcing speciality recycling facilities for the materials that cannot be reused on site

6.2 Estimated Volumes

The following table details the estimated composition by m^2 of construction waste to be generated for the total site.

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6.3 Estimated Volumes

The following table details the estimated composition by m^3 of construction waste to be generated for the total site.

Composition and Management of Construction waste by m^2

Materials on site		Destination		
Type of material	Estimated volume (m^3)	On-site (Reuse or recycle)	Off-site	Disposal
Excavation material	$10m^3$	Will either be stockpiled for use during construction if required and if not disposed off-site.	Collected and used as clean fill by the appointed contractor and/or forwarded to various facilities such as garden landscapers, or roadworks.	Facility TBA upon appointment of contractor.
Concrete	$1m^3$	Separated on site and crushed for use in pavement construction where possible	Collected by contractor and disposed at concrete recycling facility	Facility TBA upon appointment of contractor
Mixed plastics	$10m^3$	No on-site reuse	Collected by contractor for recycling. Facility TBA upon appointment of contractor.	Minimise disposal to landfill
Timber	$20m^3$	Separated and where feasible, reused for further formwork	Unused material separate and stockpiled onsite. Collected by specialist timber subcontractor for recycling	Facility TBA upon appointment of contractor
Plasterboard	$15m^3$	Unused material taken back by supplier for reuse where possible	Material to be separated and stockpiled onsite. Collected by the waste	Facility TBA upon appointment of contractor

Materials on site		Destination		
Type of material	Estimated volume (m^3)	On-site (Reuse or recycle)	Off-site	Disposal
			subcontractor on a weekly basis (or as required) for recycling.	
Metal	$15m^3$	No on-site reuse	Collected by specialist metal subcontractor for recycling	Facility TBA upon appointment of contractor
Soil/Sand/Gravel	$1m^3$	Will be stockpiled for reuse.	Excavation materials will be collected and used as clean fill by the waste contractor with appropriate notification as to location	All remaining material will be disposed at landfill – facility (or other sites as fill), TBA upon appointment of contractor
Glazing	$1m^3$	No on-site reuse	Recyclers consulted as to potential for recycling and if suitable separated for recycling.	Facility TBA upon appointment of contractor. Minimise disposal to landfill
Mixed Recyclables	$25m^3$	No on-site reuse	Contractor appointed to collect and recycle	Minimise disposal to landfill
General waste	$40m^3$	No on-site reuse	No recycling or reuse	Facility TBA upon appointment of contractor

6.4 Other Materials

A range of other materials may be present on the site once the construction activities commence.

All potentially recyclable materials are to be separated and stored on-site for an appointed waste/recycling contractor to inspect and to determine the suitability of the material for recycling (or even reuse). If approved for either action, then the contractor can then remove the items.

For materials that are not designated as potentially able to be reused or recycled, then they are to be disposed of at a landfill licenced to receive those specific materials.

6.5 Hazardous Waste Materials - Construction

If needed to be used, contractors employed to manage any identified hazardous wastes will be required (prior to appointment), to demonstrate their compliance with NSW EPA and WorkCover requirements for management of the specific materials they are contracted to manage.

The following are the recommended approaches for managing the wastes and other materials that were identified during the site analysis.

The key principles that need to be adhered to are[3]:

1. All hazardous wastes need to be correctly identified and managed in accord with all relevant legislation and Codes of Practices.

2. Hazardous materials need to be separated into their individual categories and not mixed with any other materials

Any identified hazardous materials will be transported by vehicles permitted to do so and disposed at sites licenced to receive the specific hazardous material(s). Records of all loads leaving the site will be maintained and made available to any relevant personnel/organisation.

Any identified hazardous wastes will be managed in accord with the *Protection of the Environment Operations Act 1997* and *Protection of the Environment Operations (Waste) Regulation 2014*.

[3] Reference should be made to the NSW EPA publication, Waste Classification Guidelines Part 1: Classifying Waste.

7 Contracts and purchasing

Each subcontractor working on the site will be required to adhere to this Waste Management Plan.

The Head Contractor will ensure each subcontractor:

- Takes practical measures to prevent waste being generated from their work
- Implements procedures to ensure waste resulting from their work will be actively managed and where possible recycled, as part of the overall site recycling strategy or separately as appropriate
- Ensures that the right quantities of materials are ordered, minimally packaged and where practical pre-fabricated. Any oversupplied materials are returned to the supplier
- Implements source separation of off cuts to facilitate reuse, resale or recycling.

The Site Manager will be responsible for:

- Ensuring there is a secure location for on-site storage of materials to be reused on site, and for separated materials for recycling off site.
- Engaging appropriate waste and recycling contractors to remove waste and recycling materials from the site
- Co-coordinating between subcontractors, to maximise on site reuse of materials
- Monitoring of bins on a regular basis by site supervisors to detect any contamination or leakage
- Ensuring the site has clear signs directing staff to the appropriate location for recycling and stockpiling station/s. And that each bin/skip/stockpile is clearly sign posted
- Proving training to all site employees and subcontractors in regards to the WMP as detailed below.

Should a subcontractor cause a bin to be significantly contaminated, the Site Manager will be advised by a non-conformance report procedure. The offending subcontractor will then be required to take corrective action, at their own cost. The non-conformance process would be managed by the Head Contractors' Quality Management Systems

8 Training and Education

All site employees and sub-contractors will be required to attend a site specific induction that will outline the components of the WMP and explain the site specific practicalities of the waste reduction and recycling strategies outlined in the WMP.

All employees are to have a clear understanding of which products are being reused/recycled on site and where they are stockpiled. They are also to be made aware of waste reduction efforts in regards to packaging.

The site manager will post educational signage in relation the recycling activities on site in breakout areas, lunch rooms etc.

Appendix A – Example Signage


ORGANIC WASTE
LANDFILL
RECYCLING