

Long Reef Golf Club, Collaroy – Waste Management Plan

A Submission to Assembly Projects

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In the spirit of reconciliation MRA Consulting Group acknowledges the Traditional Custodians of Country throughout Australia and their connection to land, sea and community. We pay our respects to Aboriginal and Torres Strait Islander peoples and to Elders past, present and emerging.

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Glossary

Terminology	Definition
AS	Australian Standard
C&D	Construction and Demolition
C&I	Commercial and Industrial
DA	Development Application
DCP	Development Control Plan
ENM	Excavated Natural Material
EPA	Environment Protection Authority
LGA	Local Government Area
MGB	Mobile Garbage Bin
MRA	MRA Consulting Group
MSW	Municipal Solid Waste
NBCDCP	Northern Beaches Council Development Control Plan 2022
WLEP	Warringah Local Environmental Plan 2011
WDCP	Warringah Development Control Plan 2011
VENM	Virgin Excavated Natural Material
WMP	Waste Management Plan
WSP	Waste Service Provider
WSRA	Waste Storage and Recycling Area

1 Introduction

MRA Consulting Group (MRA) was engaged by Assembly Projects to prepare a Waste Management Plan (WMP) related to the proposed refurbishment located at Long Reef Golf Club, along Anzac Ave Collaroy. The site is located within the Northern Beaches Council Local Government Area (LGA).

The proposed development includes the major refurbishment of kitchen, café, lounge and bar areas as well as the development of new amenities and office/admin areas.

This WMP addresses the requirements of the Consent Authority (Council) and conforms to the following environmental planning instruments and reference documents:

- Warringah Local Environmental Plan 2011 (WLEP)
- Warringah Development Control Plan 2011 (WDCP)
- Northern Beaches Council Development Control Plan 2022 (NBCDCP)

Consideration has also been given to the following supplementary documents in the preparation of the WMP:

- NSW EPA (2019) *Better Practice Guide for Resource Recovery in Residential Developments*.

A Waste and Recycling Management Plan has been prepared in accordance with the WDCP & NBCDCP, and states the following objectives for waste management:

- a. To facilitate sustainable waste management in a manner consistent with the principles of Ecologically Sustainable Development (ESD).
- b. To achieve waste avoidance, source separation and recycling of household and industrial/commercial waste.
- c. To design and locate waste storage and collection facilities which are convenient and easily accessible; safe; hygienic; of an adequate size, and with minimal adverse impacts on residents, surrounding neighbours, and pedestrian and vehicle movements.
- d. To ensure waste storage and collection facilities complement waste collection and management services, offered by Council and the private service providers and support on-going control for such standards and services.
- e. To minimise risks to health and safety associated with handling and disposal of waste and recycled material, and ensure optimum hygiene.
- f. To minimise any adverse environmental impacts associated with the storage and collection of waste.
- g. To discourage illegal dumping.

This WMP is used to inform the building design to deliver best practice waste management and promote sustainable outcomes at the demolition, construction and operational phases of the development. The WMP addresses waste generation and storage associated with demolition and construction works through redevelopment, and ongoing occupation of the proposed use.

2 Background

2.1 Description of the Proposed Development

The proposed development includes the following scope of works:

- Alterations and additions to create a refurbished two (2) storey Club House
- The ground floor is proposed to provide the following areas:
 - new lobby entry space
 - three (3) community / meeting rooms
 - two (2) bar areas
 - members lounge with external terrace area
 - commercial kitchen
 - dining area
 - amenities
 - office spaces
 - storage rooms
 - keg room
 - kiosk
 - covered outdoor terrace dining area; and
 - garden seating area.
- The new first floor level will provide the following areas:
 - lobby and entry area
 - back of house space
 - multi-use room for members presentation area/meeting rooms
 - bar lounge
 - amenities
 - members lounge and terrace area; and
 - two (2) outdoor terrace areas
- Revised vehicular access from Anzac Avenue
- Shared pedestrian zone along existing access road for increased safety consisting of raised pavements and improved footpaths
- Tree removal and associated replanting
- Removal and reinstatement of solar panels on roof

2.2 Location

The Site is positioned within the suburb of Collaroy, which forms part of the Northern Beaches Local Government Area (LGA). The Site is located at the eastern end of Anzac Avenue, Collaroy. The Site is located within Griffith Park which includes the Long Reef Golf Course (LRGC), Griffith Park Playing Field and amenities building, Collaroy Tennis Club, Long Reef Surf Lifesaving Club and associated facilities.

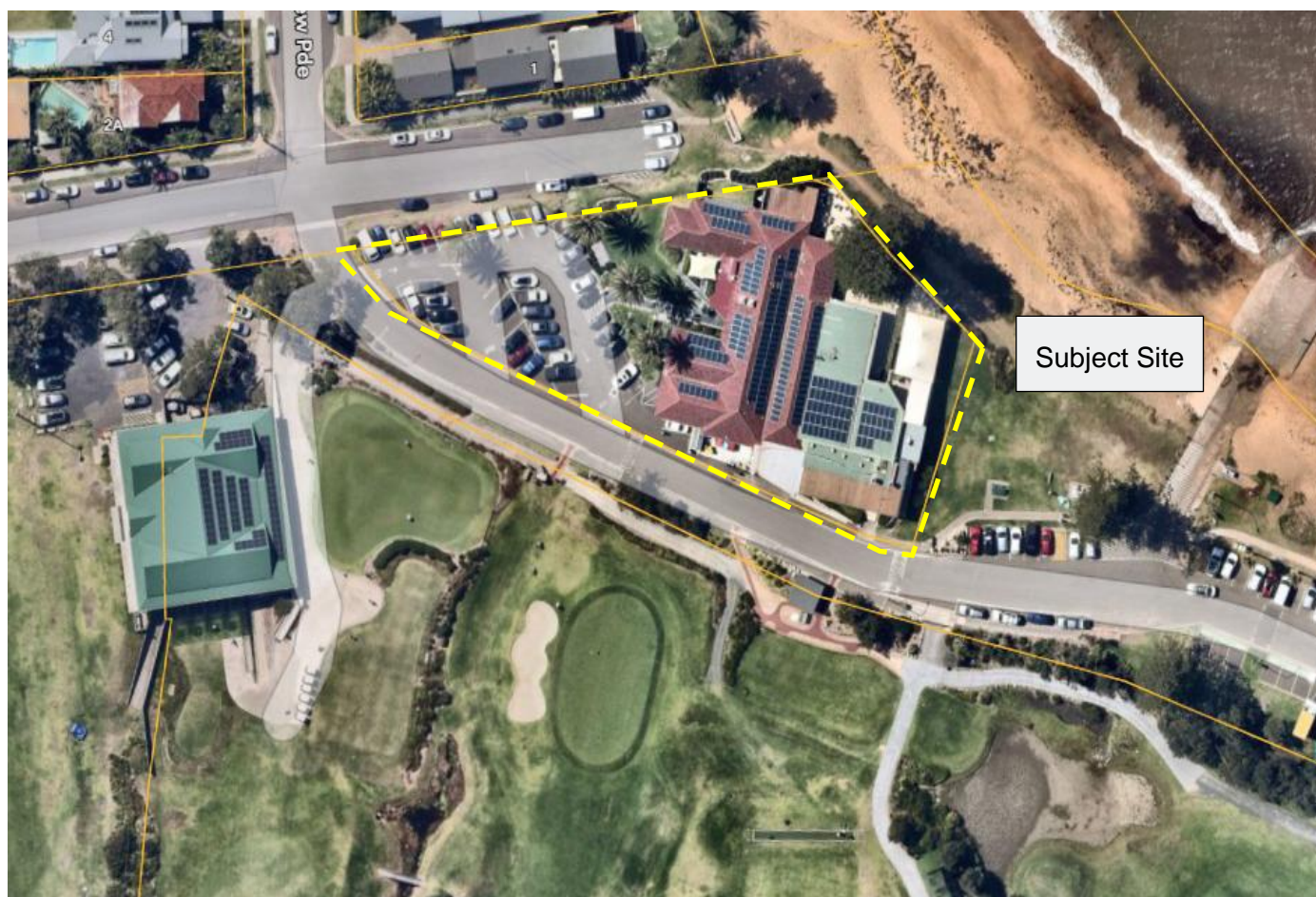
The Site is zoned RE1 Public Recreation and is subject to the provisions of Warringal Local Environmental Plan 2011. The Site is situated on the southern side of Anzac Avenue between Seaview Parade to the west and Fisherman's Beach to the east.

In its current state, the Site comprises the existing LRGCC Club House which is a single storey rendered brick building with hipped tile roof and part flat metal roof. The Club House has been subject to various additions and extensions over the years and is no longer fit for purpose. There is an existing at grade parking area to the west of the existing building that will remain largely unchanged.

The Site adjoins Fisherman's Beach to the north and east, open reserve and Fisherman's Beach Boat Ramp to the east, an access road to car parking along the foreshore, Pro Shop and golf course to the south and south-west and low-density residential housing to the north-west.

The wider Site context is a combination of recreational and sporting facilities within Griffith Park, beach and intertidal areas, and low-density residential development.

Figure 1: Site and surrounding area



Source: Nearmap, 2024.

2.3 Zoning and Use

The site is zoned as RE1 – Public Recreation according to the Warringah Local Environmental Plan 2011. The objectives of this zone are:

- To enable land to be used for public open space or recreational purposes.
- To provide a range of recreational settings and activities and compatible land uses.
- To protect and enhance the natural environment for recreational purposes.
- To protect, manage and restore public land that is of ecological, scientific, cultural or aesthetic value.
- To prevent development that could destroy, damage or otherwise have an adverse effect on those values.

Figure 2: Land use zone map



Source: NSW eSpatial Viewer, 2024.

2.4 Strategies

Waste management for the site considers better practice, necessary equipment, and integration with other guidance documents including the NSW Waste and Sustainable Materials Strategy (NSW EPA, 2021), and National Waste Policy: Less Waste, More Resources (DAWE, 2018). The key policy aims that are considered are:

- Avoidance (to prevent the generation of waste);
- Reduce the amount of waste (including hazardous waste) for disposal;
- Manage waste as a resource; and
- Ensure that waste treatment, disposal, recovery and re-use are undertaken in a safe, scientific and environmentally sound manner.

Management of waste generated onsite according to directives of the NSW Strategy will assist in achieving the target of 80% diversion from landfill in the C&D sector.

2.5 Assumptions

This report is a Waste Management Plan (WMP), forming part of the development documentation and assumes:

- Drawings and information that have been used in waste management planning for this WMP are the final design set for the development plan from the project architect, i2C, 08/10/24;
- Waste and recycling volumes are based on information provided from the Warringah DCP 2011 and Northern Beaches Council DCP 2022
- This WMP is a living document and therefore, waste management equipment and systems described in this report are subject to change based on future operations and available technology.

3 Construction and Demolition

Demolition and construction activities at the site will generate a range of construction and demolition (C&D) waste. Throughout the development process, all materials will be reused and recycled where possible, minimising the disposal (landfilling) of materials other than those that are contaminated or unsuitable for reuse or recycling processes.

Waste storage during construction operations will involve some stockpiling of reusable material, as well as placement of wheeled bins for the separation of construction materials for recycling. A bin for residual waste or contaminated material will also be made available at the site for disposal where necessary. Bins may require alternative placement across construction operations to facilitate the safe and efficient storage of materials and will be retained within property boundaries to avoid illegal dumping.

A waste storage area shall be designated by the demolition or construction contractor and shall be sufficient to store the various waste streams expected during operations. Waste storage areas will be kept clear to maintain access and shall also be kept tidy to encourage separation of waste materials and for WHS reasons. The waste storage area will retain multiple bins to allow for source separation of waste to allow for ease of recovery and reuse of materials.

Waste management principles, management measures and facilities in use on the site shall be included as part of the site induction for all personnel working on the site.

3.1 Demolition Waste

The proposed development will require demolition of existing structures prior to commencement of excavation and construction operations. Demolition works will include the removal of most internal fit out inclusive of kitchen, offices, amenities and gaming area and some external walls.

Table 1 outlines the expected demolition waste quantities to be generated at the site, in addition to the appropriate management methods for each material type. Other materials with limited reuse potential either on or offsite will be removed in bulk bins for recycling at an appropriately licenced and capable recycling facility.

Table 1: Demolition waste generation estimates

Type of Material	Estimated volumes (m ³)	Re-use on-site	Recycle (Separate collection)	Recycle (Off-site)	Disposal	Estimated % Landfill	Estimated % of landfill diversion	Methods for re-use, recycling or disposal
Concrete	150 – 200	✓	✓	✓	-	<5%	>95%	Onsite: Separated wherever possible and reused or crushed for filling, levelling or road base. Offsite: Removed to C&D facility for crushing and recycling for recovered products.
Glass	>5	✓	✓	✓	-	<10%	>90%	On site: to be separated wherever possible to enhance resource recovery. Offsite: Removed to C&D facility for crushing and recycling for recovered products.
Bricks/pavers	100 - 150	✓	✓	✓	-	<5%	>95%	Onsite: Separated wherever possible and reused or crushed for landscaping and driveways. The development will be able to reuse a number of existing building bricks as paving in landscaped areas. Offsite: Removed to C&D facility for crushing and recycling for recovered products.
Tiles	35 - 40	✓	✓	✓	-	<5%	>95%	Onsite: Separated wherever possible and reused or crushed for landscaping and driveways. Offsite: Removed to C&D facility for crushing and recycling for recovered products.

Type of Material	Estimated volumes (m ³)	Re-use on-site	Recycle (Separate collection)	Recycle (Off-site)	Disposal	Estimated % Landfill	Estimated % of landfill diversion	Methods for re-use, recycling or disposal
Timber (Treated)	15 - 20	✓	✓	✓	-	0	100	Onsite: To be separated wherever possible to enhance resource recovery. Offsite: Removed to C&D facility for crushing and recycling for recovered products.
Timber (Clean)	15 - 20	✓	✓	✓	-	50	50	Onsite: Separated wherever possible and reused or crushed for landscaping and driveways. Offsite: Removed to C&D facility for crushing and recycling for recovered products.
Plasterboard	15 - 20	-	✓	✓	-	<10%	>90%	Onsite: To be separated wherever possible to enhance resource recovery. Offsite: Removed to C&D facility for crushing and recycling for recovered products.
Metals (ferrous & non-ferrous)	5 - 10	-	✓	✓	-	<10%	>90%	Onsite: Separated wherever possible to improve resource recovery. Offsite: Removed to C&D facility for recovery and recycling.
Floor covering	10 - 15	-	✓	✓	-	50%	50%	Should be removed in bulk and sent to carpet recycler or C&D facility for recovery where possible.
Residual waste	10 - 20	-	-	-	✓	100%	-	Resource recovery dependant on facility destination capability.

Type of Material	Estimated volumes (m ³)	Re-use on-site	Recycle (Separate collection)	Recycle (Off-site)	Disposal	Estimated % Landfill	Estimated % of landfill diversion	Methods for re-use, recycling or disposal
Hazardous Waste	Unknown	-	-	-	-	100%	-	Existing buildings may contain potentially hazardous materials. Should contaminated or potentially hazardous materials be discovered they would be handled according to the demolition and/or materials management plan
Total % Diversion from Landfill Estimated							>80%	

3.2 Construction Waste

Construction waste on site will be derived from the major refurbishment to the café, kitchen, lounge and bar areas as well as the construction of new amenities and office/admin areas.

Table 2 outlines indicative volume to weight conversion factors for common construction materials.

Table 2: Indicative volume to weight conversion factors for common construction materials

Building waste material	Tones per m ³	Waste as % of the total material ordered
Soil/aggregate	1.4 – 1.6	–
Bricks	1.2	5–10%
Concrete	1.5	3–5%
Tiles/ceramics	0.5 – 1	2–5%
Timber	0.3	5–7%
Plasterboard	0.2	5–20%
Metals	0.15 – 0.9	–

Source: Green Building Code of Australia C&D Waste Criteria.

Table 3 outlines the estimated waste generation rates for materials through construction of the proposed development, in addition to the appropriate management methods for each material type.

The information below presents multiple options for materials reuse, recycling and disposal where applicable (e.g. return to manufacturer, recycled at construction and demolition (C&D) processor, or disposed to landfill if contaminated).

Table 3: Construction waste generation estimations

Type of Material	Estimated Volumes (m³)	Re-use on-site	Recycle (Separate collection)	Recycle (Off-site)	Landfill	% of landfill diversion	Methods for re-use, recycling or disposal
Excavated material	-	✓	✓	✓	-	-	Onsite: Reuse for fill and levelling. Offsite: Removed from site for reuse as recycled fill material or soil. Disposal: Removal of any contaminated material for appropriate treatment or disposal.
Bricks/pavers	20 - 25	✓	✓	✓	<10%	>90%	Onsite: Separated wherever possible and reused or crushed for landscaping and driveways. Offsite: Returned to supplier for reuse or removed to C&D facility for crushing and recycling for recovered products.
Concrete	15 - 20	✓	✓	✓	<10%	>90%	Onsite: Separated wherever possible and reused or crushed for filling, levelling or road base. Offsite: Removed to C&D facility for crushing and recycling for recovered products.
Tiles	<5	✓	✓	✓	<10%	>90%	Onsite: Separated wherever possible and reused or crushed for landscaping and driveways. Offsite: Returned to supplier for reuse or removed to C&D facility for crushing and recycling for recovered products.

Type of Material	Estimated Volumes (m³)	Re-use on-site	Recycle (Separate collection)	Recycle (Off-site)	Landfill	% of landfill diversion	Methods for re-use, recycling or disposal
Timber (clean)	5 – 10	-	✓	✓	<10%	>90%	Onsite: Separated wherever possible to improve resource recovery. Offsite: Returned to supplier for reuse removed to C&D facility for recovery where possible.
Timber (treated)	5 - 10	-	✓	✓	50%	50%	Onsite: Separated wherever possible to improve resource recovery. Offsite: Returned to supplier for reuse removed to C&D facility for recovery where possible.
Plasterboard	10 - 15	-	✓	✓	<10%	90%	Onsite: Separated wherever possible to improve resource recovery. Offsite: Returned to supplier or removed to a C&D/plasterboard recovery facility for recovery where possible.
Glass	>5	✓	✓	✓	<10%	>90%	Onsite: Separated wherever possible and reused or crushed for landscaping and driveways. Offsite: Returned to supplier for reuse or removed to C&D facility for crushing and recycling for recovered products.
Metals (ferrous) Metals (non-ferrous)	5 - 10	-	✓	✓	<10%	>90%	Onsite: Separated wherever possible to improve resource recovery. Offsite: Returned to supplier for reuse or removed to C&D facility for recovery and recycling.

Type of Material	Estimated Volumes (m ³)	Re-use on-site	Recycle (Separate collection)	Recycle (Off-site)	Landfill	% of landfill diversion	Methods for re-use, recycling or disposal
Floor covering	<5	✓	✓	✓	<10%	>90%	On site: to be separated wherever possible to enhance resource recovery. Reuse: surplus and offcut material returned to manufacturer for reuse where possible. C&D processor: recovery and recycling.
Fixtures and fittings	<5	✓	✓	✓	<5%	>95%	On site: to be separated wherever possible to enhance resource recovery. Reuse: surplus and offcut material returned to manufacturer for reuse where possible. C&D processor: recovery and recycling.
Electronic waste	5 - 10	-	✓	✓	<10%	>90%	Offcut wires and electronics separated where possible or returned to supplier for reuse.
Packaging materials (pallets, wrap, cardboard, etc)	20 - 25	-	✓	✓	<10%	>90%	Returned to supplier where possible or separated by material type for resource recovery.
Residual waste	15 - 20	-	✓	✓	100%	-	Resource recovery dependant on facility destination capability.
Total % Diversion from Landfill Estimated						>90%	

3.3 Waste Contractors and Facilities

To ensure best practice waste management, appropriate contractors and facilities have been proposed based on their location and service offerings (Table 4).

Table 4: Waste service contractors and facilities

Role	Details
Recommended Waste Collection Contractor	<p>The following are local skip bin operators for consideration in the management of excavation and construction waste for the site:</p> <ul style="list-style-type: none"> • Brown Bros Skip Bins; • Purple Cow Skips; • Aussie Industries; <p>Or another supplier as elected by the building contractor.</p>
Principal Off-Site Recycler	<p>The following are local C&D processing facilities for consideration in the management of C&D waste generated at the site:</p> <ul style="list-style-type: none"> • Cleanaway Rockdale Resource Recovery Centre • Bingo Industries • Kimbriki Resource Recover Centre <p>Or another appropriate facility as elected by the waste management contractor.</p>
Principal Licensed Landfill Site	<ul style="list-style-type: none"> • Bingo Eastern Creek <p>Or other appropriate facility as elected by the waste management contractor.</p>

3.4 Site Documentation

This WMP will be retained on-site during the construction phases of the development, along with other waste management documentation (e.g. contracts with waste service providers).

Responsibility for the WMP, waste documentation and processes during the excavation and construction phases will be with the site manager or builder.

A logbook that records waste management and collection will be maintained on site, with entries including:

- Time and date of collections;
- Description of waste and quantity;
- Waste/processing facility that will receive the waste; and
- Vehicle registration and company name.

Waste management documentation, the logbook and associated dockets and receipts must be made available for inspection by an authorised Council Officer at any time during site works.

4 Operational Waste Management

4.1 Overview

Waste management strategies related to site operations have been established according to the Warringah DCP 2011, Warringah DCP 2011, Northern Beaches Council Waste Management Guidelines and NSW EPA guideline documents.

The following space calculations are based off the mobile garbage bin (MGB) and bulk bin dimensions sourced from and NSW EPA's *Better Practice Guide for Resource Recovery in Residential Developments* (2019) (Table 5).

Table 5: Mobile Garbage Bin (MGB) and Bulk Bin capacity and footprint

Bin Capacity (L)	Height (mm)	Depth (mm)	Width (mm)	Footprint (Approx. m ²)
120	940	560	485	0.30- 0.33
240	1,100	735	580	0.41- 0.43
660	1,250	850	1,370	0.86-1.16
1,100	1,470	1,245	1370	1.33-1.74

Source: NSW EPA's *Better practice guide for resource recovery in residential developments* (2019).

4.2 Commercial Waste Management

4.2.1 Waste Generation

Operational waste management addressed in the following section relates to waste generation associated with the various commercial use types. The site proposes the use of part of the subject building for commercial uses, including offices, kitchen, bar, gaming and dining areas. It is noted that each internal commercial tenancy will require a separate application and approval for use and fit out works.

Rates have been taken from the Northern Beaches: Guidelines for Waste Management (GWM, 2016) and NSW EPA's *Better Practice Guide for Resource Recovery in New Developments* (2019). Weekly generation rates are based on a 7-day week as follows:

Table 6: Existing Waste Generation

Waste Stream	Existing Bin Allocation	Existing Collection Schedule	Total Generation (L)
General waste + Food Waste Combined	2 x 1,100L bins	Three times per week	6,600
Recycling	6 x 240L bins	Twice per week	2,880
Paper & Cardboard*	2 x 1,100L bins	Once per week	2,200

4.2.2 Waste Storage Requirements

The following section has been calculated using the existing waste streams and MRAs prior experience to ensure an efficient collection process and to avoid overcrowding the current waste management areas. (Table 7).

Table 7: Commercial waste storage and collection frequency

Waste stream	Waste generation (L/week)	Waste management options (bins and collection frequency)	Minimum Storage Area (m ²)*
General waste*	7,623 L	2 x 1,100 L bins collected up to six times per week	3.5
Recycling**	4,752 L	1 x 1,100 L bins collected up to four times per week	1.7
Paper & Cardboard	3,630 L	1 x 1,100 L bin collected three times per week	1.7
Food waste**	3,267	3 x 240 L bins collected up to 5 times per week	1.3
Total Space Requirement:			8 m²
Total Space Requirement:			12 m²
Bulky / other wastes	Other waste streams serviced as required.		

Note: storage space requirement considers additional space of approximately (m² x 1.5) for manoeuvring of bins. Food waste stored in bins recommended to be collected at least three times per week to reduce risk of odour impact.

**General waste, recycling and paper and cardboard waste generation has been calculated using a 65% increase of the existing waste management procedures*

***Food waste has been calculated at 30% of total general waste generation*

Larger wheelie bins are expected to be the most suitable option for the management of general waste and recycling streams for the proposed development. A bin tug can be obtained and stored within the waste management area to reduce impacts of manual handling on staff for large and heavy bins, carted over larger distances.

240L bins are expected to be most suitable for the collection of food waste to allow for easier manoeuvrability and servicing. Building management can observe the bin fullness levels once the site is fully occupied and adjust the number of collections accordingly.

An 11m² commercial bin storage room has been provided in an outdoor fenced area on the ground floor to accommodate waste management infrastructure detailed in the table above.

4.2.3 Temporary Waste Storage

Office, community and lobby areas:

Interim containers within office, community and lobby areas will be available sufficient for one day's generation of waste and recycling. Cleaning staff will be responsible for the emptying of these bins daily and transporting waste to the site's commercial bin storage area.

Food and Beverage:

The back-of-house areas of the restaurant and dining areas will hold bins for the temporary storage of waste. Bins for general waste, recycling, and food waste at minimum will be provided to allow easier source separation for staff. Bins will be transferred to the bin storage area at minimum once daily for emptying and cleaning and transferred back to the back-of-house.

Function Room:

Due to the infrequent use of the level 1 function room, alternative waste measures can be implemented to avoid overcrowding in the waste storage area. Additional bins for this room should be arranged prior to any events and removed within a reasonable timeframe after the event. It is recommended that in the occasion of an event that site management use the above waste generation and determine the appropriate amount of temporary additional bins.

4.2.4 Bulky Waste

Space for storage of bulky waste resulting from the commercial component of the development is available within the waste storage and recycling area or within BOH areas. Bulky waste removal will be organised promptly with the nominated waste collection contractor to avoid overspill into common areas or corridors.

5 Waste Management Systems

5.1 Waste Management System Summary

The following specific management methods are proposed for the various collection waste streams expected to be generated at the site, including alternative waste streams outside of general waste, recycling and organics:

- **General Waste:** General waste shall be placed within a tied plastic bag prior to transferring into collection bins. For collection purposes, general waste shall be stored within a mobile garbage bin (MBG).
- **Commingled Recycling:** All recyclables will be stored in commingled bins (mixed plastic, paper, cardboard, glass, aluminium, steel). All recyclables should be decanted loose (not bagged) with containers un-capped, drained and rinsed prior to disposal into the recycling bin. Paper should be flattened and placed in paper and cardboard bin if applicable.
- **Garden Waste:** It is expected that landscaping at the site will be maintained by an external contractor who will remove all vegetation waste from ongoing maintenance activities.
- **Paper and Cardboard:** Should large quantities of paper and cardboard waste be generated from proposed site uses a separate service may be suitable for application at the site. The contracted waste service provider may be able to provide separate paper and cardboard bins for the source separation and collection of paper and cardboard waste.
- **Food Waste:** Commercial food organics waste generation from the development can be collected and treated on-site at small scale should management decide to do so. Organics treatment can be used to produce conditioners, compost or vermiculture castings for application on or off-site. Equipment options include different size and capacity composters, dehydrators, worm farms and macerators. For organics treated to acceptable standards, discharge of effluent or any output to sewer as commercial trade wastewater may be permitted.
- **Food Donation:** Management of commercial and food and beverage uses may like to explore the potential for donation of excess consumable food to charities such as OzHarvest or FoodBank NSW.
- **Other (Problem) Waste:** The disposal of hard, bulky, electronic, liquid or potentially hazardous waste shall be organised between the operator and site users as necessary.

5.2 Waste Management and Recycling Method

The flow of **commercial waste and recycling** goes from generation to collection through several steps:

1. Waste is temporarily stored at its point of generation in an appropriately sized receptacle, clearly marked for type of waste;
2. Site cleaners and staff are to transfer waste to the waste storage room for appropriate disposal into the respective bin.
3. Cleaning staff and site management are responsible for maintenance of bins and the waste storage rooms, ensuring bins are clean and in working order. Cleaning staff and site management are also responsible for switching out full bins and monitoring bin fullness;
4. Site management is to ensure contracts with a private waste contractor, who also ensure appropriate collection scheduling and access is organised to minimise noise, odour, vermin, and visual amenity impacts to staff, visitors and the public.

5.3 Management System and Responsibilities

The site manager will be responsible for the management of waste at the site. Should there be any issues that impact on the operational efficiency, safety and suitability of waste management, management will be responsible for making any necessary changes, responsibilities include:

- Using this WMP to inform waste management operations, design and infrastructure;
- Providing educational materials and information on sorting methods for recycled waste, awareness of waste management procedures for waste minimisation and resource recovery;

- Maintaining a valid and current contract with a licensed waste service provider for waste and recycling collection and disposal;
- Making information available to staff and visitors about waste management procedures;
- Organising, maintaining and cleaning bins as part of a regular maintenance schedule;
- Manoeuvring bins to specified onsite collection point prior to and following scheduled collection of waste bins;
- Organising bulky waste collections as required;
- Ensuring bin allocation and waste/recycling collection frequency is adequate. Requesting additional infrastructure or services where necessary; and
- Monitoring any vermin and pest issues and arranging appropriate controls (traps or fumigating) and maintenance of doors or other points of potential entry.

5.4 Collection Method and Loading Areas

Collection will occur on site directly adjacent to the waste storage area via a private collection vehicle in accordance with Table 8 below.

Table 8: Collection points and loading areas requirements and specification

Component	Requirement	Specification
Collection point	Allow safe waste collection and loading operations	<ul style="list-style-type: none"> - Adequate clearance and manoeuvring space; - Sufficient clearance for the safe handling of materials and equipment; and - Sectioned loading bay does not impede upon traffic and pedestrian safety.
Vehicle manoeuvring and loading space	Truck space for adequate lift clearance, manoeuvring and operation for a contractor collection vehicle	<ul style="list-style-type: none"> - Collection from each site use loading area by a rear lift collection vehicle; - Adequate loading bay dimensions to not impede lift clearance; - Operational clearance for truck manoeuvring in a forward direction; and - The provision of space clear of vehicle parking spaces (level and free of obstructions).
Operating times	Appropriate collection times to limit noise and traffic disturbance	<ul style="list-style-type: none"> - Collection times will be arranged during off-peak times to ensure minimal disturbance to pedestrians and visitors.

5.5 Waste and Recycling Storage Areas

The waste areas will provide centralised storage that has adequate capacity to receive and store the maximum likely generation of waste and recycling between collection times. In accordance with best practise, it is recommended the bin storage areas be designed with the following considerations:

- Storage areas reflect the equipment, infrastructure, manoeuvring space and potential future needs of the development;
- Waste areas will be maintained;
- Be located in a position that is convenient for users and waste collection staff, located away from habitable rooms;
- All waste and recycling storage areas and access paths to be kept clean and free of obstructions;

- The floor being graded and drained to an approved drainage outlet connected to the sewer and having a smooth, even surface, coved at all intersections with walls;
- The walls being cement rendered to a smooth, even surface and coved at all intersections; and
- The room shall be adequately ventilated (either natural or mechanical) in accordance with the Building Code of Australia.

5.6 Signage

Signage that promotes resource recovery, waste minimisation, safety and amenity follows the Australian Standard for safety signs for the occupational environment (Standards Australia, 1994).

Signage will be designed to consider language and non-English speaking backgrounds, vision impairment and accessibility. Illustrative graphics must form a minimum 50% of the area of the signage. Signage is to be prominently posted in the waste room indicating:

- Details regarding acceptable recyclables;
- Recyclables are to be decanted loose (not bagged);
- *No standing* and *danger* warnings apply to the area surrounding the waste storage area;
- Contact details for arranging the disposal of bulky items; and
- The area is to be kept tidy.

Standard signage requirements and guidance for application apply (see Appendix A).

5.7 Prevention of Pollution and Litter Reduction

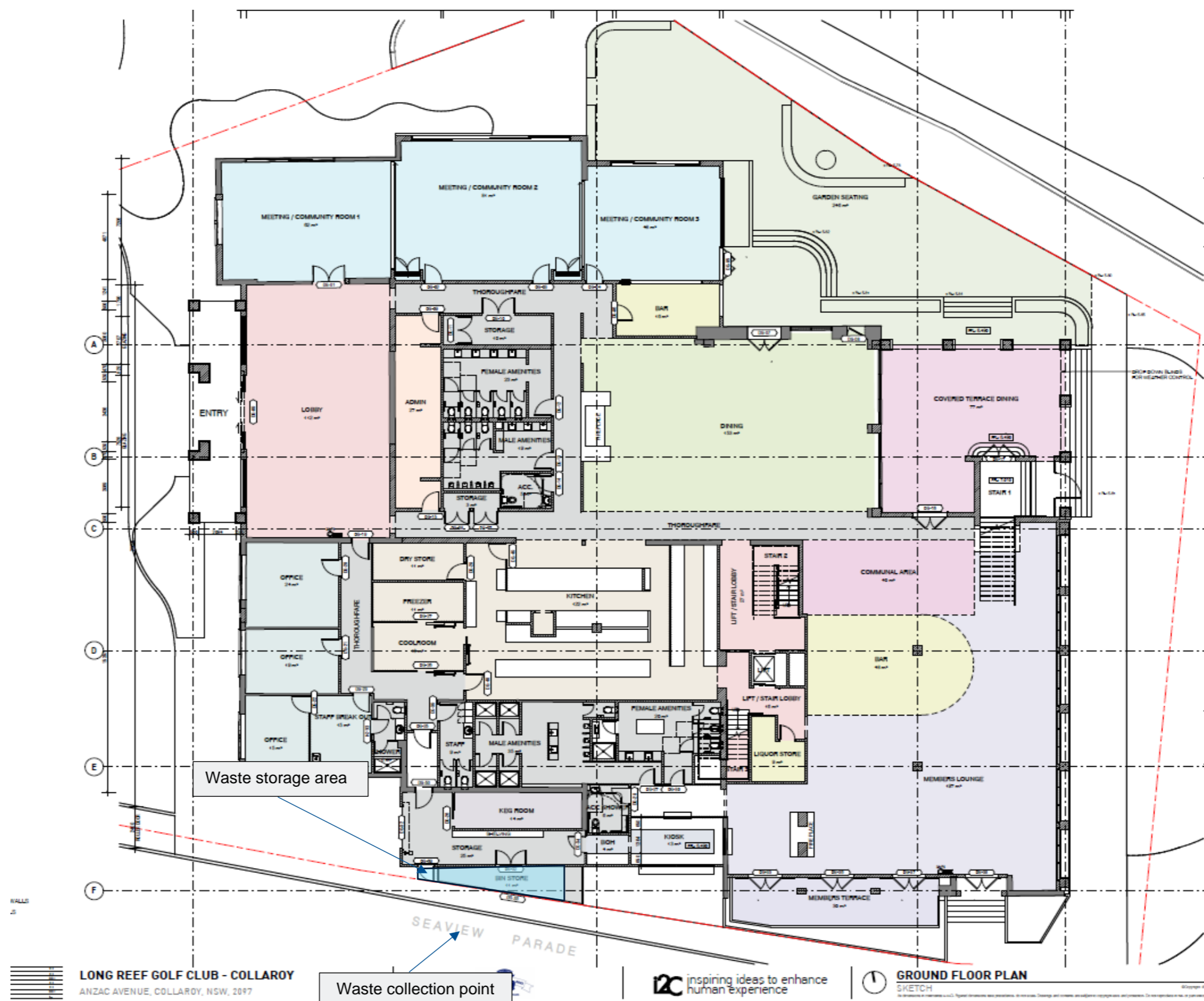
To minimise dispersion of litter and prevent pollution (to water and land via contamination of runoff, dust and hazardous materials), building management and the site cleaning staff will also be responsible for:

- Maintenance of open and common site areas;
- Ensuring waste areas are well maintained and kept clean;
- Securing the waste storage area from vandalism and the escape of litter;
- Identification and appropriate disposal of goods with hazardous material content (paints, e-waste, fluorescent tubes);
- Taking action to prevent dumping and unauthorised use of waste areas; and
- Requiring contractors to clean up any spillage that may occur during waste servicing or other work.

6 References

- Australian Department of Sustainability, Environment Water, Population and Communities (2011) Construction and Demolition Waste Guide - Recycling and Re-use Across the Supply Chain.
- Australian Standards 4123.7 Mobile Waste Containers.
- Warringah Development Control Plan 2011
- Warringah Local Environmental Plan 2011
- NSW EPA (2012) Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities.
- NSW EPA (2021) NSW Waste and Sustainable Materials Strategy 2041.
- NSW EPA (2014) Waste Classification Guidelines.
- NSW EPA (2016) Recycling Signs, Posters and Symbols. Available at: <http://www.epa.nsw.gov.au/wastetools/signs-posters-symbols.htm>.
- NSW EPA (2019) Better Practice Guide for Resource Recovery in Residential Developments.
- NSW Government (1979) Environmental Planning and Assessment Act.
- NSW Government (1997) Protection of the Environment Operations Act.
- NSW Government (2000) Environmental Planning and Assessment Regulation.
- NSW Government (2001) The Waste Avoidance and Resource Recovery Act

Appendix A Proposed Site Plans



Source: i2C, 2024.

Appendix B Standard Signage

Waste Signage

Signs for garbage, recycling and organics bins should comply with the standard signs promoted by the NSW EPA.

Standard symbols for use in signage, bin facade and educational materials are promoted through the NSW Environment Protection Authority. They are available for download from the NSW EPA website (NSW EPA 2016b), in black and white and colour versions. The Australian Standard series AS 4123 (Part 7) details colours for mobile waste containers (Standards Australia 2008).

Figure 3: Examples of standard signage for bin uses



Safety Signs

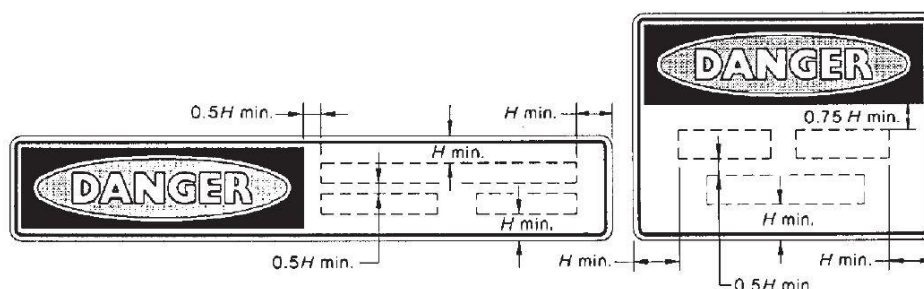
The design and use of safety signs for waste and recycling rooms and enclosures should comply with AS 1319 (Standards Australia 1994). Safety signs should be used to regulate, and control safety related to behaviour, warn of hazards and provide emergency information, including fire protection information. Below are some examples. Clear and easy to read 'NO STANDING' and 'DANGER' warning signs must be fixed to the external face of each waste and recycling room where appropriate.

Figure 4: Example and layout of safety signage



(d) Horizontal

FIGURE D5 TYPICAL ARRANGEMENTS OF DANGER SIGNS



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