199-205 Pittwater Road, Manly – Waste Management Plan

A Submission to Chrofi

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MRA Consulting Group

Prepared by

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Disclaimer

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Glossary

Terminology	Definition
AS	Australian Standard
DA	Development Application
DC	Development Consent
EPA	Environment Protection Authority
LGA	Local Government Area
DCP	Manly Development Control Plan 2013
LEP	Manly Local Environment Plan 2013
MGB	Mobile Garbage Bin
MSW	Municipal Solid Waste (also referred to as domestics or residential waste)
NBC	Northern Beaches Council
WMP	Waste Management Plan
WSP	Waste Service Provider
WSRA	Waste Storage and Recycling Area

1 Introduction

MRA Consulting Group (MRA) have been engaged by Chrofi to prepare a Waste Management Plan (WMP) in support for the proposed redevelopment at 199-205 Pittwater Road, Manly NSW. The proposed redevelopment is for a two-storey mixed-use shop top housing with 6 residential dwellings and 6 retail spaces. The site is situated in the Northern Beaches Council (NBC) Local Government Area (LGA).

MRA understands this WMP will be submitted to accompany a Section 4.55 modification application to amend existing consent DA 2022/0193 to be submitted to the Northern Beaches Council. This WMP addresses the requirements of the Consent Authority (NBC) and conforms to the following reference documents:

- *Manly Local Environment Plan 2013*
- *Manly Development Control Plan 2013*
- *Northern Beaches Council - Waste Management Guidelines* 2016

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

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

This WMP has been prepared to inform the development design and assist in the delivery of better practice waste management, promoting sustainable outcomes and minimisation of waste through the demolition, construction, and operational phases of the development. The DCP (2013) outlines the following waste management objectives:

Objective 1) Minimise overall environmental impacts of waste in accordance with regional waste plans and Federal and State Government waste minimisation targets.

Objective 2) Encourage environmentally protective waste management practices on construction and demolition sites which include:

- sorting of waste into appropriate receptors (source separation, reuse and recycling) and ensure appropriate storage and collection of waste and to promote quality design of waste facilities;
- provision of design standards that complement waste collection and management services offered by Council and private service providers;
- building designs and demolition and construction management techniques which maximises avoidance, reuse and recycling of building materials and which will minimise disposal of waste to landfill; and
- appropriately designed waste and recycling receptors are located so as to avoid impact upon surrounding and adjoining neighbours and enclosed in a screened off area.

Objective 3) Encourage the ongoing minimisation and management of waste handling in the future use of premises.

Objective 4) Provide advice to intending applicants on:

- matters to be considered when assessing the waste implications of DAs;
- sound waste management practices and requirements for the preparation of waste management plans; and
- the reduction and handling of waste during the demolition and construction phase.

The proposed modification and this WMP remains consistent with Council's waste management objectives, and has been prepared to in accordance with Council requirements.

2 Background

2.1 Description of Proposed Development

The proposed Section 4.55 modification application seeks consent for changes to the existing approved consent, DA 2022/0193.

Changes to the original DA include:

- Reduction of apartments proposed on the first level from 7 to 6 (incl. 3 existing studios)
- Changes to the parking layout
- Relocation of the waste storage areas

2.2 Location

The proposed development is identified in the Manly Local Environment Plan 2013 as Lot DP382992 – 199-205 Pittwater Road, Manly.

The proposed development is 1km north of Manly Local Centre in Sydney's Northern Beaches. The sites frontage is on Pittwater Road adjacent to the corner of Golf Parade and Collingwood Street. Vehicular access is via Golf Parade. Figure 1 depicts the site in relation to surrounding roadways.

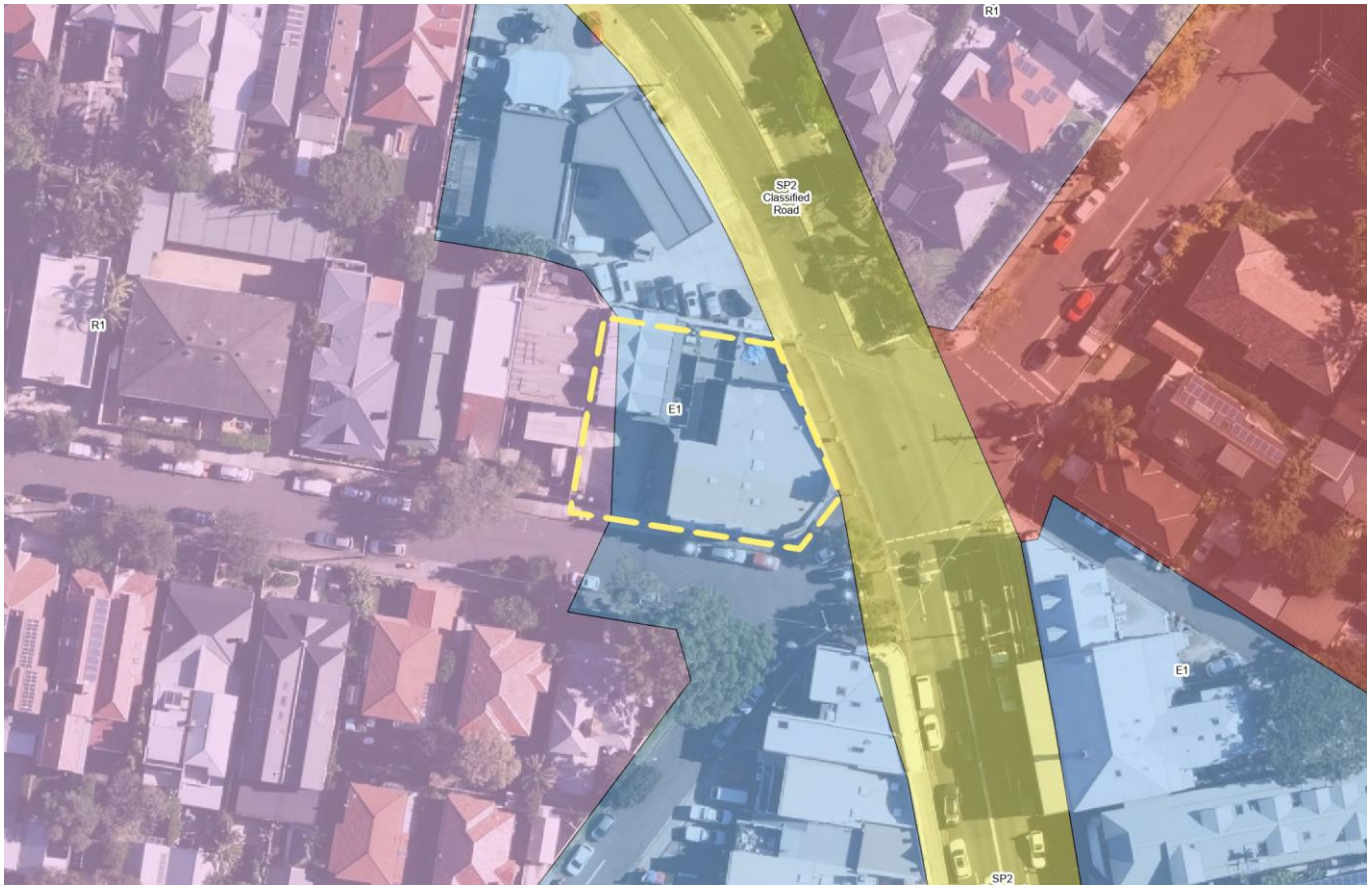
Figure 1: Site location and surrounding context

Source: Nearmap, 2023

2.3 Zoning and Use

The site is zoned as E1 - Local Centre and a small part of the lot to the rear is zoned as R1 - General Residential, in the Manly LEP 2013.

Figure 2: Land use zoning



Source: ePlanning Spatial viewer, 2023

2.4 Assumptions

This report is a 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 reference/indicative design set for the development plan from the project architect, Chrofi Architects (6 March, 2024);
- The Northern Beaches Council *Waste Management Guideline* 2016 and the NSW EPA *Better Practice Guidelines* 2019 outlines waste generation rates and services available for new developments which have been considered in the preparation of this report; and
- 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) wastes. 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 skip bins for the separation of construction materials for recycling. A skip bin for residual waste or contaminated material will also be made available at the site for disposal where necessary. Skip 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 and construction contractor and shall be sufficient to store the various waste streams expected during operations. Waste storage areas will be kept clear to maintain vehicular access and shall also be kept tidy to encourage separation of waste materials and for WHS reasons.

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

This section details the demolition waste materials expected for the proposed development, including their quantities and management options, and was designed with consideration of the requirements in the Manly DCP. The information below presents options for materials reuse, recycling and disposal where applicable. All materials are intended to be sent to a suitable, licensed landfill or resource recovery facility.

Table 1 below describes the expected demolition material quantities and appropriate management methods for the proposed development, related to the demolition or deconstruction of:

- Internal features and walls of an existing two-storey building.

Table 1: Estimation of demolition materials for reuse, recycling and landfill

Type of waste generated	Quantity	Reuse	Recycling	Disposal	Methods for reuse, recycling and disposal
Concrete	50m^3	✓	✓	-	On site: to be separated wherever possible to enhance resource recovery. Reuse: on-site for filling or under gravel carpark. C&D Processor: crushing and recycling for recovered products.
Bricks/Pavers	10-20m^3	✓	✓	-	On site: cleaned and separated wherever possible for reuse or to enhance resource recovery. C&D Processor: recovery for reuse where possible, crushing and recycling for recovered aggregate products.

Type of waste generated	Quantity	Reuse	Recycling	Disposal	Methods for reuse, recycling and disposal
Timber	<5m^3	✓	✓	-	On site: to be separated wherever possible to enhance resource recovery. C&D Processor: recovery and recycling for recovered product (e.g. mulch) or organics processing.
Insulation material	20-30m^3	✓	-	-	Reuse: retuned to supplier or manufacturer for reuse.
Metal (ferrous and non-ferrous)	<10m^3	-	✓	-	On site: to be separated wherever possible to enhance resource recovery. C&D Processor: metals recovery and recycling.
Plasterboard	<10m^3	✓	✓	-	On site: to be separated wherever possible to enhance resource recovery. Reuse: surplus and offcut material returned to manufacturer for reuse where possible or replacement for gypsum in landscaping.
Glass	<5m^3	✓	✓	-	On site: to be separated wherever possible to enhance resource recovery. Reuse: surplus and offcut material returned to manufacturer for reuse where possible. Aggregate for concrete production. Glass recycler: recovery and recycling.
Fixtures and Fittings	<5m^3	✓	✓	-	Reuse: second hand building materials. C&D Processor: recovery and recycling.
Floor Coverings	<5m^3	✓	✓	-	On site: to be separated wherever possible to enhance resource recovery. C&D Processor: recovery and recycling.

Type of waste generated	Quantity	Reuse	Recycling	Disposal	Methods for reuse, recycling and disposal
Residual Waste	10-20m^3	-	-	✓	Separate recyclables where possible and disposal at principal licensed waste facility.
Hazardous/Special Waste (e.g. spills and contaminated wastes)	Unknown	-	-	✓	It is possible that asbestos bearing material may be disturbed or removed during demolition works. Appropriate management methods specified by a licensed asbestos and site hygienist should hazardous be found at the site.

3.2 Construction Waste

Construction works will include construction of internal walls and fitting within the existing two-storey building featuring shop top housing with:

- Ground floor retail; and
- Single level of residential dwellings (for 6 dwellings in total, noting 3 currently exist at the site).

Table 2, below, describes the expected waste material quantities for construction at the site.

Table 2: Building waste material by percentage and conversion factor for volume and weight

Building waste material	Tonnes per m^3	Waste as % of the total material ordered
Brick	1	5-10%
Concrete	2.4	3-5%
Tiles	0.75	2-5%
Timber	0.5	5-7%
Plasterboard	-	5-20%
Metal	2.4	-

Source: Parramatta Waste Management Plan Application Template 2017.

The information below outlines the expected construction waste quantities to be generated at the site, in addition to the appropriate management methods for each material type.

Table 3 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 estimates

Type of waste generated	Quantity	Reuse	Recycling	Disposal	Methods for reuse, recycling and disposal
Excavated Material	N/A	✓	✓	-	On site: to be separated wherever possible to enhance resource recovery and reuse for backfilling where possible. C&D processor/landscaping or fill material: send clean ENM and VENM to recycler for use in landscaping supplies or use as fill material on another site according to relevant order and exemption. Landfill: dispose of or treat any contaminated material.
Concrete	5-10m^3	✓	✓	-	On site: to be separated wherever possible to enhance resource recovery. C&D processor: crushing and recycling for recovered products (aggregates).
Bricks/pavers	<5m^3	✓	✓	-	On site: cleaned and separated wherever possible for reuse or to enhance resource recovery. C&D processor: recovery for reuse where possible, crushing and recycling for recovered aggregate products.
Tiles	<5m^3	✓	✓	-	On site: cleaned and separated wherever possible for reuse or to enhance resource recovery. C&D processor: recovery for reuse where possible, crushing and recycling for recovered aggregate products.
Timber (engineered/ treated)	<2m^3	-	✓	-	On site: to be separated wherever possible to enhance resource recovery.

Type of waste generated	Quantity	Reuse	Recycling	Disposal	Methods for reuse, recycling and disposal
					Reuse: surplus and offcut material returned to manufacturer for reuse. C&D processor: recovery and recycling for recovered product (e.g. mulch) or organics processing.
Metals (ferrous and non-ferrous)	<5m^3	-	✓	-	Onsite: to be separated wherever possible to enhance resource recovery. C&D processor: metals recovery and recycling.
Plasterboard	<5m^3	✓	✓	-	On site: to be separated wherever possible to enhance resource recovery. Reuse: surplus and offcut material returned to manufacturer for reuse.
Glass	<2m^3	✓	✓	-	On site: to be separated wherever possible to enhance resource recovery. Reuse: surplus and offcut material returned to manufacturer for reuse where possible. Glass recycler: recovery and recycling.
Fixtures and fittings	<1m^3	✓	✓	-	On site: reuse wherever possible or return to manufacturer. Reuse: surplus and offcut material returned to manufacturer for reuse where possible. C&D processor: recovery and recycling.
Floor coverings	<5m^3	✓	✓	-	On site: to be separated wherever possible to enhance resource recovery.

Type of waste generated	Quantity	Reuse	Recycling	Disposal	Methods for reuse, recycling and disposal
					Reuse: surplus and offcut material returned to manufacturer for reuse where possible. C&D processor: recovery and recycling.
Packaging (used pallets, pallet wrap)	5-10m^3	✓	✓	-	On site: to be separated wherever possible to enhance resource recovery. C&D processor: recycling of timbers and plastic.
Paper/ cardboard	4-10m^3	-	✓	-	Commercial contractor: segregation of paper, cardboard or other streams.
Residual waste (general refuse)	<10m^3	-	-	✓	Separate recyclables where possible and disposal at principal licensed waste facility.
Hazardous/ special waste (e.g. spills and contaminated wastes)	Unknown	-	-	✓	Management by a licensed asbestos and site hygienist should hazardous or special waste be found at the site.

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
Examples of Waste Collection Contractor	The following are local skip bin operators for consideration in the management of excavation and construction waste for the site: • Brown Bros Skip Bins; • North Shore Skip Bins; • Ku-ring-gai Skip Bins; • Orange Skips Bins and • Bingo Bins. Or another supplier as elected by the building contractor.
Principal Off-Site Recycler	The following are local C&D processing facilities for consideration in the management of C&D waste generated at the site: • Concrete Recyclers, Terry Hills, • SUEZ Belrose Resource Recovery Centre; and • Benedict Recycling, Belrose. Or another appropriate facility as elected by the waste management contractor.
Principal Licensed Landfill Site	• Kimbriki Resource Recovery Centre, Terrey Hills Or other appropriate facility elected by the waste management contractor.

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 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 Use and Ongoing Waste Management

4.1 Overview

Waste management strategies related to site operations have been established according to the documents outlined in the Manly DCP 2013 and the Northern Beaches Council Waste Management Guidelines.

The proposed development will feature ground floor retail and a single level of residential dwellings. Operational waste management addressed in the following sections relates to waste generation associated with residential and commercial/retail components of the building.

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

Table 5: MGB capacity and footprint

Bin Capacity (L)	Height (mm)	Depth (mm)	Width (mm)	Footprint (Approx. m^2)
120	940	530	485	0.26
240	1,100	735	580	0.43
660	1,250	850	1,370	1.16
1,100	1,470	1,245	1,370	1.71

Source: NSW EPA, 2019.

4.2 Residential Waste

The proposed residential component of the site will occupy 6 residential dwellings. The NBC *Waste Management Guidelines* identify in appendix A, that developments with 6 residential dwellings have:

- 2 x 240L General Waste Bins;
- 2 x 240L Co-mingled recycling bins; and
- 2 x 240L Paper bins.

According to Section 4.2 of Chapter 3 in of the Waste Management Guidelines, residential developments should accommodate 1 x 240L garden organics bin for every 200m^2 of landscaped open space. The site will have very limited private or common vegetated areas and therefore, garden organics bins are not deemed to be necessary for the management of waste at the site.

4.2.1 Waste Storage

The standard council service supplies 240L MGBS with 750mm (D) x 600mm (W) dimensions for each waste stream. Each bin will occupy 0.45m^2 of space. Table 6 identifies the required bin infrastructure and space allocate for the proposed residential component of the development.

Table 6: Residential bin requirements

Dwelling Numbers	Waste Stream	Bin	Space	*Min. Space required (incl. Manoeuvring)
6 Units	General Waste	2 x 240L	0.9 m^2	4.5m^2
	Paper and cardboard	2 x 240L	0.9 m^2	
	Recycling bins	2 x 240L	0.9 m^2	

** 'Min. Space required' is calculated based on the bins' footprint (m^2) x 1.5 to allow for manoeuvring.*

There will be no garden organics service given the limited amount of personal green space available to residents.

Limited common green space is present as part of the proposed development. A gardening contractor will manage the site's gardens and will also be responsible for green waste disposal and/or treatment and composting of garden organics waste.

Temporary waste storage and disposal

Each residence will maintain smaller bins within each unit, capable of storing at least one days' worth of waste. Residents will transport waste to the ground floor WSA area where the residential bins will be stored.

Residential Waste room

Residential waste will be deposited into the residential WSA located on the ground floor to the front of the site by Golf Parade (see Appendix A).

Residential bin hold is approx. 7m^2 and has clear access to the kerbside of Golf Parade. The bin rooms will be utilised for the temporary storage of all waste types prior to collection.

4.2.2 Collection Schedule

Waste generated from the proposed residential component of the building will be collected weekly by Council. Building Management will be required to present bins from the WSA to the kerbside of Golf Parade for collection.

4.3 Retail Waste Generation

4.3.1 Waste Generation and Bin Requirements

6 Retail spaces are proposed on the ground floor of the development and are expected to generate the following volumes per week:

- 1,269L of general waste; and
- 1,269L of comingled recycling.

It is understood that each retail space will occupy different use types. Table 7 below represents proposed use type and the waste generation rates for each retail use, with reference to the Northern Beaches Council's Waste Management Guideline. Weekly volume in this instance is based on a 7 day per week operation.

Table 7: Retail waste bin requirements

Retail	Use type	Space m^2	Waste Stream	Daily generation rate	Weekly volume (L)
1	Retail store (non-food)	79	General Waste	50L/100m^2/day	277
			Recycling	50L/100m^2/day	277
2	Retail store (non-food)	45	General Waste	50L/100m^2/day	158
			Recycling	50L/100m^2/day	158
3	Retail store (non-food)	76	General Waste	50L/100m^2/day	266
			Recycling	50L/100m^2/day	266
4	Retail store (non-food)	42	General Waste	50L/100m^2/day	147
			Recycling	50L/100m^2/day	147
5	Café (non-cooking)	35	General Waste	150L/100m^2/day	368
			Recycling	150L/100m^2/day	368
6	Retail store (non-food)	15	General Waste	50L/100m^2/day	53
			Recycling	50L/100m^2/day	53
Total Waste and Recycling Volumes				**General Waste**	**1,269L**
				Recycling	**1,269L**

4.3.2 Waste Storage

In total, the proposed retail component of the development will require:

- 2 x 660L general waste bins; and
- 2 x 660L comingled recycling bins.

Table 8 below summarises the required bin infrastructure and spatial requirement to manage the expected waste generation for the proposed commercial uses.

Table 8: Retail bin requirements

Weekly waste generation	Waste Stream	Bins	Collection frequency	*Min. Space required (incl. Manoeuvring)
1,267L	General Waste	2 x 660L	Once weekly	7m^2
1,267L	Recycling	2 x 660L	Once weekly	

** 'Space required' is calculated based on the bins' footprint (m^2) x 1.5 to allow for manoeuvring.*

Temporary Waste Storage and disposal

Retail tenancies will retain general waste and recycling bins behind the counter and in their BOH area for the temporary disposal of waste prior to consolidating at the main retail waste storage area situated adjacent to the Golf Parade driveway. These bins will be sized to capture one days' worth of waste generated. Waste will be transferred between temporary bins and waste storage areas by retail staff daily.

Retail Waste Room

Retail waste disposal area is separate from residential and located to the front of the site by Golf Parade. The retail waste room is approx. 8m^2 and will have clear access to kerbside situated on Golf Parade. The bin rooms will be utilised for the temporary storage of all waste types prior to collection.

4.3.3 Collection Scheduling

Waste generated from the proposed retail component of the building will be collected once a week by a private contractor. Building Management will be required to transport bins from the retail waste storage area to the kerbside on Golf Parade for collection.

All wastes will be transported for treatment or disposal at a facility suitably licensed to receive, process, or dispose of that waste type.

5 Equipment and Waste Management Systems

5.1 Collection Method and Loading Areas

A private waste contractor will service the proposed retail component of the development and a standard council service will utilised for residential waste. A waste service vehicle will have access to the waste loading area via Golf Parade. The collection point for the waste service providers (WSP) and areas for handling and loading are as follows:

- Collection and loading will occur in the loading area on Golf Parade;
- Clear, safe, accessible and convenient space for handling of MGBs and equipment and loading of collection vehicles;
- 2m of unobstructed clear space behind the proposed truck loading area is available for the safe and effective loading of MGBs for rear lift servicing; and
- Identifiable areas where pedestrians, visitors and site staff can recognise and avoid any risk associated with moving vehicles, and bin moving and handling.

5.2 Storage Areas and Amenity

Site cleaning staff will have access to the waste rooms which will house general waste and recycling bins, and other waste management equipment/infrastructure as required.

The bin storage areas proposed for residential and commercial uses will be entirely enclosed or adjacent to loading areas to avoid impacting residents, visitors and patrons. Transfer of bins will mainly take place between storage areas and loading area at the kerbside.

5.3 Additional Waste Streams

Commercial/retail waste management may elect to perform further separation of the following waste streams and services that have the potential to be produced in large quantities.

- **Paper/Cardboard:** Dry and clean unwaxed cardboard items, paper, envelopes, newspapers and magazines can be separated onsite and collected separately in line with requirements from the elected waste service provider.
- **Food Waste:** Food organics waste generation from the development can be collected on-site at small scale should management decide to do so. Equipment options include different size and capacity composters, dehydrators, worm farms and macerators. Alternatively, site management can make arrangements for the separate collection of its organics by a private waste management contractor. Food waste can be stored in 240L sealed bins or refrigerated waste storage prior to collection.
- **Other (Problem) Waste:** The disposal of hard, bulky, electronic, liquid or potentially hazardous wastes shall be organised between site users and the waste contactor as necessary.

5.4 Waste Disposal and Recycling Methods

The flow of general 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. retail staff and residents collect and consolidate waste within retail tenancies and dwellings respectively, using split-receptacle bins/containers;
3. Consolidated waste is transferred to the respective waste storage room for appropriate disposal into the respective bin; and

4. Site management are responsible for maintenance of bins and the waste storage room, ensuring bins are clean and in working order.

5.5 Management Systems 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 residents 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.

5.6 Signage and Education

Signage that promotes resource recovery, waste minimisation, safety and amenity follow the Australian Standard for safety signs for the occupational environment (see Appendix B).

Signage is designed to consider language and accessibility (i.e. to be understood as clearly as possible by those with different abilities of vision, knowledge of the English language, intellectual ability and with other conditions). Signage is to be prominently posted on each bin and relevant waste service area indicating:

- Detail on acceptable recyclables;
- Recyclables are to be decanted loose (not bagged);
- 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.

5.7 Prevention of Pollutions, Illegal Dumping and Litter

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

- Maintenance of communal areas and bin storage areas;
- Securing the waste storage areas from vandalism and the escape of litter;
- Identification and appropriate disposal of goods with hazardous material content (paints, e-waste, fluorescent tubes);

- Acting 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 Conclusion

The proposed changes to the existing development consent (DA 2022/0193) proposed through the Section 4.55 modification application will remain consistent with Council's objectives for waste management, by achieving a compliant scheme throughout the construction, demolition and operational phases of the works.

This WMP has been prepared to detail waste management strategies in the development design and assist in the delivery of better practice waste management, promoting sustainable outcomes and minimisation of waste through the demolition, construction, and operational phases of the development. Sufficient spatial provision for waste storage will be provided throughout the development for ease of use by residents, staff and visitors. Waste management areas have been designed to facilitate source separation to achieve Council and State waste diversion targets. Modifications to the development continue to ensure safe and efficient collection by Council and private waste contractors.

7 References

Environment Protection and Heritage Council (2018) *National Waste Policy: Less Waste, More Resources*. Available at: https://www.awe.gov.au/sites/default/files/documents/national-waste-policy-action-plan-2019.pdf

Manly Local Environmental Plan 2013

Manly Development Control Plan 2013

Northern Beaches Council (2016) – *Waste Management Guidelines.* Available at: *https://files.northernbeaches.nsw.gov.au/sites/default/files/documents/general-information/building-waste/waste-management-guidelines-2016-chapters-3-7-going-waste-mgmt.pdf*

NSW DPIE (2021) NSW Waste and Sustainable Materials Strategy 2041.

NSW EPA (2012) *Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities.*

NSW EPA (2016) Recycling Signs, Posters and Symbols. Available at: http://www.epa.nsw.gov.au/wastetools/signs-posters-symbols.htm.

NSW EPA (2019) *NSW Better Practice Guide for Resource Recovery in Residential Developments, Australian Standards and Statutory Requirements*.

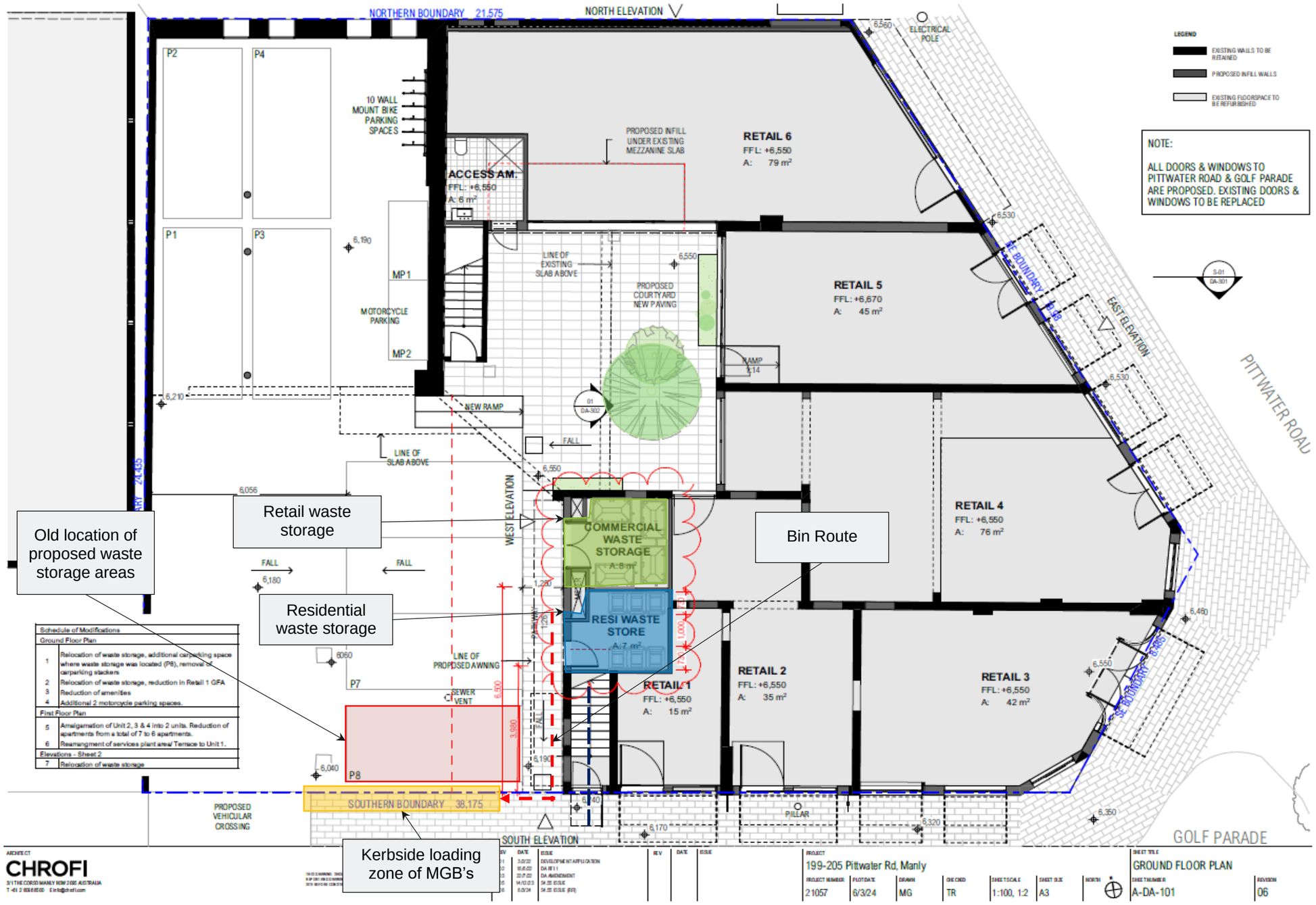
NSW EPA (2017) Recycling Signs, Posters and Symbols. Available at: http://www.epa.nsw.gov.au/wastetools/signs-posters-symbols.htm.

Standards Australia (1994) AS 1319: Safety signs for the occupational environment, Homebush, NSW: Standards Australia.

Standards Australia (2008) AS 4123 Mobile waste containers.

WorkCover (2011) Managing Work Environment Facilities Code of Practice

Appendix A Site Plans



Appendix B Standard Signage

Waste Signage

Signs for garbage, recycling and organics bins should comply with the standard signs promoted by the NSW Office of Environment and Heritage.

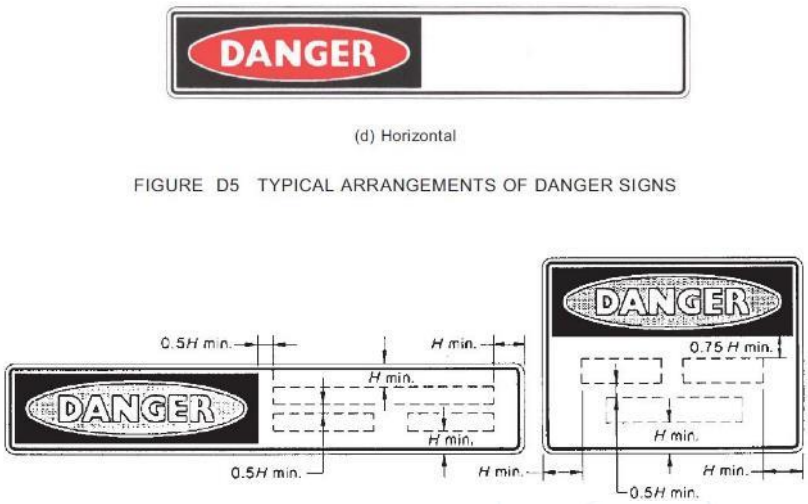
Standard symbols for use in signage, bin facade and educational materials are promoted through the NSW Environment Protection Authority. They are available for download from the NSW EPA website (NSW EPA 2016b), in black and white and colour versions. The Australian Standard series AS 4123 (Part 7) details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



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