

4-8 Inman Rd, Cromer – Waste Management Plan

A Submission to Willowtree Planning

24th October 2022



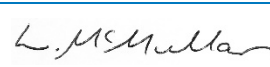
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Disclaimer

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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.

Table of contents

Glossary	iii
1 Introduction.....	1
2 Background	2
2.1 Description of Proposed Development	2
2.2 Zoning and Land Use	3
2.3 Assumptions	3
3 Demolition and Construction Waste.....	4
3.1 Demolition	4
3.2 Construction.....	4
3.3 Waste Contractors and Facilities	9
3.4 Site Documentation.....	9
4 Use & Ongoing Waste Management	10
4.1 Commercial Waste Generation.....	10
4.2 Waste Storage Area.....	11
4.3 Waste Storage Requirements.....	11
5 Equipment Waste Management Systems	12
5.1 Waste Management System Summary	12
5.2 Collection Method and Loading Areas.....	12
5.3 Waste Management and Recycling Method	13
5.4 Management System and Responsibilities.....	13
5.5 Signage and Education.....	13
5.6 Prevention of Pollution, Illegal Dumping and Litter Reduction	14

List of Tables

Table 1: Building waste material by percentage and conversion factor for volume and weight.....	4
Table 2: Construction waste material by volume.....	6
Table 3: Waste service contractors and facilities	9
Table 4: Standard bin sizes and dimensions	10
Table 5: Commercial waste generation	10
Table 6: Bin infrastructure and collection frequency.....	11
Table 7: Collection points and loading areas requirements and specifications.....	12

List of Figures

Figure 1: Proposed development in relation to surrounding area	2
Figure 2: Zoning and land use	3
Figure 3: Examples of standard signage for bin uses	17
Figure 4: Example and layout of safety signage.....	17

Glossary

Terminology	Definition
AS	Australian Standard
DA	Development Application
DC	Development Consent
DECC	Department of Environment and Climate Change
ENM	Excavated Natural Material
EPA	Environment Protection Authority
LGA	Local Government Area
MGB	Mobile Garbage Bin
MSW	Municipal Solid Waste (also referred to as domestics or residential waste)
NBC	Northern Beaches Council
VENM	Virgin Excavated Natural Material
WDCP	Warringah Development Control Plan 2011
WLEP	Warringah Local Environmental Plan 2011
WMP	Waste Management Plan
WNDCP	Waste Not Development Control Policy
WSP	Waste Service Provider
WSRA	Waste Storage and Recycling Area

1 Introduction

MRA Consulting Group (MRA) was engaged by Willowtree Planning on behalf of Peter von Sperl to prepare a Waste Management Plan (WMP) related to the proposed development at Unit 11, 4-8 Inman Rd, Cromer. The site is situated in the Northern Beaches Council (NBC) Local Government Area (LGA).

The project involves the change of use for an Indoor Recreation Facility for Precision Golf.

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

- The Warringah Local Environmental Plan 2011 (WLEP).
- The Warringah Development Control Plan 2011 (WDCP).
- Northern Beaches Council (2016) *Waste Management Guidelines*.
- NSW EPA (2019) *Better Practice Guidelines for Resource Recovery in Residential Developments*.
- NSW EPA (2012) *Better Practice Guide for Waste Management in Commercial and Industrial Facilities*

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.

A Waste and Recycling Management Plan has been prepared in accordance with provisions of the Warringah Development Control Plan 2011, and states the following objectives within C9 - waste management:

- To facilitate sustainable Waste management in a manner consistent with the principles of Ecologically Sustainable Development (ESD).
- To achieve Waste avoidance, source separation and recycling of household and industrial/commercial Waste.
- 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.
- 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.
- To minimise risks to health and safety associated with handling and disposal of Waste and recycled material, and ensure optimum hygiene.
- To minimise any adverse environmental impacts associated with the storage and collection of Waste.
- To discourage illegal dumping.

2 Background

2.1 Description of Proposed Development

The proposed development site is Northern Beaches Business Park, Unit 11, 4-8 Inman Rd, Cromer identified as Lot 1 DP 128038 in the Warringah Local Environmental Plan 2011 (WLEP).

The proposed development will feature the construction of indoor recreational facility, Precision Golf, featuring:

- Indoor driving range
- Mini golf area
- Party and simulation rooms
- Kitchen
- Retail space
- Car parking
- Sauna
- Office spaces.

The site is largely surrounded by a range of uses. It is situated in a business park, with Northern Beaches Secondary College to the west, Cromer Park and additional business uses to the south, residential uses to the east.

The following is an aerial view of the site and surrounds (see Figure 1).

Figure 1: Proposed development in relation to surrounding area



Source: Nearthmap, 2022.

3 Demolition and Construction Waste

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 and separation 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. A potential location for skip bins and material stockpiles has been identified in Appendix B.

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

It is understood that there will be no demolition involved in the change of use and fit-out works. Had there been demolition works, this WMP would detail the expected waste materials including their quantities and management options. Information would have been presented for options for materials reuse, recycling and disposal where applicable. All materials are required to be sent to a suitable, licensed landfill or resource recovery facility.

3.2 Construction

Construction of an indoor recreation facility, consisting of:

- Indoor driving range
- Mini golf area
- Party and simulation rooms
- Kitchen
- Retail space
- Car parking
- Sauna
- Office spaces.

It is expected construction materials may include partitions, flooring, tiling, synthetic turf, timber and netting.

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

Table 1: Building waste material by percentage and conversion factor for volume and weight

Building waste material	Tones per m ³	Waste as % of the total material ordered
Bricks	1	5-10%
Concrete	2.4	3-5%
Tiles	0.75	2-5%
Timber	0.5	5-7%

Building waste material	Tones per m ³	Waste as % of the total material ordered
Plasterboard	-	5-20%
Ferrous metal	2.4	-

Source: *Parramatta Waste Management Plan Application Template 2017*.

Table 2 outlines the expected construction waste quantities for materials through construction of the proposed new 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 2: Construction waste material by volume

Type of waste generated	Quantity	Reuse	Recycling	Disposal	Methods for reuse, recycling and disposal
Excavation material	N/A	✓	✓	-	On site: testing (if necessary) for contamination and stockpiling of material for reuse as fill material. Reuse onsite for backfilling or landscaping. C&D processor: reuse/ recycling of VENM and ENM Landfill if contaminated.
Concrete	<5m 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 (Interior)	<1m 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)	<5m ³	-	✓	-	On site: to be separated wherever possible to enhance resource recovery. 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.

Type of waste generated	Quantity	Reuse	Recycling	Disposal	Methods for reuse, recycling and disposal
Metals (ferrous and non-ferrous)	<1m ³	-	✓	-	Onsite: to be separated wherever possible to enhance resource recovery. C&D processor: metals recovery and recycling.
Plasterboard	<1m 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	<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. C&D processor: recovery and recycling.
Garden organics (Vegetation)	N/A	✓	✓	-	Garden organic waste from landscaping. Organics processor: storage on-site (from minor excavations) processing for recovered product (e.g. mulch or other blended recovered fines) or organics treatment.

Type of waste generated	Quantity	Reuse	Recycling	Disposal	Methods for reuse, recycling and disposal
Containers (cans, plastic, glass)	<1m ³	-	✓	-	Commercial contractor: recycling.
Paper/ cardboard	<1m ³	-	✓	-	Commercial contractor: segregation of paper, cardboard or other streams.
Residual waste (general refuse)	<5m 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 3).

Table 3: 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"> Northern Beaches Skip Bins Mr Skips (Manly) Little Big Skips Pty. Ltd. (Brookvale) <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"> Kimbriki Resource Recovery Centre <p>Or another appropriate facility as elected by the waste management contractor.</p>
Principal Licensed Landfill Site	<p>Belrose Transfer Station 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 excavation and 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 Use & Ongoing Waste Management

Waste management strategies relate to the use as an indoor recreation facility and have been established in line with the WDCP 2011. Waste generation and associated requirements for the ongoing occupation of the development is addressed in the sections below.

Site waste management responsibilities have been outlined in Section 5.4. The proposed facility will require a waste management contractor to be engaged to manage waste at the site during ongoing operation. The facility could consider using the same waste service provider as the other commercial tenancies in the business park to improve waste collection efficiencies.

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

Table 4: Standard bin sizes and dimensions

Bin Capacity (L)	Height (mm)	Depth (mm)	Width (mm)	Footprint (Approx. m ²)
120	940	530	485	0.26 – 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	1,370	1.33 - 1.74

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

4.1 Commercial Waste Generation

Commercial waste generation is based on waste generation rates provided by the Northern Beaches Council *Waste Management Guidelines*. For the purposes of this calculation, 'Assembly rooms – Recreational' has been used as the applicable premises type. Estimated waste generation is calculated in Table 5 and has been assumed to operate 7 days per week.

Table 5: Commercial waste generation

Area (m ²)	Waste Stream	Waste generation rate	Weekly Waste Generation
Recreational (2,110m ²)	General Waste	50L/100 m ² floor area/day	1,055L
	Recycling	200L/100 m ² floor area/day	4,220L
Retail (20m ²)	General Waste	50L/100m ² floor area/day	10L
	Recycling	50L/100m ² floor area/day	10L
Physio (250m ²)	General Waste	10L/100m ² floor area/day	25L
	Recycling	10L/100m ² floor area/day	25L
Totals		General Waste	1,090L
		Recycling	4,255L

Temporary Waste Storage

Bins will be placed around the facility in circulation areas and be sufficiently sized for the storage of one days' waste generated. This includes separate receptacles for general waste and recycling in all temporary waste storage areas such as kitchen, office, or activity area. Staff or contracted cleaners of the facility will be required to dispose of waste into the bin storage area each day.

4.2 Waste Storage Area

Table 6: Bin infrastructure and collection frequency

Waste Stream	Weekly generation	Bin infrastructure	Collection frequency	Minimum space required
General Waste	1,090L	1 x 1,100L bin	Once per week	8m ²
Recycling (mix of commingle and paper/cardboard)	4,255L	2 x 1,100L bin	Twice per week	

Waste infrastructure for ongoing waste management will be as follows:

- 1 x 1,100L general waste bin; and
- 2 x 1,100L allocated to recycling.

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. The waste storage area is sufficiently sized to accommodate an additional 1,100L bin or several smaller bins should the need arise to accommodate for changes in future operations.

Bins will be placed in a designated bin storage area in a centralised location (see Appendix A). Ample space has been allocated within the bin storage area to accommodate the predicted waste generated at the site (Table 6).

Loading will occur on site in front of the bin storage area for ease of access and management for site staff and the collection contractor. Appendix A shows the site plan and bin storage area for the development. Should additional measures be required to manage waste generated at the site during regular operation, the site manager will be responsible for arranging further bin storage, collection frequency or otherwise to ensure waste is managed appropriately at the site.

4.3 Waste Storage Requirements

The waste management area will provide storage that has adequate capacity to receive and store the maximum likely generation of waste and recycling between collection times. Waste bins will be stored to remain concealed from the active street frontages and site users. The waste rooms will be constructed to improve amenity, minimise odour, protect surrounding areas and promote user safety.

Waste management area specifications include:

- Signage for safety and waste bin identification;
- Safety precautions, staff training and signage for plant;
- Designed in accordance with the BCA, relevant Australian Standards and other legislation
- Graded and drained to a Sydney Water approved drainage system
- Easily kept clean and tidy
- Located entirely within the site boundary
- Clear of any stormwater system to prevent wastewater from entering the system.

Should additional measures be required to manage waste generated at the site during regular operation, the site manager will be responsible for arranging further bin storage, collection frequency or otherwise to ensure waste managed appropriately at the site.

5 Equipment 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.
- **Food Waste:** Food waste going to landfill is a source of damaging greenhouse gases and diverting this waste stream from landfill would not only prevent this, but also reduce costs associated with general waste bin lifts. Should a food waste service be elected (if food waste is generated in enough volumes), food waste would be serviced on a regular basis, according to an agreed collection schedule between the tenant and waste contractor.
- **Film Plastic:** For large amounts of film plastic, management may consider having separate collection points for separated plastic film for example, at the supermarket entrance for use by patrons. 1m³ bag and frame setups are considered appropriate for film plastic.
- **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.
- **Other (Problem) Waste:** The disposal of hard, bulky, electronic, liquid or potentially hazardous wastes shall be organised between the operator and site users as necessary. Grease traps are provided for food tenancies cooking oil and its collection will be coordinated between the operator, site users and the contracted WSP. Grease trap servicing will be scheduled as required.

5.2 Collection Method and Loading Areas

Collection of general waste and recycling is required on a weekly basis at minimum. No additional waste streams are proposed to be managed and collected, however this may change based on future requirements.

Prior to scheduled collection time, bins will be moved from the bin storage area to the front of the site for collection by the waste service provider. The collection arrangement is deemed to be appropriate since the total number of bins required to be collected is low and therefore, requires minimal management and handling.

Table 7: Collection points and loading areas requirements and specifications

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.

Component	Requirement	Specification
Operating times	Appropriate collection times to limit noise and traffic disturbance	- Collection times will be arranged during off-peak times to ensure minimal disturbance to pedestrians and visitors.

5.3 Waste Management and Recycling Method

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. Site or cleaning staff collect and consolidate waste and transfer into the respective bulk bin;
3. Site management are responsible for maintenance of bins and the waste storage areas, ensuring bins are clean and in working order. Site management are also responsible for switching out full bins and monitoring bin fullness;
4. Waste collection with a private waste contractor is managed by site management, 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.

5.4 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 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.

5.5 Signage and Education

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 C).

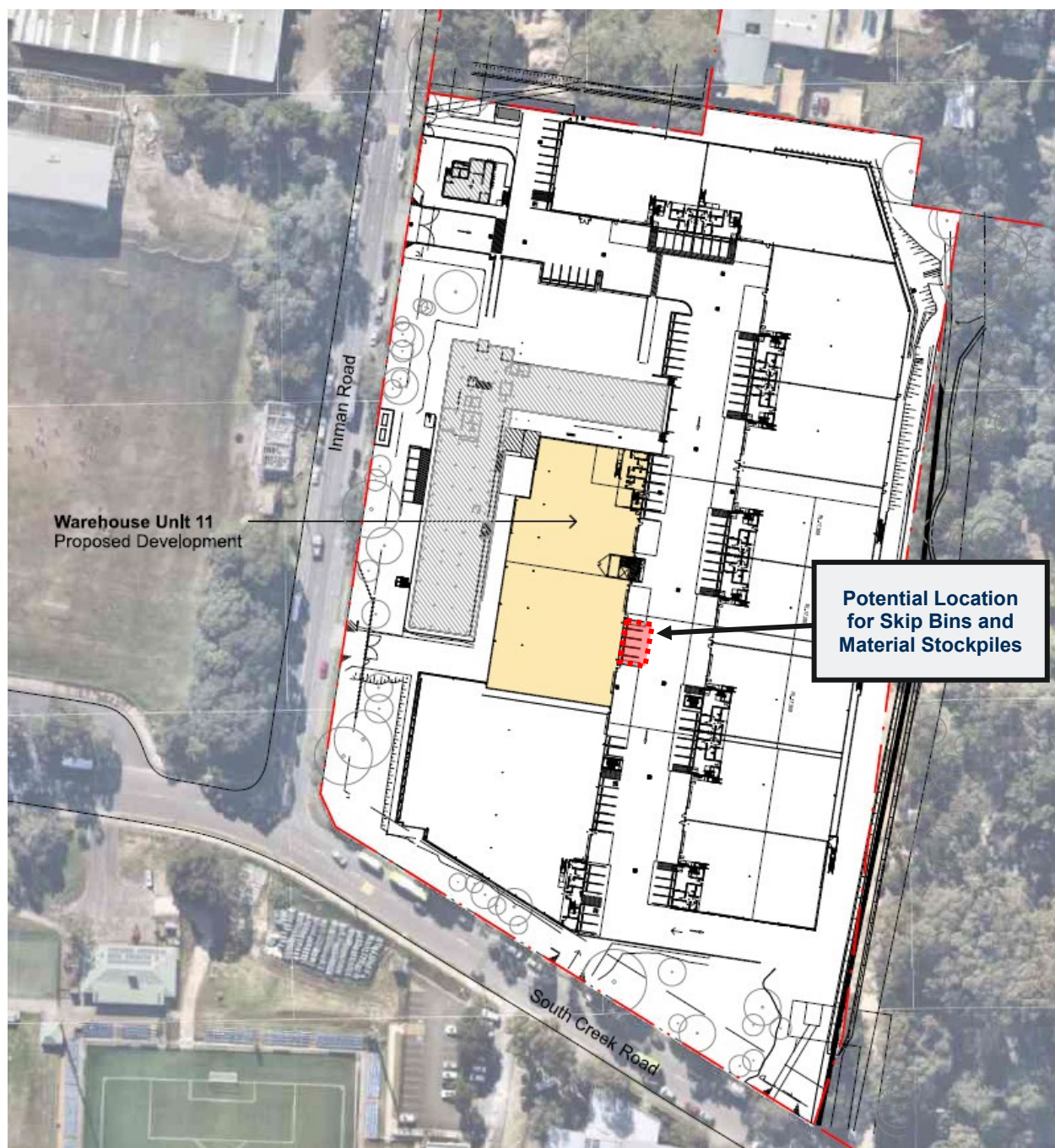
5.6 Prevention of Pollution, Illegal Dumping and Litter Reduction

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 communal areas and bin storage areas;
- Ensuring waste room is well maintained and kept clean;
- 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);
- 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.



Appendix B Storage Location for C&D Waste and Material Stockpiles



Source: SBA Architects, 2022

Appendix C 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 (NSW OEH 2008b).

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

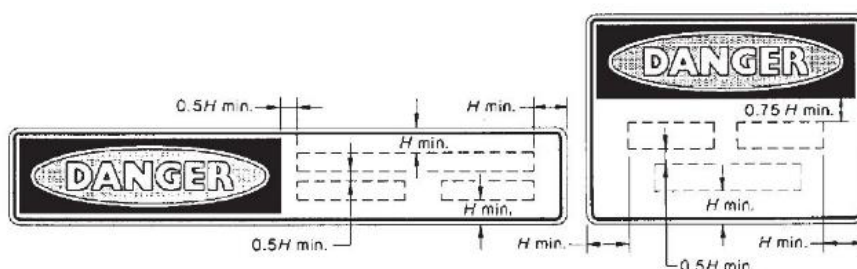
The design and use of safety signs for waste and recycling rooms and enclosures should comply with AS 1319 (Standards Australia 1994). Safety signs should be used to regulate, and control safety related to behaviour, warn of hazards and provide emergency information, including fire protection information. 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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