

27 Addison Street, Shellharbour – Waste Management Plan

A Submission to Couvaras Architects

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27 Addison Street, Shellharbour – Waste Management Plan


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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.

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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
ILU	Independent Living Unit
LGA	Local Government Area
MGB	Mobile Garbage Bin
MRA	MRA Consulting Group
MSW	Municipal Solid Waste
SLEP	Shellharbour Local Environmental Plan 2013
SDCP	Shellharbour Development Control Plan 2013
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 Couvaras Architects to prepare a Waste Management Plan (WMP) related to the proposed residential and carparking development located at 27 Addison Street, Shellharbour. The site is located within the Shellharbour City Council Local Government Area (LGA).

The proposed development includes of a mixed-use development with basement carparking.

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

- *Shellharbour Development Control Plan 2013*
- *Shellharbour Local Environmental Plan 2013*

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*.

The Shellharbour Development Control Plan contains the following objectives:

- a) To ensure the placement of site facilities are appropriately located to minimise the impacts to the building occupants, neighbours, and on the streetscape and the natural environment.
- b) To effectively integrate essential amenities and facilities within developments.
- c) To promote crime prevention through environmental design principles.

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 contains the following:

- Demolition of existing features including:
 - Ground floor retail space,
 - Existing development, and
 - One garage.
- Construction of a mixed-use building including:
 - A two-storey basement carpark,
 - An outdoor public car park,
 - Retail space, and
 - 9 residential units over 3 storeys.

2.2 Location

The site is situated within a local centre and is surrounded by local businesses as well as residential developments. The site is legally identified as 27 Addison Street, Shellharbour, Lot 1 DP 1294313 as defined within the Shellharbour LEP.

Figure 1: Site and surrounding area



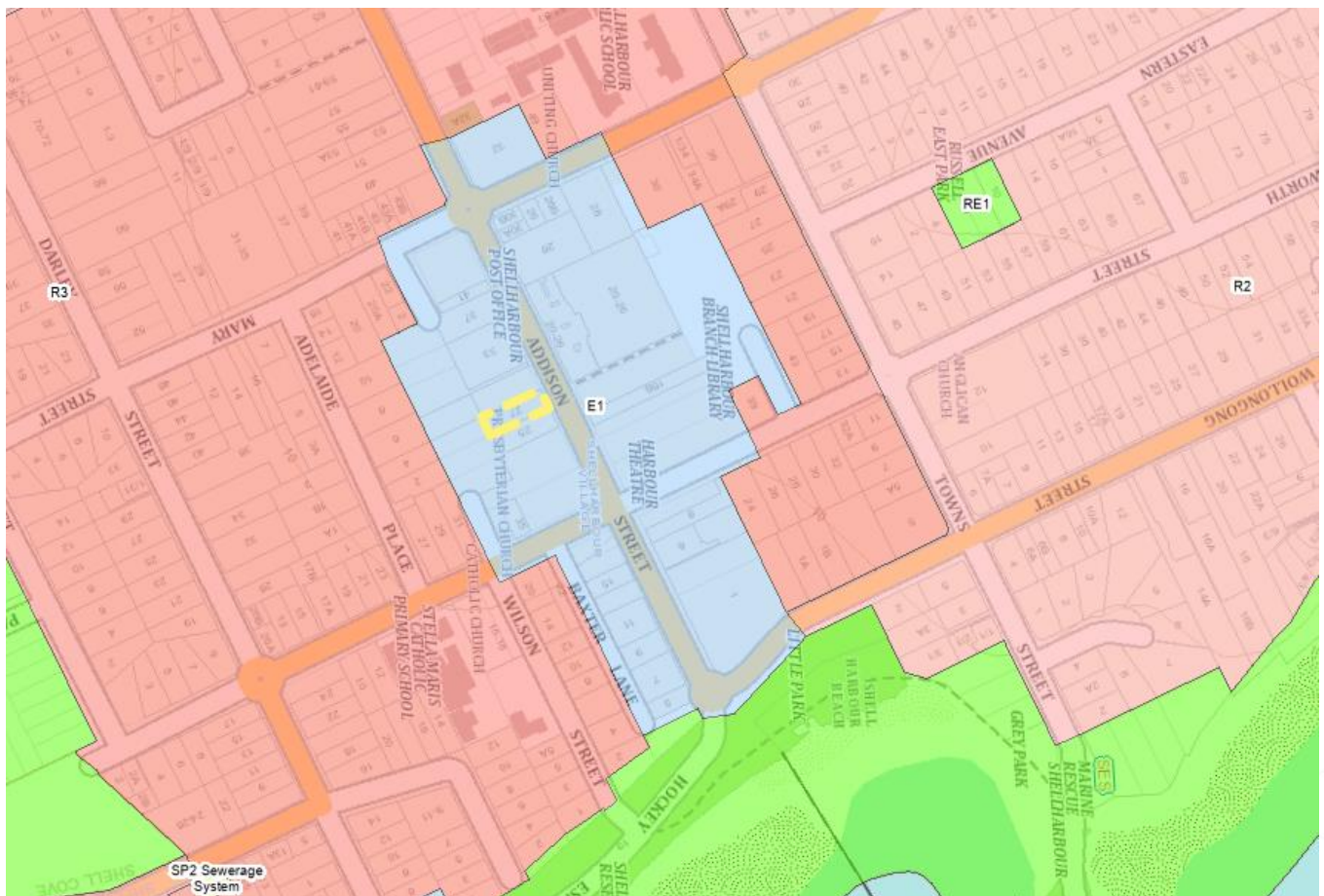
Source: Nearmap, 2024.

2.3 Zoning and Use

The site is zoned as E1 – Local Centre and is surrounded by R3 – Medium Density Residential, R2 – Low Density Residential and RE1 - Public Recreation and according to the SLEP. The objectives of this zone are:

- To provide a range of retail, business and community uses that serve the needs of people who live in, work in or visit the area.
- To encourage investment in local commercial development that generates employment opportunities and economic growth.
- To enable residential development that contributes to a vibrant and active local centre and is consistent with the Council's strategic planning for residential development in the area.
- To encourage business, retail, community and other non-residential land uses on the ground floor of buildings.

Figure 2: Land use zone map



Source: NSW ePlanning Spatial 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, Couvaras Architects, 09/07/2024;
- Waste and recycling volumes are based on information provided from the SDCP; 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) 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:

- Existing dwelling;
- Shed; and
- Existing retail shop.

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	75 - 100	✓	✓	✓	-	<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	✓	✓	✓	-	<10%	>90%	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.
Bricks/pavers	50 - 75	✓	✓	✓	-	<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	5 - 10	✓	✓	✓	-	<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 (Clean)	5 - 10	✓	✓	✓	-	0	100	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.
Timber (Treated)	5 - 10	✓	✓	✓	-	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: Separated wherever possible and reused or crushed for landscaping and driveways. 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	5 - 10	-	✓	✓		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

The proposed construction activity on site consists of:

- Construction of a mixed-use building including:
 - A two-storey basement carpark,
 - An outdoor public car park,
 - Retail space, and
 - 9 residential units over 3 storeys.

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	1,000 – 1,500	✓	✓	✓	<5%	>95%	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	25 - 30	✓	✓	✓	<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	40 - 45	✓	✓	✓	<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	15 - 20	✓	✓	✓	<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)	15 - 20	-	✓	✓	<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)	15 - 20	-	✓	✓	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	20 - 25	-	✓	✓	<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	10 - 15	✓	✓	✓	<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 - 20	-	✓	✓	<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 (m³)	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	✓	✓	✓	<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 - 10	✓	✓	✓			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)	10 - 15	-	✓	✓	<10%	>90%	Returned to supplier where possible or separated by material type for resource recovery.
Residual waste	10 - 15	-	✓	✓	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;• Pro Industries Australia;• Bin City; <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">• Benedict Recycling;• Bingo Recycling; and• SCE Recycling. <p>Or another appropriate facility as elected by the waste management contractor.</p>
Principal Licensed Landfill Site	<ul style="list-style-type: none">• Dunmore Recycling & Waste Depot <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

Operational waste management requirements of the site arise from the daily activities at the site. The mixed-use development consists of 9 total units and a small ground floor retail unit.

Waste management strategies related to site operations have been established according to the Shellharbour DCP and NSW EPA guideline documents.

The following space calculations are based off the mobile garbage bin (MGB) and bulk bin dimensions sourced from 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 Residential Waste Management

4.2.1 Waste Generation

The residential component of the proposed development consists of 16 units with:

- 6 x 2-bedroom units; and
- 3 x 3-bedroom units.

Table 6: Weekly Waste Generation Volumes

Dwelling units	Waste Stream	Generation Rate	Weekly Volumes (L)
2-bedroom units (6)	General waste	100L/unit/week	600
	Recycling	100L/unit/week	600
	FOGO*	25L/unit/week	150
3-bedroom units (3)	General waste	120L/unit/week	360
	Recycling	100L/unit/week	300
	FOGO*	50L/unit/week	150
Totals		General waste	960L
		Recycling	900L
		FOGO	510L

**Note: FOGO bins have been included to accommodate infrastructure for future waste mandates.*

4.2.2 Waste Storage Requirements

Waste storage has been calculated considering estimations of bin type, as described in the table below (Table 7). The following bin number requirements are based on the above waste generation rates collected on a weekly schedule.

Table 7: Residential waste storage and bin type

Waste Stream	Weekly Generation (L)	Collection Rate	Bin Allocation	Minimum Space Required (m²)*
General Waste	960	Fortnightly	1 x 1,100 bins	7m²
Recycling	900	Fortnightly	1 x 1,100 bins	
FOGO**	510	Once per week	2 x 240L bins	
Bulky Waste	Bulky waste streams collected as required			4m²
Total Space Requirement				11m²

**includes handling and manoeuvring space of bin footprint m² x 1.5.*

***FOGO has been incorporated to accommodate future mandates.*

A residential bin storage room has been provided on the ground floor and is sufficient to provide space for bins and bulky waste in accordance with the table above, at 12m².

Temporary waste storage and disposal

Residents are to store daily waste within a waste receptacle capable of storing up to one days' worth of waste in an appropriate area. Once full, residents are responsible for transporting waste to the ground floor residential waste storage area.

Bulky Waste

A 4m² bulky waste room has been incorporated on the ground floor of the development adjacent to the residential waste room. Bulky waste items include those that cannot be disposed of in general waste and recycling bins, including but not limited to broken/damaged/old whitegoods, furniture, appliances, mattresses, etc.

4.3 Commercial Waste Management

Commercial waste management will arise from waste generation from the general retail space located on the ground floor of the development.

4.3.1 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 retail use. The commercial waste storage room is located separately to the residential waste areas and contains a separate entry/exist for further separation.

The SDCP does not specify generation rates for specific commercial uses, therefore rates have been taken from 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 8: Commercial/Retail Waste Generation

Use type	Area (m²)	Waste Stream	Generation Rate (L/100m²/day)	Total Weekly Generation (L)
Retail	75	General waste	50	266
		Recycling	100	525
TOTALS		General waste		266 L
		Recycling		525 L

4.3.2 Waste Storage Requirements

Waste storage space has been calculated considering estimations of bin type and collection frequency, as described in the table below (Table 9).

Table 9: 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	266	2 x 240 L bins collected once per week	1
Recycling	525	3 x 240L L bins collected once per week	1
Total minimum space requirement:			3.5m²

**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.*

240L bins are expected to be most suitable for the collection of 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.

A commercial bin storage room has been provided on the ground floor separate to residential waste areas to accommodate waste management infrastructure detailed in the table above.

4.3.3 Temporary Waste Storage

Interim containers within the retail tenancy will be available for the storage of one day's generation of waste and recycling. Cleaners/staff will be responsible for the emptying of these bins daily and transporting waste to the site's commercial bin storage area.

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.
- **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.

5.2 Waste Management and Recycling Method

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

1. Waste is temporarily stored within the dwelling at its point of generation in an appropriately sized receptacle, clearly marked for type of waste (for example, in the kitchen);
2. Residents are to transfer waste to the ground floor residential waste storage room for appropriate disposal into the respective bin.
3. Site management are responsible for maintenance of bins and the waste storage rooms, ensuring bins are clean and in working order. Site management are also responsible for switching out full bins and monitoring bin fullness;
4. Site management is to ensure contracts with Council or 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.

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 respective 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 Council or 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 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.

5.4 Collection Method and Loading Areas

Waste will be collected by Council via a small rigid vehicle (SRV) within the ground floor area.

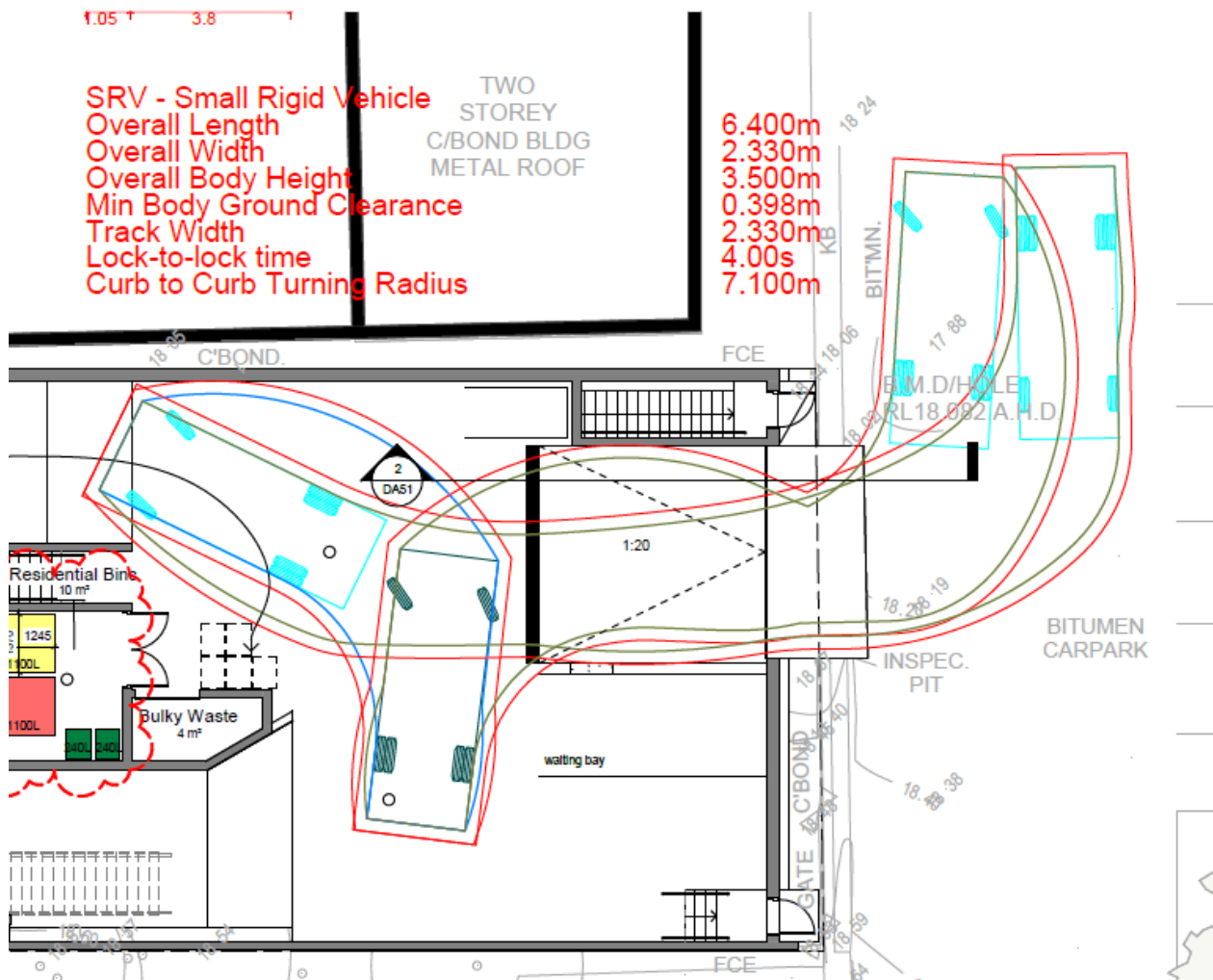
Table 10: Collection points and loading areas requirements and specification

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.

5.4.1 Swept Path

The site aims for on site Council waste servicing via small rigid vehicle (SRV). Swept path analysis for the collection vehicle are depicted in Figure 3.

Figure 3: Swept path



Source: Terraflow, 2024.

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 the DCP, 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;
- Separate Residential and Commercial waste areas will be maintained;
- Be located in a position that is convenient for users and waste collection staff, located away from habitable rooms;
- Waste handling, storage and collection systems for residential and non-residential waste to be separate and self-contained;
- 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, covered at all intersections with walls;
- The walls being cement rendered to a smooth, even surface and covered 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.

Shellharbour Development Control Plan 2013

Shellharbour Local Environmental Plan 2013

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.

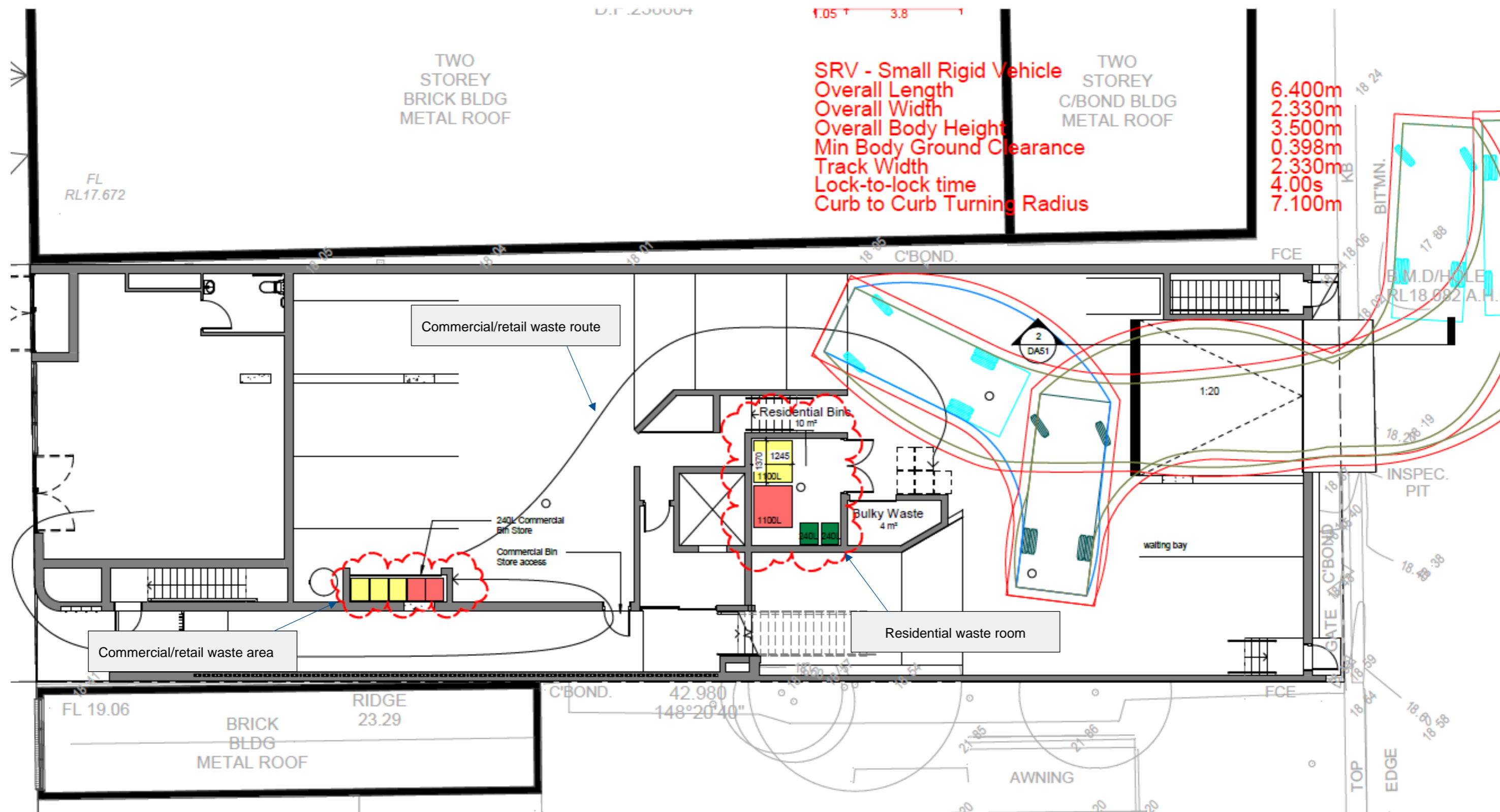
NSW Government (1979) Environmental Planning and Assessment Act.

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 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 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 4: Examples of standard signage for bin uses



Safety Signs

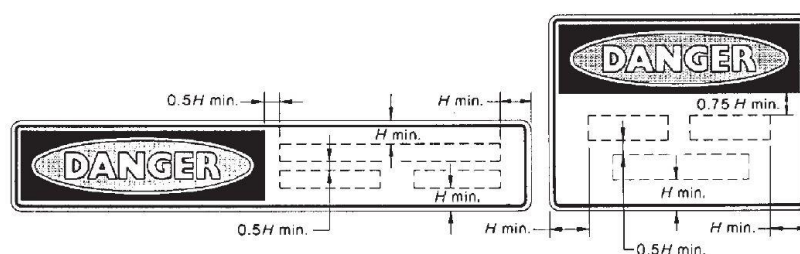
The design and use of safety signs for waste and recycling rooms and enclosures should comply with AS 1319 (Standards Australia 1994). Safety signs should be used to regulate, and control safety related to behaviour, warn of hazards and provide emergency information, including fire protection information. 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 5: Example and layout of safety signage



(d) Horizontal

FIGURE D5 TYPICAL ARRANGEMENTS OF DANGER SIGNS



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