

1B Glover Street, Belmont – Waste Management Plan

A Submission to Oak Tree Group c/o Mostyn
Cooper

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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
DA	Development Application
DC	Development Consent
DECC	Department of Environment and Climate Change
DCP	Development Control Plan
EPA	Environment Protection Authority
LGA	Local Government Area
LMCC	Lake Macquarie City Council
LMDCP	Lake Macquarie Development Control Plan 2014
LMLEP	Lake Macquarie Local Environmental Plan 2014
MGB	Mobile Garbage Bin
MSW	Municipal Solid Waste (also referred to as domestics or residential waste)
WMP	Waste Management Plan
WSP	Waste Service Provider
WSRA	Waste Storage and Recycling Area

1 Introduction

MRA Consulting Group (MRA) was engaged by Mostyn Cooper on behalf of Oak Tree Group to prepare a Waste Management Plan (WMP) related to the proposed s4.55 modification application for the proposed development of an aged care facility at 1B Glover Street, Belmont. The site is situated in the Lake Macquarie City Council (LMCC) Local Government Area (LGA).

The proposed development was previously approved for the construction of 75 residential units over two 3-storey buildings, including one basement level of carparking. The proposed s4.55 seeks approval for an additional level of units, including 26 additional units, up to 101 total dwellings.

As it relates to waste management, the proposed project will result in additional operational and construction waste associated with the additional level of development. This WMP addresses waste management for the development as proposed to be modified, including the requirements of the Consent Authority (Council) and conforms to the following reference documents:

- The Lake Macquarie Development Control Plan 2014 (LMDCP).
- The Lake Macquarie Waste Management Guidelines.
- The Lake Macquarie Local Environmental Plan 2014 (LMLEP).
- NSW EPA (2019) *Better Practice Guidelines for Resource Recovery in Residential Developments*.

This WMP has been prepared to inform the operation of the development and the delivery of best practice waste management, while promoting sustainable outcomes for the development.

The DCP states that a Waste and Recycling Management Plan must be submitted along with the development applications and states the following objectives for waste management:

1. To promote improved project management and to reduce the demand for waste disposal during demolition and construction.
2. To maximise reuse and recycling of building/construction materials.
3. To encourage building designs and construction techniques that will minimise waste generation.
4. Minimise waste generation to landfill via the waste hierarchy.
5. To assist in achieving Federal and State Government waste minimisation targets.

As the development is proposed to be seniors housing, waste management requirements will refer to Development within Residential Zones outlined in the LMDCP, which provides the following objectives:

- a. To reduce demolition waste by maximising beneficial reuse of infrastructure, buildings and materials onsite.
- b. To avoid creating construction waste wherever possible.
- c. To enable maximum diversion of demolition and construction waste to reuse, recycling or composting.
- d. To ensure that waste management is planned across all demolition and construction stages so that reusable resources and waste can be appropriately and effectively stored and removed safely from site without adverse impacts on local amenity.

2 Background

2.1 Description of the Proposed Development

The proposed development as proposed to be modified will feature:

- Excavation of one level for basement parking (existing approved, with changes);
- Construction of an aged care facility, featuring:
 - One level of basement parking;
 - Two 4-storey buildings including 101 residential units;
 - Landscaped garden and common areas; and
 - Ancillary facilities and infrastructure.

2.2 Location

The proposed development site was previously approved as 2A Maude Street, Belmont but has since had a change of address to **1B Glover Street, Belmont** – identified as Lot 202 of DP1236307 in the Lake Macquarie Local Environmental Plan (LMLP).

The site is largely surrounded by medium density residential development, public recreation area and mixed-use and local business (see Figure 1).

Figure 1: Proposed development in relation to surrounding residential properties

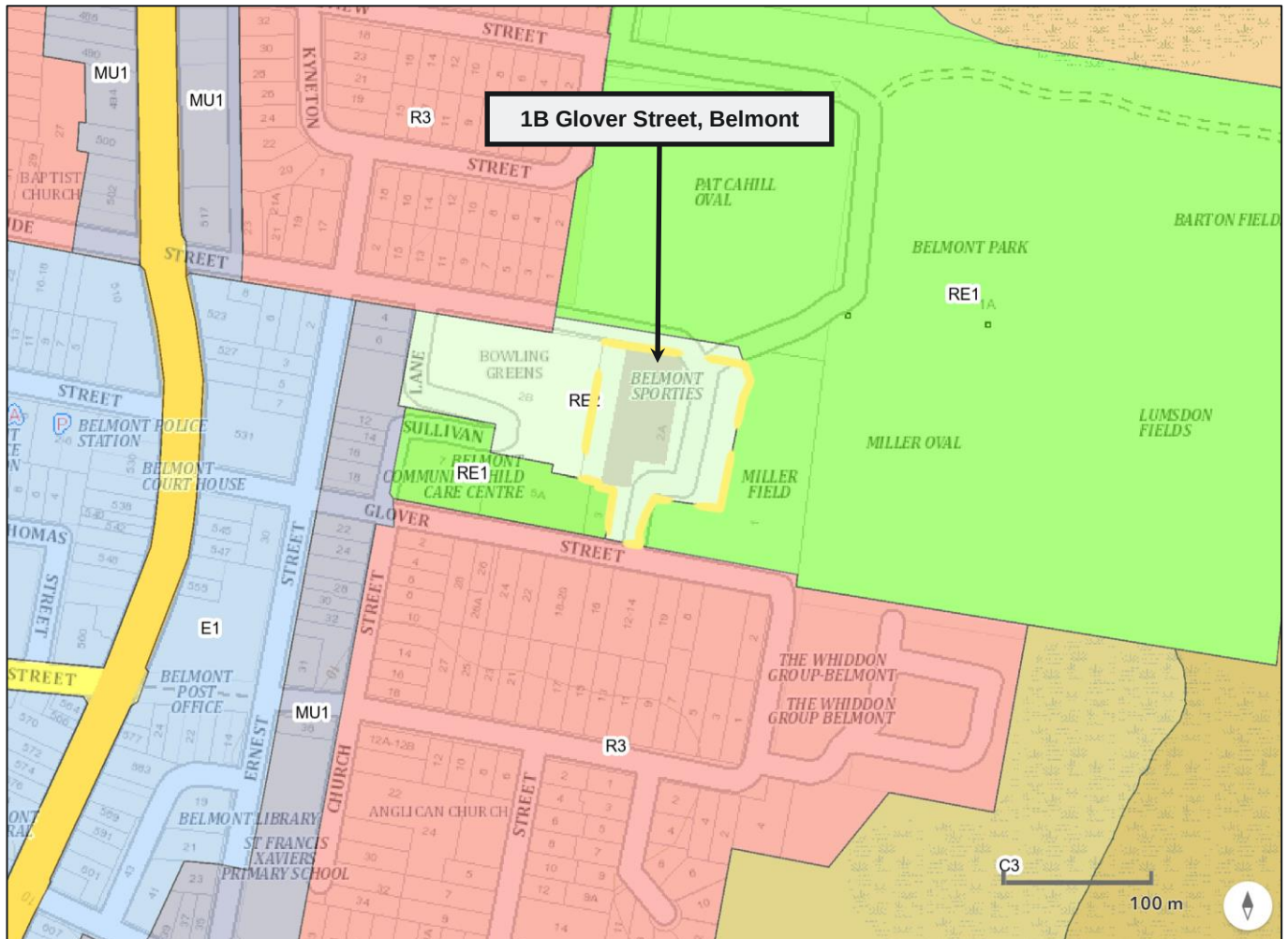


Source: Nearmap, 2025.

The site is zoned as RE2 – Private Recreation (See Figure 2) in the LMLEP. Seniors housing is permitted in on this site as specified in Schedule 1 in LMLEP. Currently, the site is occupied by a building of sport club building.

Zones surrounding the site include Public Recreation (RE1), Private Recreation (RE2), Medium Density Residential (R3), Mixed Use (B4), Local Centre (B2) and Infrastructure (SP2).

Figure 2: Zoning and land use



Source: NSW e-Planning Spatial Viewer, 2025.

2.3 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.

2.4 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 reference/indicative development plan from the project architect, CKDS, dated April 2025.
- The Operational Waste Management for Multiple Dwelling Developments LMDCG (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 activities associated with the proposed development were addressed in the original DA for the site and therefore, no further details on demolition are required.

Construction waste associated with the proposed development were addressed in the original DA, however the proposed s4.55 seeks to increase the building floor area with an additional residential level. As such, Section 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 Construction Waste

As described above, the proposed development as proposed to be modified will include:

- Excavation of one level for basement parking (existing approved, with changes);
- Construction of an aged care facility, featuring:
 - One level of basement parking;
 - Two 4-storey buildings including 101 residential units;
 - Landscaped garden and common areas; and
 - Ancillary facilities and infrastructure.

Table 1 outlines indicative volume to weight conversion factors for common construction materials.

Table 1: 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 2 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 2: Construction waste generation estimations

Type of waste generated	Quantity	Reuse	Recycling	Disposal	Methods for reuse, recycling and disposal
Excavation material	9,100m ³	✓	✓	-	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	150-250m ³	✓	✓	-	On site: to be separated wherever possible to enhance resource recovery. C&D processor: crushing and recycling for recovered products (aggregates).
Bricks/pavers	15-30m 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)	2-5m 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)	2-5m 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.
Metals (ferrous and non-ferrous)	2-5m ³	-	✓	-	Onsite: to be separated wherever possible to enhance resource recovery. C&D processor: metals recovery and recycling.

Type of waste generated	Quantity	Reuse	Recycling	Disposal	Methods for reuse, recycling and disposal
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.
Floor coverings	<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. C&D processor: recovery and recycling.
Mixed recyclables (cans, plastic, glass)	Minor	-	✓	-	Commercial contractor: recycling.
Packaging material (cardboard, plastic film, plastic strapping, etc)	10-20m ³	-	✓	-	Commercial contractor: segregation of paper, cardboard or other streams.
Residual waste (general refuse)	5-10m 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.

3.2 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	The following are local skip bin operators for consideration in the management of excavation and construction waste for the site: • EWS Skips; • Morisset Skip Bins; • Skip Bins Lake Macquarie; and • Newcastle Skips. 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: • Concrush, Teralba; • Benedict Recycling Mayfield West; • Newcastle Recycled Materials, Redhead; and • Boral Recycling, Kooragang Or another appropriate facility as elected by the waste management contractor.
Principal Licensed Landfill Site	• Summerhill Waste Management Centre, Wallsend Or other appropriate facility as elected by the waste management contractor.

3.3 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.

3.4 Waste Storage, Handling, Transport, and Disposal

3.4.1 Storage

Considering the nature of proposed works, waste management infrastructure should include retention of several skip bins (marrel or RORO) for the storage of separated demolition and excavation material. Waste should be placed in designated bins and collected on a regular schedule, as bins become full.

Recyclable materials would be source-separated onsite where possible in labelled bins according to the type of material (e.g. masonry, metals, paper and plastics) to enable improved recovery rates.

All problem and hazardous wastes would be stored in separate areas or bins as they may require special treatment. Asbestos must be stored in a separate container and wrapped in thick plastic. Any flammable liquids would be stored in a bunded area; however, this is not likely to be necessary at the site.

Separate site Mobile Garbage Bins (MGBs) would be retained on site to collect general waste and recycling associated with use of the site by demolition personnel.

3.4.2 Handling

The handling of waste would be dependent on waste type.

- Inert waste would be collected for recycling or disposal, as appropriate.
- Any soils that are tested and deemed to be contaminated would be sent to an appropriate facility for management and disposal.
- VENM and ENM may be reapplied to land onsite. VENM may be applied to land offsite without a resource recovery order and exemption. ENM requires a resource recovery order and exemption to be applied to land offsite.
- Asbestos can only be disposed of to landfills which are licensed to receive it. It must be handled and transported in a specific manner as outlined in the management measures below.
- Problem wastes include tyres, paint, car batteries, gas bottles, oils and chemicals would be disposed of at facilities which are able to receive these materials.

The Business Recycling website businessrecycling.com.au provides a directory of locations where wastes can be recycled or safely disposed of.

All material generated would be separated where possible, to maximise resource recovery potential and reduce the need for disposal of residual materials to landfill. Any material deemed unsuitable for reuse or recovery would be disposed of to an appropriately licensed landfill. Reuse and recovery potential for expected waste product includes (but is not limited to) the methods outlined in Table 4.

3.4.3 Recycling of Materials

Table 4: Expected waste streams during C&D activities related to preliminary infrastructure works

Waste Material	Reuse or recovery Potential
Brick, Rubble, Stone, Ceramic, Tile, etc.	Sent to C&D processing facility for crushing and reuse as fill material.
Virgin Excavated Natural Material	Reuse as fill material.
Excavated Natural Material	Reuse as fill material. Compliance with ENM order and exemption is required for offsite application.

Waste Material	Reuse or recovery Potential
Timber (treated and non-treated)	Sent to organics processor or C&D processing facility for mulching for reuse.
Metals (ferrous & non-ferrous)	Fixtures and fittings returned to manufacturer for reuse (if applicable) or recycling at materials recycling facility.
Plastic	Recycling at materials recycling facility.
Paper & cardboard	Recycling at materials recycling facility.
Eligible residual or non-recoverable material	Processing at appropriately licensed energy from waste (EfW) as technology becomes readily available.
Tyres	Recycling at a tyre re-processor.
Asbestos	Disposal at a facility licensed to receive asbestos.
Hazardous and problem waste streams	Disposal/recycling at a facility which is able to accept the particular type of waste.

3.4.3.1 Asbestos

The handling of asbestos requires special precautions due to the hazardous nature of the materials. Any handling of asbestos waste must be performed in accordance with Clause 42 of the PoEO Act, 1997.

Before commencing any work, a risk assessment should be carried out. Safe work procedures would be devised that minimise exposure.

Handling requirements include:

1. Keep asbestos damp but prevent excess runoff water.
2. Asbestos should be collected, labelled and sealed using plastic or leak-proof containers.
3. Storage would be at a secure site in labelled, lined bins or a leak-proof container.
4. Asbestos containing materials should be removed from the site as soon as practicable and/or collected and stored in a manner approved by the EPA or an appropriate disposal authority.
5. Transport would be in a covered leak-proof vehicle or a manner approved by the OEH.
6. Disposal in a manner and at a site approved by OEH or an appropriate disposal authority.
7. Vehicles must be cleaned before leaving the landfill site.

3.4.4 Transport

Section 143 of the *Protection of the Environment Operations Act 1997* requires that waste is transported to a place that can lawfully accept it. Both the owner of the waste and the transporter are legally responsible for proving the waste was transported to a lawful place.

To show that waste has been lawfully disposed of records should be kept of the following:

1. All demolition and construction waste dockets must be kept which show which facility received the material for recycling or disposal.

2. Who transported the waste (company name, ABN, vehicle registration and driver details, date and time of transport, description of waste).
3. Copies of waste dockets/receipts from the waste facility (date and time of delivery, name and address of the facility, its ABN, contact person).
4. Transport of waste materials is managed by a licensed operator.

Audits may be conducted by Council to verify that dockets have been kept and waste recycled and disposed of as described within the Waste Management Plan.

3.4.5 Disposal

The disposal of waste is recommended after recycling options have been implemented. Materials may only be disposed of materials to a facility which is licensed to take the particular type of waste.

1. The majority of waste onsite is inert, dry, non-putrescible waste which may be taken to any licensed landfill.
2. Stabilised asbestos in a bonded matrix may be taken to an inert waste Class 1 landfill or a solid waste landfill class 1 or 2.
3. The Planet Ark Business Recycling directory or “Recycling Near You” websites can be consulted to find facilities that accepts a particular type of waste for recycling or disposal.
4. The EPA website “Facilities that accept household asbestos” has a list of facilities that will accept asbestos. It is recommended to contact the facility first.

3.5 Management Measures

3.5.1 General Measures

The following general site management measures are recommended for preliminary site works:

- Uncontaminated soils may be reused onsite to even out cut and fill;
- It is recommended that organic waste from clearing of trees would be chipped and reapplied as mulch or delivered to an organics processor;
- No vegetation would be pushed into or applied to ecologically sensitive areas;
- Materials would be reused or recycled wherever possible;
- Separate bins would be provided for source separation of waste types where possible;
- Residual waste would be disposed of to a licensed landfill;
- Litter on the site would be managed daily to maintain a tidy environment;
- The disposal of nightsoil from portable toilets would be managed by a licenced contractor;
- Transport of waste would be managed by a licenced operator;
- Records would be kept of transport and disposal of materials;

3.5.2 Hazardous Waste Management

- Hazardous and problem wastes would be stored separately onsite and disposed of or treated at a facility licensed to receive and manage the material or substance;
- If contaminated soils are present at the site, they would be disposed of to a licensed landfill or otherwise remediated for beneficial reuse. For example:
 - Soils determined to contain contaminants may be remediated on site through piling and aeration over time if suitable; or
 - Contaminated soils can be taken to a specialist soil wash plant capable of removing contaminants such as hydrocarbons through flocculation and other processes, therefore creating a reusable product.

- If asbestos is found onsite it would be disposed of in the following manner:
 - A risk assessment would be conducted to determine appropriate management measures,
 - Asbestos waste would be disposed of in a landfill which is licensed to receive asbestos waste,
 - Asbestos waste would be wetted, wrapped in 200um thick plastic, and sealed with tape before it is transported,
 - It would be clearly labelled as “asbestos waste”,
 - It would be transported in a covered, leak-proof vehicle,
 - Copies of receipts from landfills where asbestos was taken would be retained, and
 - If the amount of asbestos is more than 10m², a qualified asbestos removalist would be engaged.

4 Operational Waste Management

4.1 Overview

Waste management strategies related to site operations have been established according to the documents outlined in the *Lake Macquarie Development Control Guidelines: Waste Management* and the *Lake Macquarie Development Control Plan 2014*.

Waste generation during the operational phase of the development are addressed in Section 4.2. Waste storage and recycling areas were determined with reference to waste generation rates and have been addressed in Section 4.3.

Waste loading areas have been identified in Section 5.4.

Site waste management responsibilities have been outlined in Section 5 generally.

4.2 Waste Generation Rates

Waste generation rates for residential flat buildings according to the guidelines are:

- 60L of general waste per dwelling per week;
- 60L of recycling waste per dwelling per week; and
- 80L of food waste per dwelling per week.

From the above requirements and expectations, the following site-specific waste generation rates are derived for the development as proposed to be modified (see Table 5), based on the assumption that each waste stream would be collected on a weekly basis.

Table 5: Site Waste Generation

Portion of Site	Units	Waste Stream	Total Weekly Generation (L)
Chute Core A	51	General waste	3,060
		Recycling	3,060
		Food waste	4,080
Chute Core B	50	General waste	3,000
		Recycling	3,000
		Food waste	4,000

4.3 Waste Storage Requirements

Table 6 outlines the standard bin sizes utilised for residential waste in Lake Macquarie, including dimensions for each. Waste storage areas on site have been designed to facilitate waste according to the waste generation rates outlined in Section 4.2.

Table 6: Mobile Garbage Bin (MGB) and Bulk Bin capacity and footprint

Bin Capacity (L)	Height (mm)	Depth (mm)	Width (mm)	Footprint (Approx. m ²)
240	1,060	730	585	0.43
660	1,200	780	1,260	1.16

Bin Capacity (L)	Height (mm)	Depth (mm)	Width (mm)	Footprint (Approx. m ²)
1,100	1,330	1,070	1,240	1.74

Source: Lake Macquarie Waste Management Guidelines

4.3.1 Dwelling Waste Storage Requirements

Each dwelling is to be provided with an indoor waste and recycling cupboard (or other appropriate storage space) to store at minimum one day's garbage waste and recycling generated. A two-core waste chute will be installed on each residential level of each building. The two chutes will accommodate a shared disposal of general waste and organics via an e-diverter, while the other chute will accommodate the separate disposal of recycling. Chutes will be located next to the lifts on each level. Residents will be responsible for the transfer of waste from the dwelling to the respective chute inlet.

4.3.2 Basement Level Chute Rooms

Two chute rooms are situated in the basement level of the development. The rooms will accommodate the chute outlets under which 660L bins will be always sited. All stored waste and recycling will be contained in bulk bins with a tight-fitting lid and smooth, washable internal surface. Additional empty bins will be retained in each chute room to be swapped out with full bins. The waste caretaker will be responsible for rotating bins as they fill and monitoring contents to ensure minimal contamination.

An area of 4m² will be allocated to a cage for the temporary storage of residential bulky waste within each chute room. The frequency of collection must be considered in space allocation for bulky waste. The waste caretaker will be responsible for arranging timely bulky waste collection by council, or a private contractor, and therefore a smaller area is sufficient for this development. The space will be managed to avoid overspill into space required for manoeuvring and access. Properly managed and maintained, this space will be able to store more than a months' worth of bulky waste.

Table 7 outlines the waste storage requirements for the two waste rooms located on Basement Level 1.

Table 7: Waste Storage Requirement

Chute Room	Waste Stream	Proposed Collection Frequency	Infrastructure Required	Footprint (m ²)	Approx. Total Space Requirement (m ²)*
Chute Room A	General Waste	Weekly	5 x 660L Mobile Garbage Bin	6m ²	54m ²
	Recycling	Weekly	5 x 660L Mobile Garbage Bin	6m ²	
	Food Waste	Weekly	7 x 660L Mobile Garbage Bin	8.5m ²	
	Bulky Waste	As Required	Lockable Bulky Waste Cage or Designated Area	4m ²	
	Chute and carousels	N/A	Chute Outlet and two, 3-bin (660L) carousels	17.5m ²	
	Bin Tug	N/A	Parking Space	2m ²	
Chute Room B	General Waste	Weekly	5 x 660L Mobile Garbage Bin	6m ²	54m ²
	Recycling	Weekly	5 x 660L Mobile Garbage Bin	6m ²	

Chute Room	Waste Stream	Proposed Collection Frequency	Infrastructure Required	Footprint (m ²)	Approx. Total Space Requirement (m ²)*
	Food Waste	Weekly	7 x 660L Mobile Garbage Bin	6m ²	
	Bulky Waste	As Required	Lockable Bulky Waste Cage or Designated Area	4m ²	
	Chute and carousels	N/A	Chute Outlet and two, 3-bin (660L) carousels	17.5m ²	
	Bin Tug	N/A	Parking Space	2m ²	

*Approximate storage requirement takes into account space to manoeuvre bins within the room. A factor of 1.5x is applied to bin footprints to achieve this estimated ratio.

The waste bins and storage areas proposed for the site fulfil the waste management requirements, facilitating safe access and manoeuvring of all bins and equipment for the proposed development. The above figures include bins to accommodate continued use of waste chutes through collection periods.

Waste management areas will be enclosed and concealed from general view to maintain site amenity while also reducing the risk of windblown litter, vandalism, and illegal dumping. The waste management areas have adequate space to facilitate changes to that waste management arrangement that may occur in the future.

4.3.3 Glover St Bin Enclosure

Bins will be transferred from each basement level chute room to a bin enclosure at the site frontage to Glover St, the night prior to waste collection. This will be the responsibility of the site building manager and may be aided by equipment such as a bin tug (see Appendix B, for an examples).

The bin enclosure will have sufficient space allocation to store up to 16 x 660L bins for General Waste, Recycling and Organics streams (see Appendix A).

4.4 Waste Loading and Collection

The waste collection contractor will have access to the bin enclosure and will utilise a wheel-in wheel-out service. Bins will therefore not be left out on the nature strip or pavement while awaiting collection, minimising risk of litter, vandalism, or impacts to visual amenity.

It is proposed that both general waste and recycling are collected on a weekly basis.

4.5 Garden Organics

It is noted that landscaping of communal areas at the site will be maintained by an external contractor who will remove all vegetation waste from maintenance activities. In addition, since the proposed development is for a residential flat building complex, it is unlikely that high amounts of garden waste will be produced due to small amounts of private garden space.

Minor amounts of soft garden waste generated at the site by residents can be disposed of with food waste as required.

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.
- **Food Waste:** Food organics waste generation from the development will be collected separately by the waste management contractor. Food waste will be stored in 660L sealed bins and collected on a weekly basis.
- **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 general, recycling and organic waste to the chute inlet located on each residential level. Here residents will select the appropriate chute and dispose of waste which will be transferred to a 660L bin located in one of two waste rooms located on the basement level;
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.

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

5.4.1 Waste Collection Arrangement

It is proposed that a kerbside wheel in, wheel out service from the temporary bin hold at the Glover St entrance will be utilised for waste servicing at the site, given the spatial constraints of the basement level. The site waste caretaker will be responsible for set out and return of bins from the bin enclosure at Glover Street on a weekly basis. This may be aided by a bin tug or trailer, an example of which is available in Appendix B. Parking spaces for the bin tug/trailer have been made available in both chute rooms.

The proposed collection points for a contracted waste service provider (WSP) for onsite collection and areas for handling and loading are as follows:

- Bins transferred from the bin storage room in Basement level 1 to the bin enclosure at the Glover St frontage located adjacent to the site driveway (see Appendix A);
- Space allocation for a minimum of 8 x 660L MGBs – the site's allocation for either general waste or recycling. It is anticipated that these streams will be collected at different times, therefore the enclosure will be designed for the maximum bins retained for one stream;
- Collection vehicle will stop at the kerbside of Glover Street and service bins;
- Clear, safe, accessible and convenient space for handling of mobile garbage bins (MGBs) and equipment and loading of collection vehicles; and
- Identifiable areas where residents, visitors and site staff can recognise and avoid any risk associated with moving vehicles, and bin moving and handling.

5.4.2 Waste Collection Specification

The table below outlines relevant requirements and specifications relating to waste collection point described.

Table 8: Onsite collection point and loading requirements and specifications

Component	Requirements	Specification
Collection point	Collection points are to be located so that:	- Bins are wheeled no more than 75m from storage area. - All bins are presented in a single file with a minimum 30cm gap between bins. - Has a minimum distance of 2m from street trees, bus stops, street furniture and road infrastructure. - Has a minimum height clearance of 4.2m from overhanging tree branches, power lines and other obstructions. - Collections are not undertaken in a 'No Stopping' zone. - Presentation of bins on the kerb is not impacted by actual or anticipated on-street parking demand.
Vehicle Specifications	Rear loading vehicle	- Length 10.24 m - Width 2.5 m - Turning Circle 18 m - Travel Height 3.5 m - Operational Height 3.5 m

Component	Requirements	Specification
Vehicle manoeuvring and loading space	Truck space for adequate lift clearance, manoeuvring and operation for a contractor collection vehicle	- The waste collection area is located away from any vehicle parking spaces or overhead obstacles.
Operating times	Appropriate collection times to limit noise and traffic disturbance	- Collection times will be arranged to ensure minimal disturbance to residents, pedestrians and visitors.

5.4.3 Waste Collection Contractor

Either a private waste contractor or Council's contracted waste service provider would be appropriate for servicing of the site. A bin enclosure is provided at the street frontage to Glover St which will allow for short transfer distances of bins to the kerbside for collection. It is proposed that a wheel-in, wheel-out service is engaged so that waste vehicle crews are able to access the enclosure and transfer bins to the waiting truck. This method is preferred over a regular kerbside service as it will minimise the time that bins are on the kerbside and reduces the amenity impacts associated (such as potential for litter generation, visual amenity, and odour and vermin).

It is currently preferred that a private waste contractor be engaged for the collection of all waste streams at the site. If council were engaged to provide a waste collection service to the site, the schedule of collections will be updated to reflect Council's standard service.

5.5 Waste and Recycling Storage Areas

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

- Storage areas reflect the equipment, infrastructure, manoeuvring space and potential future needs of the development;
- 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, coved at all intersections with walls;
- The walls being cement rendered to a smooth, even surface and coved at all intersections; and
- The room shall be adequately ventilated (either natural or mechanical) in accordance with the Building Code of Australia.

5.6 Chute system

The chute system installed at the site will be a two-core system, capable of accepting general waste, recycling and food waste, providing convenience to residents and allowing for maximised resource recovery. Of the two chute cores, one will be utilised for the disposal of recycling exclusively, while the other will be a diverter chute, capable of handling general waste and organics. The chute system will include: access areas on each floor, chute core, service access points and chute outlets in residential chute rooms. Chute cores have been indicated on each floor as required on the reference/indicative drawings. A full chute specification includes:

- Twin chutes for the management of general waste, recycling and food waste, including one diverter chute capable of managing two waste streams in the one core.
- System in either 600mm galvanised steel or 510mm recycled LLPDE polyethylene plastic;

- A minimum two-hour fire rated door for the diverter chute;
- To minimise noise disturbance, chutes and hoppers will be wrapped with noise insulation foil (e.g. 50mm poly-wool) and the walls of the shaft area surrounding the chute system are to be built to an appropriate sound reduction index specification;
- Minimal offsets of the chute in relation to outlet i.e. chutes perform optimally when vertical alignment is plumb and any deviation should be minimised;
- Vents exiting at the top of each chute and wash down system. Frequency of maintenance and upkeep (washing) to be instructed by chute supplier; and
- Chute openings for placement of fire sprinklers on every second level.

5.6.1 Chute Diverter

One of the chute cores will be fitted with a diverter system to discharge waste and recyclables from the chute into the appropriate bin in the waste chute room. The general specification listed below provides guidance for the purpose of the WMP:

- Split system body with two bottom outlets;
- Shut outdoor with manual override to close off chute fitted with fusible link;
- Internal diverter, activated by a hydraulic cylinder;
- Hydraulic power pack with single phase;
- PLC control box in garbage room, programmed to operate diverter and lock outdoors;
- Doors fitted with electronic lock out normally closed solenoid; and
- Operating instructions and labels on every level.

5.7 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).

5.8 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:

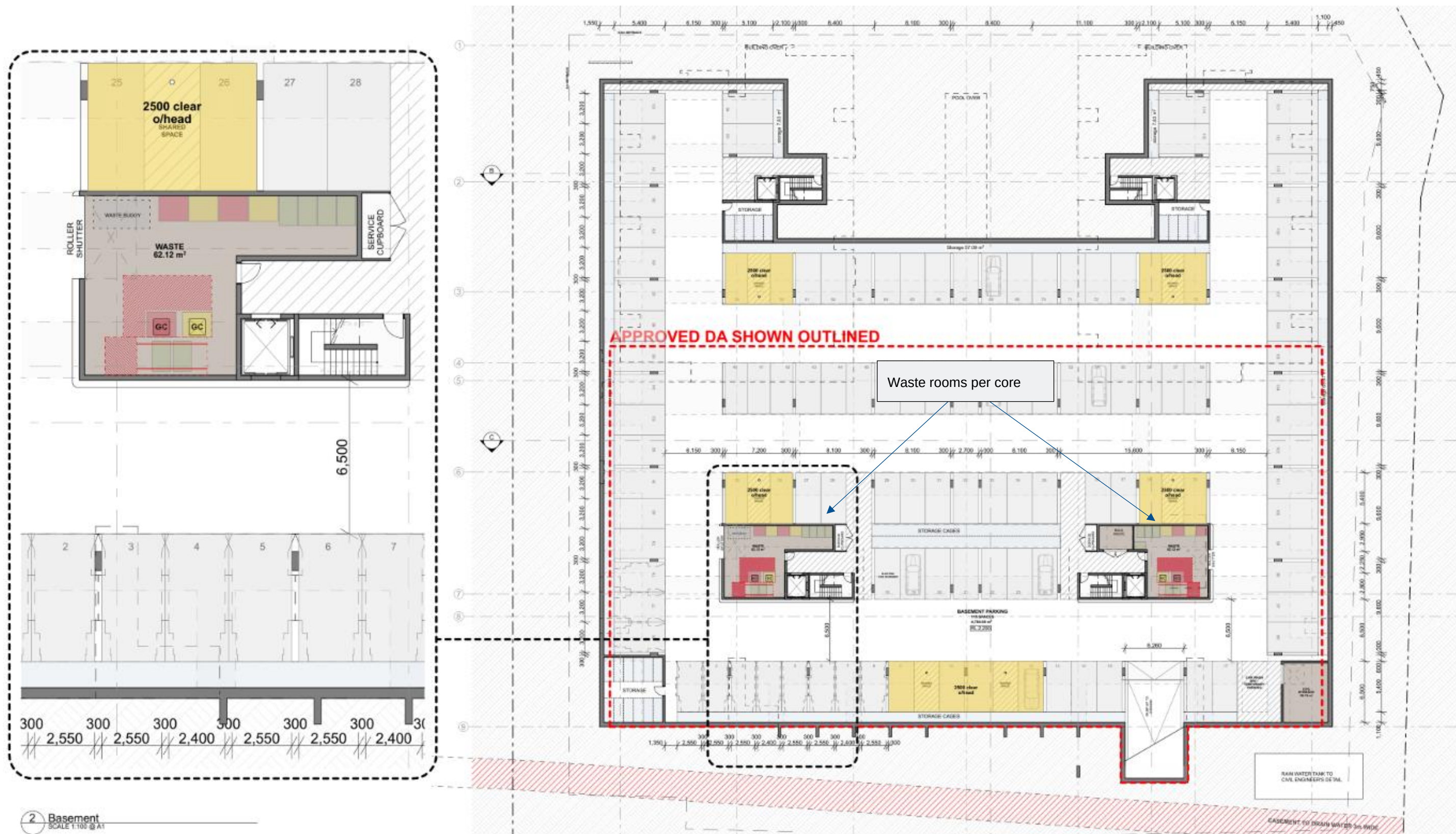
- Maintenance of open and common site areas;
- Ensuring waste areas are well maintained and kept clean;
- Securing the waste storage area from vandalism and the escape of litter;
- Identification and appropriate disposal of goods with hazardous material content (paints, e-waste, fluorescent tubes);
- 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.
- Lake Macquarie Development Control Plan 2014
- Lake Macquarie Local Environmental Plan 2014
- NSW EPA (2012) Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities.
- NSW EPA (2021) NSW Waste and Sustainable Materials Strategy 2041.
- NSW EPA (2014) Waste Classification Guidelines.
- NSW EPA (2016) Recycling Signs, Posters and Symbols. Available at: <http://www.epa.nsw.gov.au/wastetools/signs-posters-symbols.htm>.
- NSW EPA (2019) Better Practice Guide for Resource Recovery in Residential Developments.
- NSW Government (1979) Environmental Planning and Assessment Act.
- NSW Government (1997) Protection of the Environment Operations Act.
- NSW Government (2000) Environmental Planning and Assessment Regulation.
- NSW Government (2001) The Waste Avoidance and Resource Recovery Act

Appendix A Proposed Site Plans



Source: CKDS Architects, 2025.



Source: CKDS Architects, 2025.

Appendix B Waste Equipment Options

SITECRAFT 

movexx
 smart electric tugs

MOVEXX T1000-D BIN MOVER / BATTERY ELECTRIC

The Movexx T1000D takes away the manual effort required to push / pull wheeled bins. It has both variable speed and an overriding dual speed button. A built-in smart control unit is programmable for speed, acceleration and braking, plus numerous other fine-tune adjustments. These units are fitted with an electromagnetic brake system for use on ramps and slopes.

A fast and easy-to-remove lithium battery system accepts opportunity charging; additional batteries are available allowing for constant usage of the Movexx T1000D in high demand applications.

Additional batteries can be kept on an external charger, so they are ready for use once the battery indicator changes to red. Many other options are also available on request. Towing hitches are not included and can be ordered separately.



SPECIFICATION

MODEL	DIMENSIONS (MM)	OPTIONS	PULL - PUSH CAPACITY (KG)	BATTERY
T1000-D	445 (w) x 1176 (l)	* Centre mount 2x 240 ltr. wheeled bin attachment	1000	Quick Charge Lithium



*Optional centre mount 2x 240ltr. bin attachment.
 Part number - 5371347.1

movexx
 smart electric tugs

MOVEXX T2500 BIN MOVER / BATTERY ELECTRIC

Movexx T2500 Tow Tug is an extremely user friendly battery powered mobile towing unit that is ideal for applications where trolleys and rolling objects need to be moved from one place to another simply, efficiently and without physical effort. Some standard features included are: battery indicator, on board battery charger, battery, adjustable handle, dual speed and electric brake.

These units are fitted with an electromagnetic brake system for use on ramps and slopes

Features

- Electromagnetic brake for use on ramps and slopes
- Adjustable height handle



SPECIFICATION

MODEL	DIMENSIONS (MM)	OPTIONS	PULL - PUSH CAPACITY (KG)	BATTERY
T2500-D	511 (w) x 757 (h)	* Centre mount 2x 240 lbs. wheeled bin attachment	2500	AGM batteries 2x 85AH up to 8 hrs continuous operation



SITECRAFT

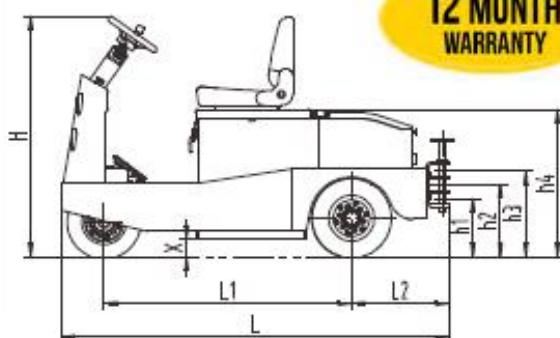
MATERIALS HANDLING EQUIPMENT



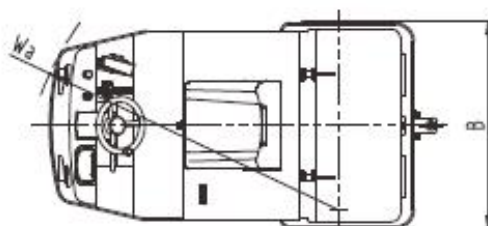
17 Macquarie Drive, Thomastown, VIC 3074
 Phone: 1300 363 152 Fax: 1300 722 383
 E: sales@sitecraft.com.au ABN: 36 423 328 526

SITECRAFT HEAVY DUTY ELECTRIC TOW TRACTOR

- > Towing capacities from 2000 kg to 6,000 kg
- > Full AC electric system has a brake-releasing function, making the unit easy and effortless to operate; The maintenance-free motor completely solves the issues of DC motor carbon brush.
- > Batteries located in the lowest part of frame ensures excellent stability
- > Quick open back service cover for easy maintenance and part replacement
- > CANbus technology reduces wiring complexity and increases reliability
- > H type axle design provides excellent stability
- > New high-range steering design; light steering and easy to maintain.
- > New large-screen instrument display provides information clearly and directly to the operator.



**12 MONTH
WARRANTY**



Model		ST-2000AC	ST-3000AC	ST-5000AC	ST-6000AC
Towing Capacity	Kg	2000	3000	5000	6000
Drawbar Centre Height	h1/h2/h3 mm	280/350/420	280/350/420	280/350/420	280/350/420
Motor	Kw / V	3Kw / 36V	3Kw / 36V	5Kw / 48V	5Kw / 48V
Total Size	L x B x H mm	1720 x 968 x 1270	1720 x 968 x 1270	1975 x 1100 x 1270	1975 x 1100 x 1270
Total Weight (With Batteries)	Kg	740	780	1240	1280
Wheel Size	Solid Rubber	15"4-8	15"4-8	15"4-8	15"4-8
Wheelbase	L1 mm	1055	1055	1280	1280
Rear Hanging Distance	L2 mm	382	382	500	500
Seat Height	h4 mm	910	910	910	910
Ground Clearance	X mm	90	90	90	90
Turning Radius	Wa mm	1500	1500	1650	1650
Maximum Speed	Km/h	10	8	14	12
Battery	V/Ah	36/200	36/250	48/360	48/400
Battery Weight	Kg	200	250	610	650
Charger	On-board V/Ah	36/30	36/30	48/50	48/50

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MATERIALS HANDLING EQUIPMENT



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SITECRAFT HEAVY DUTY ELECTRIC TOW TRACTOR



Sitecraft ST3000-AC tow tug moving 660 & 1100 litre bins



Sitecraft ST3000-AC tow tug moving 660 & 1100 litre bins

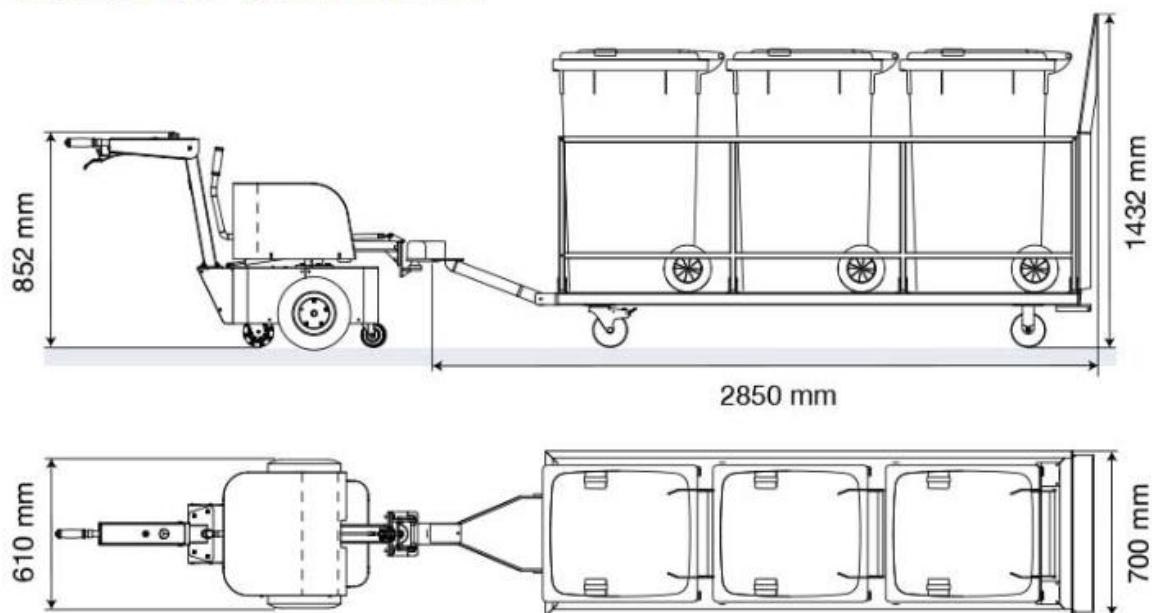


ST3000-AC tow tug complete with 6 x 250AH heavy duty batteries

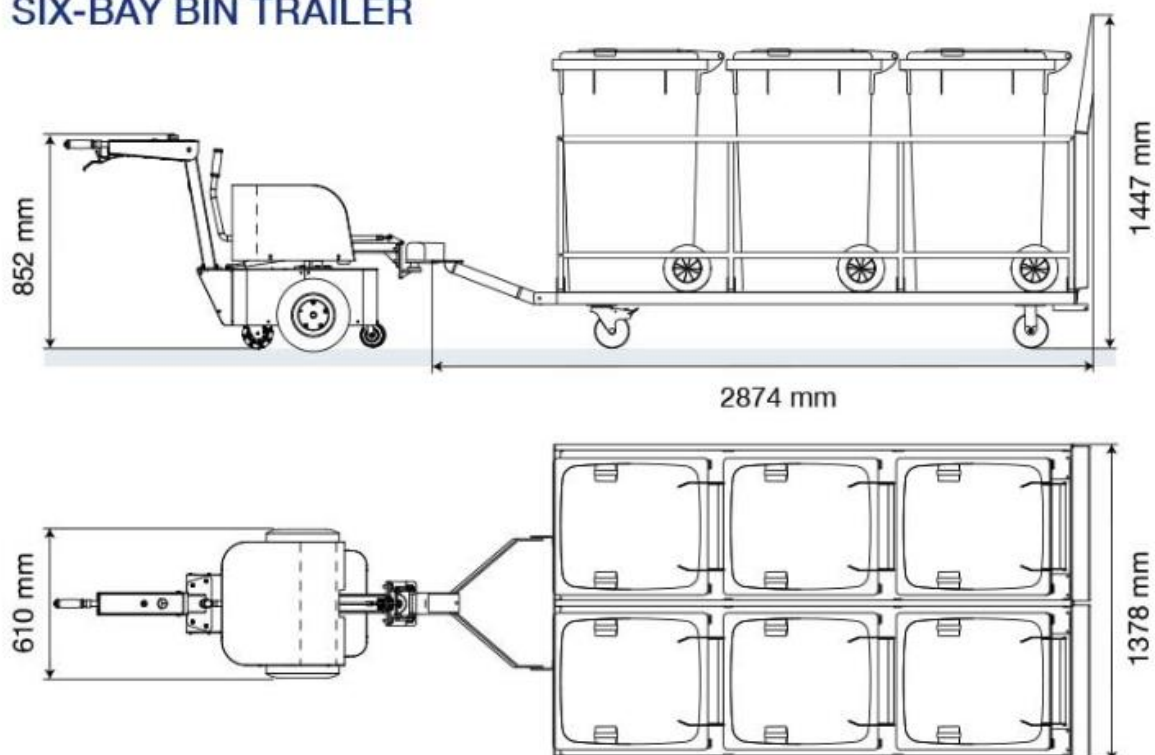


Optional steel / aluminium trailers for moving waste bins, linen trolleys, food trolleys, delivery boxes, etc ...

THREE-BAY BIN TRAILER



SIX-BAY BIN TRAILER



Appendix C Standard Signage

Waste Signage

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

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

Figure 3: Examples of standard signage for bin uses



Safety Signs

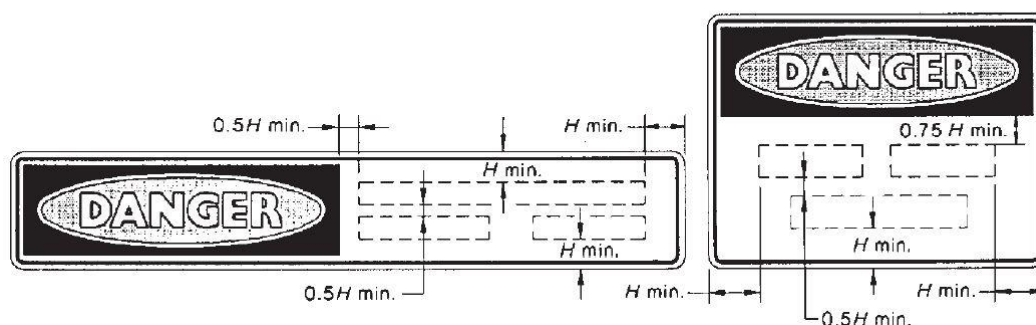
The design and use of safety signs for waste and recycling rooms and enclosures should comply with AS 1319 (Standards Australia 1994). Safety signs should be used to regulate, and control safety related to behaviour, warn of hazards and provide emergency information, including fire protection information.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

Figure 4: Example and layout of safety signage



(d) Horizontal

FIGURE D5 TYPICAL ARRANGEMENTS OF DANGER SIGNS



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