

7-9 Banksia Road, Greenacre – Waste Management Plan

A Submission to Lockhart-Krause Architects

18th October 2024



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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
CBDCP	Canterbury-Bankstown Development Control Plan 2023
CBLEP	Canterbury-Bankstown Local Environmental Plan 2023
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
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 Lockhart-Krause Architects to prepare a Waste Management Plan (WMP) related to the proposed childcare centre located at 7-9 Banksia Road, Greenacre. The site is located within the Canterbury-Bankstown Local Government Area (LGA).

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

- *Canterbury-Bankstown Development Control Plan (CBDCP) 2023; and*
- *Canterbury-Bankstown Local Environmental Plan (CBLEP) 2023.*

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;*
- NSW EPA (2012) *Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities; and*
- Canterbury-Bankstown (2023) *Waste Design for New Developments – Guide F Commercial and Industrial Development.*

The following key overarching objectives for waste management are outlined in the CBDCP:

- To maximise resource recovery and encourage source separation of waste, reuse and recycling by ensuring development provides adequate and appropriate bin storage and collection areas.
- To ensure development incorporates well-designed and adaptable bin storage areas and collection facilities that are convenient and accessible to occupants.
- To maximise residential amenity and minimise adverse environmental and health related impacts associated with waste management such as odour and noise from bin storage and collection areas.
- To ensure bin storage and collection areas are designed to integrate with and meet the requirements for Council's domestic waste services.
- To ensure development facilitates all waste streams being handled, stored and collected in a manner to reduce risk to health and safety of all users including maintenance (such as caretakers), collection staff and contractors (and required vehicles and equipment).
- To integrate bin storage and collection areas with the building form and landscape to avoid adverse visual impacts on the streetscape and neighbourhood.
- To assist in achieving Federal and State Government waste minimisation and diversion targets as set by relevant legislation, regulations and strategies.

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 is situated at 7-9 Banksia Road, Greenacre in the Canterbury-Bankstown LGA. The development features the following:

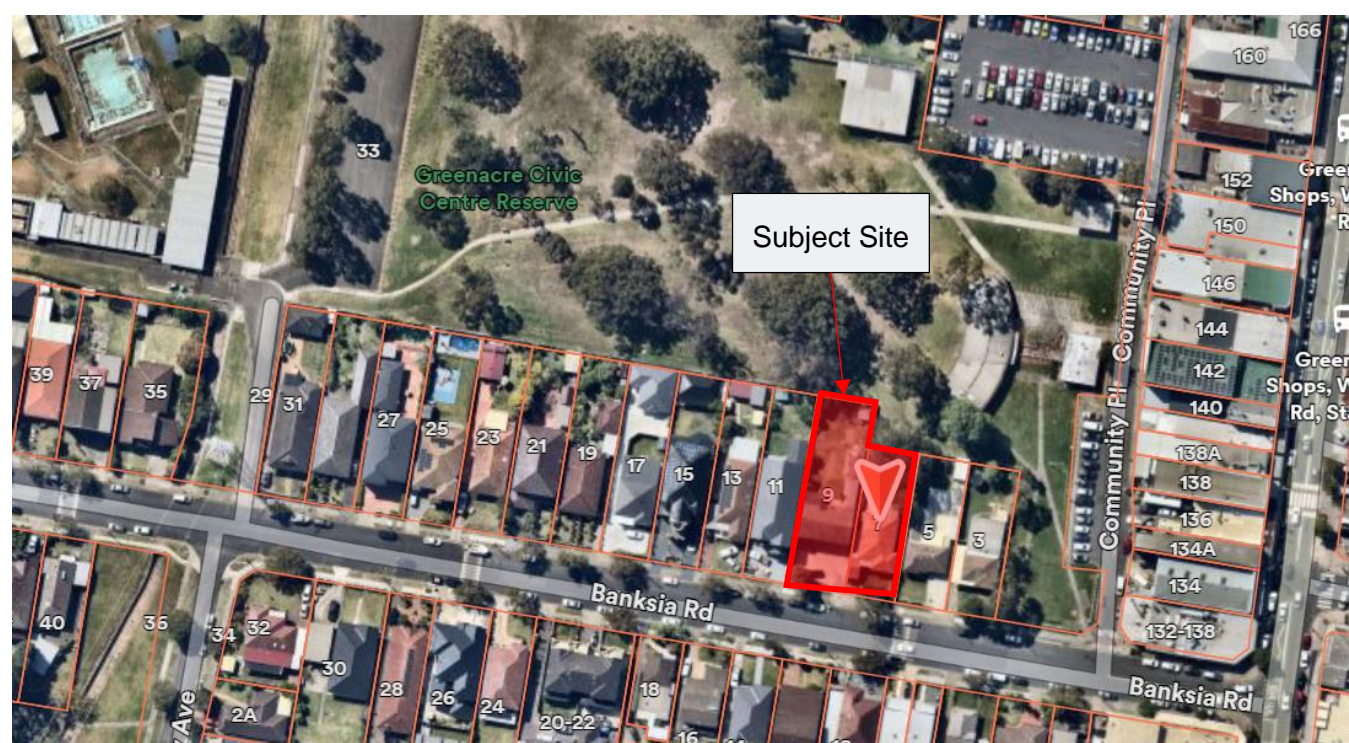
- Minor demolition and removal of existing structures;
- Construction of:
 - a two-storey childcare centre with capacity for 115 children; and
 - a basement level carpark (with 29 parking bays)

The relevant site plans for the proposed development are provided in Appendix A.

2.2 Location

The site is legally known as Lot A of DP 365724 and DP and DP419336 is situated next to Greenacre Civic Centre Reserve. The site has a primary frontage to Banksia Road and is located approximately 2 km from Wiley Park Station.

Figure 1: Site and surrounding area



Source: Nearmap, 2024.

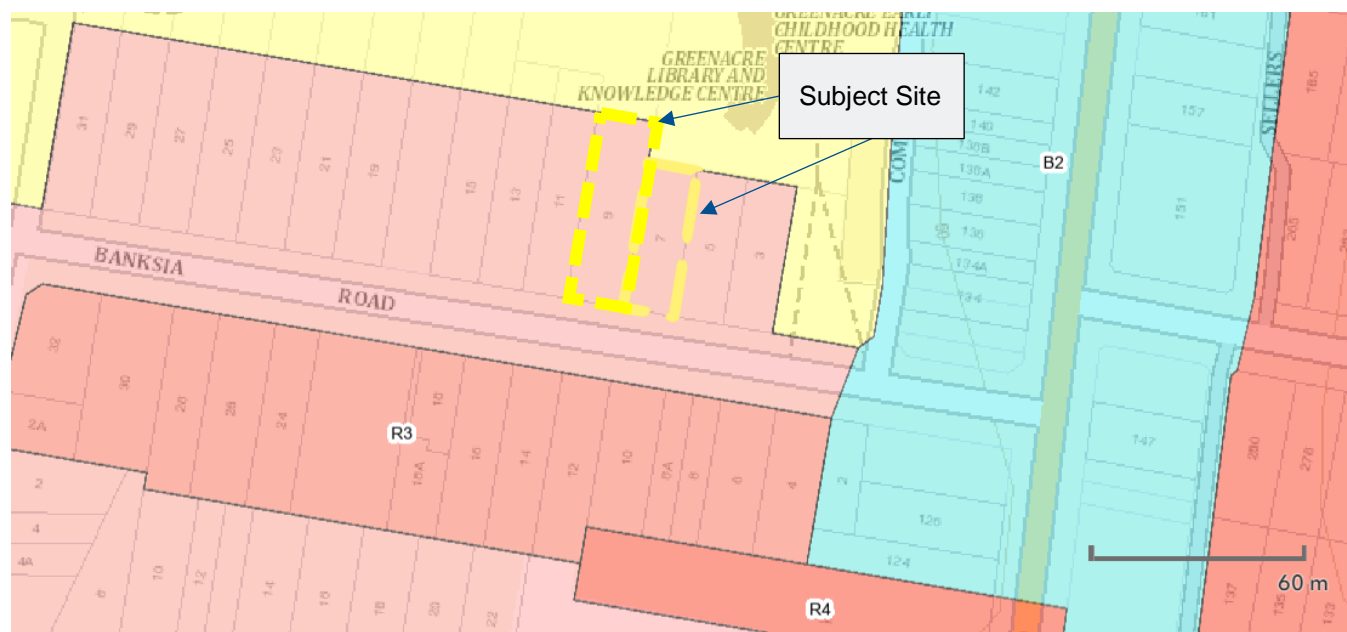
2.3 Zoning and Use

The site is zoned as R2 – Low Density Residential according to the Canterbury-Bankstown LEP (2023). The objectives of this zone are:

- To provide for the housing needs of the community within a low density residential environment.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.
- To allow for certain non-residential uses that are compatible with residential uses and do not adversely affect the living environment or amenity of the area.

- To ensure suitable landscaping in the low density residential environment.
- To minimise and manage traffic and parking impacts.
- To minimise conflict between land uses within this zone and land uses within adjoining zones.
- To promote a high standard of urban design and local amenity.

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, Lockhart-Krause Architects, 18th September, 2024;
- Waste and recycling volumes are based on information provided from the CBDP (2023); 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 housing and structures.

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	50-100	✓	✓	✓	-	<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%	>90%	On site: to be separated wherever possible to enhance resource recovery. Offsite: Removed to C&D facility for crushing and recycling for recovered products.
Bricks/pavers	<5	✓	✓	✓	-	<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	<100	✓	✓	✓	-	<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)	<10	✓	✓	✓	-	0	100	Onsite: To be separated wherever possible to enhance resource recovery. Offsite: Removed to C&D facility for crushing and recycling for recovered products.
Timber (Clean)	<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	-	✓	✓	-	<10%	>90%	Onsite: To be separated wherever possible to enhance resource recovery. Offsite: Removed to C&D facility for crushing and recycling for recovered products.
Metals (ferrous & non-ferrous)	<10	-	✓	✓	-	<10%	>90%	Onsite: Separated wherever possible to improve resource recovery. Offsite: Removed to C&D facility for recovery and recycling.
Floor covering	20-30	-	✓	✓		50%	50%	Should be removed in bulk and sent to carpet recycler or C&D facility for recovery where possible.
Residual waste	10 - 20	-	-	-	✓	100%	-	Resource recovery dependant on facility destination capability.

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

3.2 Construction Waste

Construction works include:

- a two-storey childcare centre with capacity for 115 children; and
- a basement level carpark (with 29 parking bays)

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	1,500-2,000	✓	✓	✓	<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	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.
Concrete	<10	✓	✓	✓	<10%	>90%	Onsite: Separated wherever possible and reused or crushed for filling, levelling or road base. Offsite: Removed to C&D facility for crushing and recycling for recovered products.
Tiles	5-10	✓	✓	✓	<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	-	✓	✓	<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.
Plasterboard	10-15	-	✓	✓	<10%	90%	Onsite: Separated wherever possible to improve resource recovery. Offsite: Returned to supplier or removed to a C&D/plasterboard recovery facility for recovery where possible.
Glass	<5	✓	✓	✓	<10%	>90%	Onsite: Separated wherever possible and reused or crushed for landscaping and driveways. Offsite: Returned to supplier for reuse or removed to C&D facility for crushing and recycling for recovered products.
Metals (ferrous) Metals (non-ferrous)	<10	-	✓	✓	<10%	>90%	Onsite: Separated wherever possible to improve resource recovery. Offsite: Returned to supplier for reuse or removed to C&D facility for recovery and recycling.
Floor covering	<5	✓	✓	✓	<10%	>90%	On site: to be separated wherever possible to enhance resource recovery. Reuse: surplus and offcut material returned to manufacturer for reuse where possible. C&D processor: recovery and recycling.

Type of Material	Estimated Volumes (m ³)	Re-use on-site	Recycle (Separate collection)	Recycle (Off-site)	Landfill	% of landfill diversion	Methods for re-use, recycling or disposal
Fixtures and fittings	Minor	✓	✓	✓			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.
Packaging materials (pallets, wrap, cardboard, etc)	5-10	-	✓	✓	<10%	>90%	Returned to supplier where possible or separated by material type for resource recovery.
Residual waste	5-10	-	✓	✓	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"> • Bingo Industries; • Blue Skip Bin; • 7 Skip Bins Sydney; <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"> • Bingo Recycling Centre; • Gow Street Recycling Centre; • Suez Resource Recovery Parks; <p>Or another appropriate facility as elected by the waste management contractor.</p>
Principal Licensed Landfill Site	<ul style="list-style-type: none"> • Eastern Creek Resource Recovery Park <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 given the daily activities as a childcare with a 95-child capacity. The site will be serviced by site staff and/or site cleaners who will be responsible for the daily collection of waste and its disposal in the bins allocated for collection by a waste service provider (WSP).

Waste management strategies related to site operations have been established according to the CBDPC and NSW EPA guideline documents. Waste generation for the operational phase of the development will be addressed in applying waste generation rates outlined Section 4.2 for the site. Bin requirements and waste storage areas were defined with reference to waste generation rates and have been addressed in Section 4.3.

Site waste management responsibilities have been outlined in Section 5.2.

Building management and/or site cleaning staff will maintain waste storage and management areas located on the ground level, for use by the childcare centre.

The following space calculations are based off the mobile garbage bin (MGB) and bulk bin dimensions sourced from the Canterbury-Bankstown DCP (2023) (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)
140	930	610	530	0.33
240	1,060	730	580	0.43
660	1,250	850	1,370	1.17
1,100	1,470	1,245	1,370	1.71

Source: Canterbury-Bankstown Development Control Plan (2023).

4.2 Waste Generation

Waste generation rates have been assessed from the Canterbury-Bankstown (2023) *Waste Design for New Developments – Guide F Commercial and Industrial Development*, in conjunction with the NSW EPA (2019) *Better Practice Guide for Resource Recovery in Residential Developments*.

Waste generation estimates for the childcare centre are outlined in Table 6 below,

Table 6: Childcare facility waste generation

Waste Stream	CBDPC Generation Rate	NSW EPA Generation Rate
General Waste	20L/child/day	5L/child /day
Recycling	5L/child/day	5L/child/day

Regarding the above and based on MRA's experience on previous projects, the application of EPA waste generation rates for childcare centres is expected to be the most suitable and accurate pathway to determine actual waste generation expectations. On this basis, waste generation estimates for the childcare centre are outlined in Table 7, which assumes five days per week operation.

Table 7: Waste generation estimation

Waste Stream	Generation Rate	Capacity	Weekly Generation Rate
General Waste	25L/per child/week	115 children	2,875L/week
Recycling	25L/per child/week		2,875L/week

4.3 Waste Storage Requirements

Temporary Waste Storage

General waste and recycling bins are placed in high circulation areas across the site such as the play areas, pathways, and kitchen. This waste is collected by site management or cleaner daily and deposited in the respective bins in the Waste Storage and Recycling Area (WSRA).

Waste Storage and Recycling Area (WSRA)

The WSRA for the childcare facility should be located undercover on the basement floor, accessible via the basement car park. On the scheduled waste collection days, staff will be responsible for transporting and facilitating safe waste collection from the designated waste storage area on basement level to the ground floor level by a private waste contractor.

The waste management and storage areas are based upon the above expected waste volumes for the commercial development. Table 8 summarises the waste storage size requirement for the childcare waste and recycling area and includes additional handling space (footprint (m²) x 1.5) and mechanical bin tug for the safe and effective manoeuvring of bins.

Table 8: Alternative waste storage requirement

Waste Stream	Weekly waste generation	Bin types / collection frequencies	Total Minimum Storage space Requirement (m ²)*
General Waste	2,875L	6 x 240L or 3 x 660L bins / twice per week	12m ²
Recycling	2,875L	6 x 240L or 3 x 660L bins / twice per week	
Organics [#]	-	2 x 240L bins / once per week	
Bin tug			2m ²
Total space required			14m²

*Minimum area includes estimated 1.5 x bin footprint (m²) required for bins to accommodate manoeuvring of, and access to bins.

[#]Given the proposed use, some food waste can be expected to be generated from the proposed development. A separate commercial food waste service is expected to be suitable for the proposed development.

The proposed bin storage area is required to be approximately 14m² in size which will be sufficient to fit in the allocated bins for the development, including a bin tug.

The waste management area should be located on the basement level and concealed from general view to maintain site amenity while also reducing the risk of windblown litter, vandalism, and illegal dumping. 240 or 660L MGBs are recommended for the safe and efficient storage of general waste and comingled recycling while smaller MGBs are expected to be suitable for management of organics.

The waste management and storage areas proposed for the childcare facility must fulfil waste management requirements and facilitate safe access and manoeuvring of all bins and equipment for the proposed development. The waste management areas require to have adequate additional space to facilitate changes to waste management

arrangements that may occur in the future, and management can observe bin fullness upon commencement of the use and adjust the number of bins or collection frequencies as required.

4.4 Bulky Waste

Some bulky items may be required to be removed from the site from time to time, including but not limited to broken furniture or appliances. Management will be responsible for arranging timely bulky waste collection by a private waste contractor and therefore the waste storage area is sufficient. The space shall be managed to avoid overspill into the carpark space and access to the lift and stairs.

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:

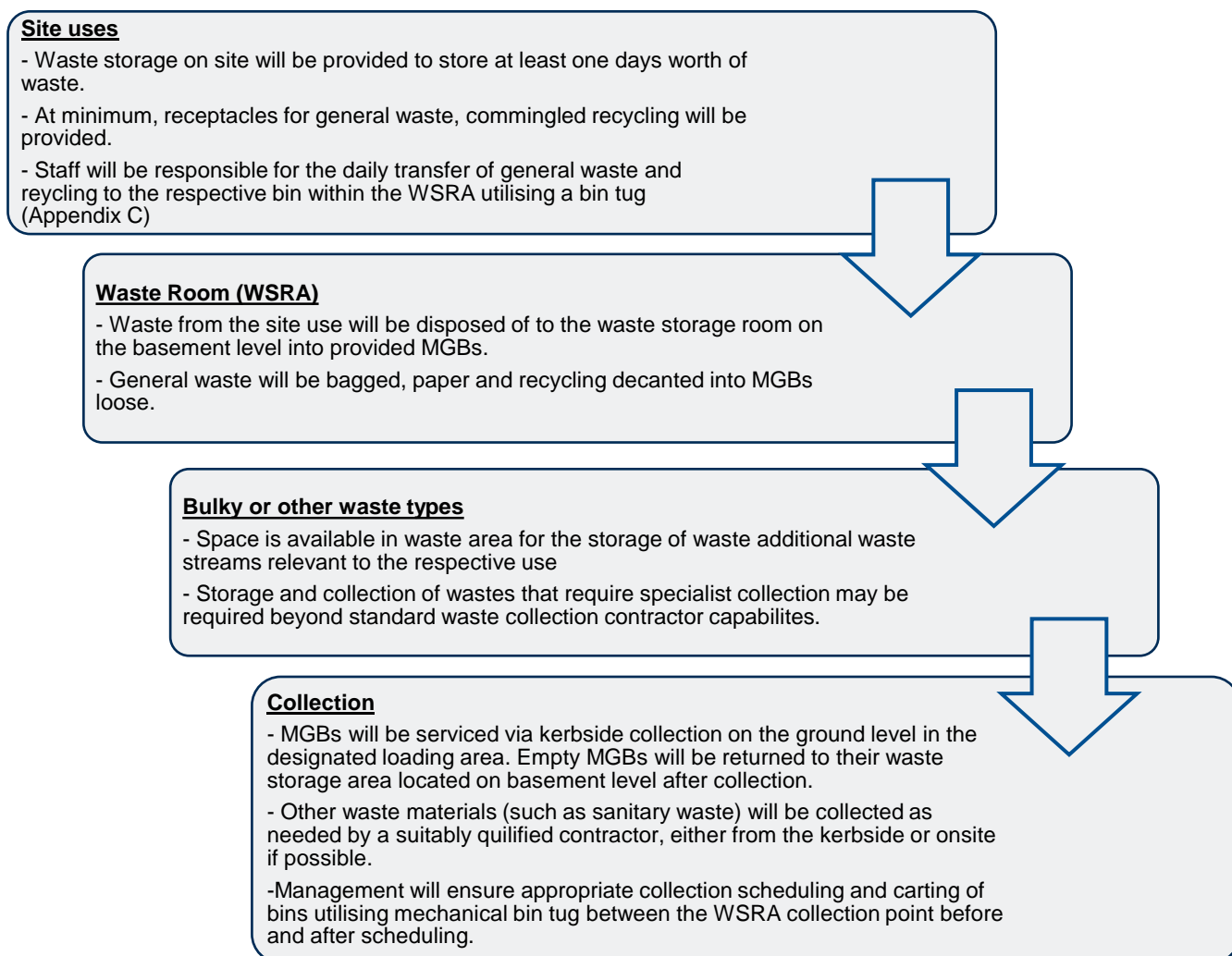
- **General Waste:** General waste shall be placed within a tied plastic bag prior to transferring into collection bins. For collection purposes, general waste shall be stored within a mobile garbage bin (MBG).
- **Commingled Recycling:** All recyclables will be stored in commingled bins (mixed plastic, 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.
- **Commercial Nappy Bin Service and Disposable Gloves Recycling:** Childcare centres daily produce large volume of nappy waste, change pads and gloves. Considering a compostable option for the above items is an increasing practice. Alternatively engaging with Terracycle helps to recycle items that are not collected by kerbside collection services such as latex gloves.
- **Food Waste:** Food organics waste generation from the development can be collected and treated on-site at small scale should management decide to do so. Organics treatment can be used to produce conditioners, compost or vermiculture castings for application on or off-site. Equipment options include different size and capacity composters, dehydrators, worm farms and macerators. For organics treated to acceptable standards, discharge of effluent or any output to sewer as commercial trade wastewater may be permitted.

Alternatively, tenants can make arrangements for the separate collection of its organics by its waste management contractor. In future, food waste can be alternatively stored in a 1,100L general waste sealed bin or refrigerated waste storage prior to collection, if required.
- **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 Disposal and Recycling Method

The flow of general waste and recycling from generation to collection is as follows (Figure 3):

Figure 3: Waste flow diagram



5.3 Deliveries, Collection Method, and Loading Areas

Management will be responsible for holding a valid waste management contract with a commercial waste service provider, who will service bins via kerbside collection on the ground floor loading area outside of operational hours.

Table 10 below outlines relevant requirements and specifications related to the use of collection points and loading areas.

Table 9: 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	<ul style="list-style-type: none"> - Collection from each site use loading area by a mini rear lift collection vehicle;

Component	Requirement	Specification
	operation for a contractor collection vehicle	<ul style="list-style-type: none"> - 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.
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 Waste Management System and Responsibilities

The building management will engage site cleaning staff to enact and monitor day to day waste management operations. Should there be any issues that impact on the operational efficiency, safety and suitability of waste management, the site cleaning staff will inform management. Operation of the waste management system is the responsibility of building management and site cleaning staff.

Responsibilities will include:

- Using this waste management plan to inform waste management operations, design and infrastructure;
- Providing educational materials and information to residents and staff on sorting methods for recycled waste, awareness of waste management procedures for minimisation and recovery;
- Making information available to visitors and workers about waste management procedures;
- Appropriate signage in waste service areas and all waste management areas;
- Using contracts to define the allocation of responsibilities with cleaners and building;
- Holding a valid and current contract with licensed collector(s) for waste and recycling collection and disposal;
- Encouraging waste avoidance and achievement of resource recovery targets;
- Providing operational management for delivery of waste objectives;
- Ensuring regular reinforcement of source separation and effective use of waste facilities;
- Organising waste, recycling and bulky pick-ups by elected contractor for the building.
- Organising, maintaining and cleaning the waste rooms and service rooms;
- Arranging access to waste rooms and bins on collection days and to liaise with the WSP for operational issues;
- Organising cleaning of bins as required;
- Monitoring any vermin and pest issues and arranging appropriate controls (traps or fumigating) and maintenance of doors or other points of potential entry;

The building management and site cleaning staff are also responsible for ensuring that workplace safety requirements according to WorkCover NSW Occupational Health and Safety are upheld.

5.5 Waste Storage Area Specifications

The waste rooms will be constructed to improve amenity, minimise odour, protect surrounding areas and promote user safety, while considering Canterbury-Bankstown (2023) *Waste Design for New Developments – Guide F Commercial and Industrial Development*. Waste room specifications include:

- The size of the bin storage area must be sufficient to cater for all likely waste generation and the required bins for all waste streams. Waste generation is to be determined in accordance with Table 1;
- Equal and convenient access for all tenants is to be provided, with each tenant to have their own allocated area for bin storage
- Sited behind the development building line and incorporated within the development footprint;
- In areas that will not reduce the amenity for tenants and existing users adjoining the development; and
- Located within 10m of the nominated collection point, to minimise bin-carting routes.
- As a minimum, the design should allow for the separate collection of general waste, recycling, paper and cardboard, food waste and pallets;

- g) Bin storage areas can be a stand-alone structure for smaller commercial and industrial developments. Where a stand-alone structure is to be provided it is to be designed and integrated into the overall look of the development in regards to materials and finishes; and
- h) For larger developments (particularly with a high number of individual tenancies) a bin storage area should be provided within the development footprint.
- i) The layout of the bin area must prevent obstructions that impact on bin movement, maintenance and cleaning as well as any servicing requirements.
- j) Floors must be constructed of concrete at least 75mm thick and graded and drained to a Sydney Water approved drainage fitting;
- k) Floors must be finished so that it is non-slip and has a smooth and even surface;
- l) Walls and floors must be constructed of solid impervious material;
- m) Ceilings must be finished with a smooth faced, non-absorbent material capable of being cleaned;
- n) Walls, ceilings and floors must be finished in a light colour; and
- o) If a room or is integrated within the building, a minimum 2.1m unobstructed room height is required in accordance with the Building Code of Australia.

5.6 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;
- The area is to be kept tidy.

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

5.7 Prevention of Pollution and Illegal Dumping

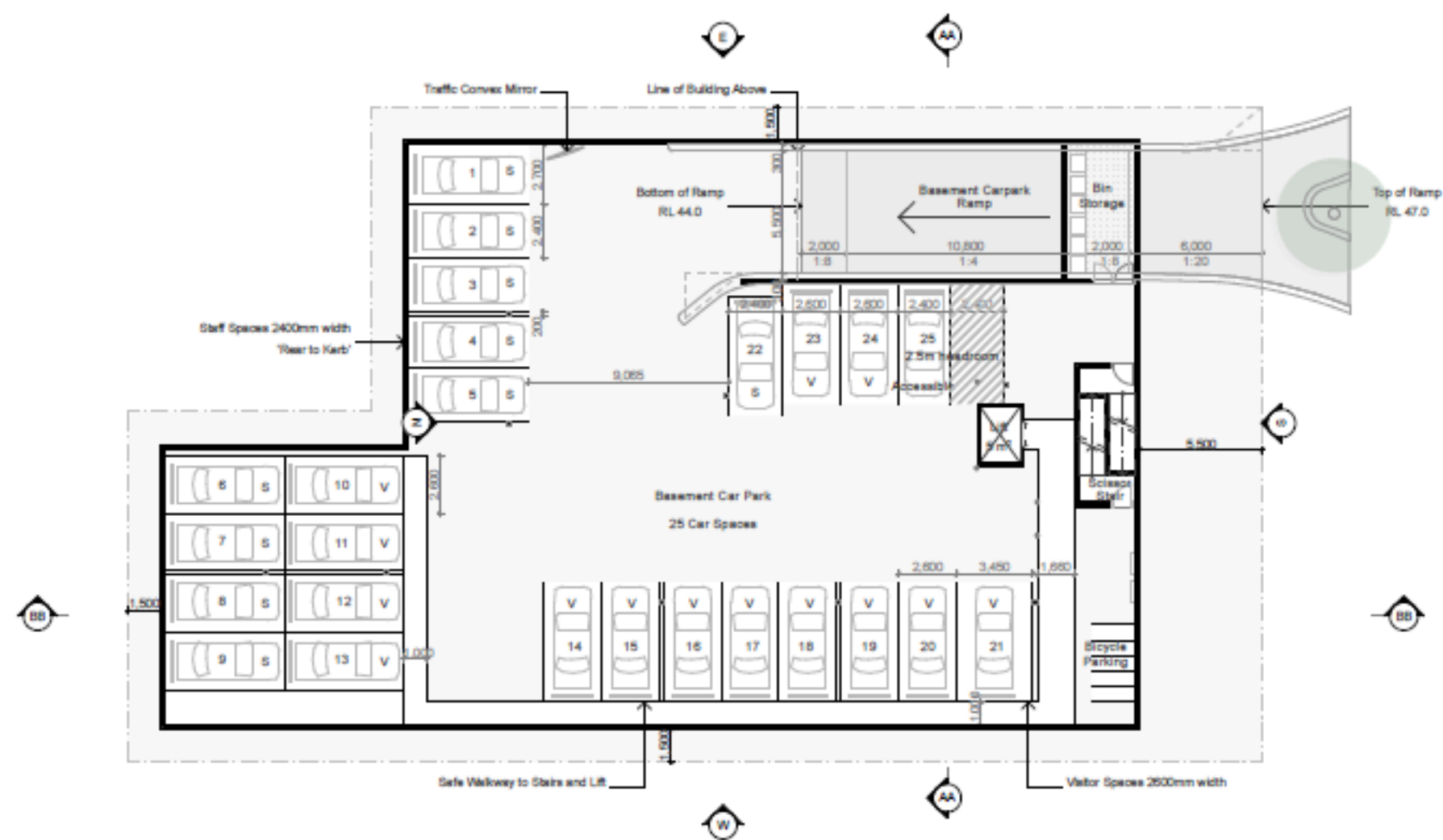
To minimise dispersion of litter and prevent pollution (to water and land via contamination of runoff, dust and hazardous materials), building management and the site cleaning staff will also be responsible for:

- Maintenance of open and common site areas;
 - Ensuring waste room is 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.
- Canterbury-Bankstown Development Control Plan 2023
- Canterbury-Bankstown Local Environmental Plan 2023
- 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: Lockhart-Krause Architects, 2024

Appendix B Waste Equipment Options

Tug Compact POWERED TUG



A nimble powered tug that allows a user to tow up to 500 kg safely. It is the ideal tug for towing document, stock, bin, linen and medical trolleys in and around tight spaces and aisles with ease.

Using the tiller handle to tow the tug, the operator is in front of the load, increasing visibility and reducing the risk of collisions.

Powered towing can eliminate push/pull injuries caused by manually moving heavy trolleys or repetitive movements.



Typical applications

Suitable for warehouses, hospitals, linen service, casinos, hospitality, universities.

Features

Tow capacity	500 kg on flat ground.
Max. speed	Up to 5 km/hour
Speed mode	Three speed control with forward, reverse and emergency stop.
Usability	<ul style="list-style-type: none"> • Grey non-marking tyres. • No driver's licence required. • Simple to use. • Quiet, smooth operation. • Zero emissions.
Hitching	<ul style="list-style-type: none"> • Supplied with a pin hitch. • Wide variety of hitches available for easy attachment to trolleys.
Dimensions (L/W/H)	1100/609/891 mm (handle down)
Battery	Two 12V 33Ah MK-gel batteries with 24V smart charger

Safety features

- Intuitive control with standard automatic safety brake, forward and reverse drive.
- Emergency stop button.
- Emergency back-off button.

ORDER CODES

Tug Compact 500 kg	TUGCOM500NH
Pin hitch (16 mm)	EDHT1810-002
Pin hitch (19 mm)	EDHT1810-043
Clamp hitch*	EDHTCLAMP001
Self-centering hitch	EDHT1810-006

* Each clamp hitch must be supplied with EDHT1810-006 (self-centering hitch) for the Tug Compact.



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smart electric tugs

MOVEXX T1000-D BIN MOVER / BATTERY ELECTRIC

The Moveox 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 Moveox 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 (h)	* Centre mount 2x 240 ltr. wheeled bin attachment	1000	Quick Change Lithium



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

movexx

smart electric tugs

MOVEXX T2500

BIN MOVER / BATTERY ELECTRIC

Moveix 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 ltr. wheeled bin attachment	2500	AGM batteries 2x 85AH up to 8 hrs continuous operation



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 4: Examples of standard signage for bin uses



Safety Signs

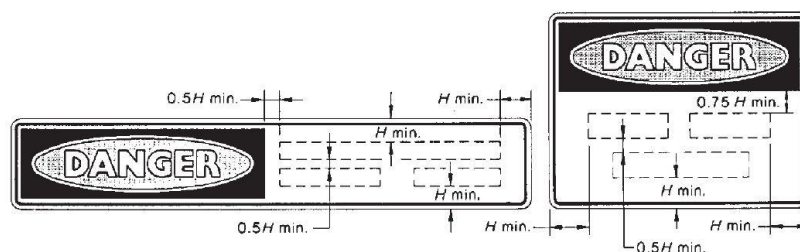
The design and use of safety signs for waste and recycling rooms and enclosures should comply with AS 1319 (Standards Australia 1994). Safety signs should be used to regulate, and control safety related to behaviour, warn of hazards and provide emergency information, including fire protection information.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