23 Dalcassia St, Hurstville: Waste Management Plan

A Submission to The Salvation Army

29th September 2020

MRA Consulting Group

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Disclaimer

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Glossary

Terminology	Definition
AS	Australian Standard
C&D	Construction and Demolition
C&I	Commercial and Industrial
DA	Development Application
DC	Development Consent
DCP	Development Control Plan
DECC	Department of Environment and Climate Change
ENM	Excavated Natural Material
EPA	Environment Protection Authority
GRC	Georges River Council
HDCP	Hurstville Development Control Plan 2012
HLEP	Hurstville Local Environmental Plan 2012
LGA	Local Government Area
MGB	Mobile Garbage Bin
MSW	Municipal Solid Waste (also referred to as domestic or residential waste)
VENM	Virgin Excavated Natural Material
WMP	Waste Management Plan
WNDCP	Waste Not Development Control Policy
WSP	Waste Service Provider
WSRA	Waste Storage and Recycling Area

1 Introduction

MRA Consulting Group (MRA) was engaged by The Salvation Army (TSA) to prepare a Waste Management Plan (WMP) for a proposed mixed use development incorporating community facilities, place of public worship and residential housing for those in need, located at 23 Dalcassia Street, Hurstville. The lot is situated in the Georges River Council Local Government Area (LGA).

This development will feature:

- Four levels of basement carparking;
- Ground and first floor community space, church, offices, and café;
- Five levels of residential/crisis accommodation consisting of:
    - Family units (4 x two-bedroom units and 5 x three-bedroom units); and
    - Women's units (18 x studio units).
- Rooftop shared terrace.

The site will feature crisis accommodation consisting of a mix of studio, 2, and 3-bedroom units, and community service, worship, and administrative spaces in the ground and first floors of the development. The development of the site will involve the demolition of the existing community building and ancillary administration offices, excavation of four levels of basement car parking, and the construction of a seven-storey mixed use building.

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

- *Hurstville Local Environmental Plan (HLEP) 2012; and*
- *Hurstville Development Control Plan (HDCP) 2012.*

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

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

This WMP has been prepared to inform the development design and assist in the delivery of better practice waste management, promoting sustainable outcomes at the demolition, construction, and operational phases for the development. The WMP addresses waste generation and storage associated to the excavation, construction and ongoing occupation of the proposed development.

The *HDCP (2012)* outlines the following waste management objectives which include:

a) Assist in the achievement of effective and efficient waste management and minimization practices across all developments; and,

b) Ensure that where practical all land use activities comply with the relative provisions of any applicable acts, regulations, and other statutes in relation to waste management and waste minimisation initiatives.

2 Background

2.1 Description of Proposed Development

The site is identified as Lot 1 of DP 586989 of the Hurstville Local Environmental Plan 2012 (HLEP). The site area is approximately 1,682m^2 and the proposed development is located on the proposed lot being approximately 1,085m^2. The site is currently occupied by an administration building, a single-storey brick dwelling, and a community centre and place of worship.

The proposed development will include:

- Four levels of basement car parking;
- The Salvation Army Community Space/Place of Worship, retail and café uses over the ground and first floors;
- Five levels of residential/crisis accommodation consisting of:
    - Family units (4 x two-bedroom units and 5 x three-bedroom units); and
    - Women's units (18 x studio units).
- A rooftop shared terrace.

2.2 Location

The proposed development is situated approximately 400m from Hurstville Train Station, and approximately 18km from Sydney's city centre.

Figure 1: Aerial image of the site and surrounding roadways

Source: Nearmap, 2020.

2.3 Zoning and Use

The site is zoned as SP2 – Infrastructure (Church and Community Purpose) in the HLEP, which is defined by the following objectives:

- To provide for infrastructure and related uses.
- To prevent development that is not compatible with or that may detract from the provision of infrastructure.

Currently, the site is occupied by The Salvation Army community and church with associated administration offices. Zones surrounding the site include R3 – Medium Density Residential, and B4 – Mixed Use.

2.4 Assumptions

This report is a WMP, forming part of the development documentation and assumes:

- Drawings and information that have been used in waste management planning for this WMP are the final reference/indicative design set for the development plan from the project architect, Integrated Design Group (28th September 2020);
- The Hurstville Development Control Plan (2012), and the NSW EPA Better Practice Guidelines (2019) outlines waste generation rates and services available for new developments which have been considered in the preparation of this report; and
- This WMP is a living document and therefore, waste management equipment and systems described in this report are subject to change based on future operations and available technology.

3 Construction Waste Management

Demolition and construction activities at the site will generate a range of construction and demolition (C&D) wastes. Throughout the development process, all materials will be reused and recycled where possible, minimising the disposal (landfilling) of materials other than those that are contaminated or unsuitable for reuse or recycling processes.

Waste storage during construction operations will involve some stockpiling of reusable material, as well as placement of skip bins for the separation of construction materials for recycling. A skip bin for residual waste or contaminated material will also be made available at the site for disposal where necessary. Skip bins may require alternative placement across construction operations to facilitate the safe and efficient storage of materials and will be retained within property boundaries to avoid illegal dumping. The calculations for C&D waste generation below assume best-practice source separation of materials, sent to a resource recovery facility for reuse and recycling.

A waste storage area (Figure 5, Appendix A) shall be designated by the demolition and construction contractor and shall be sufficient to store the various waste streams expected during operations. Waste storage areas will be kept clear to maintain vehicular access and shall also be kept tidy to encourage separation of waste materials and for WHS reasons.

Waste management principles, management measures and facilities in use on the site shall be included as part of the site induction for all personnel working on the site.

3.1 Demolition Waste

This section details the demolition waste materials expected for the proposed development, including their quantities and management options, and was designed with consideration of the requirements in the HDCP.

The information below presents options for materials reuse, recycling and disposal where applicable (e.g. excavation material may be reused as a construction fill or disposed to landfill if contaminated). All materials are intended to be sent to a suitable, licensed landfill or resource recovery facility.

Demolition works would include the following:

- Demolition of a single-storey brick dwelling;
- Demolition of community hall and church; and
- Removal of some vegetation.

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

Type of waste generated		Quantity	Reuse	Recycling	Disposal	Methods for reuse, recycling and disposal
Concrete		300m³	✓	✓	-	On site: to be separated wherever possible to enhance resource recovery. C&D processor: crushing and recycling for recovered products (aggregates).
Bricks/pavers		35m³	✓	✓	-	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	**Roof**	10m³	✓	✓	-	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.
	Interior	<20m³	✓	✓	-	
Timber (engineered/treated)		<5m³	-	✓	-	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)		<10m³	-	✓	-	Onsite: to be separated wherever possible to enhance resource recovery. C&D processor: metals recovery and recycling.
Plasterboard		<2m³	✓	✓	-	On site: to be separated wherever possible to enhance resource recovery. Reuse: surplus and offcut material returned to manufacturer for reuse.
Glass		<1m³	✓	✓	-	On site: to be separated wherever possible to enhance resource recovery. Reuse: surplus and offcut material returned to manufacturer for reuse where possible. Glass recycler: recovery and recycling.
Fixtures and fittings		<2m³	✓	✓	-	On site: reuse wherever possible or return to manufacturer.

					Reuse: surplus and offcut material returned to manufacturer for reuse where possible. C&D processor: recovery and recycling.
Floor coverings	<1m^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.
Packaging (used pallets, pallet wrap)	25m^3	✓	✓	-	On site: to be separated wherever possible to enhance resource recovery. C&D processor: recycling of timbers and plastic.
Garden organics (Vegetation)	<5m^3	✓	✓	-	Minimal garden organic waste from landscaping. Organics processor: storage on-site (from minor excavations) processing for recovered product (e.g. mulch or other blended recovered fines) or organics treatment.
Containers (cans, plastic, glass)	<2m^3	-	✓	-	Commercial contractor: recycling.
Paper/cardboard	10m^3	-	✓	-	Commercial contractor: segregation of paper, cardboard or other streams.
Residual waste (general refuse)	20m^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 Construction Waste

Construction works would include the following:

- Construction of mixed-use crisis accommodation and community and worship development; and
- Landscaping.

Table 2 outlines the expected construction waste quantities to be generated at the site, 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: Estimation of construction waste materials for reuse, recycling, and landfill

Type of waste generated		Quantity	Reuse	Recycling	Disposal	Methods for reuse, recycling and disposal
Excavation material		10,400m^3	✓	-	-	• On site: testing (if necessary) for contamination and stockpiling of material for reuse as fill material. • C&D processor: reuse/recycling of VENM and ENM • Landfill if contaminated.
Concrete		80m^3	✓	✓	-	• On site: to be separated wherever possible to enhance resource recovery. • C&D processor: crushing and recycling for recovered products (aggregates).
Bricks/pavers		<15m^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	**Roof**	N/A	✓	✓	-	• 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.
	Interior	<5m^3	✓	✓	-	
Timber (engineered/treated)		<5m^3	-	✓	-	• On site: to be separated wherever possible to enhance resource recovery. • Reuse: surplus and offcut material returned to manufacturer for reuse. • C&D processor: recovery and recycling for recovered product (e.g. mulch) or organics processing.
Metals (ferrous and non-ferrous)		<10m^3	-	✓	-	• Onsite: to be separated wherever possible to enhance resource recovery. • C&D processor: metals recovery and recycling.

Plasterboard	<2m^3	✓	✓	-	• On site: to be separated wherever possible to enhance resource recovery. • Reuse: surplus and offcut material returned to manufacturer for reuse.
Glass	<1m^3	✓	✓	-	• On site: to be separated wherever possible to enhance resource recovery. • Reuse: surplus and offcut material returned to manufacturer for reuse where possible. • Glass recycler: recovery and recycling.
Fixtures and fittings	<2m^3	✓	✓	-	• On site: reuse wherever possible or return to manufacturer. • Reuse: surplus and offcut material returned to manufacturer for reuse where possible. • C&D processor: recovery and recycling.
Floor coverings	<1m^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.
Packaging (used pallets, pallet wrap)	25m^3	✓	✓	-	• On site: to be separated wherever possible to enhance resource recovery. • C&D processor: recycling of timbers and plastic.
Garden organics (Vegetation)	<5m^3	✓	✓	-	• Minimal garden organic waste from landscaping. • Organics processor: storage on-site (from minor excavations) processing for recovered product (e.g. mulch or other blended recovered fines) or organics treatment.
Containers (cans, plastic, glass)	<2m^3	-	✓	-	• Commercial contractor: recycling.

Paper/cardboard	10m^3	-	✓	-	• Commercial contractor: segregation of paper, cardboard or other streams.
Residual waste (general refuse)	20m^3	-	-	✓	• Separate recyclables where possible and disposal at principal licensed waste facility.
Hazardous/special waste (e.g. spills and contaminated wastes)	Unknown	-	-	✓	• Management by a licensed asbestos and site hygienist should hazardous or special waste be found at the site.

3.3 Waste Contractors and Facilities

To ensure best practice waste management, appropriate contractors and facilities have been proposed based on their location and service offerings (Table 3).

Table 3: Waste service contractors and facilities

Role	Details
Recommended Waste Collection Contractor	The following are local skip bin operators for consideration in the management of excavation and construction waste for the site: • Bingo Bins; • Orange Bins; • Combined Skips; and • Empire Bins. Or another supplier as elected by the building contractor.
Principal Off-Site Recycler	The following are local C&D processing facilities for consideration in the management of C&D waste generated at the site: • Bingo - Mortdale, • SUEZ Rockdale, • Gow Street Recycling Centre, and • Bingo – Banksmeadow. Or another appropriate facility as elected by the waste management contractor.
Principal Licensed Landfill Site	SUEZ Kemps Creek Landfill or Genesis Eastern Creek Landfill, or other appropriate facility as elected by the waste management contractor.

3.4 Site documentation

This WMP will be retained on-site during the excavation and construction phases of the development, along with other waste management documentation (e.g. contracts with waste service providers).

Responsibility for the WMP, waste documentation and processes during the excavation and construction phases will be with the site manager or builder.

A logbook that records waste management and collection will be maintained on site, with entries including:

- Time and date of collections;
- Description of waste and quantity;
- Waste/processing facility that will receive the waste; and
- Vehicle registration and company name.

Waste management documentation, the logbook and associated dockets and receipts must be made available for inspection by an authorised Council Officer at any time during site works.

4 Use & Ongoing Waste Management

Waste management strategies related to site operations have been established according to the documents outlined in the HDCP.

Site waste management responsibilities have been outlined in Section 5.3.

Additional bin infrastructure will be maintained at the site to manage waste associated with the ground floor ancillary services and common use areas. Building management and the site waste caretaker will maintain waste storage and management areas located on the basement level 1, for use by all residents and users of the building.

It is noted that landscaping at the site will be maintained by an external contractor who will remove all vegetation waste from ongoing maintenance activities. In addition, since the proposed development is for apartments, it is unlikely that a high quantity of garden waste will be generated and therefore, no garden waste bins will be retained at the site.

The following space calculations are based off the bin dimensions sourced from NSW EPA's *Better Practice Guide for Resource Recovery in Residential Developments* (2019) (Table 4).

Table 4: MGB capacity and footprint

Bin Capacity (L)	Height (mm)	Depth (mm)	Width (mm)	Footprint (Approx. m^2)
80L	870	530	450	0.24
120	940	530	485	0.33
240	1,080	735	580	0.43
660	1,250	850	1,370	1.16
1,100	1,470	1,245	1,370	1.71

Source: Better practice guide for resource recovery in residential developments (2019).

4.1 Community Facilities and Place of Public Worship Waste Generation

The ground and first floor of the proposed development will be occupied by a variety of non-residential uses, such as office space, a café, and community and church spaces. Table 5 below outlines expected waste generation from these uses. It is assumed the office space will be occupied five days a week, and the café, and community and church spaces will operate on an ad-hoc basis. At a maximum, the facilities will operate seven days a week.

Table 5: Commercial Waste Generation

Use	Waste Stream	HDCP Generation Rate	Weekly Generation (L)
Café ($105m^2$)	**General Waste**	10L per $1.5m^2$ per day	4,900
	Recycling	2L per $1.5m^2$ per day	980
Offices ($100m^2$)	**General Waste**	50L per $100m^2$ per day	250
	Recycling	10L per $100m^2$ per day	125
Community Centre and Church* ($640m^2$)	**General Waste**	5L per $100m^2$ per day	224
	Recycling	10L per $100m^2$ per day	448

**The generation rate for this type of use have been taken from the NSW EPA Better Practice Guidelines 2019.*

In total, the commercial spaces for the development will generate:

- General waste: 5,374L
- Recycling: 1,553L

4.2 Residential Waste Generation

There will be a total of 27 dwelling units in the residential portion of this development. The HDCP specifies the following waste generation rates for Residential Flat Buildings (RFB):

- One 240L red-lid garbage bin shared between four units, collected twice weekly; and
- One 240L yellow-lid recycling bin shared between three units, collected weekly.

Based on the above direction from the HDCP, Table 6 outlines the equivalent waste generation rate per residential dwelling which will be applied to the site.

Table 6: Boarding House Waste Generation

Dwellings	Waste Stream	HDCP Generation Rate	Weekly Generation (L)
27	General Waste	120L per occupant space per week	3,360
	Recycling	80L per occupant space per week	2,160

4.3 Site Bin Requirements

Temporary Waste Storage

Each dwelling must have sufficient space provisioned for the storage of one days' waste generated. This includes separate receptacles for general waste and recycling. Communal areas will have space provisioned for the storage of small public bins/containers.

Site Central Waste Storage

The HDCP does not set out a requirement for separate waste storage areas for commercial and residential uses. A centralised waste storage point will be located onsite to consolidate and store waste prior to collection. The table below outlines bin options to manage residential waste at this site.

Table 7: Site Bin Options

Component of Site	Waste Stream	Weekly Waste Generation (L)	One collection per week		Two collections per week	
			240L	660L	240L	660L
Community Facilities and Place of Public Worship	**General Waste**	5,374	22	9	11	**5**
	Recycling	1,553	6	3	3	**2**
Residential	**General Waste**	3,360	14	6	7	**3**
	Recycling	2,160	9	4	5	**2**

The 660L size bin has been selected as the most appropriate application for management of general waste for the proposed development due to space availability, manoeuvring distances to the kerbside and waste generation rates. These bins have a greater capacity than 240L bins typically used for single households, allowing for less frequent bin maintenance. 660L bins are also more manoeuvrable and lighter than the larger 1,100L bins, making waste management easier and safer for building management. In total, considering maximum potential waste generation from non-residential uses onsite, a total of 13 x 660L bins will be required for this site.

With consideration to how waste is distributed across uses of the site, a private waste contractor is suggested to be engaged to service all waste generated from the site. Bins for the storage of waste related to residential and commercial/other site users should be kept separate. The following collection schedule is recommended to ensure waste is appropriately managed and number of bins is not excessive:

- General waste collection twice per week; and
- Recycling collection twice per week.

4.4 Bulky Waste

The boarding rooms as part of this development will be pre-furnished and it is not expected that large volumes of bulky waste will occur as a result of residential occupation. While the Hurstville DCP does not include a requirement for bulk waste storage, an area of 4m^2 will be provided for each residential and commercial uses of the site. Bulk waste will be stored in each of the commercial and residential waste rooms located within the upper basement level of the development.

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.

4.5 Waste Storage Area Requirements

The table below outlines space requirements for waste management across both residential and commercial uses of the site.

Table 8: WSRA space requirements

Site Component	Equipment	Space Required	Total recommended area with handling space
Commercial	**General Waste Bins (5 x 660L)**	5.8m^2	16m^2
	Recycling Bins (2 x 660L)	2.32 m^2	
	Bulky Waste	4 m^2	
Residential	**General Waste Bins (3 x 660L)**	3.48 m^2	13m^2
	Recycling Bins (2 x 660L)	2.32 m^2	
	Bulky Waste	4 m^2	

The waste management and storage areas proposed for the site fulfil waste management requirements, facilitating safe access and manoeuvring of all bins and equipment. The site 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.

4.6 Additional Waste Streams

Management may like to include the following collection systems to increase resource recovery onsite.

4.6.1 Container Deposit Scheme (CDS) eligible materials

Recyclable containers eligible for the NSW EPA's "Return and Earn" container deposit scheme can be collected separately to commingled recycling. Reverse Vending Machines (RVMs) accept these containers and issue refunds through retail vouchers (to spend or swap for cash), online into a PayPal account, or donated to a selected charity. The location of either the RVM or CDS material bin can be in a public area for use by both residents and visitors to the site.

There are a few options to achieve CDS material recovery – a sorting machine can be purchased with the assistance of the EPA BinTrim equipment rebate program. This covers up to 50% of capital machinery costs up to $50,000. This option also allows users to directly collect or donate their refund.

Otherwise, a separate bin can be used to collect CDS materials which will be collected by a service provider such as St George Recyclers. This is a free collection services with the refund paid out via bank transfer to the organisation. St George Recyclers will either provide a blue bin ($59 fee for delivery within 14 days) or are able to collect CDS materials contained in garbage bags.

4.6.2 Soft Plastics

Soft plastics cannot be placed in kerbside recycling bins; however, they can still be diverted from landfill. REDcycle is a recycling program working in conjunction with Coles and Woolworths Supermarkets, that collects soft plastics to be processed by Replas into recycled plastic products. Soft plastic waste can be collected on-site and taken to the nearby Coles (Hurstville Central Shopping Centre, 225 Forest Road, Hurstville).

Management can also engage a waste service such as Cleanaway to collect soft plastic waste. However, this is unlikely to be necessary if the volumes of plastic waste generated are not significant.

4.6.3 E-Waste collection

This can be either an on-call service or scheduled collection depending on the need. A 120L bin to store E-Waste awaiting collection can be placed in the bulky waste section of the waste storage area. Otherwise, the closest TechCollect drop-off location for free disposal of E-Waste is at the Georges River Council Works Depot (100 Roberts Ave, Mortdale).

4.6.4 Textiles bins

Storage of textile waste prior to collection or drop-off can be in the bulky waste area, in garbage bags or in a designated clothing bin.

Re-useable clothing

There are a number of services which will collect clothes in good quality for free. Clothing Cleanup offers free collection of unwanted clothing. Clothes must be placed in plastic bags and left in a location organised during the booking process. See https://clothingcleanup.com.au/ for more information.

Unusable clothing waste

Dirty, ripped, or otherwise unwearable clothing waste can still be repurposed or recycled. Major fashion retailers such as H&M and Zara accept clothing waste which is then recycled into cleaning cloths, insulation for cars and homes, and other products.

4.6.5 Mattress Collection

This service is provided as an on-call service when required. Soft Landing is a leading social enterprise in Sydney, providing collection and resource recovery services for mattresses. Bookings can be made online or by phone.

5 Equipment and Waste Management Systems

5.1 Collection Method and Loading Areas

Waste collection for the site will be conducted by a private waste contractor. Bin loading will occur at the kerbside, due to the restricted manoeuvring space and limited overhead clearance within the basement levels of the development.

Bins will be transferred from the waste storage areas to the kerbside using a motorised bin tug (an example can be found in Appendix B). The carting distance between the bin storage and kerbside is approximately 25m.

The site waste caretaker will be responsible for bin set out and return of bins to the bin storage area as soon as practicable following collection.

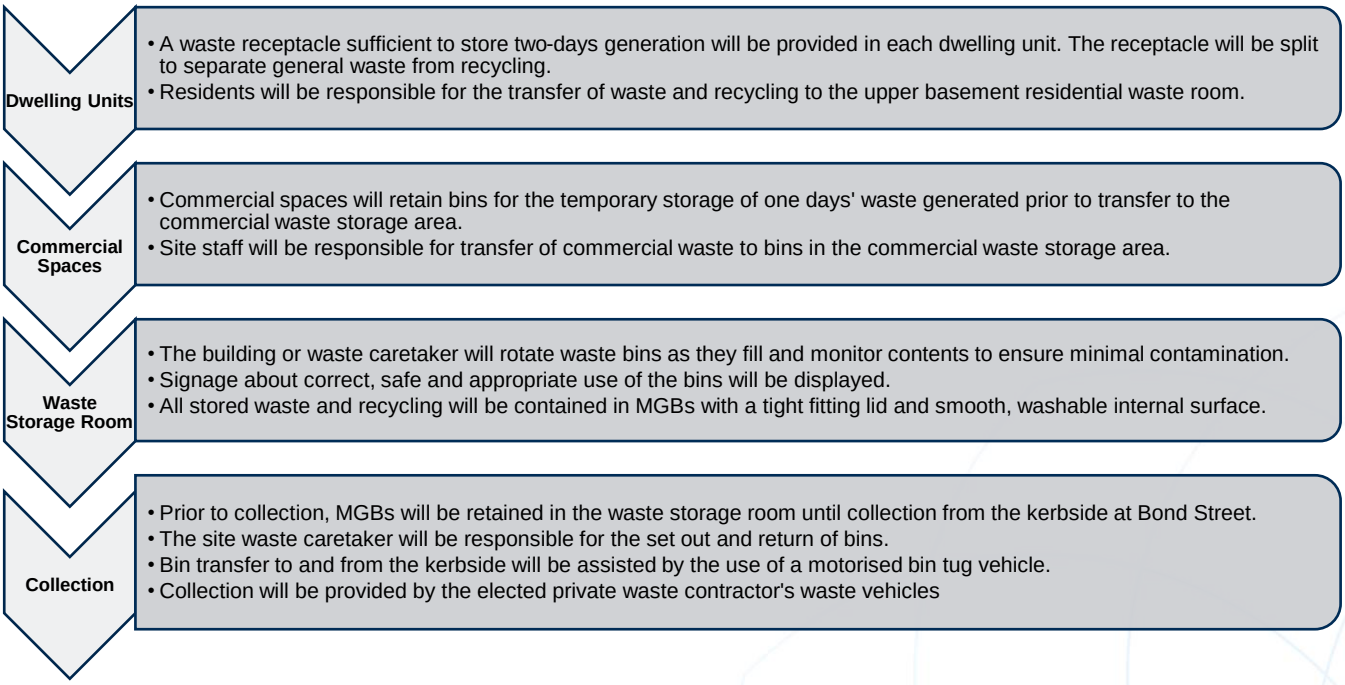
Waste collection for the site, including the collection point for the waste contractor and areas for handling and loading are as follows:

- Collection is to occur during reasonable hours to avoid disturbance and amenity impact to neighbouring residents;
- Waste trucks will load bins from the site frontage at Bond Street;
- Clear, safe, accessible, and convenient space for handling of MGBs and equipment and loading of collection vehicles;
- Facilitation of waste collection will be through the site waste caretaker who will be responsible for transfer of bins between the storage area and the kerb; and
- Identifiable areas where residents, visitors and site staff can recognise and avoid any risk associated with moving vehicles, and bin moving and handling.

5.2 Waste Disposal and Recycling Method

The flow of waste goes from generation to collection through several steps.

Figure 2: Waste Flow



5.3 Management System and Responsibilities

Building management 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, the waste caretaker will inform management. Operation of the waste management system is the responsibility of building management and the waste caretaker. 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, visitors and site staff about waste management procedures;
- Collection of waste from ground floor ancillary services in a mobile waste management/janitor trolley, for direct disposal into designated bins retained in the waste storage area;
- Manoeuvring bins to specified onsite collection point prior to and following scheduled collection of waste bins;
- Organising, maintaining and cleaning waste management areas as part of a regular maintenance schedule (every 3-6 months);
- Maintenance of equipment and infrastructure for waste where possible (within the means of staff);
- Organising the relevant waste contractor for additional maintenance or waste management for the site (including bulky waste);
- 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 Waste Storage and Recycling Area Specifications

The waste storage area will provide centralised storage that has adequate capacity to receive and store the maximum likely generation of waste and recycling between collection times. The waste storage area will be constructed to improve amenity, minimise odour, protect surrounding areas and promote user safety. Specifications include:

- 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;
- Cold water being provided in the room with the outlet located in a position so that it cannot be damaged, and a hose fitted with a nozzle being connected to the outlet;
- An overhead type door being provided to the room having a clear opening of not less than 1.8m;
- A galvanised steel bump rail at least 50mm clear of the wall being provided at the height of the most prominent part of the garbage containers;
- Construction to conform to the Building Code of Australian Standards and local laws;
- Waste room floor to be constructed of reinforced concrete at least 75mm thick and sealed with a two-pack epoxy;
- Wastewater discharge from bin washing must be drained to sewer in accordance with Sydney Water.
- Signage for safety and waste bin identification;
- Safety precautions, staff training and signage for plant;
- Noise attenuation for waste management and waste storage area that limits effects to residents from compactor, bin transfer and collection vehicle noise;
- Grading and draining to an approved drainage fitting located in the room;
- A smooth, even floor surface covered with vertical wall and plinth faces;
- Doorway ramp (if not level);
- Light colour finish for all room surfaces;
- Close-fitting and self-closing door, large enough to facilitate access of 240L bins and bulky waste items;
- Suitable construction including limited entry paths to prevent vermin;
- Ventilation through permanent unobstructed ventilation (5% of floor area) or mechanical exhaust ventilation system (5L/s per m^2 of floor area); and
- Security and lighting.

5.5 Signage and Education

Signage that promotes resource recovery, waste minimisation, safety and amenity follows the Australian Standard for safety signs for the occupational environment (Standards Australia 1994, Figure 2 and 3).

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

- Detail on 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 B, Figure 6 and Figure 7).

5.6 Prevention of Pollution, Illegal Dumping and Litter Reduction

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

- Maintenance of communal areas and the waste storage area;
- 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);
- Acting to prevent dumping and unauthorised use of waste areas; and
- Requiring contractors to clean up any spillage that may occur during waste servicing or other work.

6 DCP Compliance Checklist

The HDCP outlines the following design requirements for waste management during demolition and construction:

Table 9: DCP Compliance

Development Phase	Requirement	Reference
Demolition and Construction	Section 1 of the waste management plan must be submitted with plans that show:	
	The location of areas that will be used for the sorting of construction recyclables/waste.	Figure 5 of Appendix A
	The location of areas that will be used for the storage of construction recyclables/waste, including the location of associated containers/skips	
	The point at which vehicles removing construction recyclables/waste will access the site.	
Ongoing Use of Site	Plans submitted with the development application must clearly show:	
	The location of on-site waste and recycling storage areas and, or rooms which provide sufficient space for the storage of Council's garbage and recycling bins (refer to Appendix 1 for bin dimensions). All dwellings will share 240L garbage and recycling bins. Some very large high-rise developments may share 1,100L bulk bins for garbage.	Figure 3 of Appendix A
	The location of any indoor garbage and, or recycling or food garbage collection cupboards or rooms for each dwelling, if applicable.	Figure 3 of Appendix A
	The location of any garbage chutes.	N/A
	The design and location of any garbage compaction equipment, including details of manufacturing specifications; and,	N/A
	The path of travel from a common bin storage area/room to the designated collection point	Figure 3 and Figure 4 of Appendix A

Development Phase	Requirement	Reference
	For the Commercial component of the development:	
	Each development must be provided with sufficient on-site space to store garbage and recycling bins of a sufficient type, size and number in accordance with the waste generation rates described in Appendix 1 – 'Waste and Recycling Generation Rates'.	Section 4.1 Section 4.3
	The location of the on-site bin storage areas and, or rooms should be situated so as not to impact negatively on the visual amenity of the area and should preferably be located in the front yard of the development.	Figure 3 of Appendix A
	The bin storage area or room should also be designed to minimise the impact upon neighbouring properties, for example impacts from odour or vermin.	Section 5.4
	The bin storage area or room should be designed in accordance with the recommendations outlined in Appendix 1.	Section 5.4
	Building management will be responsible for on-site waste management and is to ensure that bin storage areas and or rooms remain clean and tidy at all times (i.e. no rubbish is to be placed outside of a mobile garbage bin). If Council's waste contractor cannot access the bin storage area/room, the bins will not be collected	Section 5.1

7 References

Australian Department of Sustainability, Environment Water, Population and Communities (2011) Construction and Demolition Waste Guide - Recycling and Re-use Across the Supply Chain.

Georges River Council (2012) Hurstville Development Control Plan.

Georges River Council (2012) Hurstville Local Environmental Plan.

NSW EPA (2014) NSW Waste Avoidance and Resource Recovery Strategy 2014-21.

NSW EPA (2014) Waste Classification Guidelines.

NSW EPA (2019) Better Practice Guidelines for Resource Recovery in Residential Developments.

NSW Government (1979) Environmental Planning and Assessment Act.

NSW Government (1997) Protection of the Environment Operations Act.

NSW Government (2000) Environmental Planning and Assessment Regulation.

NSW Government (2001) The Waste Avoidance and Resource Recovery Act.

Appendix A Site Plans

Figure 3: Site Upper Basement Plan

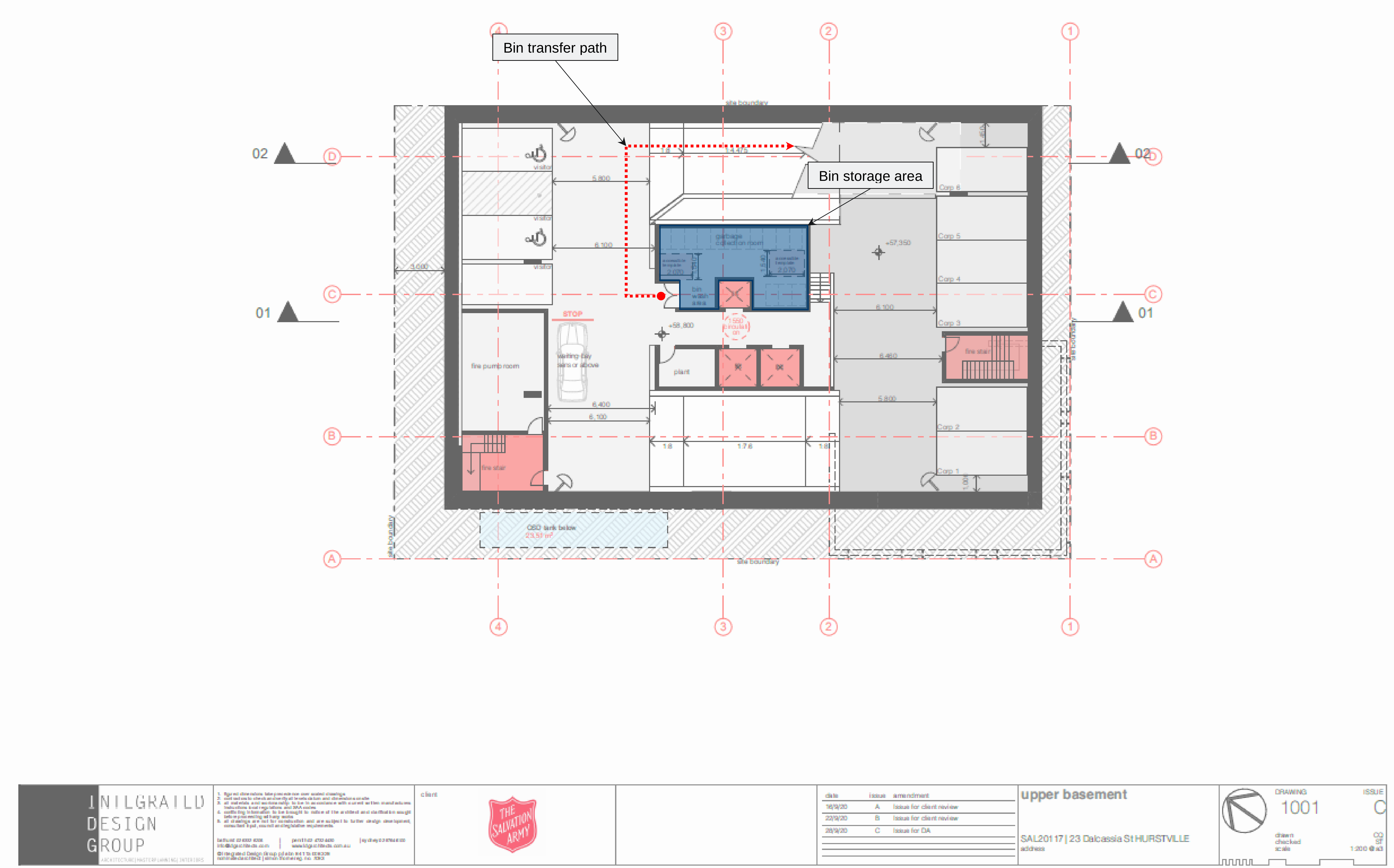


Figure 4: Ground Floor Site Plan

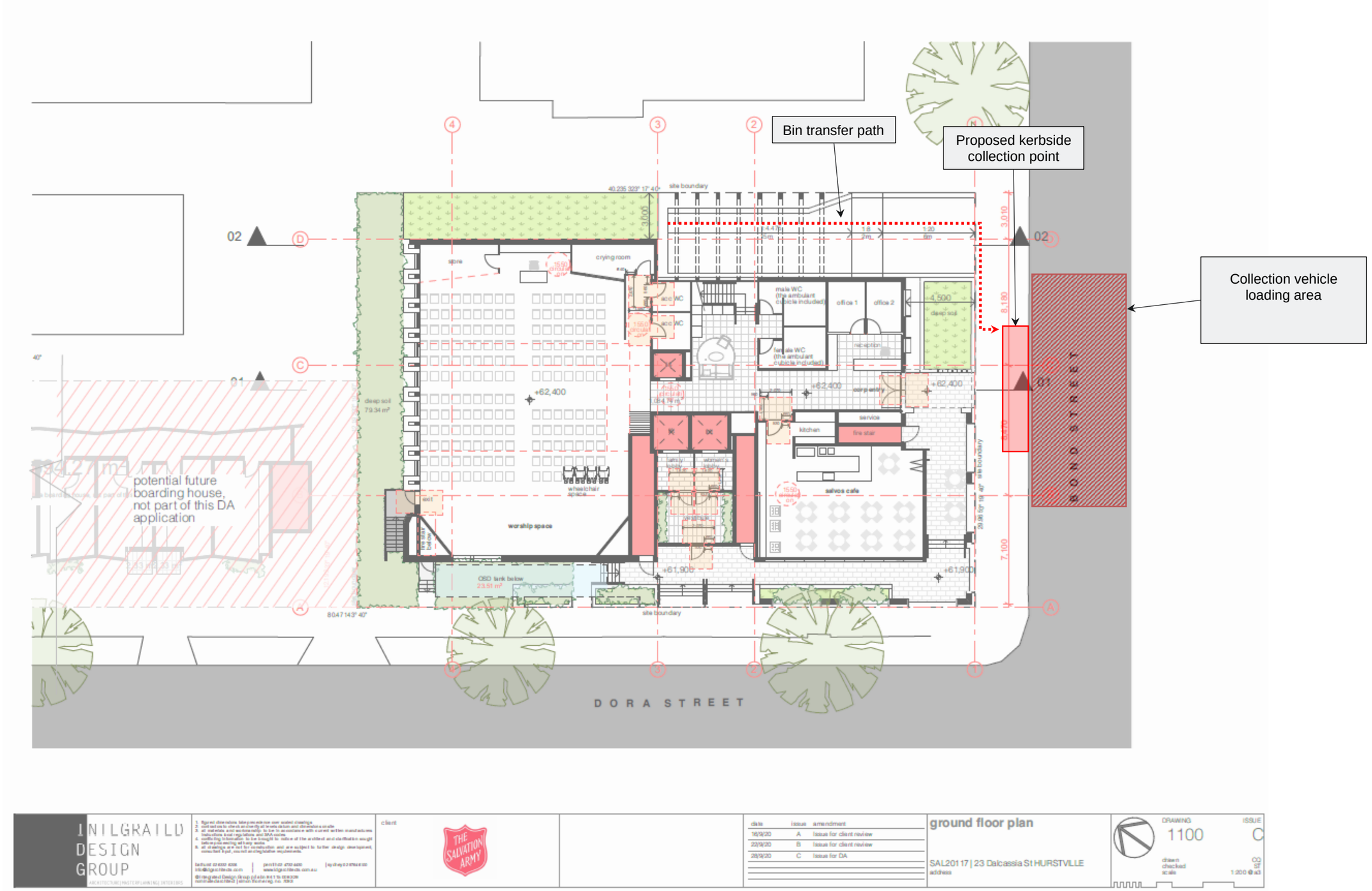
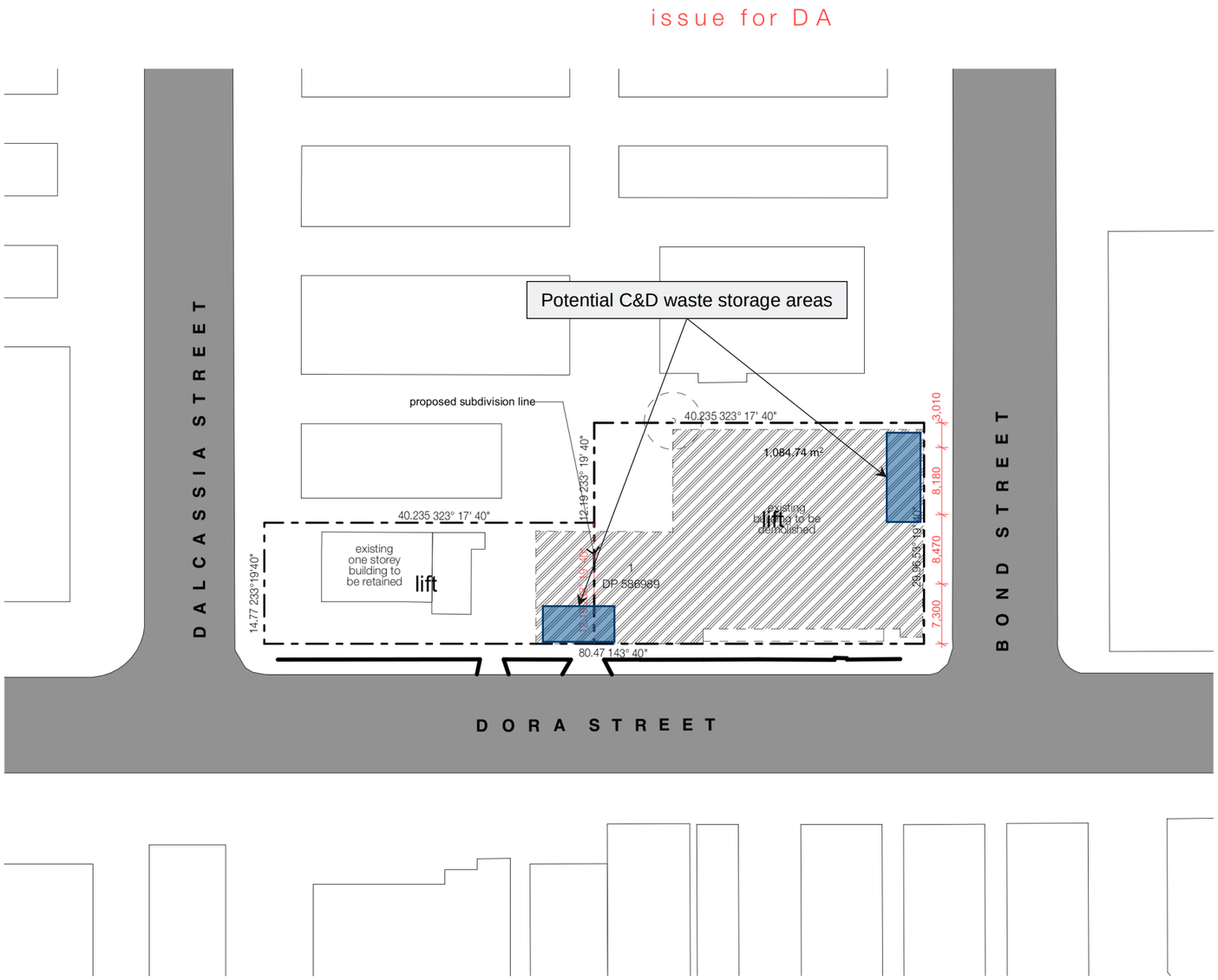


Figure 5: Proposed Location of C&D Skip Bin and Material Stockpiles



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ARCHITECTURE | MASTERPLANNING | INTERIORS

1. figured dimensions take precedence over scaled drawings
2. contractors to check and verify all levels datum and dimensions on site
3. all materials and workmanship to be in accordance with current written manufacturers instructions local regulations and SAA codes
4. conflicting information to be brought to notice of the architect and clarification sought before proceeding with the work
5. all drawings are not for construction and are subject to further design development, consultant input, council and legislative requirements.

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nominated architect | simon thorne reg. no. 7093

client
#Client Company
#Client Full Address

disciplines
#Certifier
#Structural Engineer
#Mechanical Engineer
#Hydraulic Engineer
#Civil Engineer
#Landscape Consultant
#Services Consultant

date	issue	amendment
23/9/20	A	Issue for review

demolition plan

SAL20117 | 23 Dalcassia St HURSTVILLE
address

DRAWING CC0200 ISSUE A
drawn CQ
checked ST
scale 1:500 @ a3

Appendix B Example of Bin Tug

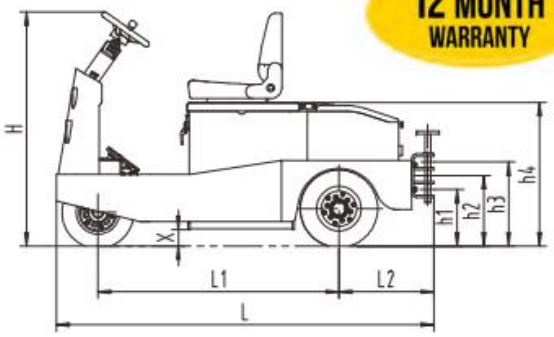
SITECRAFT
MATERIALS HANDLING EQUIPMENT

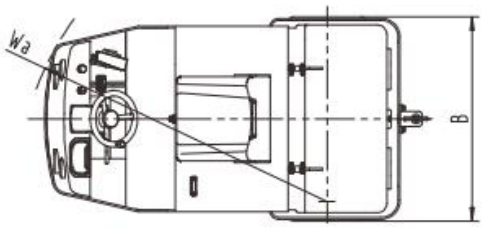
17 Macquarie Drive, Thomastown, VIC 3074
Phone: 1300 363 152 Fax: 1300 722 383
E: sales@sitecraft.com.au ABN: 36 423 328 526

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





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

The powered tug specification sheet

Move trolleys and equipment safely by maximising forward vision, reducing the risk of collisions and the risk of back and side strains.

		Tug Compact	Tug Evo 1T	Tug Evo 2T	Tug Classic 3.5T
Features	**Tug capacity**	500 kg	1000 kg	2000 kg	3500 kg
	Max. pulling force	20 kg	40 kg	80 kg	160 kg
	Speed mode	Three speed settings			
	Max. speed	up to 5 km/h	up to 5 km/h	up to 5 km/h	up to 4 km/h
	Dimensions (W/L/H)	610/1100/985 mm	610/1480/852 mm	610/1480/852 mm	740/1550/750 mm
	Unit weight	130 kg	140 kg	160 kg	320 kg
Motor	**Power (watts)**	250	250	400	375
	Voltage (V)	24			
Batteries	**Technology**	MK-Gel			
	Amp-hour	26	42	42	42
	Voltage (V)	12			
	No. of batteries	2			

Appendix C Standard Signage

Waste Signage

Signs for garbage, recycling and organics bins should comply with the standard signs promoted by the NSW Office of Environment and Heritage (NSW OEH 2008b).

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

Figure 6: Examples of standard signage for bin uses

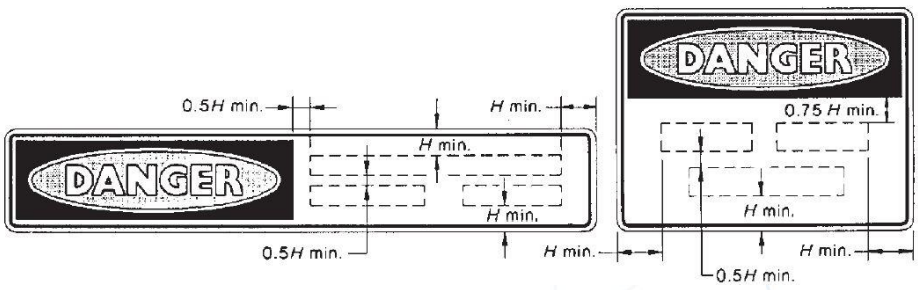
Safety Signs

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 7: Example and layout of safety signage

(d) Horizontal

FIGURE D5 TYPICAL ARRANGEMENTS OF DANGER SIGNS



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