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DEMOLITION/CONSTRUCTION
&
OPERATIONAL WASTE MANAGEMENT PLAN

2A Gregory Place, Harris Park NSW 2150

Proposed Multi-Unit Development

Prepared for:	2A Gregory Place Pty Ltd ABN 42 084 560 789
Date Prepared	June 2022
Revision:	1.2
State significant Development Application #:	SSD-31179510

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Introduction

Auswide Consulting was commissioned by the 2A Gregory Place Pty Ltd to prepare a Waste Management Plan (WMP) for approval of a proposed multi-unit development at 2A Gregory Place, Harris Park NSW. The proposal has the spatial capacity to provide adequate measures to manage, reuse, recycle and safely dispose of the waste through a strategy of incorporated waste chutes, waste rooms and a below ground waste collection area.

The proposed development consists of;

SITE DEVELOPMENT DETAILS				
Building	**1BR**	**2BR**	**3BR**	**Total**
A (Stage 1)	69	132	10	**211**
B (Stage 2)	85	68	10	**163**
C (Stage 3)	25	71	12	**109**
Total	**180**	**271**	**32**	**483**

In the course of preparing this WMP, the subject site and its environs have been inspected, plans of the development examined, and all relevant council requirements and documentation collected and analysed.

This WMP has been prepared based on the following information:

- Architectural Plans provided by Stanisic Architects.
- Planning Secretary's Environmental Assessment Requirements (SSD-31179510).
- Parramatta DCP & NSW Policy for Waste Minimisation in New Developments.

Background and Existing Conditions

The subject site lots are located at 2A Gregory Place, Harris Park NSW, on the west side Gregory Place with nearby land uses consisting of residential with and an experimental farm reserve to the southwest.

Figure 1 provides an overview of the area, and its surrounding land uses whilst **Figure 2** provides an aerial view of the immediate area surround the subject site.

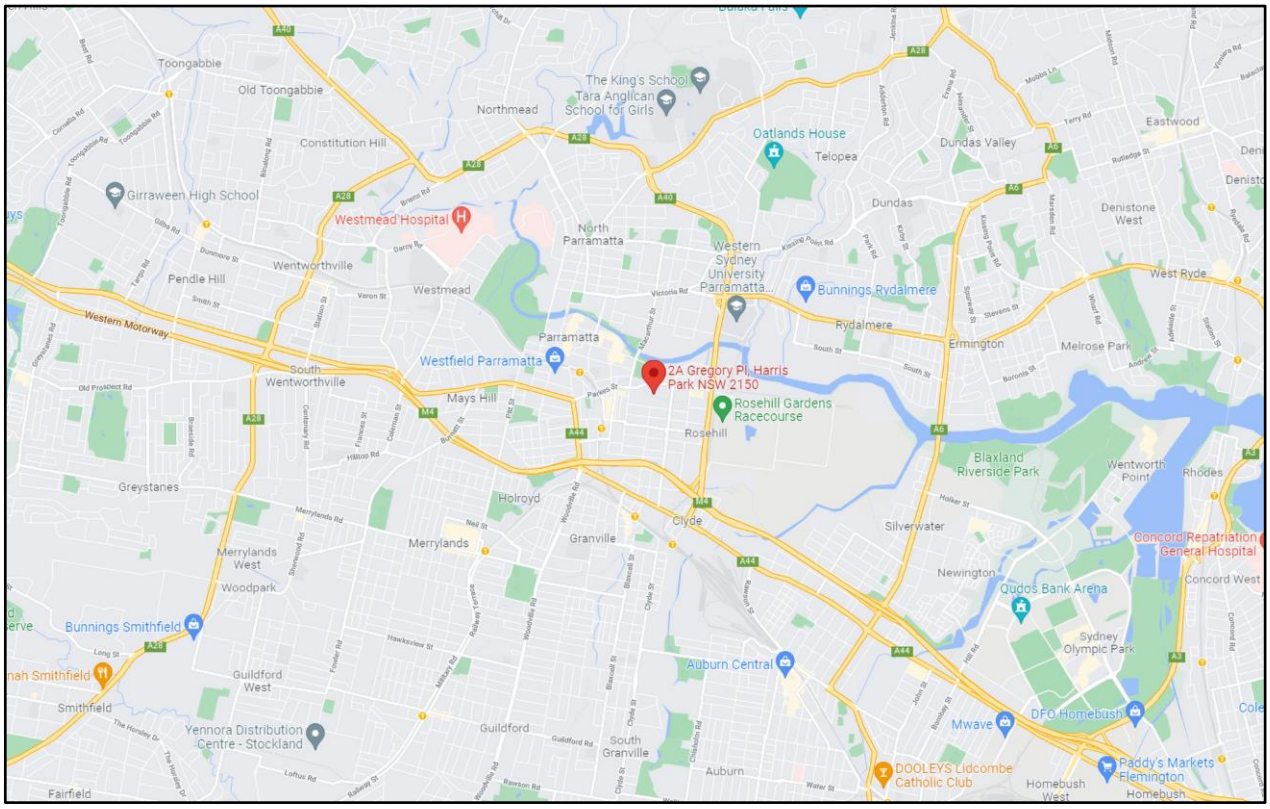

Figure 1: Location of the Subject Site

Figure 2: Aerial View of the Subject Site

Waste Management Principles

When dealing with waste, the following hierarchy has been adopted, prioritising from left to right;

Avoid/Reduce

Particularly during the construction phase, avoidance of waste will be achieved through:

- Selecting design options with the most efficient use of materials;
- Selecting materials with minimal wastage, such as prefabricated materials.

Reuse

Some of the materials encountered in the demolition stage can be recovered and reused both on-site and off-site. This will be practiced wherever possible. Reusable materials shall be appropriately stored to avoid damage from weather or machinery.

Recycle

Similarly, many materials form the demolition stage will be recyclable. These materials will be identified prior to demolition, and a system incorporated to efficiently separate reusable materials, recyclable materials and disposable materials. Recyclable materials shall be appropriately stored to avoid damage from weather or machinery. Details and receipts verifying the recycling of these materials shall be kept present on site at all times.

Disposal

The waste disposal contractor chosen for the job will comply with Council's DCP. Details and receipts verifying the disposal of these materials shall be kept present on site at all times.

Handling

When handling waste on-site, the system (including bin placement, volumes, and access) shall be designed with the following factors in mind:

- Safety (highest priority);
- Ease of use; and
- Aesthetics.

Stockpiling

Waste sorting areas and vehicular access on-site during demolition and construction shall be adequately maintained. The material (demolition material, excavation material, construction material and waste) stockpiling area shall always remain within the site boundary and relocate during different demolition and construction stages as necessary. The waste area shall be largely located at the front of the site. This is to maintain easy access and removal of waste. The stockpiling area shall not infringe on access to the site however. Hoardings shall bind the site perimeter; therefore, the waste shall not be visible from the street.

Demolition & Construction Stage

The proposal involves the demolition of any existing structures and the construction of a multi-unit development.

Demolition Works

It should be noted that the demolition stage has the greatest potential for waste minimisation, particularly in Sydney where there are high levels of development, relatively high tipping charges and where alternative quarry materials are located on the outskirts.

The contractor should consider whether it is possible to re-use existing buildings, or parts thereof, for the proposed use. With careful onsite sorting and storage and by staging work programs it is possible to re-use many materials, either on-site or off-site.

Councils are typically seeking to move from the attitude of straight demolition to a process of selected deconstruction, i.e. total reuse and recycling both off-site and on-site. This could require a number of colour-coded or clearly labelled bins onsite (rather than one size fits all).

Site contractors should demonstrate project management which seeks to:

- Re-use of excavated material on-site and disposal of any excess to an approved site;
- Green waste mulched and re-used in landscaping either on-site or off-site;
- Bricks, tiles and concrete re-used on-site as appropriate, or recycled off-site;
- Plasterboard re-used in landscaping on-site, or returned to supplier for recycling;
- Framing timber re-used on-site or recycled elsewhere;
- Windows, doors and joinery recycled off-site;
- Plumbing, fittings and metal elements recycled off-site;
- All asbestos, hazardous and/or intractable wastes are to be disposed of in accordance with Workcover Authority and EPA requirements.
  NOTE: Disposal of hazardous chemicals is regulated and must be tracked (Certified Trackable Waste Transporter) under the chain of custody and chain of responsibilities, philosophies with the site manager ultimately responsible for logistics and all waste generated on site;
- Locations of on-site storage facilities for material to be reused on-site, or separated for recycling off-site; and
- Destination and transportation routes of all materials to be either recycled or disposed of off-site.

Construction Works

The following measures shall be considered during the construction stage in order to save resources and minimise waste:

- Purchasing Policy – i.e. ordering the right quantities of materials and prefabrication of materials where possible;
- Reusing formwork;
- Minimising site disturbance, limiting unnecessary excavation;
- Careful source separation of off-cuts to facilitate re-use, resale, or efficient recycling; and
- Co-ordination/sequencing of various trades.

Estimating Waste Quantities

There are many simple techniques to estimate volumes of construction and demolition waste. The sequence of steps provided below can be used as a guide;

1) Quantify materials for the project
2) Use margin normally allowed in ordering
3) Copy these amounts of waste into your waste management plan

When estimating waste generation, the following percentages can be used as a "rule of thumb" practice;

Table 1: Estimating Waste Levels

Materials	Percentage of Waste / Total Materials Ordered
Timber	5-7%
Plasterboard	5-20%
Concrete	3-5%
Bricks	5-10%
Tiles	2-5%

Subsequently, the following table illustrates how to convert volumes of material to their respective weights. This information is particularly important during material storage and transportation stages.

Table 2: Converting Volume into Weight

Materials
Timber = 0.5 tonnes per m^3
Concrete = 2.4 tonnes per m^3
Bricks = 1.5 tonnes per m^3
Tiles = 0.75 tonnes per m^3
Steel = 2.4 tonnes per m^3

Wastage Types and Handling

Waste volumes produced by excavation, demolition and construction stages shall be estimated by the contractor at the construction certificate stage. Where possible, materials shall be reused or recycled, with disposal being the last resort. The destination of all recycled and disposed material shall be announced upon the selecting the waste collectors and recyclers.

The arrangements for all reused, recycled and disposed waste shall be tracked and recorded, and all receipts shall be held on-site.

Table 3: Waste Types and Handling

Demolition Phase

Materials on Site	Waste Estimate - Volume (m^3) or Weight (T)	On-Site Reuse	Off-Site Recycling	Off-Site Disposal (Accordance with DECCW)
Bricks	TBA			
Ceramic Tiles	TBA			
Timber	TBA			
Concrete	TBA			
Metals	TBA			
Other	TBA			
Hazardous	TBA			

The Demolition reuse/recycling/disposal information will be advised at CC Stage.

Construction Phase

Materials on Site	Waste Estimate - Volume (m^3) or Weight (T)	On-Site Reuse	Off-Site Recycling	Off-Site Disposal (Accordance with DECCW)
Bricks	TBA			
Ceramic Tiles	TBA			
Timber	TBA			
Concrete	TBA			
Metals	TBA			
Other	TBA			

Waste Collection (Demolition & Construction Stage)

The waste collection service for the proposed demolition and construction stage of the development will be provided by a private waste contractor.

All vehicle movements and strategic placement of the bins on site, ensuring the bins are relocated when needed during the works to maintain safe access and use at all times, will be provided by the site manager.

Demolition & Construction Waste Security/Communication Strategy

All demolition and construction bins will be secured on site with all site workers receiving detailed documentation detailing all necessary requirements for safe waste management and handling whilst attending the site health and safety induction course.

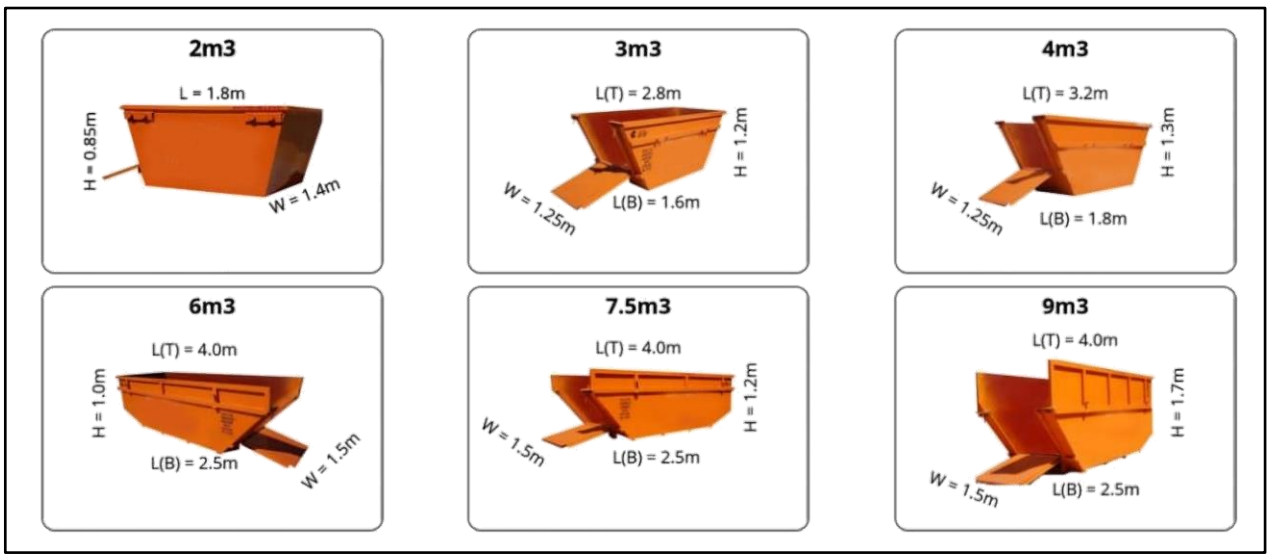

Figure 3: Typical Waste Skips for Demolition & Construction Site Waste Management

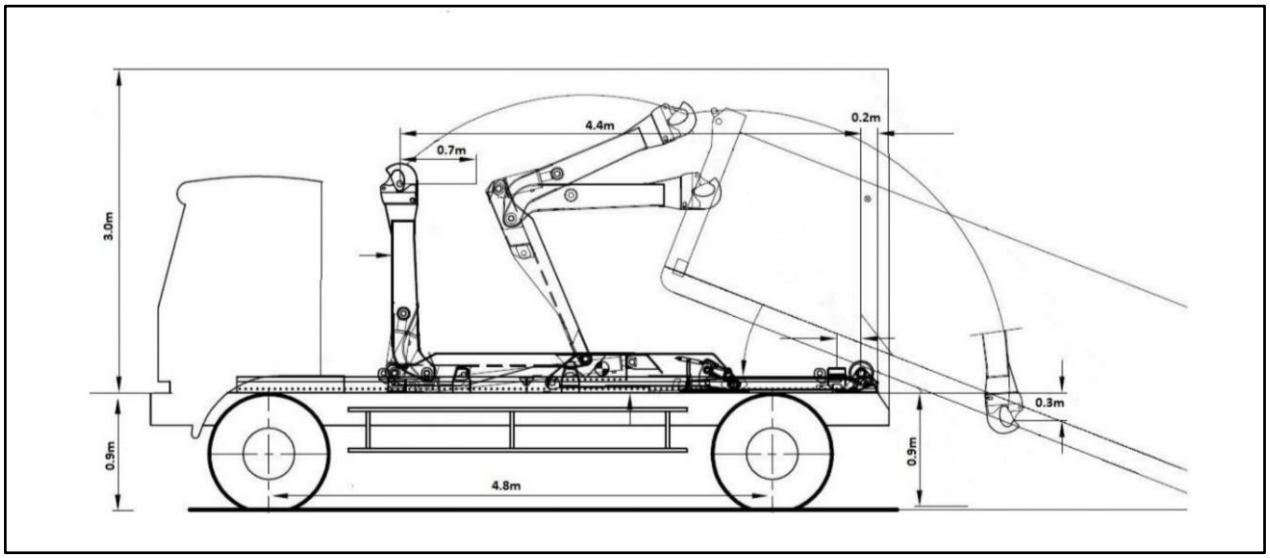

Figure 4: Typical Hook Lift Waste Collection Vehicle Configuration

Operational Waste Management, Storage and Collection

The proposed development consists of the construction of 483 multi-units. Access to the development will be via a walkway and driveway off Gregory Place with other walkways accessed from other locations. The waste collection area can be accessed via the waste storage room on basement level 2 **(Ref: Appendix B).**

Waste Generation

The on-site waste collection service for the proposed development will be provided by a private contractor.

As per the Parramatta DCP & NSW Policy for Waste Minimisation in New Developments,

The waste entitlement for Multi-Unit Dwellings is 80L per week of general waste plus 40L per week of recycling waste. (Inclusive of paper & containers waste).

The following table illustrates the typical general and recycling generation rates.

Table 4: Typical Garbage and Recycling Generation Rates for Multi-Unit Dwellings.

Type of Premises	General Landfill Waste	Commingled Recycling Waste
Multi-Unit Dwelling	80L/per/week	40L/per/week

NOTE: Generation rates based on weekly rates within the Parramatta DCP & NSW Policy for Waste Minimisation in New Developments. Actual usage can vary and may be generated at a reduced rate. The Body Corporate will monitor all waste requirements and handling. Accessing any needs for waste management plan revisions.

NOTE: It is noted that this is a concept application as such details of the development will be resolved in subsequent works DA's. The scheme as presented has the capability of complying with Councils requirements below.

4.3.19 Where on-site collection is not possible because of topographic or access constraints, and/or restrictive site dimensions, adequate arrangements need to be made for the convenient, safe and direct access between the waste storage room and the collection point. These arrangements need to be discussed at a pre-lodgement meeting with Council's Waste Services section.

4.3.20 For developments comprising four or more storeys (8 or more dwellings), the development can incorporate a waste chute system to the following specifications:
a) The waste chute system will provide a chute for garbage only.
b) Waste Disposal points are to be provided on each residential level of the development in an accessible and readily identifiable location.
c) The chute is to be designed to minimise noise and fire risks being cylindrical in section and having a diameter of at least 500mm. The chute is to be completely enclosed in a fire-rated shaft and constructed in accordance with the Building Code of Australia.
d) The chute is to terminate in a garbage room and discharge directly into a receptacle/bin that prevents spillage and overflow. The waste chute service room must be located directly under where the chute terminates.
e) A site caretaker/manager will be required to transfer all bins from the chute service room to the agreed waste bin storage area ready for collection.
f) For developments comprising greater than or equal to 10 storeys, the applicant must seek advice from Council on the type of chute system proposed and its suitability for high rise developments.

Waste Storage and Handling of Waste Streams

Using the garbage and recycling generation rates above, the following can be calculated;

Building A (Stage 1)

- 211 x Units x 80L of general waste per week = 16,880L (uncompacted)
- 211 x Units x 40L of recycling waste per week = 8,440L (uncompacted)

Building B (Stage 2)

- 163 x Units x 80L of general waste per week = 13,040L (uncompacted)
- 163 x Units x 40L of recycling waste per week = 6,520L (uncompacted)

Building C (Stage 3)

- 109 x Units x 80L of general waste per week = 8,720L (uncompacted)
- 109 x Units x 40L of recycling waste per week = 4,360L (uncompacted)

Total Waste: General Waste = 38,640L & Recycling Waste = 19,320L

Waste Storage Areas

NOTE: Each basement endpoint chute room will have the capacity for 2 days of 1,100L general waste MGB's. The 360L MGB's will be used to swap over with the smaller waste rooms on each floor.

Building A - Each Basement Level 2 Waste Chute Room (2)

- 2 x 1,100L General Waste MGB's – exchanged every 2 days using the bin tug.

Building B - Each Basement Level 2 Waste Chute Room (2)

- 1 x 1,100L General Waste MGB's – exchanged every 2 days using the bin tug.

Building C - Each Basement Level 2 Waste Chute Room (2)

- 1 x 1,100L General Waste MGB's – exchanged every 2 days using the bin tug.

Central Basement Level 2 Waste Storage/Collection Room (1)

- 36 x 1,100L General Waste MGB's – collected and emptied once a week.
- 54 x 360L Recycling Waste MGB's – collected and emptied once a week.

NOTE: The number of 360L MGB's may be slightly higher in numbers depending on the number of units on each floor per waste room (consisting of a general waste chute and recycling waste bins) which can be determined when further plans are submitted.

The following table illustrates the typical dimensions of the MGB's mentioned above.

Table 5: Typical Mobile Garbage Bin Measurements for On-Going (Operational) Waste.

Size (L)	Height (mm)	Width (mm)	Depth (mm)
360L	1,100	680	848
1,100L	1,465	1,360	1,220

Recycling	Garbage
✓ All recycling. ✓ Steel, tin, aluminium cans, empty aerosols. ✓ Clear, brown, green glass bottles / jars (rinsed, no lids). ✓ Plastic bottles, soft drink bottles, containers (rinsed, no lids). ✓ Carboard boxes, milk, juice cartons. ✓ Newspapers, magazines, office paper, junk mail, window envelopes. ✓ Council provided compostable caddy liner. ✘ Plastic bags, light bulbs, mirrors, drinking glasses, general and food, waste, ceramics, crockery, foam, ovenware, polystyrene, waxed cardboard boxes.	✓ General waste. ✓ Plastic bags. ✓ Packets, wrappers, cling wrap, bubble wrap. ✓ Nappies, sanitary waste, (wrapped tightly and stored in a well-sealed bag). ✓ Animal faeces, bedding, and kitty litter. ✓ Foam, polystyrene, and polystyrene. ✓ Light bulbs, mirrors, ceramics, cookware, and drinking glasses. ✓ Contents of your vacuum cleaner, cotton wool, buds and cigarette ends. ✘ Building materials, syringes, oil or paint, gas bottles, hazardous or chemical waste. ✘ Medical waste: (speak to your doctor / pharmacy).

Figure 5: Guidelines for Waste Placement within the General & Recycling Waste MGB's

The following figure illustrates a scaled diagram of the MGB's within the waste storage area.

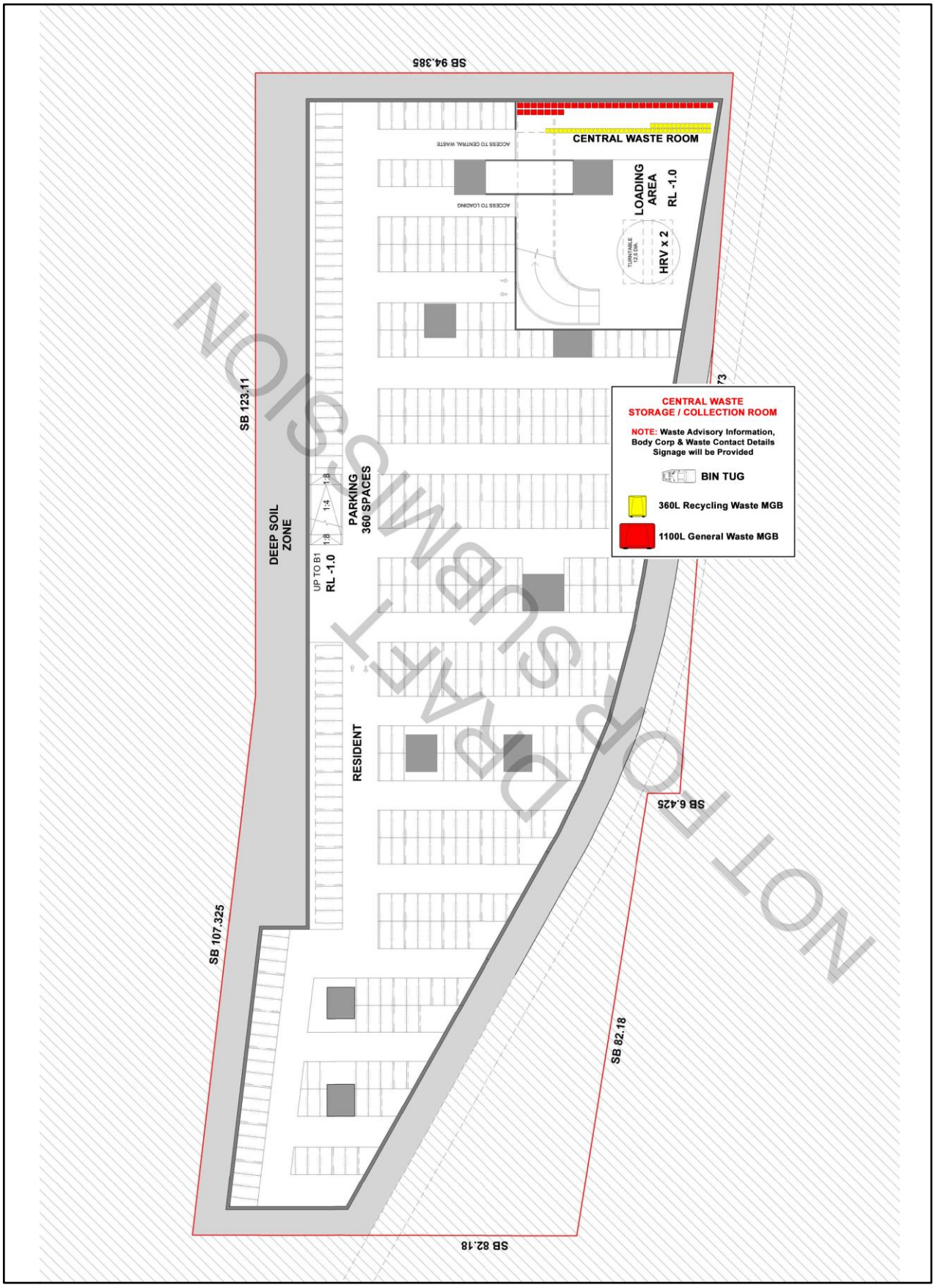

Figure 6: Scaled Diagram of the Waste Storage Areas

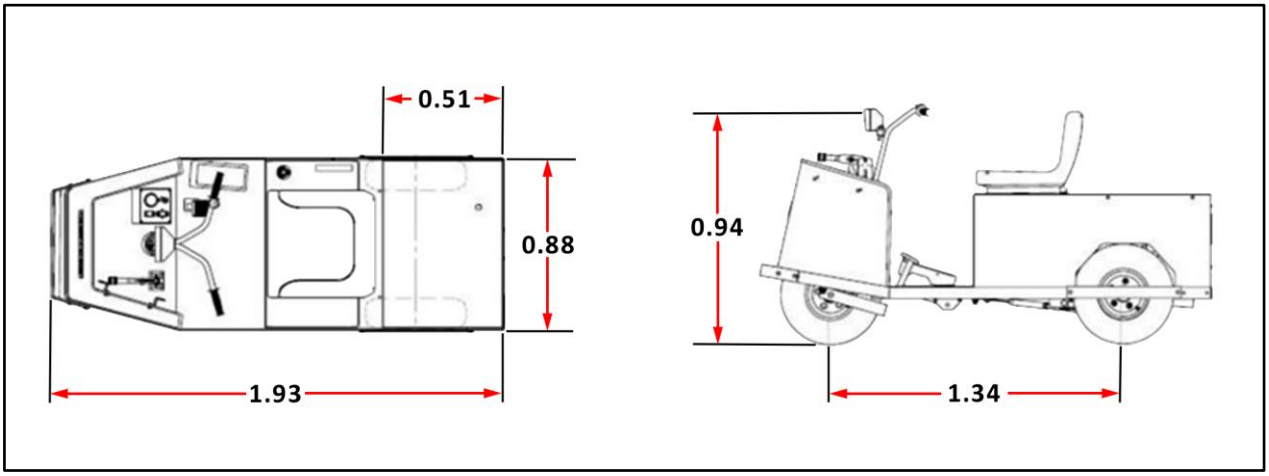

Figure 7: Typical Large Bin Tug

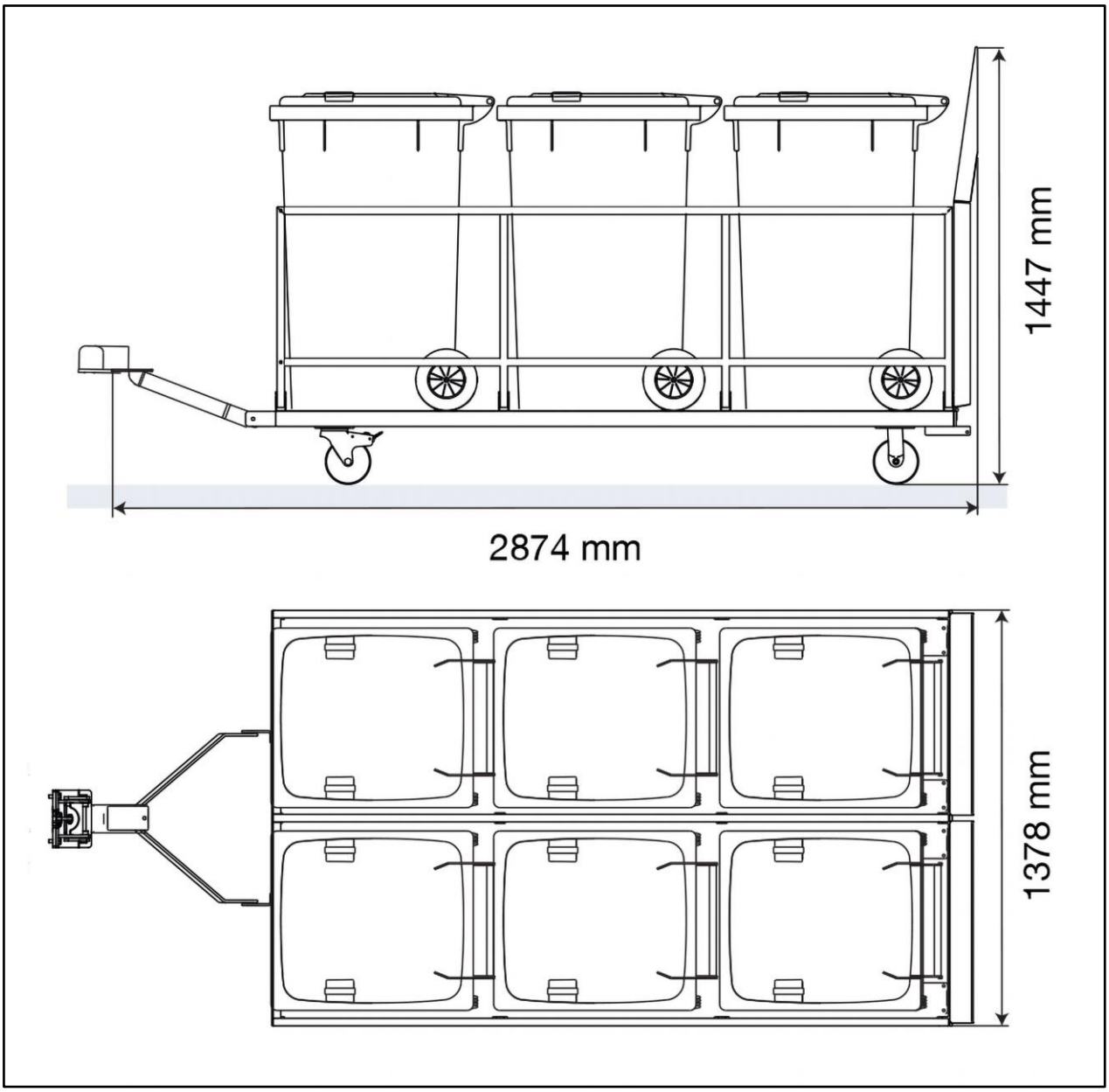

Figure 8: Typical 240L-1,100L Bin Trailer

Waste Collection (Operational Waste)

The waste collection service for the proposed development will be provided by a private contractor.

The waste collection vehicle will enter the building basement via Gregory Place and parking on the HRV turntable on basement level 2 near the waste storage area. Wheel the MGB's to/from the waste vehicle emptying the MGB's. Once all the MGB's have been emptied and returned to waste collection room the waste vehicle will leave in a forward motion.

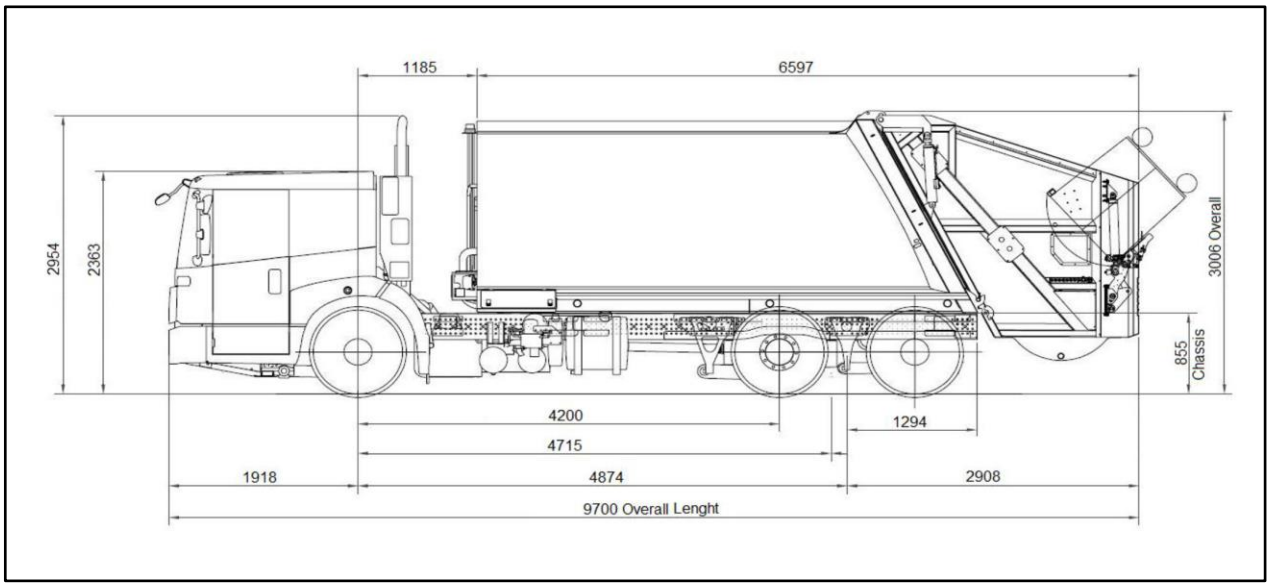

Figure 9: Template of a Typical HRV Waste Collection Vehicle

Amenity

Noise

The only noise generated from the waste management at the property will be that of the MGB's being collected by the waste collection vehicle and emptied. Any other noise related to the waste management will be kept to a minimum.

Ventilation

The waste storage areas should be ventilated.

Security/Communication Strategy

All MGB's will be secured within the waste storage areas.

All residents will receive detailed documentation detailing all necessary requirements for safe waste management and handling, including all relevant contact information.

Waste Storage Enclosures & Cleaning Facilities

The caretaker will be responsible for keeping the MGB's clean.

NOTE: The commercial waste storage area should consist of; **(1)** Impervious coated/treated walls and ground surface, ensuring the ground is graded to the sewer (100 mm diameter) floor drain outlet within the enclosure. **(2)** Tap and hose (hose cock must be protected from the waste containers) for use of cleaning the MGBs and waste area. **(3)** Self closing double doors/electric roller door allowing for easy access to wheel the MGBs to/from the waste vehicle.

Prevention of Vermin

The occupants will be advised to not overfill the bins so that the lids are closed at all times. It is suggested to place rat traps in the corners of the waste storage areas.

Miscellaneous

Composting Facility

The provision of a communal composting facility will be resolved in subsequent DA's.

Dwelling (Internal) Waste Storage

It is suggested that sufficient space within the kitchen, should be provided in each dwelling for interim storage of at least one days' worth of garbage and recyclables. Space should allow for separate storage of recyclables from the garbage stream.

Green/Food Waste

Food waste should be placed in biodegradable plastic bags before placing in the general waste chutes. All other green waste within the property will be handled by the gardening contractor.

Bulky Hard Waste

Residents should contact the caretaker for collection of hard waste.

A bulky hard waste room will be detailed in the subsequent DA's.

E-Waste

Recyclable electronic goods include batteries, equipment containing printed circuit boards, computers, televisions, fluorescent tubes and smoke detectors. E-Waste will be placed in impermeable surface containers and collected by a registered E-Waste Re-Processor as required.

Appendix A – Waste Management Contacts

Materials	Company Name	Company Address	Contact Details
Evacuation Material/Soil Waste	Enviroguard	Cnr Mamre & Erskine Parks Roads, Erskine Park	9834 3411
Green Waste	Ecocycle	155 Newton Road, Wetherill Park	9757 2999
Bricks	Brandown	Lot 9 Elizabeth Drive, Kemps Creek	9826 1256
Concrete	Brandown	Lot 9 Elizabeth Drive, Kemps Creek	9826 1256
Timber	Artistic Popular Furniture	10 Raglan Road, Auburn	9644 3054
Metals	Parramatta Scrap Metal	12 North Roack Road, Nth Parramatta	9630 2974
Roof Tiles	Obsolete Tiles	3 South Street, Rydalmere	9684 6333
Door Fittings	Recycling Works	45 Parramatta Road, Annandale	9517 2711
Plastics	Cromford	120-122 Ballandella Road Pendle Hill	9631 6644
Plasterboard	Ecocycle	155 Newton Road, Wetherill Park	9757 2999
Fibro Containing Asbestos	Enviroguard	Cnr Mamre & Erskine Parks Roads, Erskine Park	9834 3411
Hazardous Chemicals	Cleanaway	40 Christie Street, St Marys	9851 4200
NOTE: Disposal of hazardous chemicals is regulated and must be tracked (Certified Trackable Waste Transporter) under the chain of custody and chain of responsibilities, philosophies with the site manager ultimately responsible for logistics and all waste generated on site.			

Appendix B – Site Plans