



WASTE MANAGEMENT PLAN

175-177 Cleveland Street, REDFERN
PROPOSED MIXED-USE DEVELOPMENT

Project Site Address
175-177 Cleveland St, Redfern

Prepared on behalf of
HIGH QUALITY BUILDING PTY LTD

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INTRODUCTION

This report was prepared by Ghazi Al Ali Architect Pty Ltd for a Waste Management Plan for the proposed mixed-use development at 175-177 Cleveland Street, Redfern.

The subject site is bound by Cleveland Street to the north, Eveleigh Street to the west and Woodburn Street to the east. The proposal includes construction of a multi storey mixed use building with a total of **53 units** on a land area of 645.2 square metres. This includes:

- 40 X 1 bedroom units (Student Accommodation)
- 13 x 1 bedroom with kitchen (Residential)

One level of basement **on-site parking** will be provided with access off Eveleigh Street.

A communal bin storage area has also been proposed on the lower ground floor for the residential apartments and ground floor for the student housing to accommodate the waste generated by the overall development.

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

1. BACKGROUND AND EXISTING CONDITIONS

Location and Land Use

The subject site is located between Eveleigh Street to the west and Woodburn Street to the east and Cleveland Street to its north. The main intersection is at Cleveland St and Regent Street, with a maximum speed limit of 50km/hour.

The area in the vicinity of the subject site includes various land uses, such as residential, public, commercial and retail.

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Cleveland Street, a main road is at the frontage of the subject site and Eveleigh Street on the west is a side street with two lanes of traffic in one direction (with kerbside lane parking permitted) and Woodburn Street on the east is a side street with two lanes of traffic in each direction (with kerbside lane parking permitted).

Figure 1 shows the site and the local road network from a street map perspective.

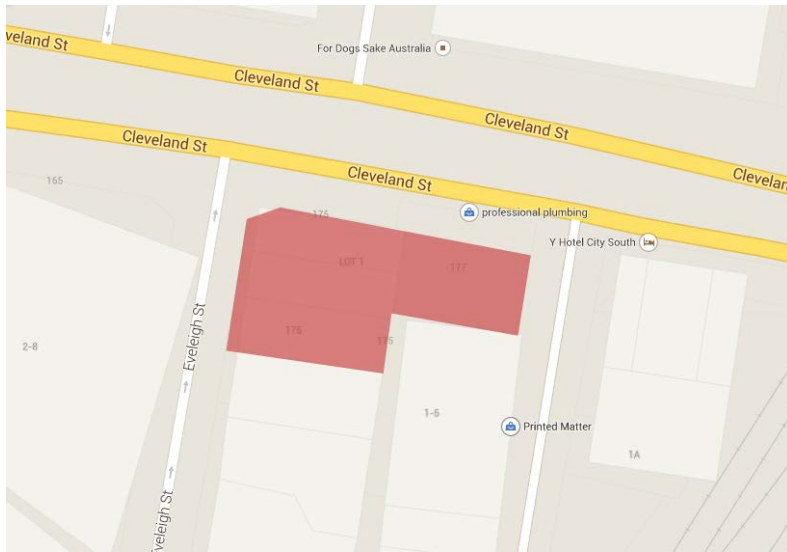
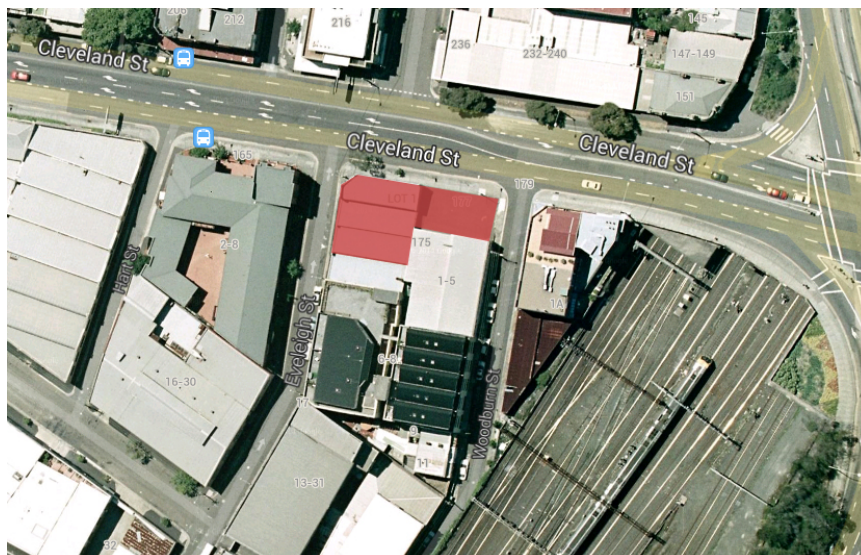


Figure 2 Presents an aerial photograph of the subject site and the surrounding areas





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2. STAGE 1- DEMOLITION

This is the stage with the greatest potential for waste minimisation, particularly in Sydney where there are high levels of development, relatively high tipping charging's and where alternative quarry materials are located on the outskirts.

In the proposed development with careful on-site sorting and storage and by staging work programs, wherever it is possible to reuse and the existing buildings or parts either onsite or offsite.

The project management will seek to demonstrate;

- Reuse of excavated material on site and disposal of any excess to an approved site;
- Green waste mulched and reused in landscaping either onsite or offsite
- Bricks, tiles and concrete reused onsite as appropriate, or recycled off site
- Plasterboard reused in landscaping onsite, or returned to supplier for recycling
- Framing timber reused on site or recycled elsewhere
- Plumbing, fittings and metal elements recycled off site
- All asbestos, hazardous and /or intractable wastes are to be disposed of in accordance with Work cover Authority and EPA requirements
- Locations of onsite storage facilities for materials to be reused on site or separate for recycling off site
- Destination and transportations routes of all materials to be either recycled or disposed of off site

The following table is completed for any demolition work. The following details are found on the plans;

- Location of onsite storage space for materials (for reuse) and containers for recycling and disposal.
- Vehicle access to the site and to the storage and container areas.

MATERIALS ON-SITE		DESTINATION		
		Re-Use & Recycling		Disposal
Type of Material	Estimate volume (m3) or area (m2)	<u>Onsite</u> How material will be reused or recycled	<u>Offsite</u> The contractor and recycling outlet	The contractor & landfill site
Excavation Material	2030m ³		To be Specified	



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Green Waste				
Bricks	175.56m ³		To be Specified	
Roof Tiles				
Concrete	1106m ²			To be Specified
Timber	10m ³		To be Specified	
Plasterboard				
Metals	450m ²			
Asbestos				
Other waste (Plumbing Waste)	10m ³		To be Specified	

3. STAGE 2- CONSTRUCTION

POTENTIAL FOR WASTE MINIMISATION DURING CONSTRUCTION STAGE

The following measures that may also save resources and minimise waste at the construction stage;

- Purchasing Policy- i.e. ordering the right quantities of materials and prefabrications of materials where possible
- Reusing formwork
- Minimising site disturbance, limiting unnecessary excavation
- Careful source separation of offcuts to facilitate reuse, resale or efficient recycling
- Co-ordination/sequencing of various trades.

The following details are shown on plans;

- Location of the temporary storage spaces on the site
- Each designated storage should be labelled on the plan



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MATERIALS ONSITE		DESTINATION		
		Re-Use & Recycling		Disposal
Type of Material	Estimate volume (m3) or area (m2)	<u>Onsite</u> How material will be reused or recycled	<u>Offsite</u> The contractor and recycling outlet	The contractor & landfill site
Excavation Material				
Green Waste	11.61m ³	50% to be re-used	To be Specified	To be Specified
Bricks				
Tiles	156.5m ²		To be Specified	To be Specified
Concrete				
Timber	15m ³			
Plasterboard	10m ³			To be Specified
Metals	50m ³		To be Specified	
Asbestos				
Other waste (Plumbing Waste)	10m ³		To be Specified	



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4. STAGE 3 ON-GOING WASTE

WASTE GENERATION PER DWELLING

The proposal seeks a construction of a multi-storey mixed use building with a total of **53 units** on a land area of 645.2 square metres. This includes:

- 40 X 1 bedroom units (Student Accommodation)
- 13 x 1 bedroom with kitchen (Residential)

The following table illustrates typical garbage and recycling generation rates for various sizes of residential and commercial units. However, it must be noted that the garbage and recycling needs of residents in multi-unit developments are typically lower than this.

Table 1 Typical Garbage and Recycling Generation Rates for Residential/Commercial Units

Residential Dwelling	Garbage	Recycling
Individual Dwelling	120L per week	120L or 240L
3 Bedroom Apartment or greater	120L per week	60L per week
2 Bedroom Apartment	120L per week	50L per week
1 Bedroom or Studio Apartment	80L per week	35L per week
Single bed Student Accommodation	40L per week	10 L per week
<ul style="list-style-type: none"> • Communal Kitchen • Communal Courtyard • Communal Spaces 	112L/week/ 20m ² 1.5L/week/20m ² 3L/week/40m ²	28/week/20m ² 1.5L/week/20m ² 3L/week/40m ²

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STORAGE IN EACH UNIT

Each residential and student housing unit should have separate bins with carry handles within the unit for general waste and recyclable waste. These bins should be stored in an area away from food. The residents of each unit can dispose the garbage at the communal bin storage area provided on their given level.

WASTE WITHIN OVERALL DEVELOPMENT

Using the garbage and recycling generation rates stipulated in Table 1 above, the following can be calculated;

Table 2 Garbage and Recycling Generation from the Overall Development

Unit Type	Number	Waste Generation Rates		Weekly Generation	
		Garbage	Recycling	Garbage (L)	Recycling (L)
Student Housing	40	40L/Week	10L/Week	1600	400
<ul style="list-style-type: none"> • Communal Kitchen • Communal Courtyards • Communal Spaces 	8 1 1	112L/week/20m ² 1.5L/week/20m ² 3L/week/40m ²	28L/week/20m ² 1.5L/week/20m ² 3L/week/40m ²	896 3 3	224 3 3
Residential	13	80L/Week	35L/Week	1040	455
Total Weekly Generation (L)				3542	1485

From the waste generation calculations outlined in Table 2 above, the following garbage and recycling generation levels are expected from the overall development within a week:

Residential Garbage Generation

Total garbage generation = 1040 L per week

Total recycling generation = 455 L per week

Student Housing Garbage Generation

Total garbage generation = 2502 L per week

Total recycling generation = 630 L per week



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COMMUNAL STORAGE AREA

Residential Bins Provision

6 x 240 L Mobile Garbage Bins (MGB) for garbage (Red) – Total capacity of 1,440 L.

4 x 240L MGBs for recycling (Yellow) – Total capacity of 960 L.

2 x 240L MGBs for green waste (Green) – Total capacity of 480 L.

Residential apartments shall be furnished with plastic lined under bench storage bins located both in the bedroom and kitchen areas, with a minimum capacity of 15 litres, for the temporary holding of garbage waste. The residents of the apartments will then dispose of garbage into 6 x 240 litre collection bins provided within the garbage store on the lower ground floor.

The residents of the apartments will separate recyclable waste from garbage and dispose of recyclables into 4 x 240 litre collection bins provided within the garbage store.

The residents will also separate green waste from garbage and dispose of recyclables into 2 x 240 litre collection bins provided within the garbage store.

Student Housing Bins Provision

3 x 1000 L Bins for garbage – Total capacity of 3000 L.

1 x 1000 L Bins for recycling – Total capacity of 1000 L.

The student communal spaces/kitchen/courtyard and associated amenities shall be furnished with suitable plastic lined garbage bins. Garbage bins are to be strategically placed throughout these areas for garbage disposal by students. Cleaning staff shall periodically clear bagged-garbage, using a cleaner's trolley or similar, and transfer this waste to the 1000 litre bins located in the garbage store at ground level for disposal.



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The table below and the attached plan indicates the quantity, required area and the location of the bins proposed according to this waste management plan.

Garbage Store Requirements	Length	Width
1000 litre	1.160m	1.360m
240 litre	0.749m	0.580m

As per the dimensions presented in the figures above, the total area required in the communal bin areas is as follows;

Residential Bins Provision

10 x 240L MGBs = 10 x 0.749m x 0.580m = 4.3 sqm of area for placing 240L garbage & recycling bins

2 x 240L MGBs = 2 x 0.749m x 0.580m = 0.9 sqm of area for placing 240L green waste bins

As per above, a total of approximately **5.20 sqm of area plus circulation** is needed within the communal bin storage area to accommodate the garbage and recycling bins for residential.

Student Housing Bin Provision

3 x 1000L MGBs = 3 x 1.160m x 1.360m = 4.7 sqm of area for placing 1000L garbage

1 x 1000L MGBs = 1 x 1.160m x 1.360m = 1.6 sqm of area for placing 1000L recycling bins

As per above, a total of approximately **6.3 sqm of area plus circulation** is needed within the communal bin storage area to accommodate the garbage and recycling bins for commercial.

TOTAL COMMUNAL STORAGE AREA

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As shown in the scaled diagram for the communal bin area below, it is clear that the communal bin area (residential and commercial Bin Holding Rooms) with an overall area of **14.8 sqm**, provides sufficient space to store the bins required for this development.

1.1 Residential Bin Holding Room

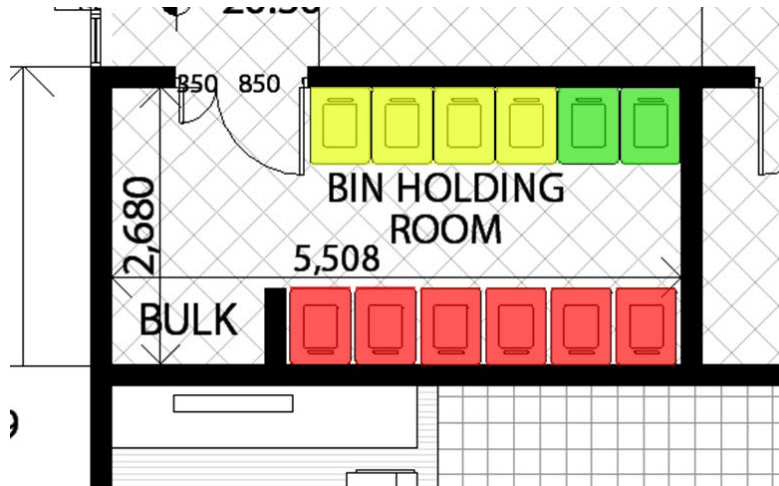


Figure 6: The Scaled Bin Area Diagram

1.2 Student Housing Bin Holding Room

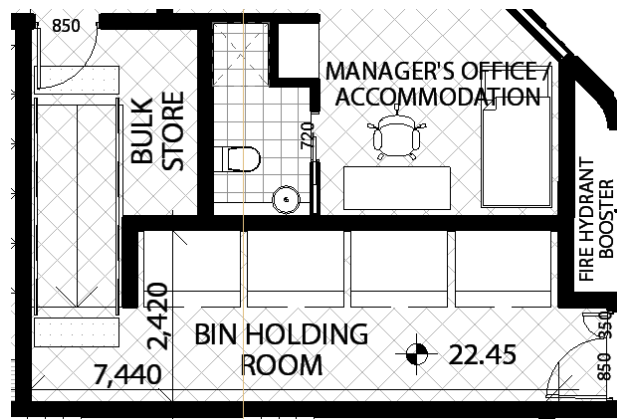


Figure 7: The Scaled Bin Area Diagram

As indicated in the table above and on the plan, the proposed garbage store provides sufficient area for the storage and manoeuvrability of the required number of bins.



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5. FREQUENCY OF COLLECTION

Due to the total waste generated by the development (and the size of the MGBs provided), it is recommended that both the general waste and recycling be collected weekly (pickups occur on Tuesday).

6. METHOD OF COLLECTION

Both garbage and recycling will need to be collected by Sydney Council. The garbage collection truck can be parked on kerb side at the side entries of the building at Eveleigh Street for the residential units and Woodburn Street for the student accommodation and the bins can be wheeled out for emptying into the truck.

7. MANAGEMENT

CLEANING FACILITIES

The bin storage area is located within the ground and lower ground level of the building. As such, it is imperative to have clean bins within the storage area. The private contractor will need to clean the bins and the bin storage room every week during garbage/recycling collection.

GREEN WASTE

The landscaping at the development has been designed as such to be very low maintenance. Therefore it is expected that green waste removal will be minimal.

It is expected that a gardener will be employed by the residents group to maintain the garden and that they will remove any green waste.

RESPONSIBILITY

On completion of the development, residents will be given information (prior to moving in) regarding the bin storage area, numbers and types of bins for waste and that they are to share the responsibility of keeping the area clean.

The Owners Corporation will be responsible for ordering the MGBs, ensuring the system is utilised properly and maintaining the MGBs and the communal bin area.

APPENDIX A: INFORMATION ON THE PROPOSED GARBAGE AND RECYCLING BINS

Residential 240 L MGB's

Dimensions - Weights - Standards

■ Nominal volume:	240 litres
■ Net weight:	approx 13 kg
■ Max load:	96 kg
■ Permitted total weight:	110 kg

■ A 1060 mm	■ D 678 mm
■ B 990 mm	■ E 552 mm
■ C 624 mm	■ F 398 mm

Measurements to be used as a guide only – variations will occur

The technical drawing shows two views of the bin. The top view is a rectangle with dimensions C (width) and D (depth). The side view shows a trapezoidal shape with height A (total height), height B (height to the top of the lid), and a wheel diameter of 200mm. Dimension E is the height of the main body, and F is the width of the main body.

240 Litre Container:
Still Going Strongly



- EASY HANDLING
- VERSATILE
- STABLE DESIGN

Student Housing 1000 L MGB's

Mobile Garbage Bins (MGBs)

Bin Type	1000L MGB
Height	1350 mm
Length	1160 mm
Width	1360 mm

