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## WASTE MANAGEMENT PLAN

**1105-1107 Barrenjoey Road, Palm Beach NSW 2108**

*Proposed Shop Top Development*

Prepared for:	Macarthur Projects
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Revision:	1.0
Northern Beaches Council Application #:	TBA

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## Introduction

AusWide Consulting was commissioned by Macarthur Projects to prepare a Waste Management Plan (WMP) for approval of a proposed shop top (mixed-use) development at 1105-1107 Barrenjoey Road, Palm Beach NSW.

The proposed development consists of;

DEVELOPMENT DETAILS	
<b>Ground Floor:</b> Retail 1-4 (43m <sup>2</sup> ), (75m <sup>2</sup> ), (41m <sup>2</sup> ), (42m <sup>2</sup> ) & Café (61m <sup>2</sup> ) + 3 x 1 BR Serviced Apartments	
<b>Levels 1:</b> 5 x 3 BR Units	<b>Levels 2:</b> 3 x 3 BR Units

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:

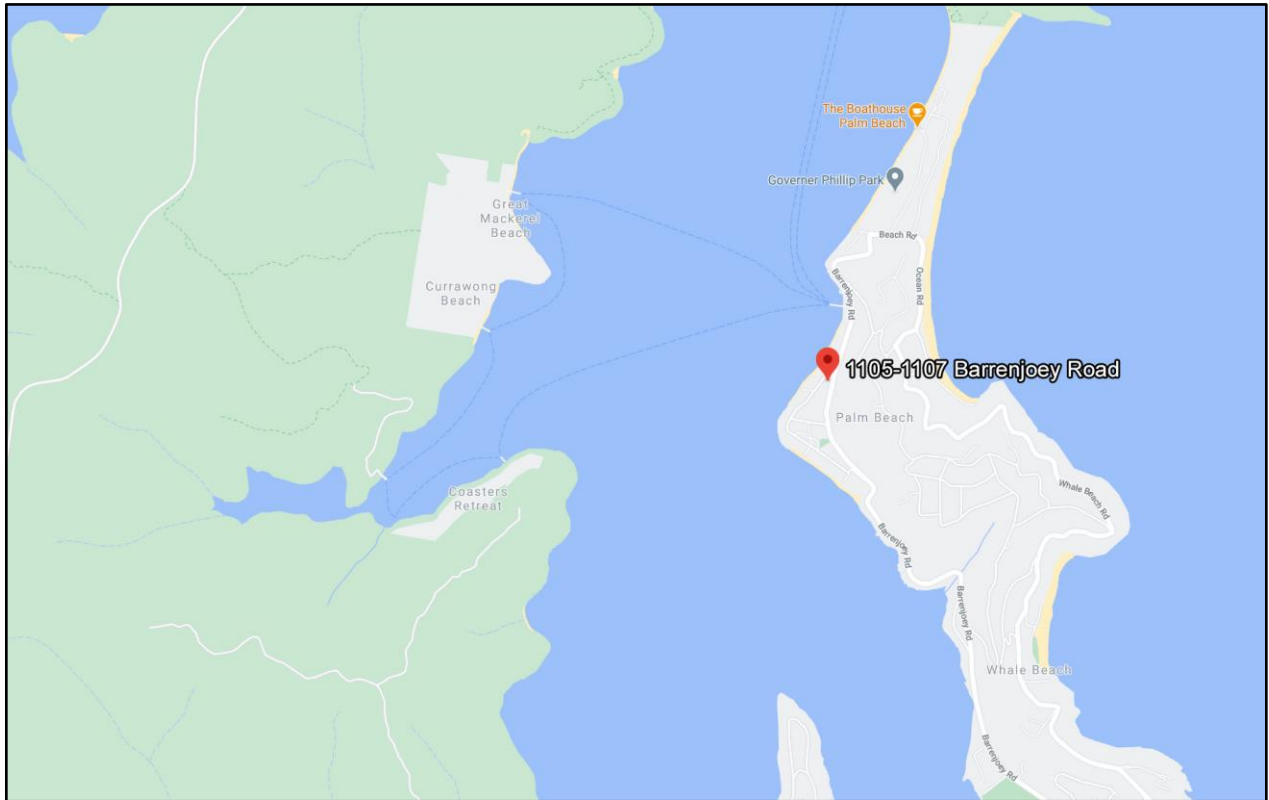
- Architectural Plans Provided by PBD Architects.
- As per the Northern Beaches Waste Management Guidelines.



## Background and Existing Conditions

The subject site is located at 1105-1107 Barrenjoey Road, Palm Beach NSW, on the west side of Barrenjoey Road. The nearby land uses are mostly residential with some commercial.

**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 pre-fabricated 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 from 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 the existing buildings and the construction of a Shop Top (mixed use) 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;
- 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 <sup>3</sup>
Concrete = 2.4 tonnes per m <sup>3</sup>
Bricks = 1.5 tonnes per m <sup>3</sup>
Tiles = 0.75 tonnes per m <sup>3</sup>
Steel = 2.4 tonnes per m <sup>3</sup>



## 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 <sup>3</sup> ) 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			

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

### Construction Phase

Materials on Site	Waste Estimate - Volume (m <sup>3</sup> ) 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			

## On-going Waste Management

Waste collection will be provided by Northern Beaches Council.

### Waste Generation

As per the Northern Beaches Waste Management Guidelines:

The waste entitlement for a (a) Multi-Units is 80L/Unit/Week of general waste (Red MGB's), 60L/Unit/Week of recycling (Blue MGB's) and 40L/Unit/Week of recycling (Yellow MGB's). (b) Retail is 50L/100m<sup>2</sup> floor area/day of general waste plus 50L/100m<sup>2</sup> floor area/day of recycling waste. (c) Café is 300L/100m<sup>2</sup> floor area/day of general waste plus 200L/100m<sup>2</sup> floor area/day of recycling waste. (d) Serviced Apartments are 5L/bed/per day of general waste plus 5L/bed/per day of recycling waste (commercial recycling waste is inclusive of paper & cardboard waste).

The following table illustrates the typical general waste and recycled waste generation rates.

**Table 4: Typical General and Recycling Waste Generation Rates for Mixed-Use Developments**

Residential Units		
(Red) General Landfill Waste	(Blue) Paper/Cardboard Recycling Waste	(Yellow) Mixed/Containers Recycling Waste
80L/per/week	60L/per/week	40L/per/week

Commercial Space		
Type of Business	General Landfill Waste	Commingled Recycling Waste
Retail	50L/100m <sup>2</sup> /floor area/day	50L/100m <sup>2</sup> /floor area/day
Café	300L/100m <sup>2</sup> /floor area/day	200L/100m <sup>2</sup> /floor area/day
Serviced Apartments	5L/bed/per day	5L/bed/per day

## Waste within Overall Development

Using the general waste and recycled waste generation rates above, the following can be calculated;

### Residential Units

- 8 x Units x 80L of general landfill waste per week = 640L (uncompacted)
- 8 x Units x 60L of paper/cardboard recycling waste per week = 480L (uncompacted)
- 8 x Units x 40L of mixed/container recycling waste per week = 320L (uncompacted)

### Retail 1-4 (43m<sup>2</sup>), (75m<sup>2</sup>), (41m<sup>2</sup>), (42m<sup>2</sup>) = (201m<sup>2</sup>)

- 50L/100m<sup>2</sup> of floor area per day general waste = 703.5L per week (uncompacted)
- 50L/100m<sup>2</sup> of floor area per day recycling waste = 703.5L per week (uncompacted)

### Café (61m<sup>2</sup>)

- 300L/100m<sup>2</sup> of floor area per day general waste = 1,281L per week (uncompacted)
- 200L/100m<sup>2</sup> of floor area per day recycling waste = 854L per week (uncompacted)

### Serviced Apartments

- 3 x 5L/bed/per day general landfill waste = 105L per week (uncompacted)
- 3 x 5L/bed/per day commingled recycling waste = 105L per week (uncompacted)

## Waste Storage Areas

Based on the total waste generated by the development, the following combination of bins should be provided:

### Residential Waste Area

- 3 x 240L general landfill waste MGB's – collected & emptied weekly.
- 2 x 240L paper/cardboard recycling waste MGB's – collected & emptied weekly.
- 2 x 240L mixed/container recycling waste MGB's – collected & emptied weekly.
- 1 x 240L organics waste MGB – collected & emptied fortnightly.

**NOTE:** 1 x 240L organic waste bin must be provided for every 200m<sup>2</sup> of landscaped open space on the site.

### Commercial Waste Area (General Waste 2,089.5L & Recycling Waste 1,662.5L)

- 9 x 240L general landfill waste MGB's – collected & emptied weekly.
- 7 x 240L commingled recycling waste MGB's – collected & emptied weekly.

The following table illustrates the typical dimensions of the 240L MGBs mentioned above.

**Table 5: Typical Mobile Garbage Bin Measurements for New Developments in NSW.**

Size	Height (mm)	Width (mm)	Depth (mm)
240L	1,080	580	735

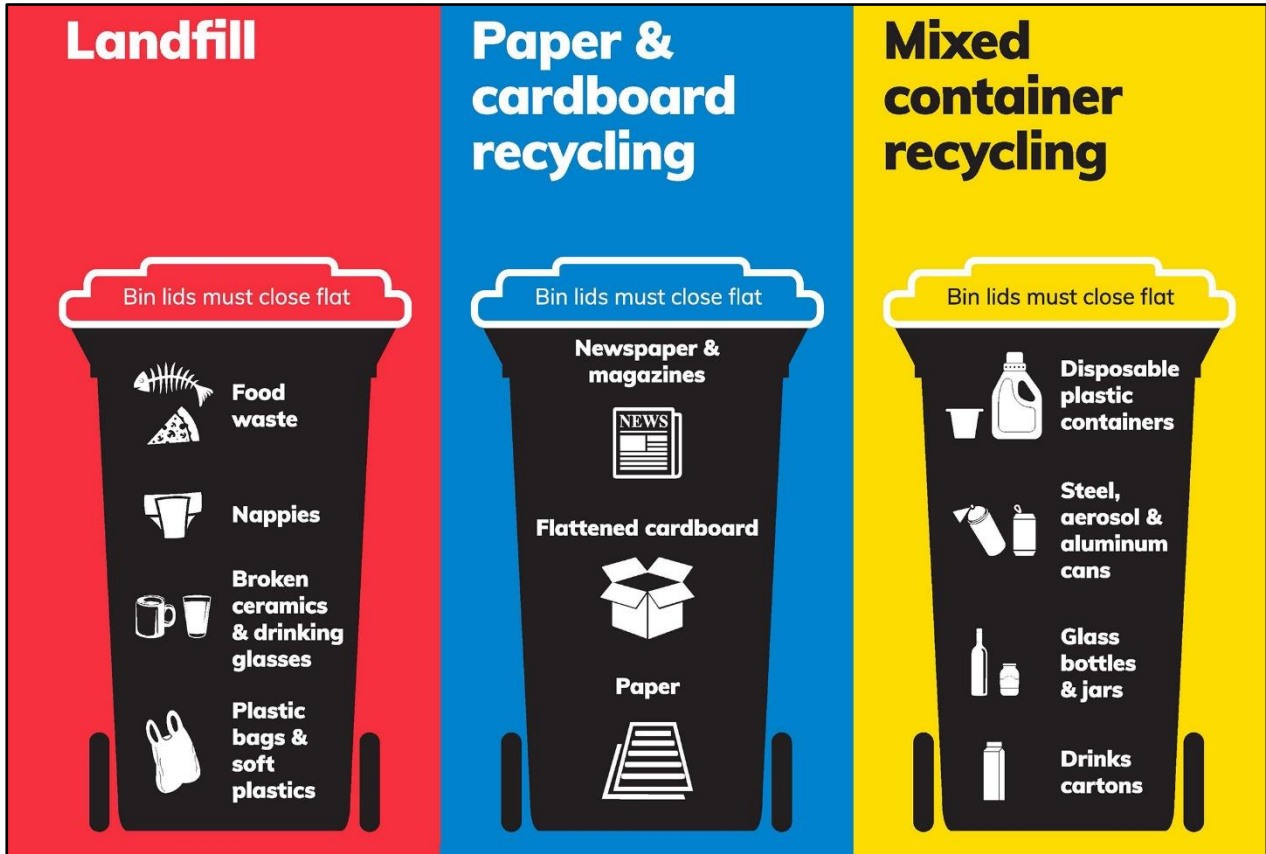


Figure 3: Guidelines for Residential Waste Placement within each MGB

The following figure illustrates the scaled diagrams of the MGB's within the waste storage areas and kerbside placement for collection.

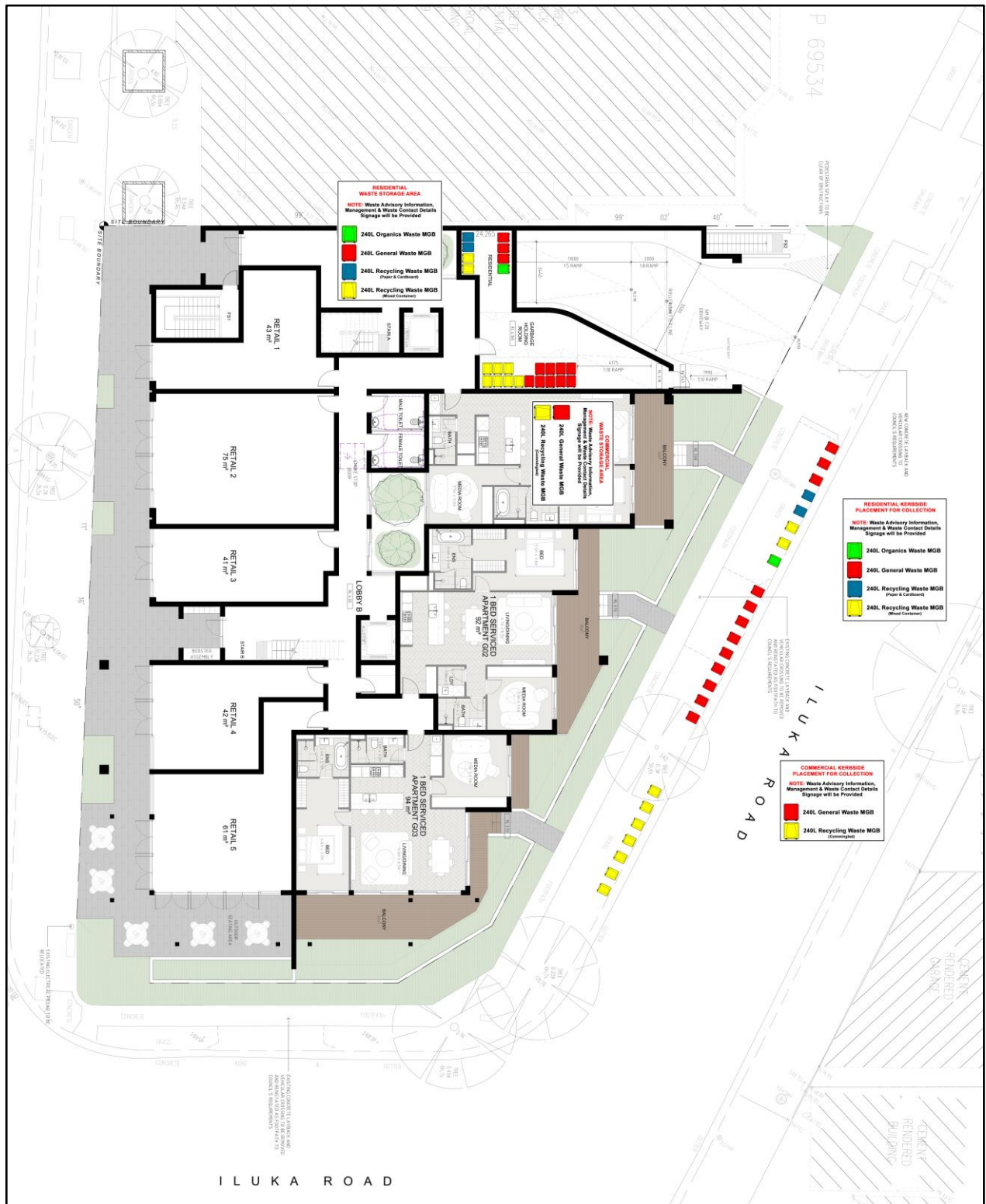


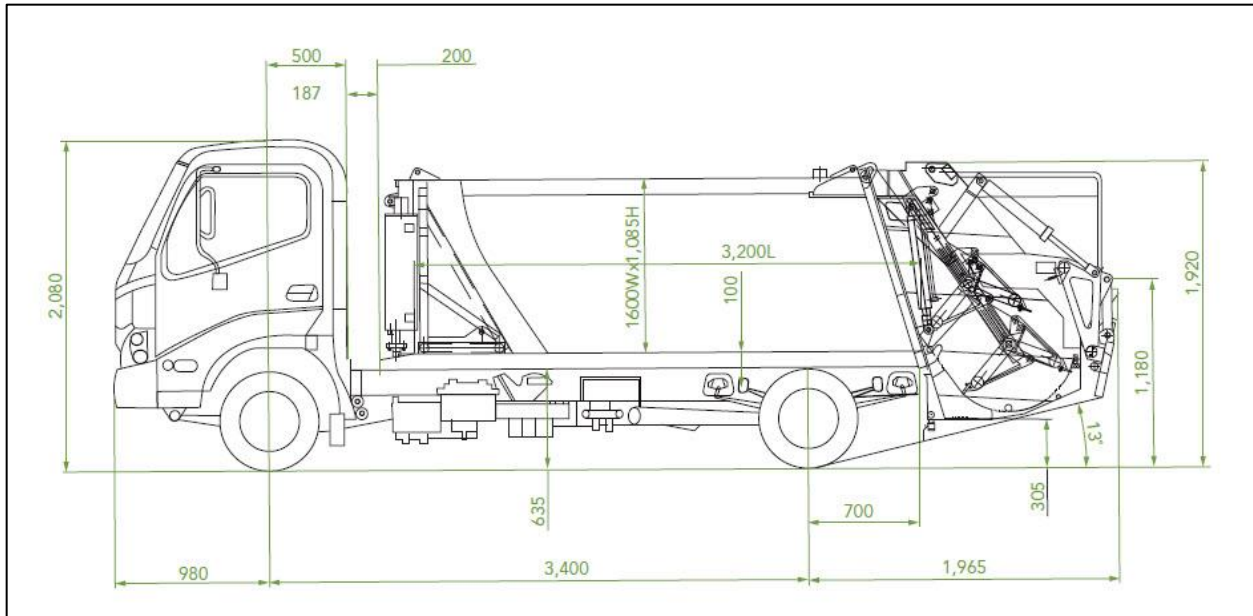
Figure 4: Scaled Diagram of the Waste Storage Areas & Placement for Collection

## Waste Collection

The waste collection service for the proposed development will be provided by Northern Beaches Council.

**NOTE:** On collection days, the caretaker will ferry the MGB's to Iluka Road, street kerbside 200mm apart for waste collection. Once all the MGB's have been emptied the caretaker will promptly return them to the waste storage areas.

The waste collection vehicle will pull up on Iluka Road emptying the MGB's. Once all the MGB's have been emptied and returned to the street kerbside, the vehicle will leave in a forward motion. The caretaker will then promptly return the MGB's to the waste storage areas.



**Figure 6: 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 waste being collected, and ferried to/from the street kerb, any other noise related to the waste management will be kept to a minimum.

### Ventilation

The waste storage areas will need to be ventilated.

### Security/Communication Strategy

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

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

### Cleaning Facilities

The caretaker is responsible for keeping the MGB's clean.

**NOTE:** It is recommended that the waste areas consist of; **(1)** Impervious coated/treated walls and ground surface within the waste area enclosure, 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 single/double doors that bolt open allowing easy removal of the MGB's. **(4)** Waste advisory information, management & waste contact details signage should be provided within the main waste area and on the MGB's.

### 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

### Communal Composting Facility

No consideration has been given to a communal composting facility. Residents wanting to compost some of their rubbish will be required to do so individually.

### Dwelling (Internal) Waste Storage

Sufficient space within the kitchen, should be provided in each dwelling for interim storage of at least one day worth of garbage and recyclables. Space should allow for separate storage of recyclables from the garbage stream and, ideally, for the segregation of food organics in a separate waste container.

### Green Waste/Food Waste

Green waste will be placed in the Organics MGB. Food waste will be placed in the General Waste MGB.

### Bulky Hard Waste

You can [pre-book two on demand collections](#) within 12 months (subject to availability). This service is only available to mainland residents that pay a domestic waste service charge.

The 12-month period commences from the date of your first booking. Please note, this service is not available during the last week of December and first week of January and longer wait times may be experienced over the summer holidays due to peak demand.

A booking must be made before materials are left out for collection.

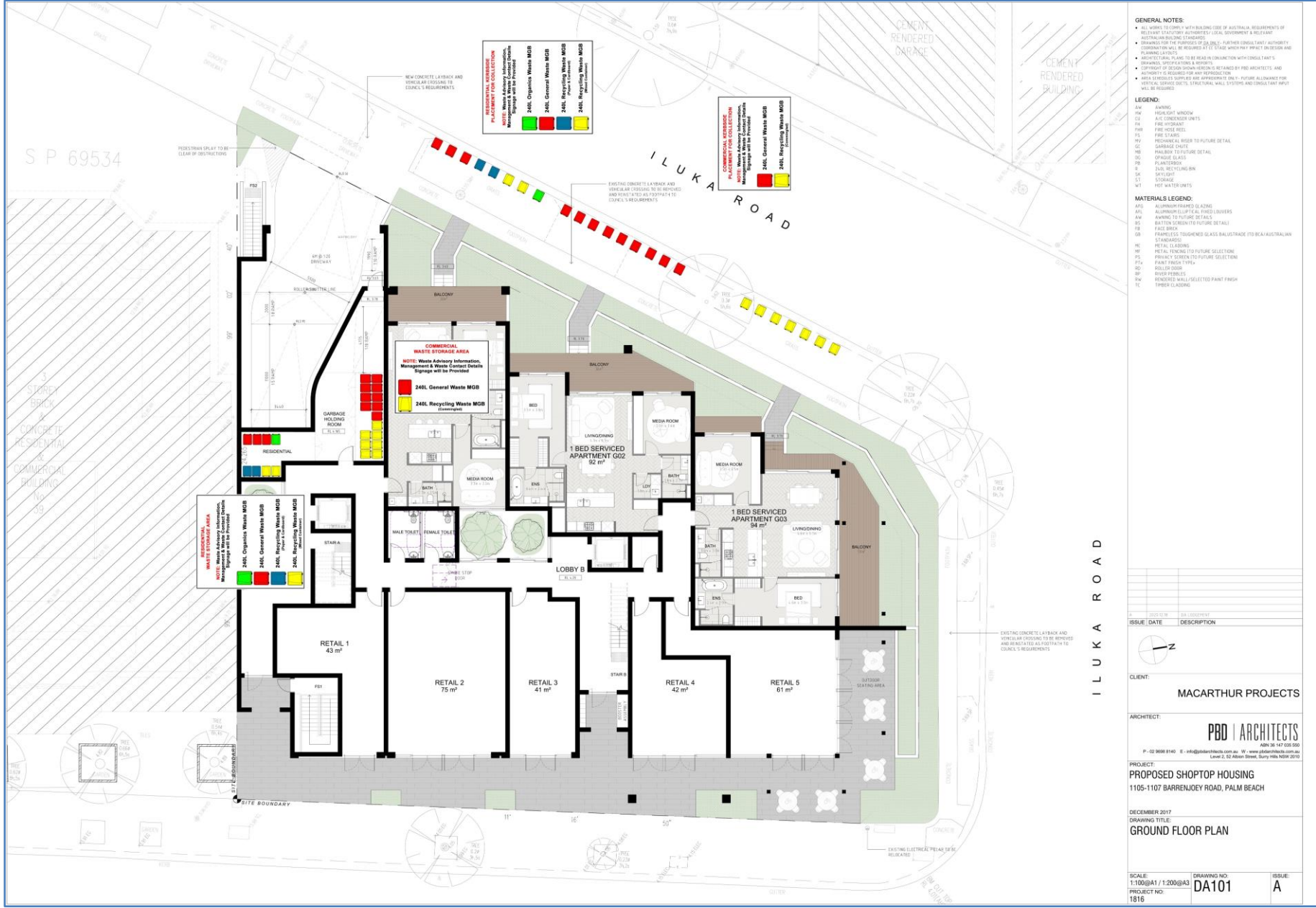
### E-Waste

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

<b>Materials</b>	<b>Company Name</b>	<b>Company Address</b>	<b>Contact Details</b>
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







**GENERAL NOTES:**

- ALL WORKS TO COMPLY WITH BUILDING CODES OF AUSTRALIA, REQUIREMENTS OF SYDNEY CITY AUTHORITY, LOCAL GOVERNMENT & RELEVANT AUSTRALIAN BUILDING STANDARDS.
- DRAWINGS FOR THE PURPOSES OF TENDERS, FURTHER CONSULTATION ALTHOUGH CONSENT SHALL BE REQUIRED AT ALL STAGES, WITH THE PROJECT DESIGN AND PLANNING LAID OUT.
- ARCHITECTURAL PLANS TO BE READ IN CONJUNCTION WITH CONSULTANT'S GENERAL SPECIFICATIONS & SCHEDULES.
- COPYRIGHT OF DESIGN DRAWING HEREIN IS RETAINED BY PBD ARCHITECTS AND IS NOT TO BE REPRODUCED OR ANY REPRODUCTION.
- AREA SCHEDULES SUPPLIED ARE APPROXIMATE ONLY - FUTURE ALLEVIATION FOR SERVICE PROVIDER DETAILS, STRUCTURAL WALL SYSTEMS AND CONSULTANT WORK WILL BE REQUIRED.

**LEGEND:**

- AW AIRING
- HW HIGH LIGHT WINDOW
- IC AC CONCRETE CURBS
- FW FIRE WYTHE
- FHW FIRE WYTHE WALL
- FS FIRE STAIRS
- FRS REINFORCED CONCRETE TO FUTURE DETAIL
- GC GARAGE CURT
- FRS REINFORCED CONCRETE TO FUTURE DETAIL
- OG OPAQUE GLASS
- PL PLASTERWORK
- S DASH RECYCLING BIN
- SPC SPOCKET
- ST STORAGE
- WT HOT WATER UNITS

**MATERIALS LEGEND:**

- AFD ALUMINIUM FRAMED GLAZING
- AL ALUMINIUM CLIP ON WALL FINISH LINERS
- AW AIRING TO FUTURE DETAILS
- AW AIRING TO FUTURE DETAILS
- BS BATH LINEN (TO FUTURE DETAIL)
- FB FLOOR BRICK
- GB GRANITE BLENDED TONGUED GLASS BALUSTRADE (TO BE AUSTRALIAN STANDARDS)
- HC METAL CLADDING
- MC METAL FINISHING TO FUTURE SELECTION
- PC PRIVATE GREEN TO FUTURE SELECTION
- PF PAINT FINISH (TYPICAL)
- HALL OF COMMONS
- RIVER PISBLES
- RENDERED WALL (COLLECTED PAINT FINISH)
- TR TRIMMER CLADDING

ILUKA ROAD

ISSUE	DATE	DESCRIPTION

CLIENT: **MACARTHUR PROJECTS**

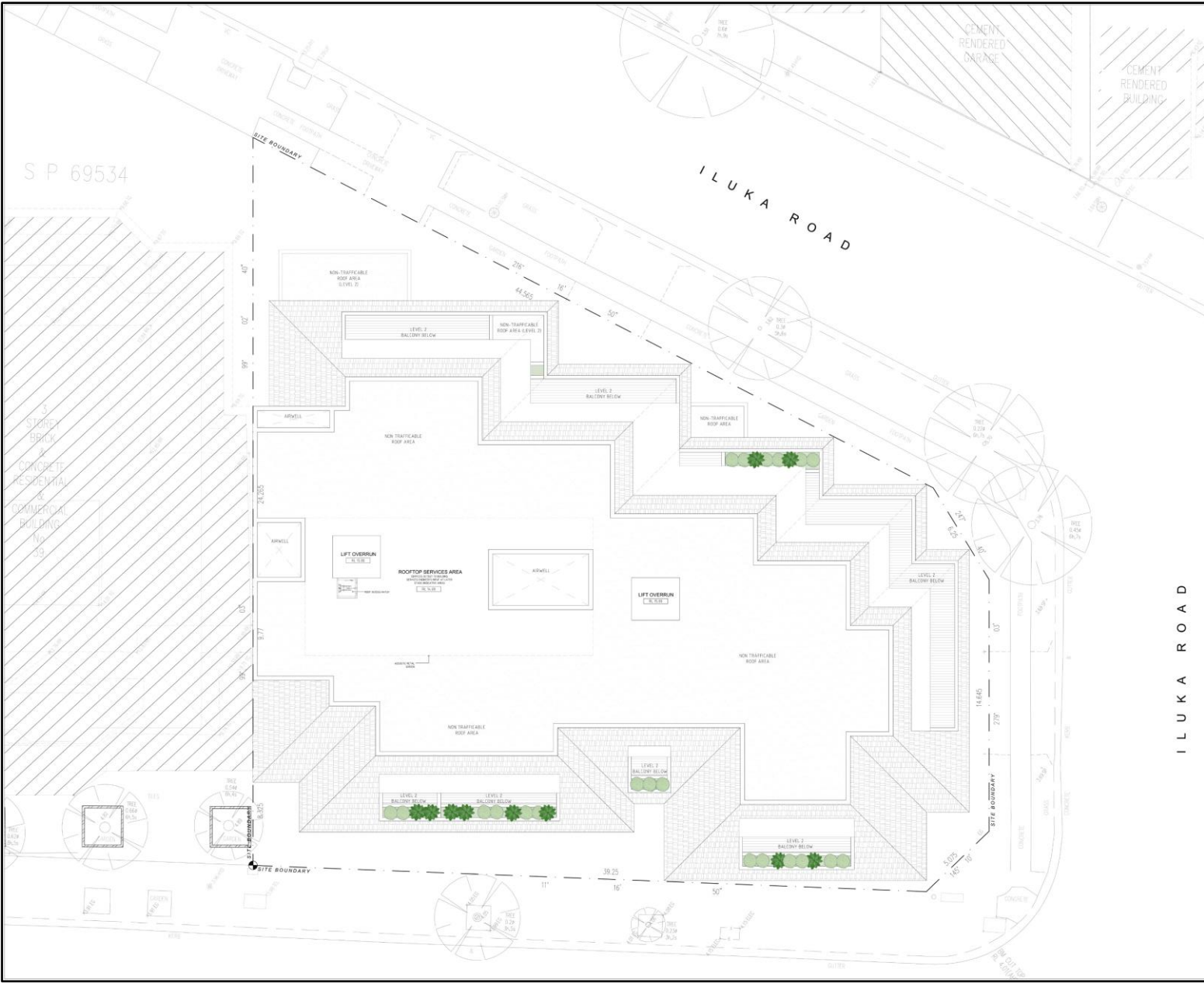
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PROJECT: **PROPOSED SHOPTOP HOUSING**  
**1105-1107 BARRENJOEY ROAD, PALM BEACH**

DECEMBER 2017  
 DRAWING TITLE: **LEVEL 1 PLAN**

SCALE: 1:100@A1 / 1:200@A2	DRAWING NO: <b>DA102</b>	ISSUE: <b>A</b>
PROJECT NO: 1816		





**GENERAL NOTES:**

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- DRAWINGS FOR THE PURPOSES OF PERMIT ONLY. FURTHER CONSULTATION ALTHOUGH COMMON SHALL BE REQUIRED AT ALL STAGES WITH THE PROJECT ENGINEER AND PLANNING LAUITS.
- STRUCTURAL DRAWINGS SHALL BE READ IN CONNECTION WITH CONSULTANT'S DRAWINGS, SPECIFICATIONS & MEMORANDUM.
- CONTRIBUTION OF DESIGN SPAN WHICH IS RETAINED BY PBD ARCHITECTS, AND AUTHORITY IS REQUIRED FOR ANY REPRODUCTION.
- AREA DIMENSIONS GIVEN BY ARCHITECTURE TO INDICATE FUTURE ALIGNMENT FOR SPECIAL SERVICE DETAILS, STRUCTURAL WALL SYSTEMS AND CONSULTANT INPUT WILL BE REQUIRED.

**LEGEND:**

- AW JOINING
- HW FIRE LIGHT WINDOW
- CC AIR CONDENSER UNITS
- FW FIRE HYDRANT
- FHB FIRE HOSE REEL
- FS FIRE STAIRS
- MY REINFORCEMENT BEER TO FUTURE DETAIL
- GC GARBAGE CHUTE
- MB BALCONY TO FUTURE DETAIL
- OG OPAQUE GLASS
- OL OPAQUE GLASS
- R DASH RECYCLING BIN
- SC SCOFFER
- ST STORAGE
- WT FIRE WATER DRETS

**MATERIALS LEGEND:**

- AFB ALUMINIUM FINISHED GLAZING
- AL ALUMINIUM ELLIPTICAL FINISH LAMINERS
- AW WINDOW TO FUTURE DETAILS
- BC BATH SCREEN TO FUTURE DETAIL
- FB FACE BRICK
- GR FRAMELESS TIGHTENED GLASS BALUSTRADE TO BRAY AUSTRALIAN STANDARDS
- MC METAL CLADDING
- ML METAL PANELING TO FUTURE SELECTION
- PTA PAINT FACED TO FUTURE SELECTION
- RF RIVER PEBBLES
- RW REINFORCED WALL SELECTED PAINT FINISH
- TL TRIMMER CLADDING

NO	ISSUE DATE	DESCRIPTION



CLIENT: **MACARTHUR PROJECTS**

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PROJECT: **PROPOSED SHOPTOP HOUSING**  
**1105-1107 BARRENJOEY ROAD, PALM BEACH**

DECEMBER 2017  
 DRAWING TITLE: **ROOF PLAN**

SCALE: 1:100@A1 / 1:200@A2  
 DRAWING NO: **DA104**  
 PROJECT NO: 1816  
 ISSUE: **A**

ILUKA ROAD