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WASTE MANAGEMENT PLAN

69 & 71 Banana Street and 18 Outridge Street, Redland Bay QLD, 4165

Proposed Childcare Centre and Residential Apartments

**PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL**

Approval no: DEV2022/1349

Date: 15/12/2023



Prepared for:

Hayes Anderson Lynch Architects Pty Ltd

Date Prepared

March 2023

Revision:

1.0

Redland City Council Application #:

TBA

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Introduction

AusWide Consulting was commissioned by Hayes Anderson Lynch Architects Pty Ltd to prepare a Waste Management Plan (WMP) for approval of a proposed residential apartment and childcare development at 69 & 71 Banana Street and 18 Outridge Street, Redland Bay QLD, 4165.

The proposed development consists of:

CHILDCARE CENTRE	RESIDENTIAL APARTMENTS
120 Places	52 Dwellings

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 Hayes Anderson Lynch Architects Pty Ltd
- EPA Guidelines for Waste Management in New Developments
- Redland City Council – Part 11n – Planning Scheme Policy 9 – Infrastructure Works – Chapter 16 -Waste Management

Background and Existing Conditions

The subject site is located at 69 & 71 Banana Street and 18 Outridge Street, Redland Bay, just west of the Redland Bay Marina Platform 3. The primary land use surrounding the area is mixed-use, residential and marine activities.

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

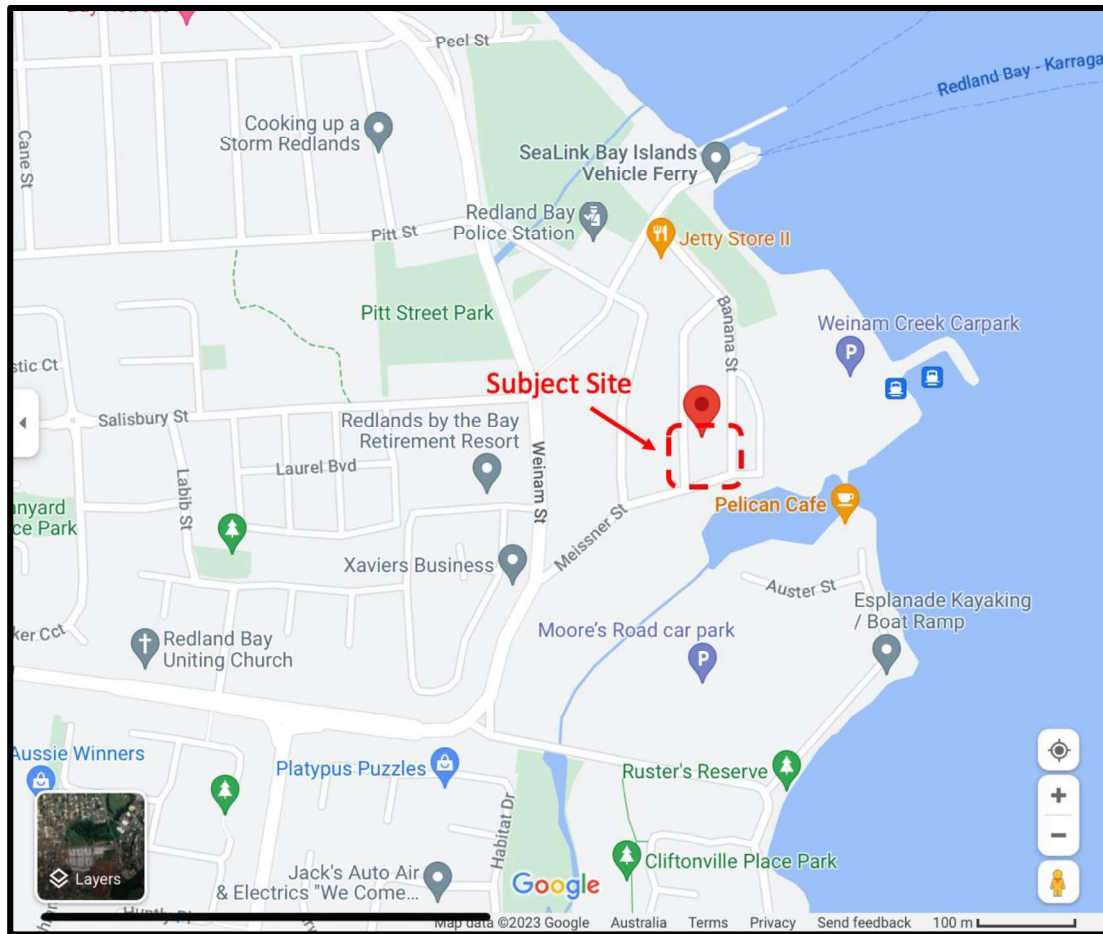


Figure 1: Location of the Subject Site



Figure 2: Aerial View of the Subject Site

Proposed Development

The proposed development will consist of multi-unit residential apartments, a childcare centre and basement level car park. It will be accessed via the paved walkways and driveway. A pedestrian walkway for the residential apartments will be via Banana Street and a pedestrian entry for the childcare facility will be via Outridge Street. A vehicular access to the basement level car park will be shared for both residential and the childcare facility with the entry and exit via Outridge Street.

Anticipated Waste Generation, Storage and Collection

The waste will be collected by a private waste services contractor.

Waste Generation

This report has used the waste generation rates for a childcare centre as defined in the 'EPA Guidelines for Waste Management in New Developments' and the waste generation rates for a multi-unit development as defined in the Redland City Council – Part 11 n – Planning Scheme Policy 9 – Infrastructure Works – Chapter 16 -Waste Management.

The following Table 1 illustrates the typical uncompacted general and recycling generation rates based on use.

Table 1: Typical Garbage and Recycling Generation Rates

Type of Premises	General Waste	Recycling Waste	Food Waste
Childcare Facility	50L/100m ² floor area /day	50L/100m ² floor area /day	15L/100m ² floor area /day
Multi-unit Residential Developments	100L/unit/week	70L/unit/week	N/A

Waste within Overall Development

Using the general and recycling generation rates above, the following can be calculated for this development:

Table 2: Waste Generation For Childcare Facility

Type of Premises	Gross Floor Area (m ²)	General Waste	Recycling Waste	Food Waste
Childcare Facility	829.94	415L/day	415L/day	124.5L/day
		2,075L/week	2,075L/week	622.5L/week

NB: Organic Waste will be disposed of with the general waste however space will be allocated for future organic collection if implemented.

NB: Weekly waste generation has assumed a 5-day operation.

Table 3: Waste Generation For Proposed Residential Development

Type of Premises	Units	General Waste	Recycling Waste
Residential Units	52	5200L/week	3640L/week

Mobile Garbage Bin Requirements

The MGB requirements for the separate sections of the proposed development are shown below.

Childcare Facility MGBs

- 1 x 1100L General Waste MGB – collected and emptied twice a week.
- 1 x 1100L Recycling Waste MGB – collected and emptied once a week.

Residential Development MGBs

- 3 x 1100L General Waste MGBs – collected and emptied twice a week.
- 2 x 1100L Recycling Waste MGBs – collected and emptied twice a week.

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

Table 4: Typical Mobile Garbage Bin Measurements for Redland City Council

Size (L)	Height (mm)	Width (mm)	Depth (mm)
1,100L	1,500	1,300	1,300
240L	1,080	580	735

NOTE: Generation rates are based on generation rates within the 'EPA Guidelines for Waste Management in New Developments'. Actual usage can vary and may be generated at a reduced rate. Management will monitor all waste requirements and handling due to the on-going operations of business and assessing any needs for waste management plan revisions.

Waste Storage Area Design Considerations

The design of the waste storage area has considered the requirements for industrial or commercial properties as described in the 'Redland City Council – Part 11 n- Planning Scheme Policy 9 – Infrastructure Works – Chapter 16 -Waste Management'.

These include the following:

- Residential dwelling units are provided with a centralised waste and recycling storage area that is separate and additional to a centralised waste and recycling storage area for the commercial use (**SEE BELOW SECTION**);
- Each residential and commercial waste and recycling storage area (**COMPLIANT**)–
 - a) is large enough to store the number of waste and recycling containers, being bulk bins or wheelie bins, equivalent in volume of expected waste generation;
 - b) is dedicated for the storage of waste and recycling containers and associated equipment only;
 - c) allows for 0.5m space around containers for manoeuvrability and cleansing;
 - d) has separate access for container retrieval and occupant use;
 - e) has a smooth hardstand surface that will permit easy bin movement, not including asphaltic concrete;
 - f) is fitted with bump rails to prevent bins from contacting walls;
 - g) is both a storage area and a service point when bulk bins greater than 1.5m³ are used;
 - h) is not located immediately adjacent to living and eating areas of any unit or neighbouring property;
- For internal waste and recycling storage rooms (**COMPLIANT**)–
 - a) doors are close fitting, self closing and wide enough for bulk bin access and manoeuvrability;
 - b) walls, doors and roof are constructed and lined with a non-combustible and impervious material with a smooth finish and a fire resistance of one hour;
 - c) the junctions of walls with floors are covered and artificial lighting provided;
 - d) door frames are made of metal, hardwood, or metal clad softwood and are rebated with a lock capable of being activated from within the room without a key at all times;
 - e) a hose-cock and adequate length of hand hose of minimum internal diameter 12 mm is provided immediately outside the room;
 - f) unless refrigerated below four degrees Celsius, the room has an approve mechanical exhaust system for ventilation or permanent, unobstructed natural ventilation openings direct to the external air not less than one-twentieth (1/20th) of the floor area. One half of such openings shall be situated at or neat the floor level, and one half at or near the ceiling level;
 - g) fitted with automatic sprinklers or other system for the control of fire which meets Australian Standards;
 - h) are fly and vermin proof;
 - i) has smooth flooring that is graded and drained to a trade waste outlet located outside to the waste room and as close to the doorway as possible, or otherwise to the satisfaction of the local government;

- j) is designed and constructed to prevent stormwater and surface water from entering the waste room;
- k) has all conduits concealed in the floor, wall or ceilings;

Waste Storage Areas

The proposed development has 2 dedicated waste storage areas on the ground level (shown below in figure 4).

The smaller bin room is dedicated to residential general waste only. This room accommodates the associated equipment for collecting waste from the chutes that are located on each level. This room will only be accessible to building management.

The larger bin room will accommodate all of the MGBs from the childcare centre and the recycling waste for residents due to the mechanical equipment associated with the bin chutes.

Residents will be advised that their general waste must be disposed of using the waste chutes on each level. In addition all of the MGBs for the childcare centre will remain locked, with the exception of collection day.

Residential recycling MGBs will be easily accessible and clearly marked.

To ensure the correct allocation of fees and charges building management will be required to keep a tally of all residential and childcare centre MGBs collected.

A section in the bin room will also be allocated to bulky waste and building management will arrange collection as required.

Waste Storage Area Signage

Waste separation and sorting information will be provided within the main waste storage area to ensure appropriate source separation of waste. The following figures 3 shows examples of waste signage and appropriate waste separation.

Recycling	Garbage
👍 All recycling 👍 Steel, tin, aluminium cans, including empty aerosols 👍 Clear, brown and green glass bottles and jars (rinsed, no lids) 👍 Plastic bottles, soft drink bottles and containers (rinsed, no lids) 👍 Cardboard boxes, milk and juice cartons 👍 Newspapers, magazines, office paper and junk mail, including window envelopes	👍 General waste 👍 Plastic bags 👍 Packets, wrappers, cling wrap and bubble wrap 👍 Nappies and sanitary waste, wrapped tightly and stored in well-sealed bags 👍 Pet waste, kitty litter 👍 Foam, polystyrene 👍 Light globes, mirrors, ceramics, cookware and drinking glasses
👎 <i>Plastic bags, light bulbs, mirrors or drinking glasses, food or general waste ceramics, crockery or ovenware, foam or polystyrene, waxed cardboard boxes.</i>	👎 <i>Building materials, syringes, oil or paint, gas bottles, hazardous or chemical waste</i> 👎 <i>Medical waste (speak to your doctor or pharmacy).</i>

Figure 3: Recycling and General Waste MGB Guidelines

The following figure illustrates a scaled diagram of the MGBs within waste storage areas.

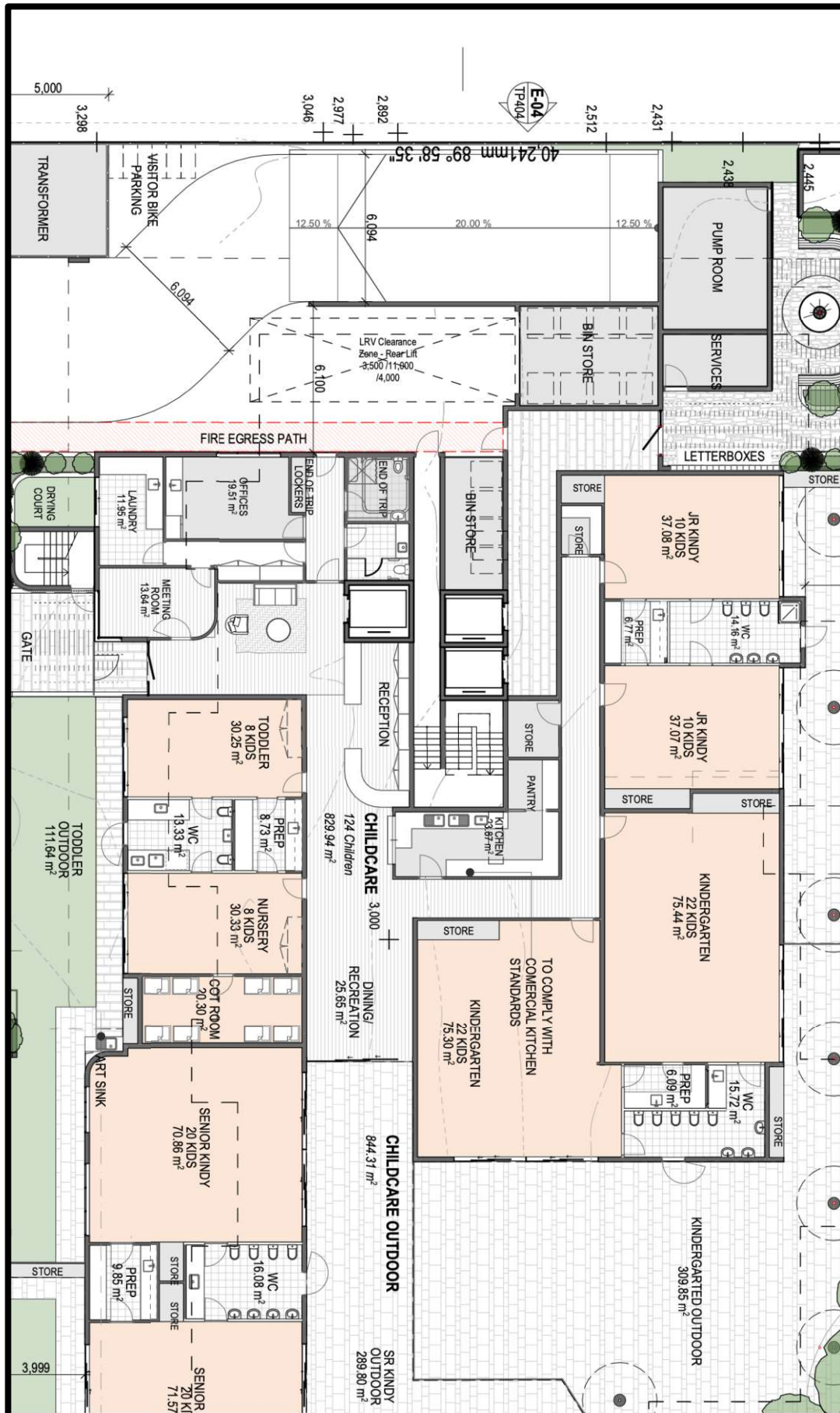


Figure 4: Scaled Diagram of the Waste Storage Area

Waste Chute

As per the 'Redland City Council – Part 11 n – Planning Scheme Policy 9 – Infrastructure Works – Chapter 16 – Waste Management' for developments over 3 storeys a waste chute is to be provided on each level. The waste chute is located adjacent to the lifts on each level and will allow for the disposal of general waste only. The below figure 5 shows the location of the waste chute on each floor.

The design of the waste chute will include the following:

- a) is cylindrical with a minimum diameter of 450mm;
- b) have a bottom edge that finishes at least 25mm below the level of the ceiling in the waste room, with a maximum 300mm between chute edge and any extension thereof and the top of the container;
- c) is vertical throughout the length upto the highest hopper;
- d) discharges centrally above the waste container or compactor in the waste room;
- e) continues in full bore above the roof of the building, or not less than 600mm above the highest hopper;
- f) is fully supported at each floor level;
- g) is continued in fire rated shafts in compliance with the appropriate standards;
- h) has chute pipes with access provided at appropriate levels and a nylon brush of similar appliance on a pulley system, for clearing obstructions and cleansing;
- i) has a ventilation system to ensure that air does not flow from the chute through service
- j) where the chute is not continued to the full height of the building, a vent of non-combustible material having a minimum diameter of 150mm is provided. Such vent is carried to a point of at least 2 metres above the eaves of the building or the eaves of any building within 10 metres;
- k) has a shutter fitted for closing off the chute in the case of fire or when the waste container is withdrawn. The shutter is self-closing, constructed of galvanized steel sheet or other approved metal and fitted with a fusible link for automatic operation in the case of a fire in the waste container or waste room.



Figure 5: Waste Chute Location

As discussed, the waste chute delivers the waste to the residential general waste storage area on the ground level. The room will be fitted with a linear track system similar to the elephant foot system (shown below) that will automatically change over the MGBs once full. This will be a 2 MGB system and building management will be altered once the first MGB is full and will be replaced with another empty MGB as required.

The following figure 6 shows the layout of an Elephant foot track system.

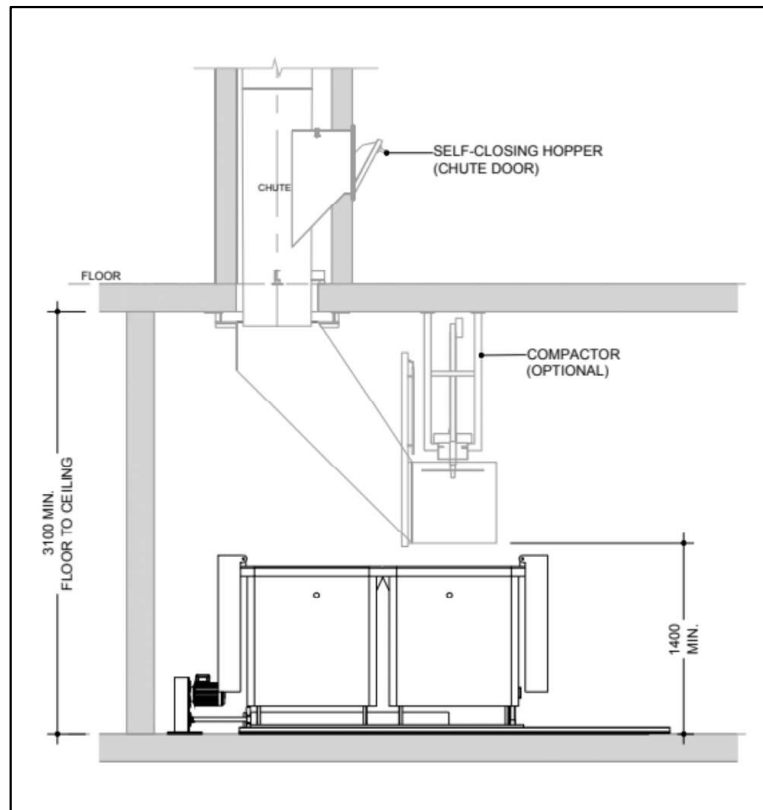


Figure 6: Elephant Foot Linear Track System

Waste Collection

The waste collection will utilise the Redland City Council bulk bin waste collection service.

The waste services vehicle is able to enter the proposed development via Outridge Street using the two-way entrance. The MGBs will be collected from the loading bay directly in front of both the residential and childcare facility waste storage areas.

Building management will be responsible for wheeling the MGBs to the loading area from the residential general waste storage area for collection.

Once the MGBs are all emptied, the waste vehicle will exit the loading area in a forward motion.

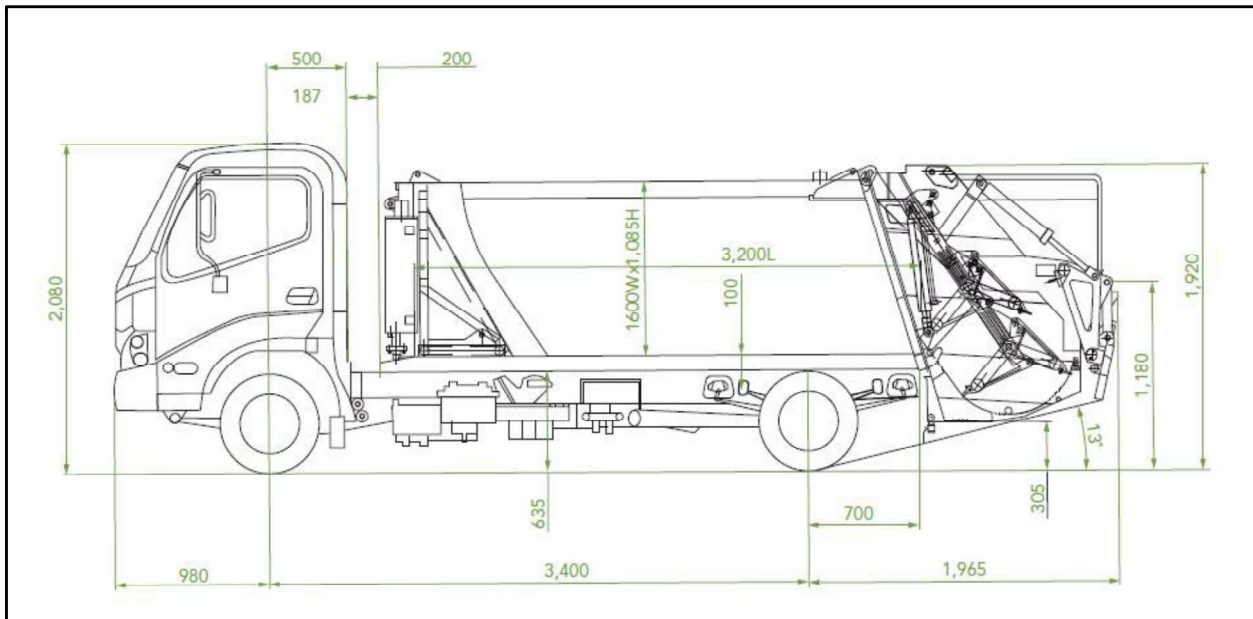


Figure 7: Template of typical Waste Collection Vehicle

Amenity

Noise

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

Ventilation

The waste storage area will be ventilated. The area will have a screened wall ensuring sufficient air flow.

Security/Communication Strategy

All MGBs will be secured within the ground level waste storage areas.

Management will ensure all staff and residents receive detailed documentation outlining all necessary requirements and appropriate source separation guides.

Cleaning Facilities/Bin Enclosures

Management & staff will be responsible for keeping the MGBs clean.

NOTE: **(1)** The bin enclosures shall be large enough to accommodate the required number of bins based on the available bin capacity, dimensions and waste generation rates. A scaled and dimensioned plan shall be provided which shows the communal bin enclosure and the bin layout. **(2)** Sufficient space must be provided to allow the easy passage of bins in and out of the bin enclosure as per the access width requirements detailed above. **(3)** Common bin enclosures must be fitted with a self-closing gate. **(4)** The bin enclosures shall not be fitted with a lock. **(5)** The bin enclosures must have a smooth impervious floor sloped to a drain connected to the sewer system of not less than 75mm in thickness, to the satisfaction of the Redland City Council. **(6)** The bin enclosures must have enough space and be constructed of a material to facilitate the cleaning of bins inside the enclosure. **(7)** Fully enclosed bin enclosures must be ventilated to a suitable standard, to the satisfaction of the City.

Prevention of Vermin

Staff and residents will be advised to not overfill the bins so that the lids are closed at all times. The waste area should be constructed to help keep vermin out with lockable gates. Rat traps should be placed in a safe place within the waste area.

Miscellaneous

Communal Composting Facility

No consideration has been given to a composting facility at this stage.

Interim Internal Waste Storage

Waste bins will be provided for interim storage of one day's worth of garbage and recyclables within each of the activity areas within the childcare facility and also the residential units. Space should be allowed for separate storage of recyclables from the general waste.

Green Waste/Food Waste

Green waste will be handled by a gardening contractor. Food waste should be placed in the General Waste MGBs.

Bulky Hard Waste

If hard waste collection is required, management should call a private contractor directly.

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.