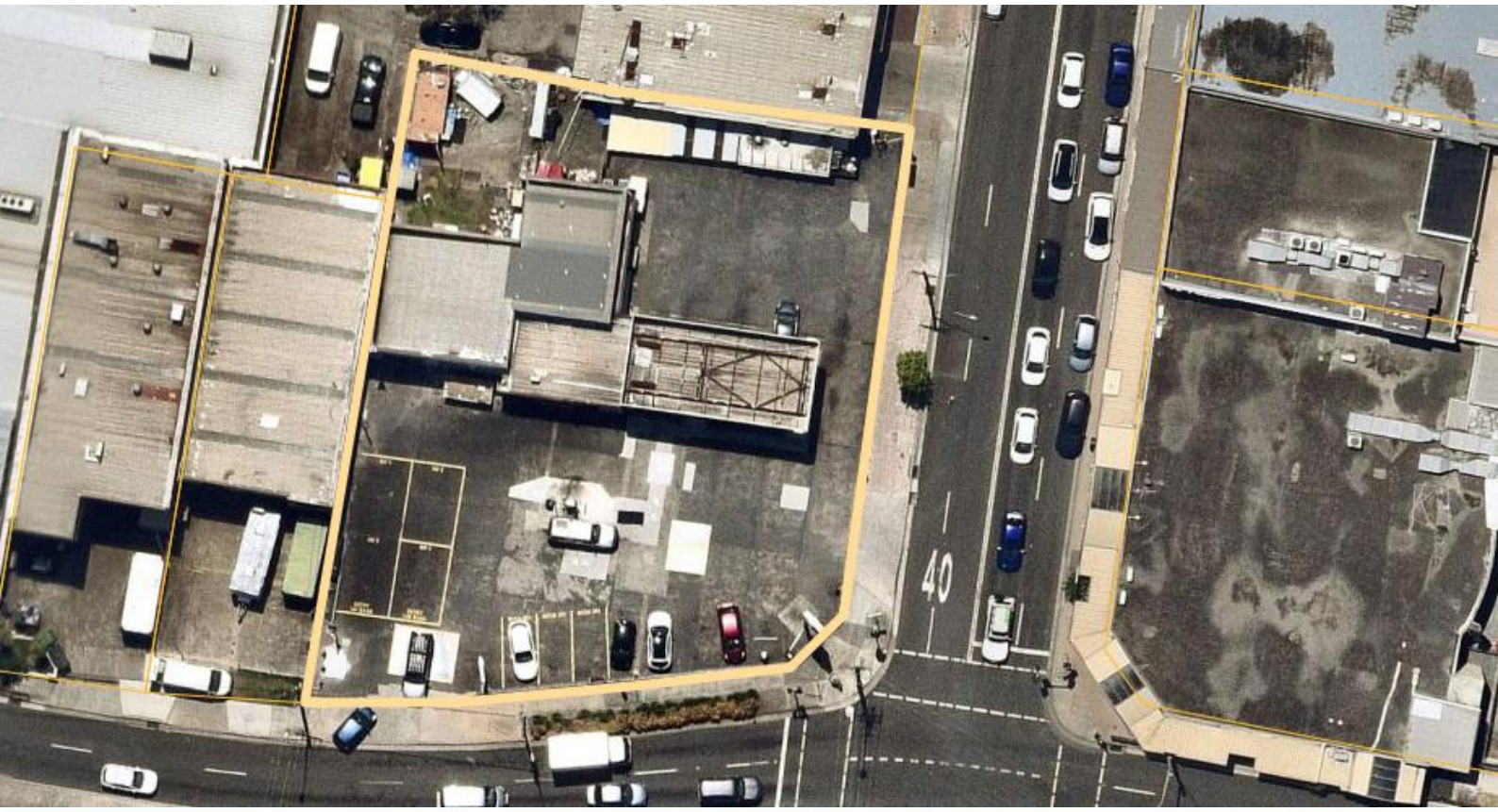
BARKER RYAN STEWART



Waste Management Plan

Mixed Use Development

190 Waterloo Rd, Greenacre

March 2025

ENGINEERING
PLANNING
SURVEYING
CERTIFICATION
PROJECT MANAGEMENT

www.brs.com.au

Project No.	240562
Author	L Wall
Checked	L Wrightson
Approved	L Wrightson

Rev No.	Status	Date	Comments
1	Draft	17/01/2025	For co-ordination
2	Final	03/03/2025	For DA submission

REPORT DISCLAIMER
This report has been prepared for the client identified in section 1.0 only and cannot be relied on or used by any third party. Any representation, statement, opinion or advice, expressed or implied in this report is made in good faith but on the basis that Barker Ryan Stewart are not liable (whether by reason of negligence, lack of care or otherwise) to any person for any damage or loss whatsoever which has occurred or may occur in relation to that person taking or not taking (as the case may be) action in any respect of any representation, statement, or advice referred to above.

This report is for development application purposes only and is not to be relied upon for construction purposes. The waste calculations included in the report are an estimate only, based on the plans and documents supplied by the client and waste generation guidelines from Council, the EPA and other third parties. This report is a guideline only and should not be used as a basis for feasibility studies, safety procedures, operational costs, demolition / construction estimates or bills of quantities. Should waste generation be higher than expected, the site manager shall make appropriate adjustments to accommodate additional waste. Any equipment recommended in this report shall be assessed by the supplier and site manager to determine it is fit for the intended purpose.

SYDNEY
P (02) 9659 0005
E sydney@brs.com.au

CENTRAL COAST
P (02) 4325 5255
E coast@brs.com.au

HUNTER
P (02) 4966 8388
E hunter@brs.com.au

COFFS HARBOUR
P (02) 5642 4222
E coffs@brs.com.au

NORTHERN RIVERS
P (02) 6681 6696
E northernrivers@brs.com.au

SOUTH EAST QLD
P (07) 5582 6555
E seqld@brs.com.au

NORTH QLD
P (07) 4453 0555
E northqld@brs.com.au

www.brs.com.au

Table of Contents

List of Figures

List of Tables

1 Author and Project Details

Author Details	
Name	Barker Ryan Stewart
Address	Suite 603, 12 Century Circuit, Baulkham Hills 2153
Phone number(s)	02 9659 0005
Email	planning@brs.com.au

Development Details	
Project Details	Mixed-use development comprising retail premises and residential flat building
Address of Development	190 Waterloo Road, Greenacre
Existing Buildings and other structures currently on the site	Service station Comprising: - sales building, - petrol pumps - car wash - signage
Description of proposed development	Demolition of all existing structures Construction of new mixed-use development comprising 4x retail tenancies and 62 residential dwellings (units)

This development achieves the waste objectives set out in the DCP. The details on this form are the provisions and intentions for minimising waste relating to this project. All records demonstrating lawful disposal of waste will be retained and kept readily accessible for inspection by regulatory authorities such as council, OEH or WorkCover NSW.

Contact Name	Lachlan Wall
Date	3 March 2025

2 Council Requirements

This Waste Management Plan (WMP) has been prepared having regard for the specific waste management objectives of the Canterbury-Bankstown Development Control Plan (DCP) for residential and commercial development, and the Canterbury-Bankstown Waste Management Guide for new developments. The specific waste management objectives of the Canterbury-Bankstown DCP are:

1. *To maximise resource recovery and encourage source separation of waste, reuse and recycling by ensuring development provides adequate and appropriate bin storage and collection areas.*
2. *To ensure development incorporates well-designed and adaptable bin storage areas and collection facilities that are convenient and accessible to occupants.*
3. *To maximise residential amenity and minimise adverse environmental and health related impacts associated with waste management such as odour and noise from bin storage and collection areas and waste collection vehicles.*
4. *To ensure bin storage and collection areas are designed to integrate with and meet the requirements for Council's domestic waste services.*
5. *To ensure development facilitates all waste streams being handled, stored and collected in a manner to reduce risk to health and safety of all users including pedestrians, maintenance (such as caretakers), collection staff and contractors (and required vehicles and equipment)*
6. *To integrate bin storage and collection areas with the building form and landscape to avoid adverse visual impacts on the streetscape and neighbourhood.*
7. *To assist in achieving Federal and State Government waste minimisation and diversion targets as set by relevant legislation, regulations and strategies.*

The proposed development will be consistent with the guiding waste management principles of:

- Reduce.
- Reuse.
- Recycle.

Table 1 below illustrates how this WMP addresses the Council controls included in Sections 3 and 4 of the CBDCP chapter 3.3.

Table 1: Council controls included in Section 2.

<table>
<tr><th>DCP Control</th><th>Comment</th></tr>
<tr><td>2.1 The weekly generation rates per dwelling are:

<table><tr><th>General Waste</th><th>Recycling</th><th>Garden Organics</th></tr><tr><td>140L</td><td>120L</td><td>120L*</td></tr></table>
* Residential flat buildings, shop top housing and mixed-use development are allocated 1 bin per 10 dwellings.</td><td>Waste generation for the residential component of the site has been designed in accordance with the weekly generation rates.</td></tr>
<tr><td>The bin sizes for residential development are.
<table><tr><th rowspan="2">Residential development</th><th colspan="3">Waste Stream</th></tr><tr><th>General Waste</th><th>Recycling</th><th>Garden Organics</th></tr><tr><td>Residential flat buildings, shop top housing,</td><td>660L / 1,100L or hook lift bin with compactor</td><td>660L or 1,100L</td><td>240L</td></tr></table></td><td>1100L bins have been provided for the residential component of the development in accordance with the required bin sizes in this control</td></tr>
</table>

DCP Control	Comment
mixed use development	

2.3 *The standard bin dimensions are listed as below.*

Standard bin type	Dimensions		
	Height	Width	Depth
140L mobile garbage bin	930mm	530mm	610mm
240L mobile garbage bin	1,060mm	580mm	730mm
660L bulk bin	1,250mm	1,370mm	850mm
1,100L bulk bin	1,470mm	1,370mm	1,245mm
Hook lift/compactor bin ($10m^3$–$30m^3$)	2.5m	2.5m	6m

1100L bins have been provided for the residential component of the development in accordance with the required bin sizes in this control

2.4 *The standard service frequencies for residential development are:*

Residential development	***Service frequency***			
	General waste	***Recycling***	***Garden organics***	***Bulky Waste (per calendar Year***
Low rise residential flat buildings, shop top housing, mixed use development	*One collection per week*	*One collection per fortnight*	*One collection per fortnight*	*Development (51 or more dwellings)–Six collections***

*****Bookings to be made by caretaker, building manager or strata manager on behalf of the whole building.*

The collection frequency is sought to be increased to a twice weekly collection for general waste and recycling waste streams. Garden organics will be collected once weekly.

Bulky waste collection is proposed to occur at 6 collections per year as per the control.

Section 3 Residential Development - All Residential Development types

3.1 *Council or its contractors are solely to provide the waste services to all residential development types as required under the Local Government Act 1993.*

A variation to this requirement has been sought due to the nature of the on-street collection proposed.

To minimise the area of Waterloo Road required to be used for both bins and the waste collection vehicle, a private waste contractor will be used to collect waste within the area identified within Waterloo Road frontage.

Waste-free, a private waste contractor, has confirmed that they are able to provide a 'mini vehicle' of dimensions 6.4m long and 2.2m high. That can service the development. www.waste-free.com.au

3.2 *Each dwelling is to have:*

Each dwelling has sufficient space to store waste within and to separate

DCP Control	Comment
(a) A waste storage cupboard in the kitchen capable of holding two days waste and recycling and be sufficient to enable separation of recyclable materials. *(b) A suitable space in the kitchen for a caddy to collect food waste.*	waste streams within the dwelling unit.
***3.3** Development must provide an adequately sized bin storage area behind the front building line to accommodate all allocated bins.*	All bin storage areas are located behind the building line.
***3.4** The location of the nominated collection point and bin storage area must not adversely impact on the streetscape, building design or amenity of dwellings.*	The collection point is located within the street frontage of Waterloo Street to the east of the site. The bin storage areas have been incorporated into the design of the building and will not have an adverse impact on building design or amenity of the dwellings.
***3.5** The location of the bin storage area should ensure this area:* *(a) is screened or cannot be viewed from the public domain; and* *(b) is away from windows of habitable rooms to reduce adverse amenity impacts associated with noise, odour and traffic.*	The bin storage area is contained within the building envelope and is screened from the public domain. the bin storage area faces the street, there are no habitable rooms or windows facing the bin storage rooms.
***3.6** The location of the bin storage area is to be convenient to use for the dwelling occupants and caretakers, through reducing the bin travel distance from the bin storage area to the nominated kerbside collection point. The bin-carting route from the bin storage area to the collection point must not pass through any internal areas of the building/dwelling and must avoid stairs or slopes.*	The waste storage and collection areas have been designed to fit with the overall building design. As previously stated, there are two main storage areas, one in the basement and another at ground level. The building managers will be responsible for transporting waste for collection days.
***3.7** Where possible, development may consider providing each dwelling with a suitable space for composting and worm farming, located within the backyard, private courtyard or open space. Composting facilities should locate on an unpaved area, with a minimum size of 1m2 per dwelling*	The design does not propose to provide a composting area, however an area within the communal open space could be provided for composting facility if the tenants elect to maintain one. The size of any such compost area would be subject to the number of residents who may choose to maintain / use it.
***3.8** Dwellings are to have access to an adequately sized on-site storage area to store bulky waste awaiting collection.*	A suitable bulky waste storage area has been provided of approximate dimensions 14.4m^2 and is of sufficient size to store the largest bulky waste item, i.e. furniture and white goods.
***3.9** Development must comply with the requirements of the applicable Waste Design for New Developments Guide.*	The development is considered to comply with the guide, refer to table

DCP Control	Comment
	2 for a detailed assessment against this guide.
3.10 *Council cannot provide a collect and return service at locations where waste collection vehicles are not permitted to stop in accordance with road rules.*	The Waterloo Road frontage where bin collection is proposed permits the stopping of vehicles.
Residential flat buildings	
3.18 *In addition to clauses 3.1–3.10, residential flat buildings are to provide a communal bin storage area that is designed to integrate with Council's standard collect and return service by locating the bin storage area within 10m of a layback to the nominated collection point and ensuring safe parking for Council's service vehicle, without blocking driveways or traffic. Nominated collection points must avoid classified roads and roads with high vehicle and pedestrian traffic*	A communal bin storage area is provided on basement level 01. A secondary bin room for the holding of bins is provided on the ground floor and is located within 10m of the collection point. The bin storage room located within the ground floor is capable of storing all residential bins at ground level before collection to enable the efficient presentation and return of bins to the bin room. An upgrade to the existing kerb of Waterloo Road to provide a layback Kerb is to be provided as part of the development to enable collect and return service.
3.19 *The communal bin storage area must be of sufficient size to accommodate all allocated bins, and the location and design must:* *(a) integrate with the building form and landscape.* *(b) locate either at ground level behind the front building line or within the basement level of the development.* *(c) provide direct and convenient access for the occupants of the development. The maximum walking distance from any entrance of a dwelling to the communal bin storage area must not exceed 30m (lift travel distance not included).* *(d) allow for the safe and direct transfer of all bins from the bin storage area to the collection point.* *(e) not adversely impact the occupants within and adjoining the development in relation to visual amenity, noise, odour and traffic.* *(f) not interfere with car parking, landscape and any existing trees and vegetation.* *(g) not adversely impact on the streetscape, building design or amenity of dwellings.* *(h) comply with the requirements of the applicable Waste Design for New Developments Guide.* *(i) ensure walls and floors are solid and impervious.* *(j) ensure compliance with Work, Health and Safety legislation and standards.*	The communal bin storage area has been sufficiently sized to accommodate all required bins for the residential component of the development that does not interfere or conflict with the commercial bin storage area. The bin storage area is to be closed to public domain when bins are not being moved.

DCP Control	Comment
3.20 *The bin-carting route from the bin storage area to the collection point must:* *(a) be direct and short as possible.* *(b) be solid, impervious and a minimum 2m wide.* *(c) be non-slip, free from obstacles and steps.* *(d) be a maximum grade of 1:30.* *(e) avoid passing through any internal areas of the building.* *(f) ensure compliance with Work, Health and Safety legislation and standards.*	The bin-carting route from the bin storage area has been minimised for residential component.
3.21 *Where development is proposing on-site waste servicing and collection or is deemed by Council to be unsuitable for collect and return, the development is to be designed to integrate with Council's standard waste service and to enable all allocated bins to be collected on-site. This includes:* *(a) designing entry/exit points and internal roads to allow Council's waste collection vehicles to enter and exit in a forward direction.* *(b) ensuring the design of the waste collection vehicle route of travel (including manoeuvring areas) and loading area complies with the Australian Standard AS 2890.2.* *(c) ensuring the on-site collection point integrates into the design of the development. The collection point may be directly from the bin storage area or a nominated holding collection area within the site.* *(d) ensuring the design of the on-site collection point complies with the requirements of the applicable Waste Design for New Developments Guide.* *Note: Council's standard waste servicing system is a heavy rigid vehicle as per the Australian Standard AS 2890.2.*	N/A as the development proposes on-street waste collection for residential and commercial components of the development.
3.22 *Residential flat buildings must provide a bulky waste storage room(s) for residents to store bulky waste (e.g. white goods, mattresses, furniture) awaiting collection to prevent the illegal dumping of materials on the kerbside or in common areas. The design of the bulky waste storage room(s) must ensure:* *(a) it integrates with the building form and landscape.* *(b) does not adversely impact on the streetscape, building design or amenity of dwellings.* *(c) complies with the requirements of the applicable Waste Design for New Developments Guide*	The development provides a bulky goods storage room within the ground floor bin store area of the residential bin storage room. And is integrated into the building design. This area is of a sufficient size to allow for the storage of bulky goods.
3.23 *Residential flat buildings with 50 or more dwellings must provide a separate communal bin storage area for the storage of household items (e.g. clothing, mattresses, polystyrene, cardboard and electronic waste) awaiting collection through Council's Supplementary Recycling Service. The minimum area required is 9m2 and the design is to comply with the requirements of the applicable Waste Design for New Developments Guide.*	There is sufficient space located within the bin storage room and bin holding room to allow for the storage of household items awaiting collection through Council's Supplementary Recycling Service.
Residential component of mixed-use development including shop top housing	

DCP Control	Comment
3.24 *The design of the bin storage areas of mixed-use development must ensure:* *(a) the residential component of mixed-use development complies with the development controls for residential flat buildings.* *(b) the commercial component of mixed-use development complies with the development controls for commercial development.* *(c) the bin storage areas for the residential and commercial components of development are separate with restricted access to prevent unauthorised access and illegal dumping.* *(d) compliance with the requirements of the applicable Waste Design for New Developments Guide.*	The commercial and residential bin storage areas are separated to avoid illegal dumping. The residential and commercial components are generally in accordance with the relevant DCP controls.
Section 4 – Commercial Development	
All Commercial Development types	
4.1 *Development must provide bin storage and separation facilities within each tenancy and within the communal bin room*	Bin storage within each tenancy can be accommodated. Details of the waste storage and separation area would be provided during the fit out of any tenancy. As such the development is capable of complying. Separation of recycling and general waste bins is provided for within the communal bin room.
4.2 *Development must provide an appropriate and efficient waste storage system that considers:* *(a) the type of business.* *(b) the volume of waste generated on-site.* *(c) the number of bins required for the development and their size.* *(d) additional recycling needs e.g. cardboard, pallets and milk crates.* *(e) waste and recycling collection frequencies*	Waste generation has been estimated for the residential tenancies using the Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities, "all retail rate". During the fit out of any retail premises, a specific waste management plan would be required. That considers any specific additional needs. Waste collection has been designed to accommodate a weekly collection for both general waste and recycling waste associated with the commercial component of the development.
4.3 *Where development involves multiple tenancies, the design of development is to ensure each tenancy will be able to obtain a Trade Waste Licence.*	the development involves 4 tenancies, each will be capable of obtaining a trade waste agreement, the specific need of the tenancy will depend on the final use.

DCP Control	Comment
4.4 *Bin storage areas are to integrate with the overall design and functionality of development and are to locate within the building envelope to enable these areas to be screened from view from the public domain.*	The bin storage area is located within the building and is not visible from the street frontage or public domain. No opening or window to the commercial bin room.
4.5 *The design of the bin storage area must comply with the requirements of the applicable Waste Design for New Developments Guide*	Refer to Table 2 below
4.6 *An on-site collection point is to be nominated for development. The location of the collection point must allow collection vehicles to enter and exit the site in a forward direction and allow all vehicle movements to comply with the Australian Standard AS 2890.2. The location of the collection point must ensure waste servicing does not impact on any access points, internal roads and car parking areas*	The development proposes on-street collection instead. The development does not require the waste collection vehicle to enter the site. as part of a pre-lodgement meeting with Council and subsequent correspondence dated 5/11/2024 with Council's waste officer, did not raise concerns with commercial collection from Waterloo Road, as there was no viable alternative.
4.7 *Waste collection frequency is to be a minimum of once per week. Higher collection frequency may be required for development with larger waste generation rates or development that produce food waste.* *Bin storage areas are to be kept clean, hygienic and free from odours.* *Higher collection frequencies must not impact on neighbouring residents in relation to noise, odour and traffic.*	Waste associated with the commercial component is to be collected weekly, This management plan outlines operational waste management requirements to ensure that conflict with the residential component of the development and operation of Waterloo Rd is not significantly impacted. Given the semi-commercial nature of the area, there is minimal noise impact anticipated. Bin cleaning facilities can be provided within the bin storage area to minimise odour. The commercial bin store and carting route is separated from other uses on site and will have a nil impact on adjoining residences.
4.8 *Collection frequency for commercial tenancies producing more than 50 litres of meat, seafood or poultry waste must have daily waste collection or be designed to be provided with a dedicated refrigerated room for waste storage between collections*	The development does not propose a specific land use for the commercial / retail tenancies. Future development or use of these tenancies will need to consider the provision of refrigerated waste if required.

Table 2: Review of Waste Design for New Developments – Guide E – Mixed Use Development June 2023

<table>
<tr><th>Requirement</th><th>Comment</th></tr>
<tr><td colspan="2">Section 5 Residential Waste Management Considerations</td></tr>
<tr><td>5.1 General considerations</td><td></td></tr>
<tr><td>Ensure all dwellings have internal waste storage.
Have a thorough understanding of the waste generated by your development and the number of bins to be allocated by Council and stored within the development.
Ensure that the development can be integrated with Council's standard HRV waste service; and
Consider what access is required to the site by collection staff and vehicles to facilitate the safe and efficient waste servicing of the development.</td><td>The development complies with these requirements.
On street collection is proposed as an alternative to onsite collection.</td></tr>
<tr><td>5.2 Waste Generation Rates
Waste generation to be designed in accordance with Table 1.
Table 1: Weekly Waste Generation Rates per Dwelling<table><tr><th>General Waste</th><th>Recycling</th><th>Garden Organics</th></tr><tr><td>140L</td><td>120L</td><td>120L*</td></tr></table>* Developments are allocated 1 bin per 10 dwellings.</td><td>Waste generation and subsequently the provision of bins has been carried out in accordance with the rates within Table 1 of the guide.</td></tr>
<tr><td>5.3 Standard Waste Service</td><td></td></tr>
<tr><td>5.3.1 Collection Services
Kerbside waste collection is considered unsuitable in mixed use developments due to amenity and safety issues, the number of bins requiring collection, the size of the bins and time taken to empty the bins.
Council offers two waste collection services for mixed use developments:
• Collect and Return: collection staff enter the development to collect bins from a nominated area and return them once emptied.
• On-site collection: collection occurs within a development site's boundary by an HRV at a nominated area.</td><td>Kerbside waste collection is proposed to be for both commercial and residential components of the development.

An on-site manager is to be present to present and collect bins for each waste stream both residential and commercial waste collections.</td></tr>
<tr><td>5.3.2 Bin Sizes for Residential Developments
An adequate bin storage area is to be provided within the development site to store all allocated bins.</td><td>The plans show that the bin storage area can accommodate all bins required.</td></tr>
</table>

Requirement	Comment
The following Tables identify the bin types, sizes and dimensions required for residential developments. **Waste Stream** **General Waste:** 660L, 1,100L or hook lift bin with compactor **Recycling:** 660L or 1,100L **Garden Organics:** 240L **Standard Bin Type** / **Dimensions (Additional 15cm is to be provided around each bin)** Height / Width / Depth 240L Mobile Garbage Bin (MGB): 1,060mm / 580mm / 730mm 660L Bulk Bin: 1,250mm / 1,370mm / 850mm 1,100L Bulk Bin: 1,470mm / 1,370mm / 1,245mm Hook Lift / Compactor Bin (10m³-30m³): 2.5m / 2.5m / 6m	Provision of bins for the development have been provided in accordance with tables 2 and 3 of this guide.
5.3.3 Service Frequency **Service Frequency** **General Waste:** One or two collections per week* **Recycling:** One collection per fortnight* **Garden Organics:** One collection per fortnight **Bulky Waste (Per Calendar Year):** Developments with five or less dwellings – Two collections; Developments with six to 50 dwellings – four collections **; Developments with 51 or more dwellings – six collections ** NOTES: * Frequency of service may be increased only after discussion and recommendation of Council's waste management assessment officers. ** Bookings to be made by building's caretaker, building manager or strata manager on behalf of the whole building.	Waste generated is required to be collected twice weekly for general waste and recycling waste stream. Garden organics waste is to be collected once weekly
6. Residential Waste Management Facilities	
6.1 Internal Waste and Recycling Storage • *A waste storage cupboard in the kitchen capable of holding a minimum 40L of waste (approximately two days) and to enable a minimum 20L of recyclable waste to be stored in a separate container and not in plastic bags.* • *Suitable space in the kitchen for a 3-5L caddy to collect food waste. This is to encourage on-site composting and reduction in waste to landfill; and* • *Suitable space storage space for other recyclable items, such as light globes and batteries.*	Each unit can provide a waste storage cupboard and kitchen caddy. A waste storage cupboard can be provided within each unit for garbage, recycling and organic waste. Additional storage for problematic waste recyclables such as light globes and batteries can be accommodated within the unit area.
6.2 General Requirements *Provide a waste storage cupboard on each floor for three days storage of waste and recycling: A service lift is required for the caretaker to move the bin storage area and/ or bin collection area. The caretaker should use a bin lifter to empty the waste into larger 660L or 1,100L bins, which are then emptied by Council.*	A waste storage cupboard providing 2x bins is proposed on each level that will provide additional storage on each level. The development proposes to use 1,100L bins. Residents can store waste within a waste storage area within each floor, or directly to the communal bin storage area. so that no dwelling path of travel will exceed 30m to the communal storage area. Additionally, residents may enter the bin store room to dispose of their waste themselves.
Bins would be collected directly from the communal bin storage area by collect and return service, or if deemed unsuitable by Council, the	Bins are to be carted from the storage room to the holding room via the bin lift.

Requirement	Comment
development must be designed to facilitate on-site collection with an HRV.	On-street collection is proposed to occur from Waterloo Road. The building manager will be responsible for the presentation and return of bins from the on-street collection point.
if garden organics bins are provided, these would need to be presented to the kerbside for collection by a caretaker/property manager	The garden organic bins are provided within the development. it will be the responsibility of the property manager to present and collect these bins to the collection point.
In addition, separate bulky waste storage area/s and space for additional recycling storage are required	A bulky waste storage area is provided within the bin store area.
6.3 Specific Requirements	
6.3.1 Communal Bin Storage Area *A communal bin storage area must be designed so it can be integrated into the overall design of the development and located so it can be accessed conveniently and will not impact on residential amenity in regard to noise, odour and visual impacts*	A communal bin storage area has been proposed that is located on the first basement level of the development. with an additional holding room on the ground floor to avoid noise and odour to the residential dwellings. The bin storage area is incorporated into the building design and will not cause visual impacts as a result. The proposed bin storage area provides for the number of bins required in order to comply with Council's requirements based on a twice weekly collection.
6.3.2 Bin-Carting Route (Collect and Return) *For the collect and return service, the bin-carting route from the communal bin storage area to the kerbside collection point, must comply with the following requirements:* • *Direct and less than 10 metres.* • *Include a layback at the nominated collection point.* • *Minimum 2m wide solid and impervious surface;* • *Does not pass through any internal walkways, doors or rooms.* • *Non-slip, free from obstacles and steps.* • *A maximum grade of 1:30 (3%).* • *Not be within a driveway or carpark; and* • *Compliant with Work, Health and Safety for collection staff*	A bin carting route is provided from the storage area to the on-street collection location. - The bin area directly adjoins the proposed collection area within Waterloo Street. - A minimum 2m wide corridor is provided. - floor finishes can comply with the impervious slip free and gradient requirements,
6.3.11 Bulky Waste *Bulky waste area is provided in accordance with Table 7.*	The plans provide a minimum area of 14.44m^2 for the storage of bulky waste that complies with the requirements of Table 7 of the guide. The bulky storage area can be separated as required through the provision of internal walls to the bin area as required.

Requirement	Comment
Table 7: Minimum Size of Bulky Waste Area **Number of Dwellings** / **Minimum Area Required** 20 or less / 4 m^2 21 to 30 / 5m^2 31 to 40 / 6m^2 41 to 50 / 7m^2 51 to 60 / 8m^2 61 to 70 / 9m^2 71 to 80 / 10m^2 81 to 90 / 11m^2 91 to 100 / 12m^2 More than 101 / 13 m^2 + 2 m^2 per 50 additional units (or part thereof) above 101 units *The bulky waste storage area is to be separate to the bin storage area/s,*	
6.3.12 Supplementary recycling service *Separate additional recycling storage area/s are to be provided for residents to store household items, such as clothing, mattresses, polystyrene, bulky cardboard and electronic waste.*	This area can be accommodated within the oversized bulky waste area
6.3.13 food and garden organic waste *Space must be provided for communal composting and worm farming. The area is to be an unpaved area, in a communal area that is managed by the development. This space is to be shown on the site plans.*	No communal composting or worm farming is proposed as part of this development. where required, space within the communal open space area for the use of a composting area can be accommodated.
6.4 Design for ongoing use	
Council recommends a site caretaker or manager be employed to ensure effective and efficient ongoing waste management. A site caretaker or manager will be required to: • *Maintain and clean all bin storage areas and recycling cupboards.* • *Cleaning and maintenance schedules for all waste equipment.* • *Maintain and clean temporary holding areas (if applicable).* • *Clean and wash all bins regularly.* • *Manage all bin transfers and rotations.* • *Ensure waste chute system and associated waste service equipment functions effectively and in accordance with manufacturer's specifications.*	A site manager is to be provided to ensure the efficient operation of the waste systems. As the development proposes twice weekly collections the site manager will be on-site at least twice a week to maintain the waste areas.

Requirement	Comment
• *Manage bulky waste and additional recycling storage areas and arrange appropriate collections.* • *Ensure the loading bay is kept clear of parked cars.* • *Ensure the turntable and related devices are maintained in working order.* • *Providing training to collection staff in the use of the turntable when requested.* • *Manage the communal composting area.* • *Arranging the prompt removal of dumped rubbish.* • *Ensuring the recycling bins are free of contamination (which includes but not limited to garbage, plastic bags, clothing, polystyrene, etc); • Ensuring there is suitable signage for each bin hopper and recycling cupboard on each floor and bin storage room. Council can assist with educational signage.* • *Ensuring all residents are informed and kept up to date in the use of the waste management system; and* • *• Checking the number of bins and reporting any damages to Council*	
7. Commercial Waste Management considerations	
7.1 Waste Generation Rates	Waste has been calculated using the NSW EPA Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities (2012) for "all retail – other". Instead of the 2019 guide as outlined in section 5.1 of this WMP. Should the retail tenancies be redeveloped in the future a specific waste management plan will be required for specialised retail premises, or food premises. Noting that some land uses will not likely be suitable in this development due to the intensity of waste generated. Each tenancy is provided bins within the communal area.
7.2 Waste collection services *In most instances commercial land uses are required to be serviced by a private waste collection service*	A private waste contractor will be required for the commercial component
7.3 Bin Sizes *An adequate bin storage area is to be provided within the development site to store all allocated bins*	The development provides for 660L bins for the commercial tenancies, 4x bins of waste and 4 x recycling bins are provided. The proposed communal waste area has been designed to accommodate the 660L bins that are proposed to be used.

Requirement	Comment
7.4 Bin storage area	A combined commercial bin storage area is provided. The development provides a 660L bins for waste and recycling each per week per tenancy. The bin storage area is provided a separate carting route. However, a minor variation to the 10m distance to the collection point is sought. a maximum of 15m to the collection point on Waterloo Road is required, this is as a result of the wide footpath. The design of the bin area has been designed in accordance with Figure 6.
7.5 Collection point	The collection point for both the residential and commercial components of the development is to occur from Waterloo Road and will not occur on-site. On-site waste collection is not achievable on this site. on-street collection is to be used. Council's waste officer has advised as part of the pre-lodgement discussions that on-site collection was suitable subject to traffic matters being resolved.
7.6 Land Use and Development Requirements	The proposed development does not seek consent for the fit out of any commercial tenancy. Details of potential contaminated sharps will be generated as part of a future land use this would be required to be considered at that point.

3 Demolition

The development involves the demolition of all existing structures on site, including removal of underground petrol tanks associated with the previous use. As shown on the demolition plan attached to the architectural plans.

3.1 Waste Generation

Table 3 below includes calculations of the demolition waste that is estimated to be generated from the demolition component of the proposed development.

Table 3: Demolition waste generation

Type of Waste Generated	Reuse	Recycle	Disposal	Comment
	Estimate Volume (m^3)	Estimate Volume (m^3)	Estimate Volume (m^3)	Specify method of on-site reuse, contractor and recycling outlet and/or waste depot to be used
Excavation material	-	-	-	Excavation waste is at construction stage. Excavation required during the demolition stage is captured under the hazardous material heading and is not double counted.
Timber (Side façade / dressed)	0	13.5	2	Transferred to a Material Recovery Facility or Council Waste Transfer Station.
Gyprock / Cladding	0	12.5	1.5	Transferred to a Material Recovery Facility or Council Waste Transfer Station.
Concrete	-	400	-	Any concrete waste will be crushed and transported to other construction sites or through a Material Recovery and Recycling Facility.
Masonry (Hebel Block/Fibre cement sheeting/ Pavers / bricks)	-	28	-	Transferred to a Material Recovery and Recycling Facility.
Tiles (roof)	N/A	N/A	N/A	The existing building's roof is not tiled so no waste of this type will be generated.
Metal (roofing / framing / façade)	-	28.5	-	Transferred to a Material Recovery and Recycling Facility.
Glass	-	7	-	Transferred to a Material Recovery and Recycling Facility.
Furniture	N/A	N/A	N/A	Furniture will be removed prior to demolition.
Fixtures / Fittings	-	4.5	1.5	Transferred to a Material Recovery and Recycling Facility or Council Waste Transfer Station.

Type of Waste Generated	Reuse	Recycle	Disposal	Comment
	Estimate Volume (m^3)	Estimate Volume (m^3)	Estimate Volume (m^3)	Specify method of on-site reuse, contractor and recycling outlet and/or waste depot to be used
Floor coverings	-	7	4.5	Transferred to a Material Recovery and Recycling Facility or Council Waste Transfer Station.
Packaging (used pallets / pallet wrap)	-	-	-	No packaging will be used during the demolition.
Garden organics	N/A	N/A	N/A	No garden organics currently exist on site.
Containers (cans / plastic / glass)	-	2.5	-	Containers to be sorted and transferred to Council Waste Transfer Station for recycling.
Paper / cardboard	-	1.5	-	Transferred to a Material Recovery and Recycling Facility.
Residual waste	-	2	7.5	Transferred to a Council Waste Management Facility for disposal or recycling.
Hazardous / special waste (specify)	See comment	See comment	See comment	Should any asbestos be found on the site it will be removed and disposed of by a qualified demolition removalist in accordance with the relevant standards. Demolition and removal of existing petrol tanks associated with the existing petrol station are to be removed and decommissioned in accordance with relevant EPA requirements and Australian Standards.
Other	N/A	N/A	N/A	It is unlikely that there will be any other waste generated during demolition, however if there is, it will be classified appropriately and either recycled or transferred to an appropriate waste management facility.

3.2 Waste Management

Waste management during demolition and construction will be provided as part of a construction management plan included as part of the construction certificate process. Reuse/ recycling contractor and landfill site for disposal to be determined at Construction Certificate stage.

3.3 Waste Avoidance and Reduction

- Only demolish the necessary parts of the buildings on site and reuse where possible the existing structures.
- Salvage materials for recycling and reuse during the demolition process; and
- The remaining waste to be transported to a recognised builders recycling yard or waste facility.

4 Construction

4.1 Waste Generation

Table 4 includes details of the potential construction waste that will be generated from the proposed development on the site.

Table 4: Construction waste generation

Type of Waste Generated	Reuse	Recycle	Disposal	Comment
	Estimate Volume (m³)	**Estimate Volume (m³)**	**Estimate Volume (m³)**	**Specify method of on-site reuse, contractor and recycling outlet and/or waste depot to be used**
Excavation material	-	-	9,150	To be confirmed by architect / designer Excavated materials will be disposed of, as the site has been previously used as a service station, there is the potential for the soil to contain contaminants resulting from the petrol storage tanks that will limit the ability to reuse or recycle any excavated material. Any material to be disposed of is to be disposed of at an authorised and licensed facility.
Timber (Side façade / dressed)	3.5	8	-	Transferred to a Material Recovery and Recycling Facility.
Gyprock / Cladding	-	18	-	Transferred to a Material Recovery and Recycling Facility.
Concrete	6	1.5	-	Any excess concrete will be retained in the truck and used elsewhere or transferred to a Material Recovery and Recycling Facility.
Masonry (Hebel Block/Fibre cement sheeting/ Pavers)	8	17.5	-	Transferred to a Material Recovery and Recycling Facility.
Tiles (roof)	N/A	N/A	N/A	No tiles proposed for the roof of the building.
Metal (roofing / framing / façade)	3	10.5	-	Transferred to a Material Recovery and Recycling Facility.
Glass	N/A	N/A	N/A	All glass will be made to order
Furniture	N/A	N/A	N/A	Not at this stage.
Fixtures / fittings	N/A	N/A	N/A	Fixtures will be made to order.
Floor coverings	2	3.5	5.5	Transferred to a Material Recovery and Recycling Facility or Council Waste Transfer Station.

Type of Waste Generated	Reuse	Recycle	Disposal	Comment
	Estimate Volume (m^3)	Estimate Volume (m^3)	Estimate Volume (m^3)	Specify method of on-site reuse, contractor and recycling outlet and/or waste depot to be used
Packaging (used pallets / pallet wrap)	0	14.4	0	Pallets will be transferred to a Material Recovery and Recycling Facility. Wrap and packaging will be a transferred to Councils Waste Management Facility.
Garden organics	1.5	-	-	Organics will be ordered to size in accordance with the quantity survey. Any excess will be reused on another site.
Containers (cans / plastic / glass)	-	18	-	Containers will be a transferred to Councils Waste Management Facility.
Paper / cardboard	-	7	-	Transferred to a Material Recovery and Recycling Facility.
Residual waste	-	5	16.5	Residual waste will be transferred to Councils Waste Management Facility for disposal or recycling.
Hazardous / special waste (specify)	N/A	N/A	N/A	No hazardous materials will be utilised in the construction.
Other	N/A	N/A	N/A	No other waste proposed to be generated from the construction.

4.2 Waste Management

Waste management during demolition and construction will be provided as part of a construction management plan included as part of the construction certificate process.

4.3 Waste Avoidance and Reduction

- All fixtures and fittings will be made to measure.
- All materials will be ordered in accordance with a bill of quantities.
- Recycled materials will be utilised where ever possible.
- Measures will be taken to ensure the construction contractor is aware of the waste management procedures and adheres to appropriate guidelines.
- Salvage materials for recycling and reuse during the construction process; and
- The remaining waste to be transported to a recognised builders recycling yard or waste facility.

5 Ongoing Operation

5.1 Waste Generation

This section considers the expected waste generation from the proposed development of residential and commercial development on the site.

For the residential component of the development, due to the number of residential tenancies within the proposed development, it is proposed that waste is collected twice weekly for both recycling and general waste. Garden Organic waste is to be collected once weekly. Rates for residential units have used those indicated in Table 1 above as per the DCP.

This WMP has included flexibility in the design of waste storage through the calculation of waste generation using the "all retail" rate provided within the from Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities (2012). Council's DCP control requires compliance with the "Better practice guide for resource recovery in residential developments" (2019). This guide has not been used as the 2019 guide does not provide for a general "all retail rate" as the 2012 rate shown in figure 1.

This will cover most opportunities for tenancies. Figure 1 includes an extract of the generation rates used from the 2012 document mentioned above. This is considered to provide a more accurate estimate of waste that would be generated as the final use of each tenancy is not known. It is recommended that if any of the proposed uses have high or different waste generation, then they would need to consider how the additional waste would be able to be managed.

Type of premises	Average L per 100 m^2 per day		Maximum L per 100 m^2 per day		Number of businesses surveyed
	Waste	Recycling	Waste	Recycling	
All non-food retail	40	50	300	715	69
All retail	80	70	860	715	111

Figure 1: Extract from Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities (2012) Appendix A table 16.

Table 5 below provides an overview of the waste generation estimated for the residential and commercial components of the development proposed on the site.

Table 5: Estimate of Operational Waste Generation

Requirement	Recyclables	General Waste	Green Waste
Residential			
Amount generated (L per day)	1,063L	1,240L	Green waste bins have been allocated at 1 bin per 10 dwellings. It is anticipated that any green waste generated by the landscaping contractor will be
Amount generated (L per week)	7,440L	8,680 L	

Requirement	Recyclables	General Waste	Green Waste
			collected and removed as it is generated and will reduce the amount of green waste storage required.
Number and size of bins	4 X 1100L Total 4,400L capacity	4 x 1,100L Total 4,400L capacity	4x 240L Total 960L Capacity
Frequency of Collections	Removed twice weekly	Removed twice weekly	Removed twice weekly
Commercial / Retail			
Amount generated (L per day)	322L 80L per 100m^2 GFA / day	282L 70L per 100m^2 GFA / day	It is anticipated that green waste generated by commercial component of the development will be subject to the nature of the use of the tenancy. A specific Waste management plan for future tenancy use should be required if green waste is generated.
Amount generated (L per week)	2256.65 L	1976.3 L	
Number and size of bins	4 x 660 L	4 x 660 L	
Frequency of Collections	Removed weekly	Removed weekly	

5.2 Waste Storage

Table 6 includes details of the waste storage areas proposed.

Table 6: Waste storage

Waste Storage Area	
Floor area for the storage bins (m^2) (Commercial)	The storage room is 25m^2, is located on the ground floor level, and will contain 4 x 660 Recycling and 4 x general waste bins. The General and recycling waste is to be removed once weekly for collection.
Floor area for the storage bins (m^2) (Residential)	The waste storage for residential bins is separated into two rooms. - The bin room located on the basement level 01 and is 60m^2. - A bin holding room is provided on the ground floor and is 25m^2. - A bin lift to provide access between the two levels is provided and the area of the bin left is excluded from the floor area provided for storage. The bins are to be relocated into the bin holding room on the ground floor as they are filled to await collection day.
Green Waste (residential)	An area has been provided for the storage of green waste. These bins are proposed to be stored within a dedicated area within the common open space area, adjacent to the norther boundary and driveway ramp. Where

	required there is sufficient space to provide additional green waste bins to suit tenants' needs within the communal open space area. Green waste bins have been provided at the rate of 1 bin per 10 dwellings in accordance with Council's DCP control 2.1. There is sufficient space within the communal open space area adjoining the proposed green waste storage location to provide additional bins as required. A total of 6.2 bins (round up to 7 bins) would be required to comply with Council's DCP requirements. The development instead proposes to use 4 x 240L bins which are to be collected twice weekly. Doing so provides sufficient storage capacity in between collections. No specific on-site composting or worm-farming area has been provided as part of the development. This could be readily installed by the tenant's initiative during the life of the development within the communal open space area. Landscaping waste will be removed by the landscape contractor as it is generated that will reduce the storage capacity of green waste storage required.
Bulky Waste (residential)	A Bulky waste storage area is included within the 56m^2 bin storage area and is located within the basement level bin storage room. This complies with Table 7 of the Council's DCP guide, which requires 9m^2 and the requirements of the *NSW EPA Better practice guide for resource recovery in residential developments,* which requires 14.4m^2. this area The proposed development will allow for up to 6 collections per year for the development in accordance with table 2.4 of Council's DCP. Bookings for bulky waste collection will occur by booking only and is not to occur simultaneously with any other bin collection. If there is waste that needs collection outside of these 6 collections, due to the number of units on site, the building manager will arrange collection by a private contractor as appropriate depending on the waste required to be removed or recycled.
Floor area required for manoeuvrability (m^2)	The storage area is wide enough for bins to move passed each other while leaving enough space for human passage between passing bins. 2.0m wide corridor and doors have been provided to facilitate access from bin rooms into the collection path. A minimum aisle width of 1.5m is provided internally to facilitate the movement of bins inside the waste storage rooms.
Height required for manoeuvrability (m)	Provides sufficient overhead clearance, for bin lifters to transfer waste into bins within the storage room and point. A minimum ceiling height of 3.0m within the bin storage room is provided
Comment	**Recycle:** This development will provide adequate recycling bins to meet the minimum recycle requirements. **Waste:** This development will provide adequate waste bins to meet the minimum waste requirements. **Garden Organics:** This development will provide adequate waste bins to meet the minimum waste requirements.
Waste Collection location	The waste vehicle servicing the development is provided a stopping area within Waterloo Road as shown on the proposed plans, and highlighted in yellow in figure 2 This is a nominal length of 12m and provides for adequate space at the

	rear to bring bins from holding room nearby for collection by a rear loading vehicle. Confirmation from Waste-free, a private waste contract has confirmed that a 'mini vehicle' is available to service the development, this vehicle is a MRV with dimensions 6.4m and requires an additional 2.45m to safely lift a bin. This vehicle is capable of stopping within the identified area and lifting bins safely
Bin collection path	Residential and commercial components of the development will utilise the same bin collection path. The waste collection paths for both commercial and residential bins from the storage areas to the collection point on Waterloo Road is shown in figure 2 below.
Frequency of residential waste collection	To minimise the number of bins that will be presented to Waterloo Road at any given time, it is proposed to increase the frequency of collections to twice weekly for the residential component of the development.

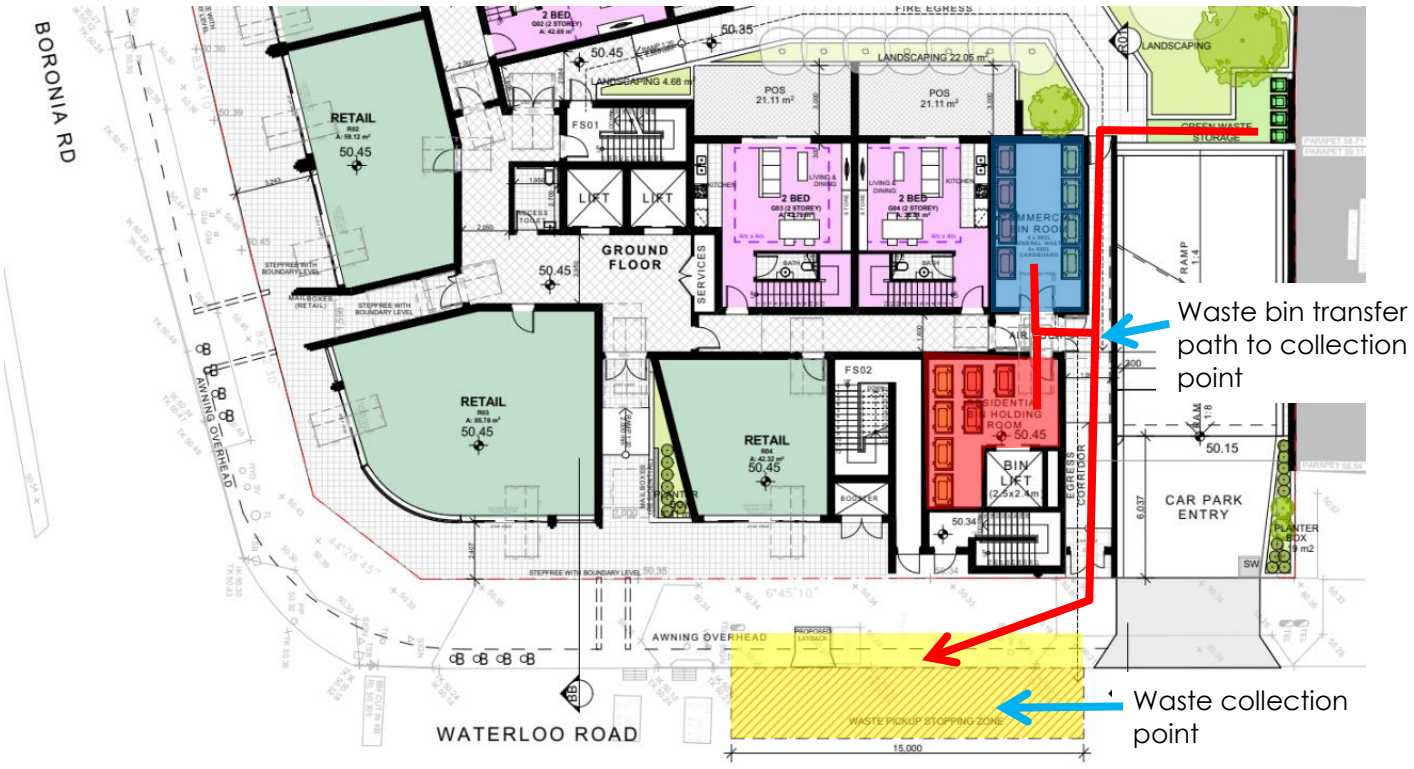


Figure 2: Extract of site plan showing commercial waste storage area (Blue highlight), and residential bin storage area (red highlight) and combined bin carting route to waste collection area (yellow highlight).

5.3 On-going Waste Removal Procedures – Residential

- Residents will transfer their general and recycling waste to the bins located in the communal bin storage room located on the basement level 01 via the lift as required.
- Residents are also able to transfer their recycling waste to the bins located in the waste cupboard on their level. The building manager will be responsible for transferring the recycle bins from the waste cupboard each floor to the collection storage area each week.
- The building manager will be responsible for the use of the bin lift.
- Building manager will be responsible for the moving the recycling bins from the waste cupboard on each floor each week and emptying these bins into the shared bins within the bin storage room within the basement level 01.
- Residents will transfer their garden organic waste to the shared green organic bins located within the communal open space area.

- The bin storage room will be accessible only be the building management and residents.
- The bin holding room located on the ground floor room will be accessible by building management only.
- The building manager will be responsible for transferring the general waste, recycling and green waste bins to the collection storage area for collection and return the bins to the communal storage area after collection. The path of travel is less than 10m, with a grade less than 10%.
- Council or a private contractor will collect waste and recycling from the Waterloo Street area as shown in the architectural plan package for residential waste bins.
- No bins are to be left within the road frontage awaiting collection.
- **Bin Lift:**
    - A bin lift is to be retained within the storage area to allow for the safe disposal of waste and recycling into the bins.
    - Management shall be responsible for the maintenance of the bin lift.
- **Maintenance**:
    - Management shall be responsible for the maintenance of signage, the security of the waste storage area.
- **Hygiene:**
    - An arrangement will be made with a bin cleaning contractor for regular bin cleaning. The bin contractor will provide a specialised filtration service to ensure pollutants are collected by the mobile unit and appropriately disposed in accordance with EPA Guidelines.
    - A cleaning area for both bin areas is to be provided within each bin storage / holding room. Bin washing can occur within the bin rooms, using the room clean down facilities (i.e. tap connection and drain).
- **Bulky goods**
    - A bulky waste storage area is provided within the bin storage room on basement level 01 movement of bulky goods can be moved via the bin elevator lift to provide access to the ground floor level and collection point.
    - The building manager will be responsible for the organisation of bulky good waste collections on an as needs basis to a maximum of 6 collections per year.

5.4 On-going Waste Removal Procedures – Commercial

- Staff of retail tenancies will be responsible for the transfer of their general and recycling waste to the bins located within the commercial bin room.
- A private contractor will collect waste and recycling from the Waterloo Street area as shown in the architectural plan package for both the residential waste bins.
- The building manager will be responsible for transferring the general waste and recycling bins to the collection storage area for collection and return the bins to the communal storage area after collection. The path of travel is less than 15m, with a grade less than 10%.
- **Maintenance**:
    - Management shall be responsible for the maintenance of signage, the security of the waste storage area.
- **Hygiene:**
    - An arrangement will be made with a bin cleaning contractor for regular bin cleaning. The bin contractor will provide a specialised filtration service to ensure pollutants are collected by the mobile unit and appropriately disposed in accordance with EPA Guidelines.
    - A cleaning area for both bin areas is to be provided within each bin storage / holding room. Bin washing can occur within the bin rooms, using the room clean down facilities (i.e. tap connection and drain).

5.5 Management of Collection Timing

- The building manager is responsible for the creation of a waste collection schedule that accommodates the required collection frequencies and times for the waste collection to occur.

- No overlap between commercial and residential collection is to occur. i.e. only commercial or residential bins may be presented to the street at any one time.
- Residential and commercial bin collection are not to occur immediately following another collection and must provide a separation of time between collections.

5.6 Education

- Intelligible signage will be erected in the waste storage areas on each floor and in the basement to identify which bins should be used for different waste and recyclable materials in accordance with the Councils waste minimisation policy.
- Building tenants are to be provided with details of waste collection times and days.
- Building tenants will be supplied with a copy of this WMP to inform them on the concepts of waste minimisation and recycling.
- Retail / commercial tenants / staff will be supplied with a copy of the WMP to inform them on the concepts of waste minimisation and recycling.
- Building management will monitor the waste areas and rectify any issues.

6 Conclusion

This waste management has been prepared for the demolition, construction and operation of the proposed mixed use development located at 190 Waterloo Road, Greenacre. It considers the principles of reduce, reuse and recycle and provides appropriate provisions for the management of waste for the proposed development.

Private waste contractors will be used to collect the waste of all streams in the demolition of the existing structures on the site and will dispose of materials in accordance with this waste management plan.

A combination of Council waste services, and private waste contractors will be used to collect the waste of all streams in construction and ongoing operation and dispose of it to an appropriate waste management or recycling facility.