Operational Waste Management Plan

Proposed Build to Rent Mixed-use Development

At 11 – 23 Macarthur Avenue, Hamilton

On behalf of Brookfield Portside East Pty Ltd

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Revision Record

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1 Introduction

1.1. Background

TTM Consulting has been engaged by Brookfield Portside East Pty Ltd to prepare an OWMP to support the proposed build to rent mixed-use development located at 11 – 23 Macarthur Avenue, Hamilton. This OWMP relates specifically to Building 18 and Building 19 with the inclusion of additional considerations relating to the refuse storage and collection of the existing Rivello Building (B17). It is understood that a development application will be lodged with Economic Development Queensland (EDQ).

1.2. Scope

The content of this OWMP is intended to provide information in reverse order to the typical movement of waste streams from disposal to collection. The reverse order provides context for refuse collection, storage, and transfer. Information on refuse disposal and collection points is given for each use within the development. The recommendations in this report relate to the operational phase of the development only. Additional requirements for refuse management during or after demolition or construction phases are not included and require a dedicated plan. Items covered within the report are explained in Table 1.1. The key information for Council approval can be found in Section 2.

Table 1.1: Scope Items

Item	Explanation
Refuse streams	Identification of refuse streams & anticipated refuse volumes likely to be produced
Refuse separation	Recommendations for appropriate segregation methods for each refuse stream
Refuse collections	Assessment of refuse collection vehicle (RCV) access and manoeuvring
Refuse storage	Detailed analysis of refuse storage facilities and design
Refuse transfer	Assessment of refuse transfer between refuse storage and collections areas
Refuse disposal	Recommendations for refuse disposal within the development
Refuse management equipment	Identification of recommended and optional refuse management systems and equipment
Refuse management operations	Recommendations for operational efficiency and ongoing management, including refuse minimisation, tenant education and safety
Building design	Recommendations for design of refuse management facilities

Detailed information including site plans and drawings, specified and recommended refuse management equipment, common refuse signage as well as a list of terms and abbreviations are provided in the appendices.

The provisions outlined in this OWMP are considered appropriate for this type of development. It is noted that the refuse rooms are suitably sized to accommodate the refuse generated and number of bins proposed based on the storage and collection methods outlined herein.

1.3. Regulatory Considerations

1.3.1. Council's Refuse Planning Scheme

The plan satisfies EDQ requirements by providing the following information:

- Type and quantity of refuse materials to be generated during the occupancy of the proposed site.
- Refuse collection, storage, transfer, and disposal arrangements during occupancy of the completed development.
- Recommended operational requirements for the operational phase of the development, and design requirements for the building and refuse management facilities.

As this development is within a Priority Development Area, TTM has referred to the requirements outlined in the Northshore Hamilton Priority Development Area Development Scheme. Table 1.2 demonstrates the refuse management items addressed to align with the requirements described in section 2.5.4.7 Waste Management.

EDQ 2.5.4.7 Waste Management		
Item	Requirement	Compliance/Comment
(1)	Provides facilities for the same and efficient removal of waste.	Comp[lies – Refer to Entire WMP
(2)	Provides facilities for recycling, composting, and waste reduction.	Complies – Note Composting is not mandatory – The waste facilities will allow for future addition of FOGO collections in lieu of the equivalent volume removed from General Waste
(3)	Ensure that no liquid or solid wastes, other than stormwater, are discharged to neighbouring land or waters.	Complies
(4)	Ensures waste access and collection points and servicing areas for waste collection vehicles are appropriately designed to mitigate and manage acoustic and odour impacts.	Complies – Refer to Sections 2 and 3
(5)	Ensure waste management areas are designed to be integrated into part of the development, preferably within the building or specifically designed enclosed areas, and designed to avoid disruption movement and circulation areas ensuring the safe, convenient, and prioritised movement of pedestrians, active transport and private vehicles.	Complies – Refer to Sections 2, 3 and Appendix A Site Plans

1.4. Site Location

The site is located at 11 – 23 Macarthur Avenue, Hamilton as shown in Figure 1.1.

The property is described formally as Lots 703 on SP287531, 705 on SP287529 and Lot 951 on SP287536.

The site has frontages on Macarthur Avenue and Wharf Street with all service vehicular access occurring via an unnamed service laneway accessed directly from Macarthur Avenue.

Figure 1.1: Site Location

Source: Nearmap, image dated 17/03/2022

1.5. Development Summary

The proposed development includes two towers comprising shared basement and podium parking, retail tenancy, residential apartments, and resident amenity.

Typical of a Build-to-Rent property, the development is design to attract and retain good tenants under long leasing arrangements. This building buildings includes amenities such a pools and other shared facilities such as outdoor spaces , community gardens, communal working spaces, gyms, yoga studios, and shared dinging or entertainment spaces.

Retails spaces such as the Café, are designed and located primarily to provide service for the building tenants and are not typically leased and operated for off the street / walk-in customers. The lower intensity and turnover therefore yield a slightly lower generation of waste then a typical Café or restaurant.

Table 1.2 and Table 1.3 provides a summary of the combined development, including the refuse infrastructure areas as context for the volume information provided in Section 2. GFA demonstrated relates to areas and uses that generate refuse only and therefore the total GFA shown may not match total GFA's for the development.

Table 1.2: Non- Residential Use Development Summary

Level	Description	Measure *
Basement	Car and Bike parking / Refuse Room Plant	N/A
Ground Level	Office, Concierge, FOH and BOH Operations	127 m^2
	Café	85m^2
	Dog Grooming	57m^2
	Gym	217m^2
	Co-working Space	275m^2
Mezzanine	Gym	410m^2
Level 2 – 4	N/A	
Level 5	N/A	
Level 6 - 17	N/A	
Level 18 - 23	N/A	
Roof	Plant	N/A
Total	**1171m^2 GFA**	

Note: Refuse Generating Areas Only

Table 1.3: Residential Use Development Summary

Level	Description	Measure
Basement	N/A	
Ground Floor	Residential Apartments	12 Units
Mezzanine	Residents Workshop	N/A
	Residents Media Room	N/A
Level 2 – 4	Residential Apartments	57 Units
Level 5	Residential Apartments	11 Units
	Pool and Residential Amenities	N/A
Level 6 - 17	Residential Apartments	324 Units
Level 18 – 23	Residential Apartments	156 Units
Roof	N/A	
Total	**560 Units**	

Note: Residential refuse generation is based on the total number of units. For the purpose of volume estimates all residential amenities are included within the unit calculations.

2 Refuse Management

This section provides the detailed refuse calculations and describes the arrangements for the collection, storage, transfer, and disposal of refuse within the development. This includes the associated bin quantities, storage capacities, equipment details, collection frequencies and site access details.

2.1. Refuse Calculations

The generation rates and service frequency used for the calculation of residential refuse produced have been applied based on rates prescribed by Brisbane City Council to achieve compliance. It should be noted that these rates are standardised generation rates and not site specific however, give an estimation on the maximum potential waste generation. Site specific auditing will be required once operational to establish actual refuse generation of this site and enable refinement of waste strategy and refuse equipment utilised.

A refuse collection frequency of 3 times per week has been established for both general waste and commingled recycling in line with BCC's 'Residential (on-site bulk) service frequency and compaction requirement'. A non-residential collection frequency of 3 days per week has been established to be compliant with BCCs un-documented maximum 'low-frequency servicing' requirement. TTM recommend considering a service frequency of 2 days between services where volumes of food waste are generated.

Table 2.1: Refuse Generation Rates

Type	Measure	General Waste	Commingled Recycling	Days of Operation
Residential Dwelling	L / Unit / Week	240	240	N/A
Retail - Food and Beverage <150m^2	L / 100m^2 / Day	300	200	7
Hairdresser / Barber	L / 100m^2 / Day	60	60	7
Gym	L / 100m2 / Day	10	10	7
Co-Working Space	L / 100m2 / Day	660	200	7

**Co-Working Space has been calculated against maximum rates (F&B >150m^2) to allow flexibility for use of this space*

Table 2.2: Eastern Building Residential Refuse Calculations

Description	Quantity	Measure	General Waste L/Week	Comingle Recycling L/Week
Residential Apartments	278	Unit	66,720	66,720
Total Weekly Volumes (L / Week)			**66,720**	**66,720**
Total Weekly Volumes Compacted (L / Week)			**22,240***	**N/A**
Volumes per Day (L / Day)			**3,177***	**9,531**
Volumes per Collection (L / Collection)			**7,413***	**22,240**
Collection and Equipment Details	Collections per Week		3	3
	Storage Capacity		3 Days	3 Days
	Equipment Size		1100L	1100L
	Equipment Qty Required		7 + 1	20 + 1

*General Waste compacted at an average 3:1 ratio.

Table 2.3: Western Building Residential Refuse Calculations

Description	Quantity	Measure	General Waste L/Week	Comingle Recycling L/Week
Residential Apartments	278	Unit	67,680	67,680
Total Weekly Volumes (L / Week)			**67,680**	**67,680**
Total Weekly Volumes Compacted (L / Week)			**22,560***	**N/A**
Volumes per Day (L / Day)			**3,223***	**9,669**
Volumes per Collection (L / Collection)			**7,520***	**22,560**
Collection and Equipment Details	Collections per Week		3	3
	Storage Capacity		3 Days	3 Days
	Equipment Size		1100L	1100L
	Equipment Quantity Required		7 + 1	21 + 1

*General Waste compacted at an average 3:1 ratio.

Note: All residential amenities are included in the total unit volume estimates

Table 2.4: Non-residential Refuse Calculations Western Building

Description	Area	Measure	General Waste L/Week	Comingle Recycling L/Week
Manager office, FOH & BOH	127	GFA (m^2)	89	178
Café – Food and Beverage <150m^2	85	GFA (m^2)	1785	1190
Dog Grooming – Hairdresser	57	GFA (m^2)	239	239
Gym (Ground)	217	GFA (m^2)	152	152
Co-Working Space*	275	GFA (m^2)	12705	3850
Gym (Mezzanine)	410	GFA (m^2)	287	287
Total Weekly Volumes (L / Week)			**15257**	**5896**
Volumes per Day (L / Day)			**2180****	**842**
Volumes per Collection (L / Collection)			**1695**	**2527**
Collection and Equipment Details	Collections per Week		3	3
	Storage Capacity		3 Days	3 Days
	Equipment Size		1100L	1100L
	Equipment Quantity Required		2	2

Co-Working Space has been calculated against maximum rates (F&B >150m^2) to allow flexibility for use of this space

**Waste is compacted using a Bin Press (3:1)*

2.2. Refuse Bins and Equipment Requirements

Table 2.5 and Table 2.6 below outline the number of bins and additional equipment required for the development. As waste volumes may vary according to the development occupants' attitudes to waste disposal and recycling, bin numbers and sizes may need to be altered to suit the building operation. The table shows the maximum number of bins and equipment expected.

Table 2.5: Combined Bin Requirements (Building 18 & 19)

Component	Refuse Stream	Bin / Equipment - Type or Size	Bins Required
Residential	General Waste	1100L	14 + 2 to remain under chutes
	Commingled Recycling	1100L	41 + 2 to remain under chutes
Non-residential	General Waste (Compacted 3:1)	1100L	2
	Commingled Recycling	1100L	2

Table 2.6: Additional Equipment

Component	Description	Quantity	Notes - See Appendix B for details
Residential	Dual Refuse Chutes	2	1 required for each tower. Co-located chutes for general waste and recycling. Access points on each habitable residential level.
	Integrated Chute Discharge Compactor	2	1 required for each tower. Installed to general waste chute only. Will achieve an average compaction ratio of 3:1.
	2 x 1100L Bin Linear Conveyor	2	1 required for each tower. Automate bin rotation beneath the chute discharge of the general waste stream.
	4 x 1100L Bin Carousel	1	1 required for tower 18. Automate bin rotation beneath the chute discharge of the commingled recycling stream.
	4 x 1100L Bin Linear Conveyor	1	1 required for tower 19. Automate bin rotation beneath the chute discharge of the commingled recycling stream.
	Mechanical Bin Towing Aid	1	To assist in the transfer of bins to the Western Building Refuse Room
Non-residential	Refuse / Cleaner Trolleys	TBD	
	Used Cooking Oil Storage	1	Portable storage tank stored BOH

2.3. Refuse Storage

2.3.1. Eastern Building

All Residential refuse will be stored within the Basement 1 refuse room located directly beneath the Eastern Building core. The refuse room will house all equipment required for the Eastern Building Residential Waste Management including the chute discharge, bin rotation equipment and storage of the bins. The room will be accessible only to building management and authorised persons.

For Residential Bin Presentation –Refer to Section 2.3.3.

Retail waste will not be housed in the Eastern Building – Refer Section 2.3.3.

2.3.2. Western Building

All Residential refuse will be stored on the Ground Floor in the refuse room, located directly beneath the Western Building Core. The refuse room will house all equipment required for the Western Building Residential Waste Management including the chute discharge, bin rotation equipment and storage of the bins. The ***Ground Floor Apartments*** will not have access to the dual chutes. 1100L Waste and Recycling bins are housed in refuse storage area in proximity to these apartments to allow for Waste and Recycling disposal.

For Residential Bin Presentation – Refer to Section 2.3.3.

Retail refuse is stored in a separated refuse room – Refer to Section 2.3.3

2.3.3. Consolidated Bin Storage and Collection

The development design includes a Service / Loading area built into the Western Building - Ground Floor design. The loading bay is sized to provide a single and central collection point for three of the Portside East Precinct Buildings (Eastern, Western and Rivello (B17) Buildings). The Service / Loading area supersedes the use of an existing open air storage and collection point for refuse collection.

The **Western Building** refuse room is directly adjacent to the loading dock. The refuse room has been designed with surplus area to permanently house 15 x 1100L changeover bins for the **Rivello Building**. The The room includes a service door and full width (10m) roller door to allow easy access to stored bins from the Loading Bay Area.

Holding areas immediately outside of the refuse room allow for temporary storage and presentation of the Recycling and Waste bins from the **Eastern Building**.

Eastern Building bins temporarily stored within the holding area are washed and returned to the Basement 1 - Waste Room, immediately after collections. The Rivello & Western Building bins are returned to the Western Building Refuse Room by the collecting driver and can then be rotated and cleaned as required prior to re-use.

The Western Building refuse room will include chain mesh partition or similar to separate the chute discharge and bin rotation / compaction equipment from the storage portion of the room. Separation of these spaces allows safe access to the room by collecting drivers.

The chute discharge area will be accessible only to building management and authorised persons with restricted distribution of door keys/fob or swipe cards and signage applied to the discharge areas for both buildings,

Non Residential

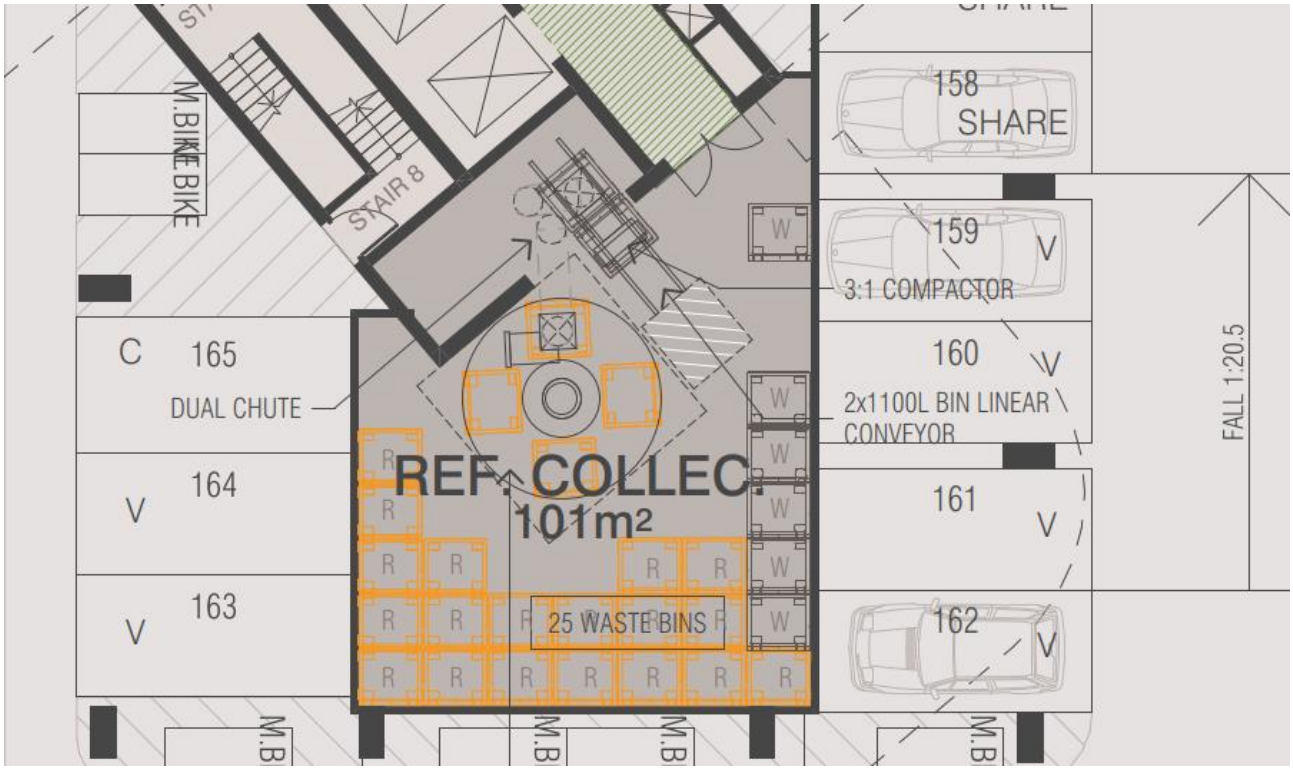
The non-residential (Retail) refuse storage room is located near the consolidated residential storage room and adjoining the service laneway in a serviceable, efficient, and operationally convenient location.

Access to the room is 10m of the loading bay and external access ensures separation from the residential refuse bins temporarily stored within the loading bay.

Waste Room Sizing

The refuse rooms are sufficiently sized to accommodate all of the bins and equipment required as outlined in Table 2.4 and Table 2.5. and an additional 15 Bins required for exchange to the Rivello Building (B 17).

Figure 2.1 demonstrates the potential layout of the refuse storage area for Eastern Building.

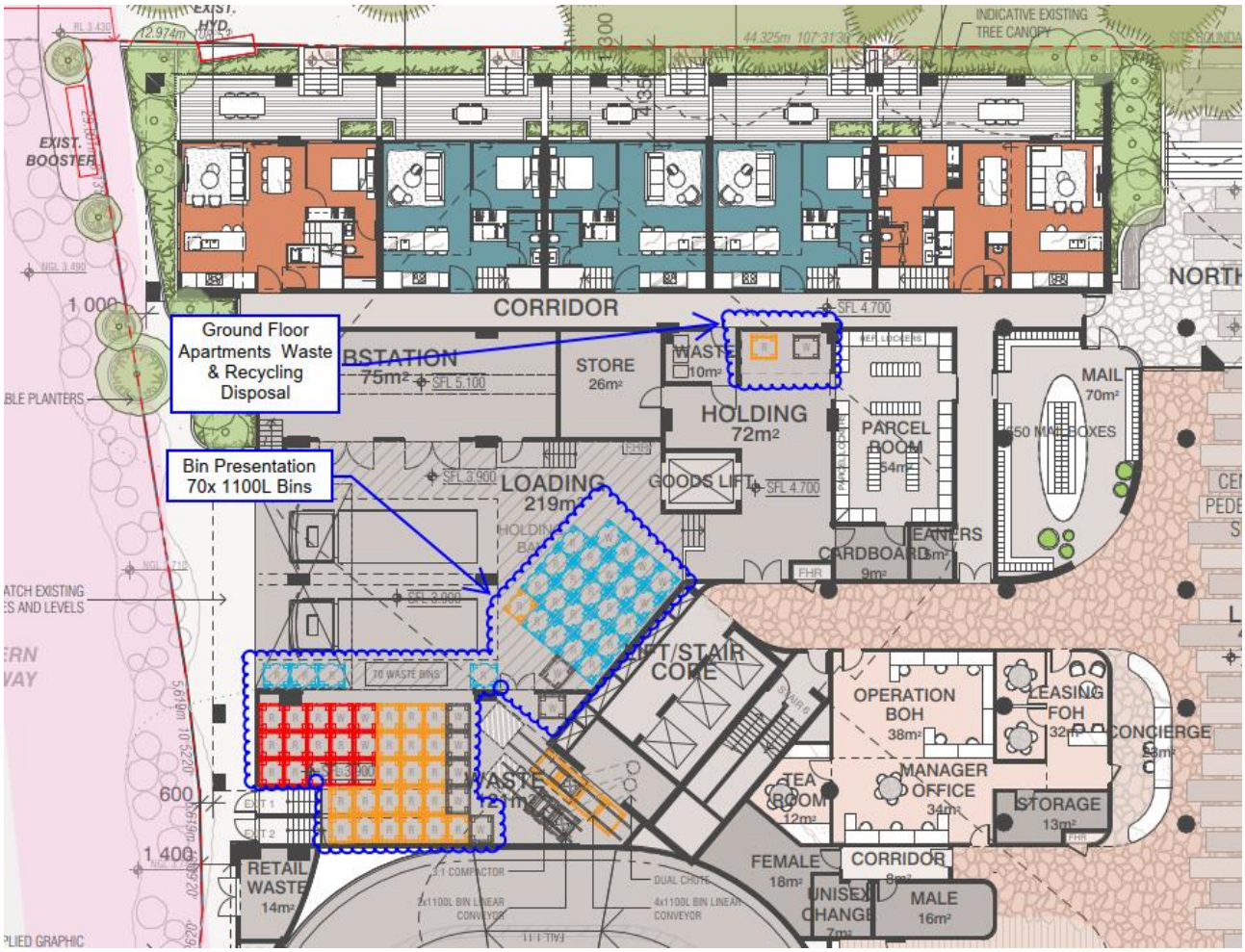


Source: Fender Katsalidis, DA 0099_Rev 2 _Basement Floor Plan

Figure 2.1: Residential Refuse Room Layouts – Eastern Building

Figure 2.2 demonstrates the refuse storage areas for the Western Building, consisting of the residential chute discharge room, existing refuse storage and non-residential refuse storage.

Noting this layout depicts all residential bins presented for servicing from the Rivello Building as well as the Western and Eastern Buildings. Bins from the Eastern Building will only be presented for a short period of time when servicing is scheduled to occur. Drawing Excerpt is included in Appendix A which demonstrates all bins presented for collections and coloured for each building. Revello in Red, Eastern Building in Blue, Western Building – Orange for Recycling bins and Black for Waste bins



Source: Fender Katsalidis, DA 0100_Rev 2 _Ground Floor Plan

Figure 2.2: Residential and Non-residential Refuse Room Layouts – Western Building

Waste Room Design

All refuse storage areas will also have the following features in order to minimise odours, deter vermin, protect surrounding areas, providing a user-friendly and safer area:

- Doors wide enough to allow for the easy removal of the largest container to be stored.
- Adequate artificial lighting.
- Not located adjacent to or within any habitable portion of a building or place used in connection with food preparation (including food storage).
- Permits unobstructed access for removal of containers to the service point.
- Does not have any steps or lips.
- Is enclosed on all sides except for the entrances to ensure bins are not visible from a public place, neighbouring properties, passing vehicles or pedestrian traffic external to the site.
- Is of sufficient size to accommodate the bins with sufficient clearance around the combined bin area.
- Is positioned away from entrances to shops or residential premises.
- The height of the bin storage area allows for waste bins to be opened and closed.
- The floors to be graded to fall to a drainage point.
- Drainage points connected to sewer in accordance with trade waste requirements.
- A hose cock provided inside the room for cleaning bins and the rooms.
- The walls, ceilings, floors, and equipment are to be designed and constructed of impervious material with a smooth finish to allow for easy cleaning.
- Is designed to minimise their visual impact on the surrounding areas.
- Is naturally or mechanically ventilated.

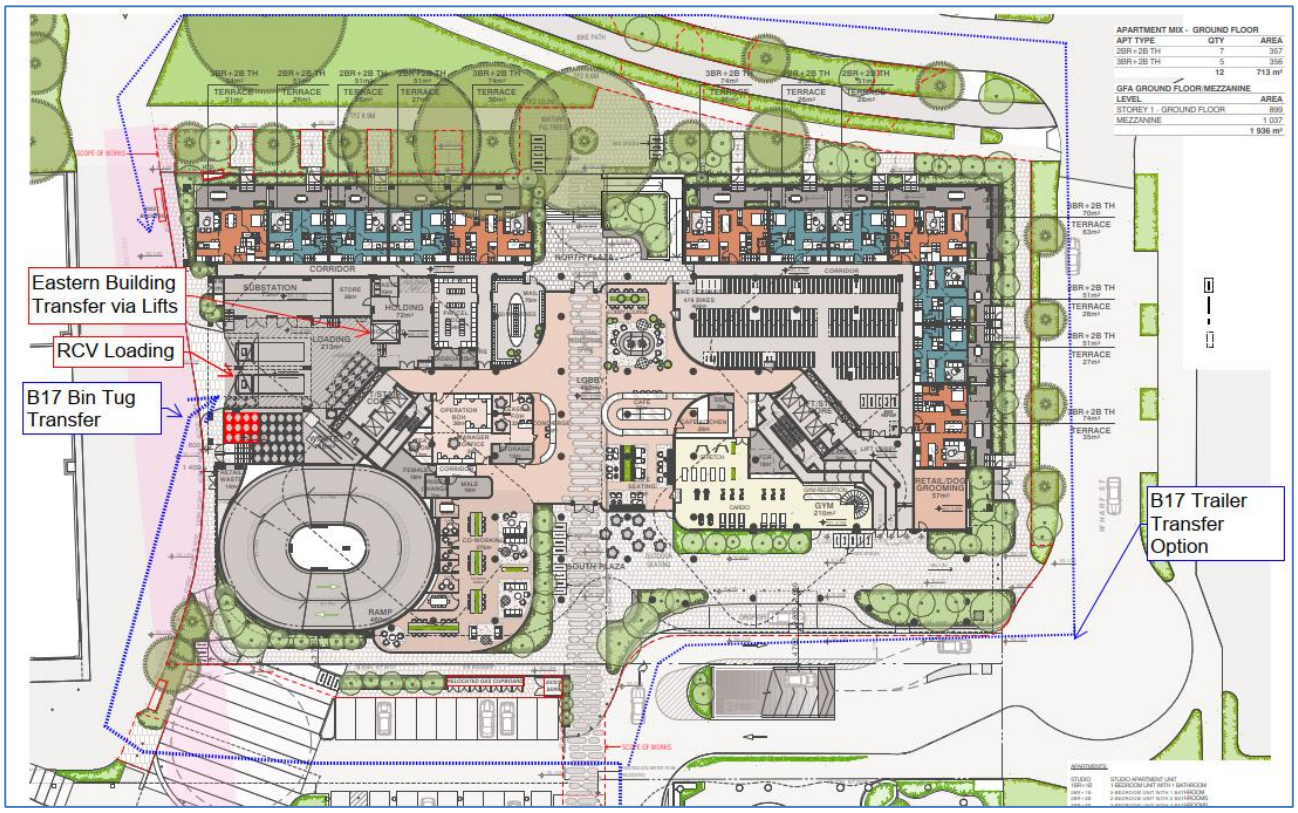
2.4. Refuse Transfer

Building management or caretaker will be responsible for the rotation of bins on the linear conveyors when deemed necessary. Prior to collections transfer of bins is required between the refuse rooms of the Eastern Building and Western Building Waste room and loading bay area. Permanent storage is also provided within the Western Building waste room for refuse produced by Rivello (B17). Bin towing equipment such as a bin tug or a registered vehicle fitted with a trailer may be utilised to transfer multiple bins per trip. Use of a bin tug would be via internal pathways at low pedestrian traffic periods, or a vehicle and trailer may use public roadways for the transfer of bins.

Retail tenancy staff / cleaners will transfer all refuse generated within each tenancy to the retail refuse room using cleaners' trolleys to reduce manual handling input as required for disposal. The transfer path is contained entirely within the building line.

The collecting contractor will service the residential refuse bins directly from the Western Building refuse room and temporary storage areas adjoining the servicing area and return after servicing. The non-residential refuse bins will be collect in Town

ed from and returned to the non-residential refuse room after service. Building staff / Cleaners will be responsible for cleaning and returning bins to buildings and cleaning the rooms after service as required.



Source: Fender Katsalidis, DA 0100_Rev 2 _Ground Floor Plan

Figure 2.3: Refuse Transfer Path

The refuse transfer path has been designed to allow for:

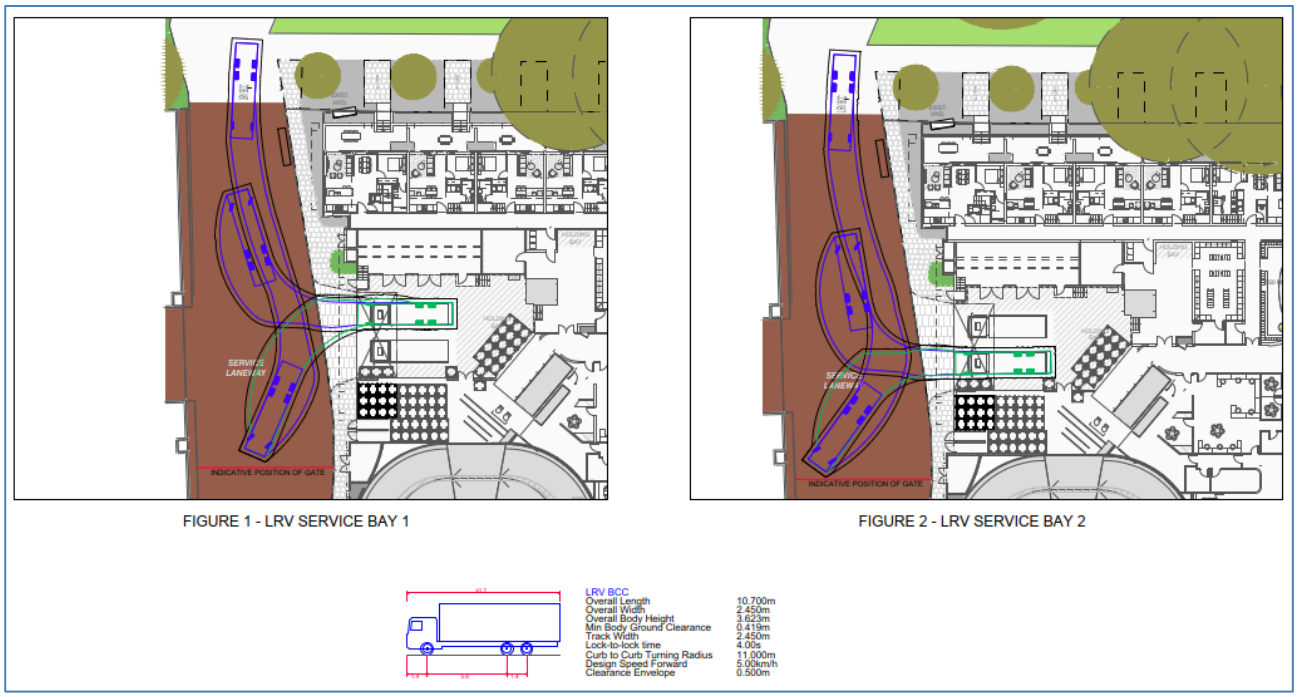
- The bins to be transferred via hard stand pathway.
- Allows bins to be easily manoeuvred.
- Does not impeded traffic flow.
- Does not extend through any habitable parts of a building or food premises.
- Does not have any lips, stairs, or steps for bins to be manoeuvred easily.

2.5. RCV Arrangements and Bin Servicing Areas

All refuse will be collected by Rear Loading RCV. As a build-to-rent scheme building operators may elect to have refuse collected by either Private Contractor or Council's appointed collecting contractor. All non-residential refuse will be collected by private contractor.

RCV's will enter the site via the service laneway which is accessed via the crossover on Macarthur Avenue. RCV's will access the development by performing a single reverse manoeuvre from the service laneway into the designated loading bay. Once the collection service has been performed, the RCV will exit site in a forward gear onto the service laneway and subsequently Macarthur Avenue.

Figure 2.2 demonstrates the swept path for an LRV up to 10.7m which indicates sufficient manoeuvering and clearances for an RCV up to 10.3m as specified in the Refuse PSP. Further details on vehicle access and on-site manoeuvring can be found in the traffic report.



Source: TTM- 21BRT0771-04

Figure 2.4 RCV Swept Path

Service Area Design

The bin servicing area / loading bay has been designed with the following features:

- Has sufficient access and clearance for the waste and recycling collection vehicles to service the bins, including no overhead obstructions.
- Allows bins to be serviced safely while minimising the impediment to vehicle movements during servicing.
- Is clearly separated from car parking bays, footpaths, and pedestrian access.

- Is devoid of stairs, lips or ramps and allows bins to be manoeuvred easily.
- Does not block the entry and exit to the property.
- Is over 5m from any door, window or fresh air intake within the development or any adjoining site.
- Is positioned away from entrances to shops or residential premises.

3 Recommended Operational Requirements

3.1. Operational Equipment Summary

The tables in this section summarise general recommended disposal arrangements for frequently generated and infrequently generated refuse for each use within the development. Section 3.2.1 describes the frequently generated refuse streams that are generated in high volumes for any given period require significant capacity for storage prior to collections. Section 3.2.2 describes infrequently generated refuse streams that are generated in relatively low volumes, and where minimal provisions for storage can be easily managed by collection frequency.

3.1.1 Residential Refuse

Bins will be provided for each residency to store at least one days' worth of generated refuse. Each day or as required, all refuse will be transferred by residents to the dual chute access hoppers on each habitable residential level, see Figure 3.1 below for typical access hopper layout. The refuse chute will discharge directly into appropriate bulk bin stored in the refuse room. The dual chute hopper doors are co-located and colour-coded for easy identification and separation of refuse streams. Bins should also be placed in communal areas with Building management to assist with the disposal of waste from communal areas. Further details are provided in Table 3.1.

Source: Fender Katsalidis, DA 0106_Rev 1 _Level 6 Floor Plan

Figure 3.1 Typical Dual Chute - Access Hopper

Table 3.1: Disposal of Residential Waste

Refuse Stream	Disposal Details
WASTE	
General Waste	Waste bins should always be lined with bags and the bags tied before removal. Operationally, general waste should weigh approximately 3 kg or less and not exceed the dimensions of the Waste Chutes. **Residential Tenancies** Residents will have receptacles within their individual units for collection and storage of at least one day of general waste. Bins are typically placed under the kitchen sink and accompanied by a commingled recycling bin in order to facilitate separation of general waste and recycling. **Communal Spaces** General waste from communal spaces (e.g. recreational areas) may include small quantities of food waste, food packaging, drink bottles etc. General waste bins of an appropriate size to accommodate at least one day of waste should be located within the respective areas. Additional bins may be provided for special events.
Organic (Food) Waste	While BCC does not currently offer a food organics collection service to multiple unit dwellings, commercial options are available at additional cost. Separating organic or food waste from general waste is recommended to reduce the total amount of general waste produced. Additionally, apartment style equipment such as organic household composter or worm farms are available for use where practical and space allows. Composting should be arranged with the building management. Refer to Appendices for options.
RECYCLING	
Commercial Comingled, including • glass • aluminum • steel cans • tins • cardboard • semi rigid plastics	Items for recycling must not be bagged and disposed in loose form. This can be done by decanting the materials from the individual receptacles into the refuse chute access hopper. Residents will liaise with building management for the disposal of oversized recyclables not suitable for chute disposal. Residents will have receptacles within their individual units for collection and storage of at least one day of recycling. Recycling bins are typically placed under the kitchen sink next to the general waste bin. Recycling bins will usually be used for all recycling materials (commingled recycling). However, residents are encouraged to make use of the container refund scheme and separate eligible containers from the commingled recycling material (see below).
	Container deposit / refund schemes are currently in place in Queensland. Various models exist including bottle return facilities and (automated) reverse vending machines. Occupants should be encouraged to separate containers that qualify for the schemes from the waste or recycling streams, and send back to a return points. Storage space or dedicated bins within the units or refuse rooms can be provided. For the proposed developments, consideration should be given to placement of a reverse vending machine on site for disposal.

3.1.2 Non-Residential Refuse

Bins will be provided for each retail tenancy. After each day of operation or as required, refuse will be transferred by staff / cleaners to the non-residential refuse room (Annotated as Retail Waste) and decanted into the appropriate bulk bins. Each tenancy will provide a sufficient quantity of refuse receptacles within the tenancy to capture a full days' worth of refuse to reduce the frequency of trips to the refuse room. Further details are provided in Table 3.2.

Table 3.2: Disposal of Non-Residential Waste

Refuse Stream	Disposal Details
WASTE	
General Waste	Waste bins should always be lined with bags and the bags tied before removal. General waste from food and beverage outlets such as restaurants, takeaways, cafés will be captured by bins typically ranging in size from 30L to 80L that will be placed within the kitchen or back-of-house area to meet the design or layout criteria of the café or restaurant operators. Tenancies will have a sufficient quantity of receptacles within the tenancy for collection and storage of at least one day of general waste.
Organic (Food) Waste	Separating organic or food waste from general waste is recommended to reduce the total amount of general waste produced. Caddy bins or bins no larger than 60L should be used in retail and food and beverage outlets, for disposal of food waste if required. The bins are then transferred to the refuse room for collection. The content is then decanted in bulk bins no larger than 660L bins provided within the refuse room. A purpose-built trolley should be used to transfer caddy bins.
Cooking Oil Waste	Waste oils should be disposed separately from general waste if large quantities are produced (e.g. in food and beverage outlets). All waste liquids / oils (e.g. from commercial kitchens) should be separated and stored in clearly labelled containers. Typically, waste oils are removed during delivery of new oils by the supplying contractor. Bunded areas or bunded plastic pallets should be supplied for the storage of liquid waste / oils and stored in a levelled area (e.g. refuse room). Bunded pallets can be stored indoors or purpose built for outdoors.
RECYCLING	
Commercial Comingled, including • glass • aluminum • steel cans • tins • cardboard • semi rigid plastics	Items for recycling must not be bagged and disposed in loose form. This can be done by decanting the materials from the individual receptacles into the provided bulk bins. Commingled recycling from food and beverage outlets such as restaurants, takeaways, cafés can be captured by bins up to 120L that will be placed within the kitchen or back-of-house area to meet the design or layout criteria of the café or restaurant operators. Tenancies will have a sufficient quantity of receptacles within each tenancy for collection and storage of at least one day of recycling.
	Container deposit / refund schemes are currently in place in Queensland. Various models exist including bottle return facilities and (automated) reverse vending machines. Occupants should be encouraged to separate containers that qualify for the schemes from the waste or recycling streams, and send back to a return points. Storage space or dedicated bins within the units or refuse rooms can be provided. For the proposed developments, consideration should be given to placement of a reverse vending machine on site for disposal.

3.1.3 Infrequent Waste

Table 3.3: Disposal of Infrequently Generated Waste

Refuse Stream	Disposal Details
Green Waste	Green waste is not typically produced from this type of development other than from surrounding landscaped areas or potted plants. Green waste is usually removed by the designated maintenance contractor. The engaged contractor will be required to send this material to a composting or resource recovery facility rather than to a landfill.
Hard Waste / Bulky Goods	Hard waste may be stored in the western building in limited quantities. Alternatively, collections can be coordinated, and hard waste / bulky goods moved to the loading dock or a designated area for removal prior to collection. When storing bulky goods in a loading dock, it is recommended that items are placed on a pallet for efficient loading via a pallet jack or forklift onto the RCV.
Hazardous Waste (paints, batteries and cartridges) **Electronic Waste**	Where applicable, occupants usually make their own arrangements for the disposal of specialised or hazardous waste and electronic waste such as recycling of toner cartridges and batteries. Please refer to BCC and QLD government websites for disposal options. It is an expectation that the building management assist with disposal of hazardous, electronic or liquid waste and any paint or chemicals as required and requested. Hazardous waste must be handled with due care, separated and securely stored for collection by a specialist waste contractor. Please refer to local BCC and QLD government websites for further information.

3.2 On-going Management

The tables below are not assessable as part of the development application instead for the demonstration of required tasks during the operational phase of the development and therefore intentionally left blank.

Responsibilities have to be assigned for all on-going refuse management operations. This is generally done by a building manager, staff and / or cleaners. The following lists (Table 3.4 to Table 3.10) are designed to help managing responsibilities and monitor the refuse operations in order to maintain efficient services and a safe environment.

Table 3.4: General Refuse Management Checklist

Objectives	Checked	Remarks
Organise temporary additional bins or collections to cater for additional waste generated during initial resident move in.		May also be required for high resident turnover events.
Organising of weekly pick-ups for all refuse streams.		Liaise with private contractors and Council as required.
Regular spot checks are performed on equipment and bins		Checking for compliance and stream contamination.
Managing daily bin transfers between refuse storage / collection areas if required.		
Check bin fill levels and rotate / swap bins as required, e.g. under chutes.		

3.2.1 Safety

Transferring refuse bins and using management equipment are considered hazardous tasks. Therefore, contractors must ensure that a full risk assessment of equipment, surfaces, and related gradients is complete. The contractor must provide procedural documentation to appropriate personnel prior to delivery of equipment occupancy of the development.

Table 3.5: Safety Checklist

Objectives	Checked	Remarks
Abiding by all relevant occupational health and safety legislation, regulations and guidelines to ensure site safety for residents, visitors, staff and contractors.		
Assessment of any manual handling risks and preparation of a manual handling control plan for waste and bin transfers.		
Provision of equipment manuals, training, health and safety procedures, risk assessments and personal protective equipment to staff / contractors in order to control hazards associated with all waste management activities.		

3.2.2 Signage

All receptacles, bins and other refuse management equipment will have adequate signage. Standard signage will be provided in and around waste collection and storage areas and should be colour coded in accordance with AS 4123.7 – 2006 Mobile waste containers (see Appendix C).

Table 3.6: Signage Checklist

Objectives	Checked	Remarks
Ensuring compliance of signage with government local council regulations.		Use signage provided by Council or engaged contractor if available.
Ensuring that labelling on bins, refuse room etc. is appropriate and clear and easy to read and updated if required.		

3.2.3 Cleaning and Maintenance

Regular cleaning and maintenance of all refuse management facilities is important to maintain a safe and hygienic environment for residents, visitors, staff, and contractors.

Table 3.7: Cleaning and Maintenance Checklist

Objectives	Checked	Remarks
General cleaning of all refuse holding and transfer areas including • Refuse rooms and storage areas • Refuse bins • Refuse transfer areas including lifts and staircases • Refuse chutes and hopper doors • Any other refuse management equipment		Frequency depends on refuse generation and building operation.
Coordination of specialised cleaning contractors as required.		
Maintenance and servicing of refuse management equipment as per schedule.		Frequency as per manufacturers recommendation and warranty requirements.
Coordination of specialised equipment contractors as required.		

3.2.4 Education and Communication

On-going education is important to ensure people continue to use the facilities as originally intended and to avoid ongoing contamination of recoverable refuse streams. Building management should be involved in education of building occupants and encouraging participation in recycling activities. All body corporate and leasing contracts should contain clauses pertaining to waste management arrangements and use of any associated equipment.

Table 3.8: Education and Communication Checklist

Objectives	Checked	Remarks
Communication of refuse management arrangements to residents, staff and contractors as required.		
Consideration of promotional opportunities for any successes e.g. local shopping partnerships / discounts.		

3.2.5 Refuse Minimisation

Refuse minimisation is an important part of any site operation, it is strongly recommended that building management are actively involved in encouraging and assisting residents to follow the refuse hierarchy. At a minimum, the following should be implemented. Guidance on additional refuse minimisation options can be provided during the operational phase of the development by external review.

Refuse minimisation required regular reviewing to ensure operational sustainability of refuse volumes, equipment, and economic feasibility. It is recommended that refuse weights and movements are noted and reviewed. An external review is usually conducted 12 to 18 months after the implementation of the plan.

Table 3.9: Refuse Minimisation Checklist

Objectives	Checked	Remarks
Regular review of material quantities to avoid over-ordering.		
Encourage residents to regularly review grocery quantities to avoid over-ordering and food waste.		
Consideration of secondary and recycled materials where possible.		
Encouraging refuse minimisation through education and signage (see below).		
Reduce refuse through continuous monitoring and review (see below).		

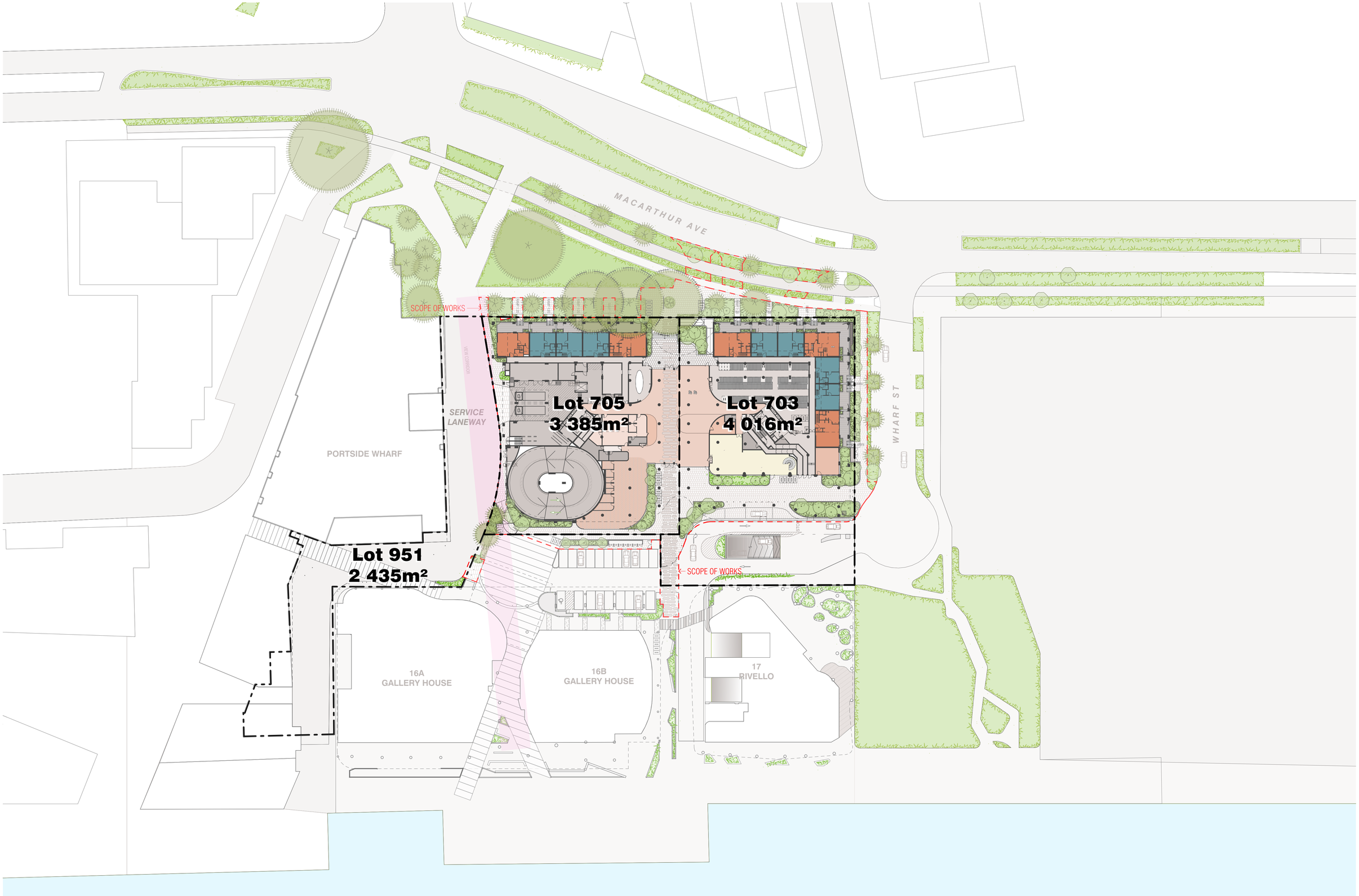
3.2.6 Monitoring and Review

Regular monitoring and inspections of waste and related equipment and facilities from the development should be conducted by building management or designated staff or maintenance and sustainability.

Table 3.10: Monitoring and Review Checklist

Objectives	Checked	Remarks
Continual monitoring of equipment uses and scheduling to ensure best operational outcomes.		
Regular review of refuse management equipment and facilities such as bin volumes, refuse storage capacities and stormwater management arrangements.		

Appendix A Relevant Site Plans and Drawings



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PROJECT
11-23 MACARTHUR AVENUE HAMILTON
11-23 MACARTHUR AVENUE
HAMILTON QUEENSLAND 4007

DRAWING TITLE
PRECINCT GROUND PLAN

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FENDER KATSALIDIS (AUST) PTY LTD ACN 092 943 032

ISSUE PURPOSE
DEVELOPMENT APPLICATION

REV. 01

DRAWING NO.
DA0013

SUMMARY

SITE AREA	**9 836 m²**
RESIDENTIAL PLOT RATIO	**3.93 : 1**
AMENITIES PLOT RATIO	**0.25 : 1**
TOWER SITE COVER	**2231 m²**

GFA RESIDENTIAL

	LEVEL	GFA
	STOREY 1 - GROUND FLOOR	899
	MEZZANINE	380
	STOREY 2 - PODIUM	1 465
	STOREY 3 - PODIUM	1 465
	STOREY 4 - PODIUM	1 465
	STOREY 5 - PODIUM ROOFTOP	955
LOWER TOWER	STOREY 6 - TOWER	1 784
	STOREY 7 - TOWER	1 784
	STOREY 8 - TOWER	1 784
	STOREY 9 - TOWER	1 784
	STOREY 10 - TOWER	1 784
	STOREY 11 - TOWER	1 784
	STOREY 12 - TOWER	1 784
	STOREY 13 - TOWER	1 784
	STOREY 14 - TOWER	1 784
	STOREY 15 - TOWER	1 784
	STOREY 16 - TOWER	1 784
	STOREY 17 - TOWER	1 784
	STOREY 18 - TOWER	1 778
UPPER TOWER	STOREY 19 - TOWER	1 778
	STOREY 20 - TOWER	1 778
	STOREY 21 - TOWER	1 778
	STOREY 22 - TOWER	1 778
	STOREY 23 - TOWER	1 778
		38 705 m²

GFA AMENITIES

LEVEL	GFA
STOREY 1 - GROUND FLOOR	897
MEZZANINE	657
STOREY 5 - PODIUM ROOFTOP	901
	2 455 m²

TOTAL GFA	**41 160 m²**

GFA/APARTMENT MIX

GFA - APARTMENT MIX SCHEDULE

APT TYPE	QTY MIX	AREA MIX	QTY	APARTMENT GFA
STUDIO ACC			3	132
STUDIO DK			48	1 920
STUDIO TOTAL	9%	6%	**51**	**2 052 m²**
1BR+1B			221	11 050
1BR+1B ACC			30	1 620
1-BED APT TOTAL	45%	37%	**251**	**12 670 m²**
2BR+1B ACC			2	150
2BR+1B DK			48	3 120
2BR+2B			144	10 440
2BR+2B ACC			21	1 584
2BR+2B TH			7	546
2-BED APT TOTAL	40%	46%	**222**	**15 840 m²**
3BR+2B			26	2 678
3BR+2B ACC			5	529
3BR+2B TH			5	549
3-BED APT TOTAL	6%	11%	**36**	**3 756 m²**
			560	**34 318 m²**

APARTMENT MIX ACCESSIBLE UNITS

APT TYPE	QTY MIX	AREA MIX	QTY	APARTMENT GFA
1BR+1B ACC			30	1 620
2BR+1B ACC			2	150
2BR+2B ACC			21	1 584
3BR+2B ACC			5	529
STUDIO ACC			3	132
ACCESSIBLE TOTAL	11%	12%	**61**	**4 015 m²**

APARTMENT MIX QTY NON-ACCESSIBLE

APT TYPE	QTY MIX	AREA MIX	QTY	APARTMENT GFA
1BR+1B			221	11 050
2BR+1B DK			48	3 120
2BR+2B			144	10 440
2BR+2B TH			7	546
3BR+2B			26	2 678
3BR+2B TH			5	549
STUDIO DK			48	1 920
NON-ACCESSIBLE TOTAL	89%	88%	**499**	**30 303 m²**

OTHER AREAS

NON-RESIDENTIAL GFA

ZONE NAME	AREA
STOREY 1 - GROUND FLOOR	
CAFE	55
CAFE KITCHEN	30
CAFE_SEATING	91
CO-WORKING	275
GYM	210
RETAIL/DOG_GROOMING	57
	718 m²
MEZZANINE	
GYM	410
	410 m²
	1 128 m²

COMMUNAL OPEN SPACE

STORY NAME	AREA
STOREY 1 - GROUND FLOOR	2 208
MEZZANINE	594
STOREY 2 - PODIUM	107
STOREY 3 - PODIUM	107
STOREY 4 - PODIUM	107
STOREY 5 - PODIUM ROOFTOP	3 933
	7 056 m²

BIKE PARKING

BICYCLE PARKING SCHEDULE

LEVEL	TYPE	QTY
BASEMENT		
	CRADLE	34
	WISHBONE	20
STOREY 1 - GROUND FLOOR		
	ARC STAGGERED	454
	CRADLE	10
	DDA	4
	WISHBONE	10
	WISHBONE OUTSIDE	54
STOREY 2 - PODIUM		
	WISHBONE	18
STOREY 3 - PODIUM		
	WISHBONE	18
STOREY 4 - PODIUM		
	WISHBONE	18
		640

CAR/MOTORBIKE PARKING

CARPARKING SCHEDULE

Carpark Type	LEVEL	QTY
AusStd 90 Degree		
	BASEMENT	135
	STOREY 2 - PODIUM	64
	STOREY 3 - PODIUM	64
	STOREY 4 - PODIUM	64
		327
AusStd Parallel		
	STOREY 2 - PODIUM	2
	STOREY 3 - PODIUM	2
	STOREY 4 - PODIUM	2
		6
AusStd Public (2.7m wide)		
	BASEMENT	9
		9
AusStd Small		
	BASEMENT	14
	STOREY 2 - PODIUM	13
	STOREY 3 - PODIUM	13
	STOREY 4 - PODIUM	15
		55
Disabled Space		
	BASEMENT	4
	STOREY 2 - PODIUM	4
	STOREY 3 - PODIUM	4
	STOREY 4 - PODIUM	4
		16
Tandem 90 Degrees		
	BASEMENT	5
	STOREY 2 - PODIUM	6
	STOREY 3 - PODIUM	6
	STOREY 4 - PODIUM	6
		23
		436

MOTORBIKE PARKING

Carpark Type	LEVEL	QTY
AusStd Motorbike		
	BASEMENT	23
	STOREY 2 - PODIUM	14
	STOREY 3 - PODIUM	14
	STOREY 4 - PODIUM	14
		65

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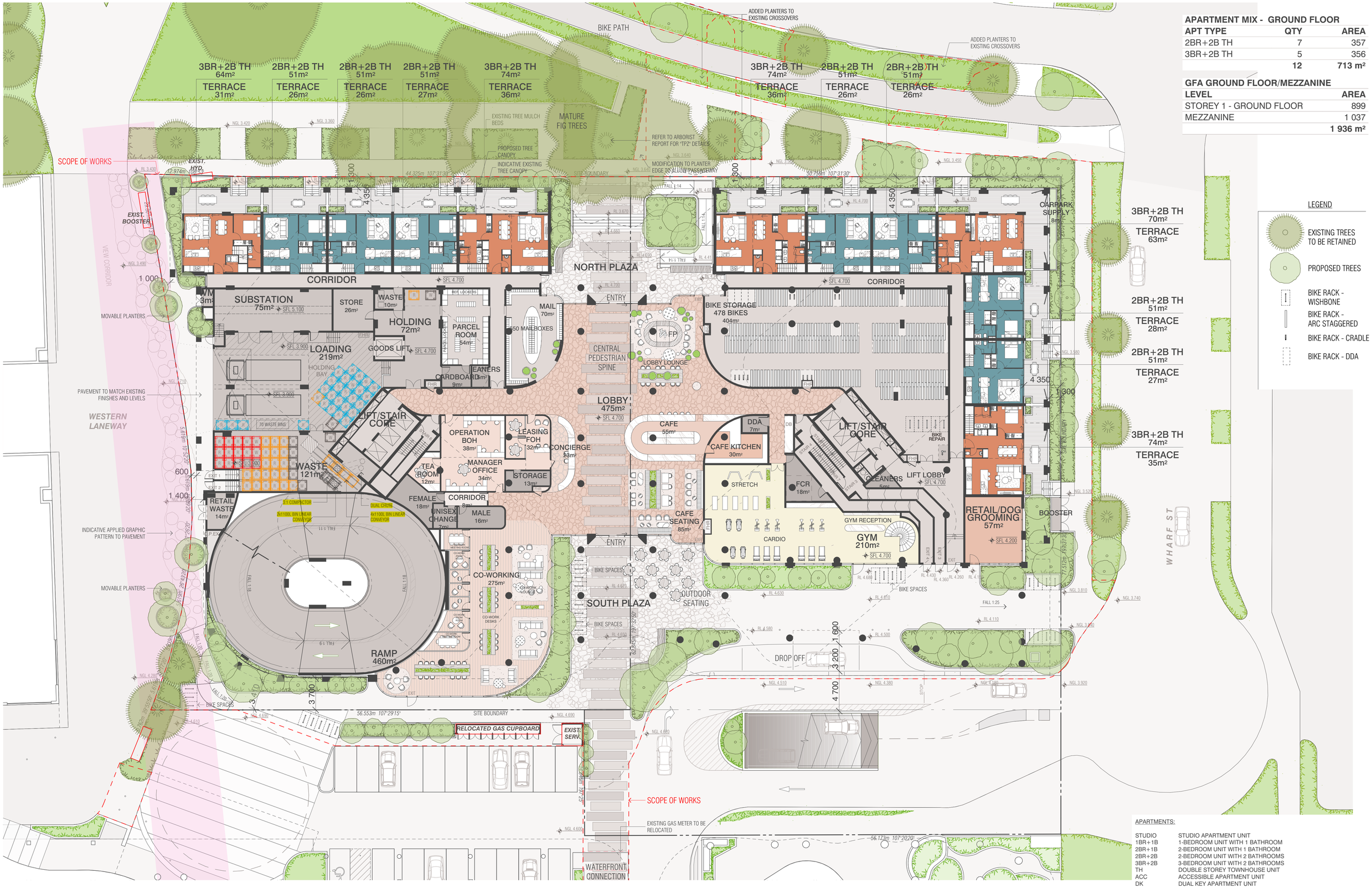
PT	21.07.2023	ND	31.07.2023	22136	1:200@A1

DRAWING TITLE
BASEMENT FLOOR PLAN

ISSUE PURPOSE
DEVELOPMENT APPLICATION

REV. 02

DRAWING NO. DA0099



APARTMENT MIX - GROUND FLOOR

APT TYPE	QTY	AREA
2BR+2B TH	7	357
3BR+2B TH	5	356
	12	713 m²

GFA GROUND FLOOR/MEZZANINE

LEVEL	AREA
STOREY 1 - GROUND FLOOR	899
MEZZANINE	1 037
	1 936 m²

LEGEND

- EXISTING TREES TO BE RETAINED
- PROPOSED TREES
- BIKE RACK - WISHBONE
- BIKE RACK - ARC STAGGERED
- BIKE RACK - CRADLE
- BIKE RACK - DDA

APARTMENTS:

STUDIO	STUDIO APARTMENT UNIT
1BR+1B	1-BEDROOM UNIT WITH 1 BATHROOM
2BR+1B	2-BEDROOM UNIT WITH 1 BATHROOM
2BR+2B	2-BEDROOM UNIT WITH 2 BATHROOMS
3BR+2B	3-BEDROOM UNIT WITH 2 BATHROOMS
TH	DOUBLE STOREY TOWNHOUSE UNIT
ACC	ACCESSIBLE APARTMENT UNIT
DK	DUAL KEY APARTMENT UNIT

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DRAWING TITLE GROUND FLOOR PLAN

ISSUE PURPOSE DEVELOPMENT APPLICATION

REV. 02

DRAWING NO. DA0100

APARTMENT MIX - PODIUM LEVELS

APT TYPE	QTY	AREA
1BR+1B ACC	10	540
2BR+2B ACC	7	528
3BR+2B ACC	1	101
STUDIO ACC	1	44
	19	**1 213 m²**

GFA PODIUM

LEVEL	AREA
STOREY 2 - PODIUM	1 465
STOREY 3 - PODIUM	1 465
STOREY 4 - PODIUM	1 465
	4 395 m²

APARTMENTS:

STUDIO	STUDIO APARTMENT UNIT
1BR+1B	1-BEDROOM UNIT WITH 1 BATHROOM
2BR+1B	2-BEDROOM UNIT WITH 1 BATHROOM
2BR+2B	2-BEDROOM UNIT WITH 2 BATHROOMS
3BR+2B	3-BEDROOM UNIT WITH 2 BATHROOMS
TH	DOUBLE STOREY TOWNHOUSE UNIT
ACC	ACCESSIBLE APARTMENT UNIT
DK	DUAL KEY APARTMENT UNIT

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DRAWING TITLE
LEVEL 4 FLOOR PLAN

ISSUE PURPOSE
DEVELOPMENT APPLICATION

REV. 01

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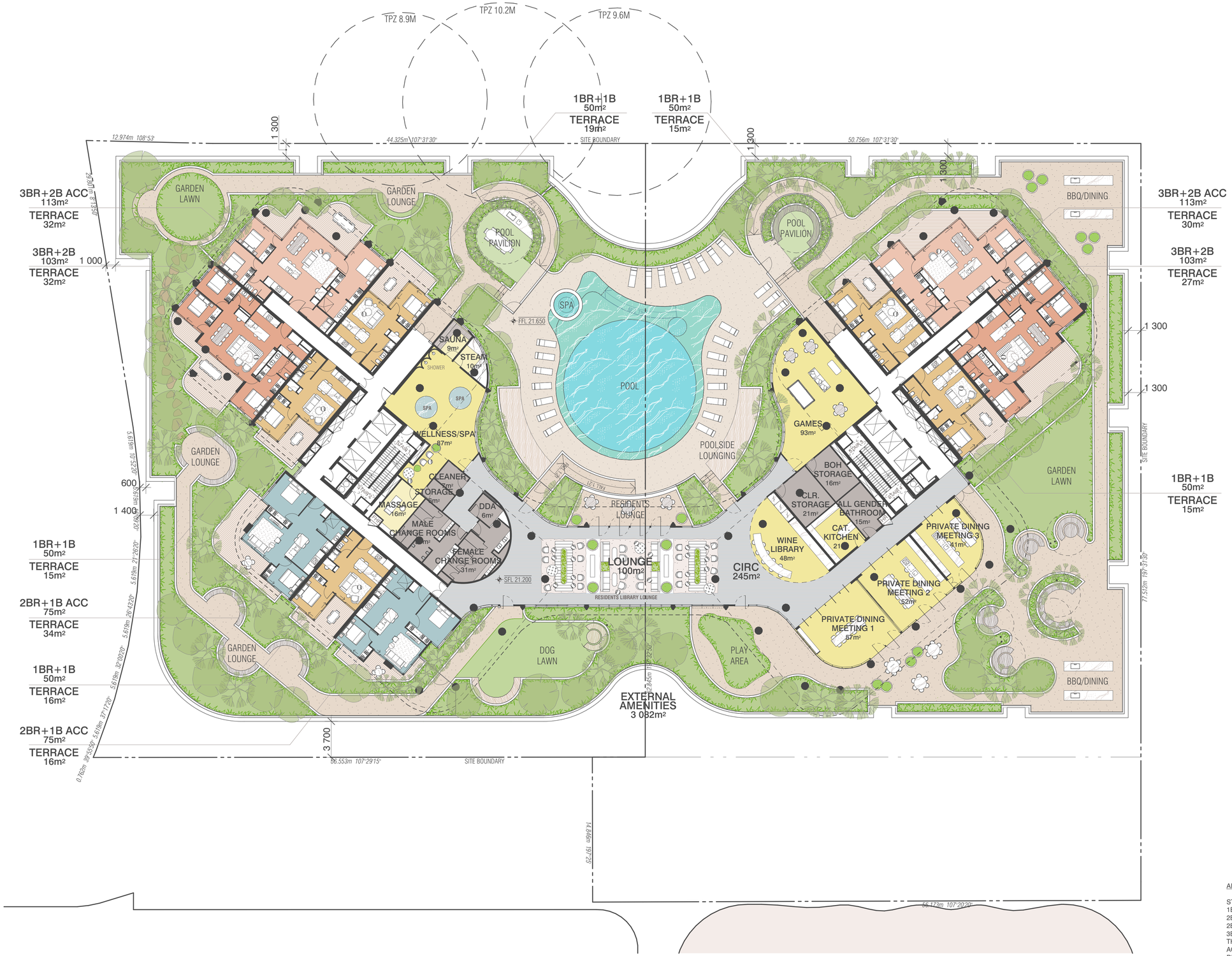
DA0104



APARTMENT MIX - AMENITIES LEVEL

APT TYPE	QTY	AREA
1BR+1B	5	250
2BR+1B ACC	2	150
3BR+2B	2	206
3BR+2B ACC	2	226
	11	**832 m²**

GFA PODIUM ROOFTOP

LEVEL	AREA
STOREY 5 - PODIUM ROOFTOP	955
	955 m²

APARTMENTS:

STUDIO	STUDIO APARTMENT UNIT
1BR+1B	1-BEDROOM UNIT WITH 1 BATHROOM
2BR+1B	2-BEDROOM UNIT WITH 1 BATHROOM
2BR+2B	2-BEDROOM UNIT WITH 2 BATHROOMS
3BR+2B	3-BEDROOM UNIT WITH 2 BATHROOMS
TH	DOUBLE STOREY TOWNHOUSE UNIT
ACC	ACCESSIBLE APARTMENT UNIT
DK	DUAL KEY APARTMENT UNIT

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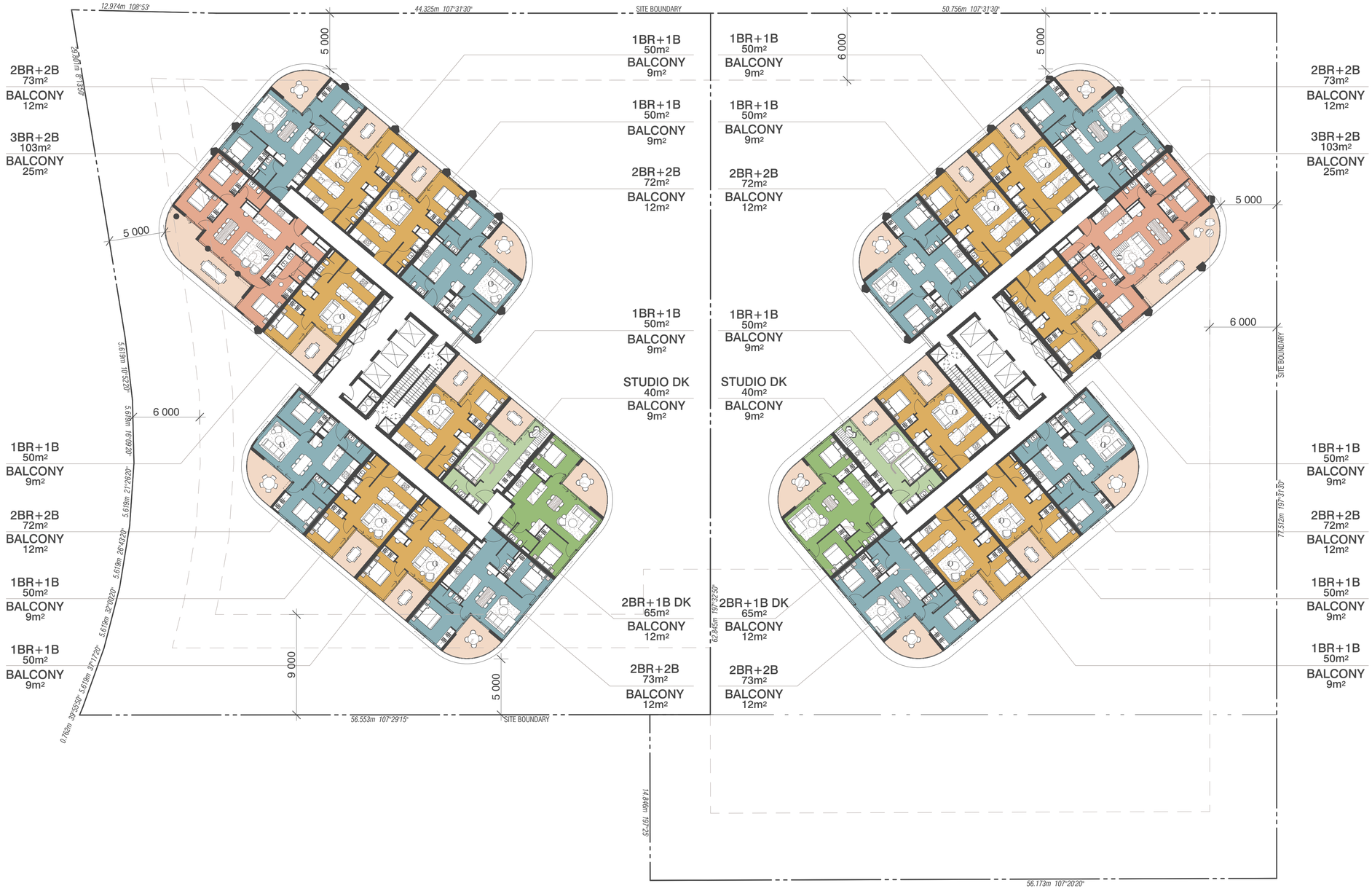
DRAWING TITLE
PODIUM ROOF FLOOR PLAN

ISSUE PURPOSE
DEVELOPMENT APPLICATION

REV. 01

DRAWING NO.
DA0105



APARTMENT MIX PER LEVEL - UPPER T...

APT TYPE	QTY	AREA
1BR+1B	12	600
2BR+1B DK	2	130
2BR+2B	8	580
3BR+2B	2	206
STUDIO DK	2	80
	26	**1 596 m²**

GFA UPPER TOWER

LEVEL	AREA
STOREY 18 - TOWER	1 778
STOREY 19 - TOWER	1 778
STOREY 20 - TOWER	1 778
STOREY 21 - TOWER	1 778
STOREY 22 - TOWER	1 778
STOREY 23 - TOWER	1 778
	10 668 m²

APARTMENTS:

STUDIO	STUDIO APARTMENT UNIT
1BR+1B	1-BEDROOM UNIT WITH 1 BATHROOM
2BR+1B	2-BEDROOM UNIT WITH 1 BATHROOM
2BR+2B	2-BEDROOM UNIT WITH 2 BATHROOMS
3BR+2B	3-BEDROOM UNIT WITH 2 BATHROOMS
TH	DOUBLE STOREY TOWNHOUSE UNIT
ACC	ACCESSIBLE APARTMENT UNIT
DK	DUAL KEY APARTMENT UNIT

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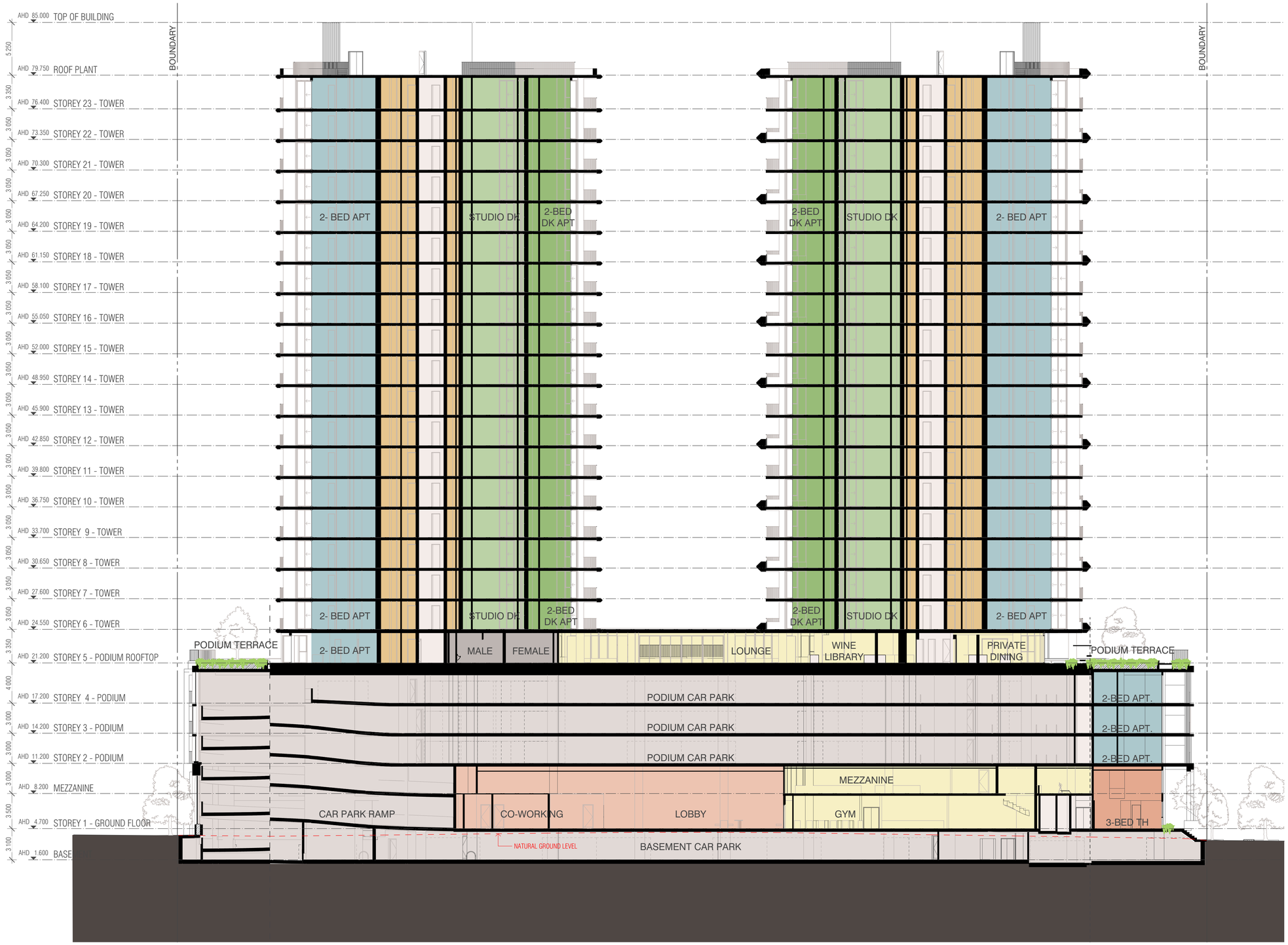
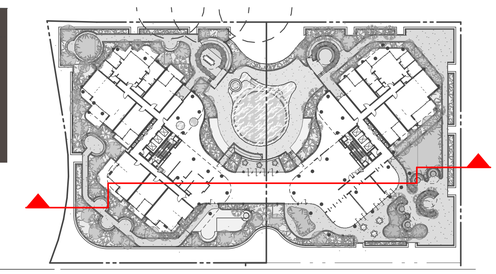
PT	28.04.2023	ND	12.05.2023	22136	1:200@A1	LEVEL 18-23 FLOOR PLAN

ISSUE PURPOSE	REV.	DRAWING NO.
DEVELOPMENT APPLICATION	01	**DA0118**





BIMcloud: fkaeprdbim01 - BIMcloud/22136 11-23 MacArthur Avenue Hamilton/00 BIM MODELS/SD_TP-DA/CENTRAL MODELS/22136 General

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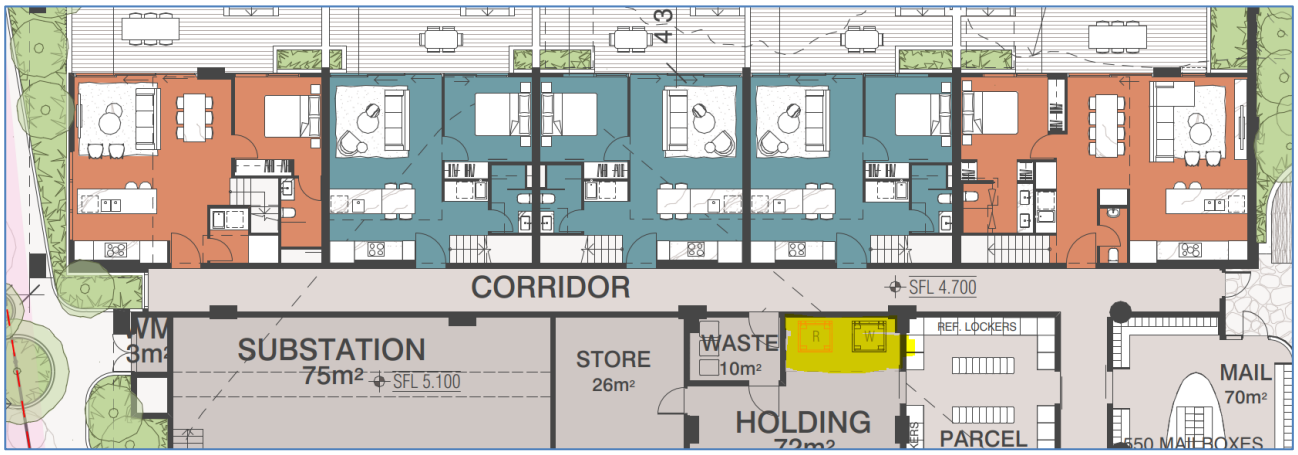
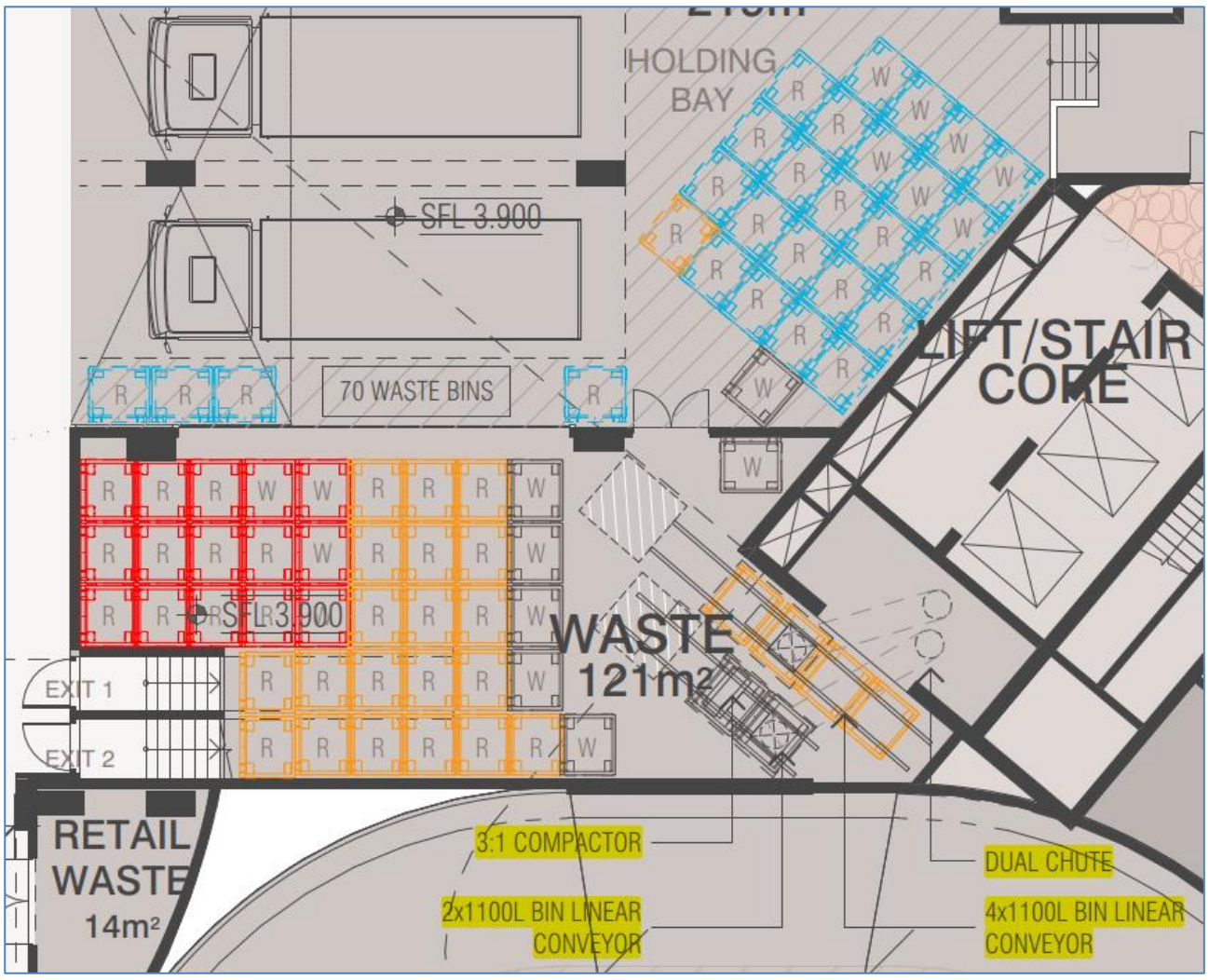
PT	28.04.2023	ND	12.05.2023	22136	1:200@A1	SECTION A	DEVELOPMENT APPLICATION	01	**DA2500**

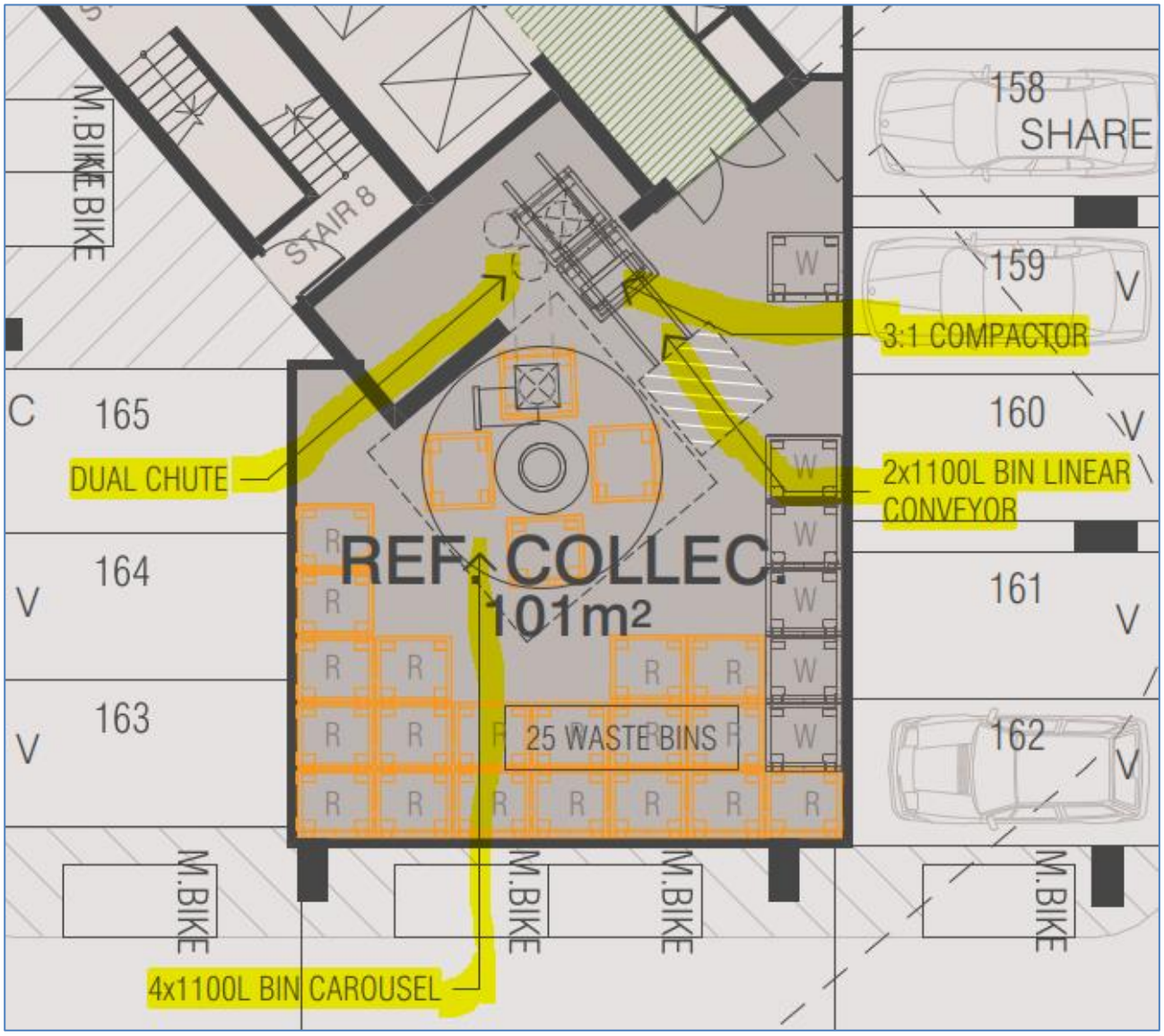
Waste Rooms and Swept Paths

Western Building – Waste Room and Ground Floor Waste

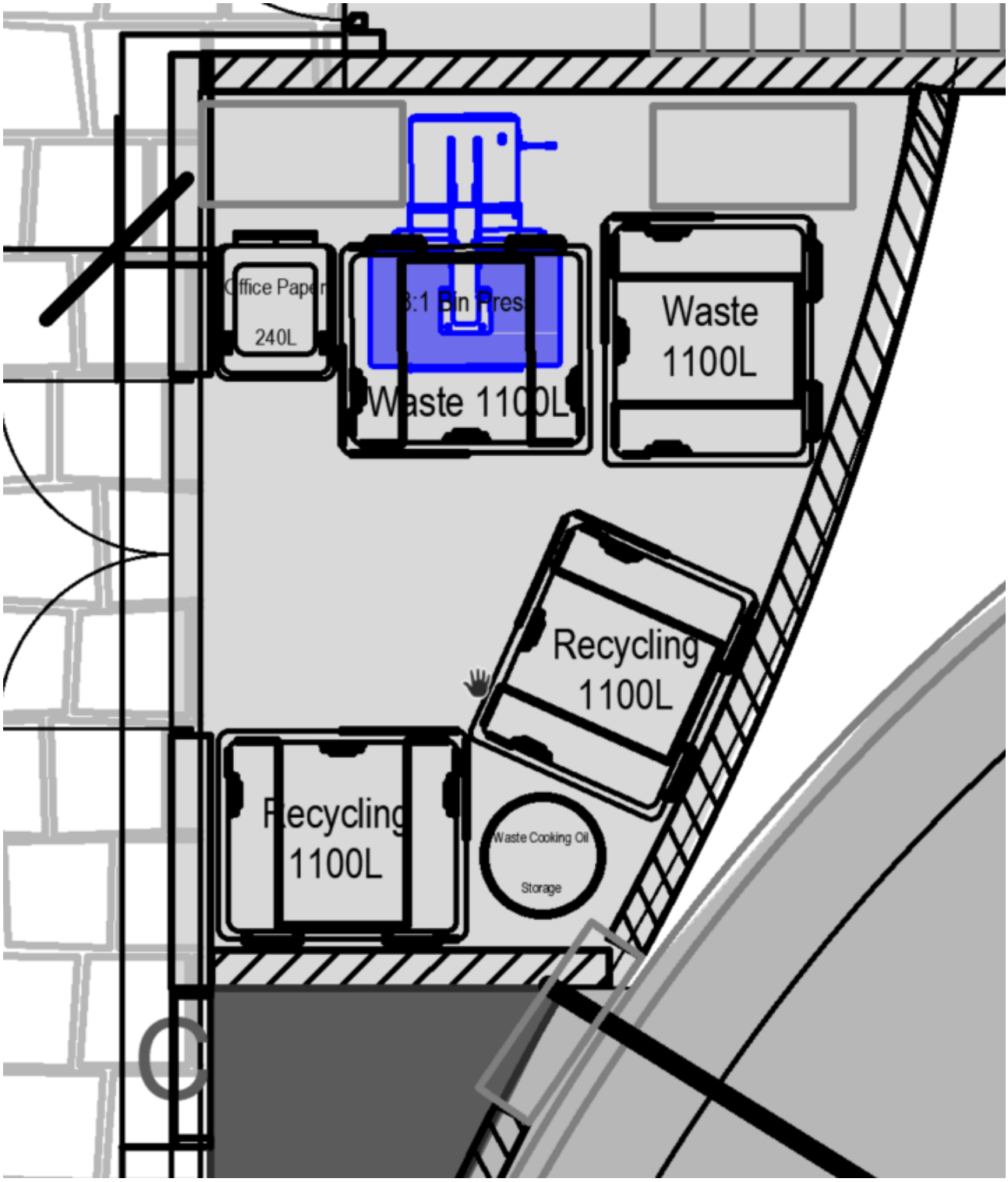




Eastern Building – Waste Room



Non Residential - Waste Room



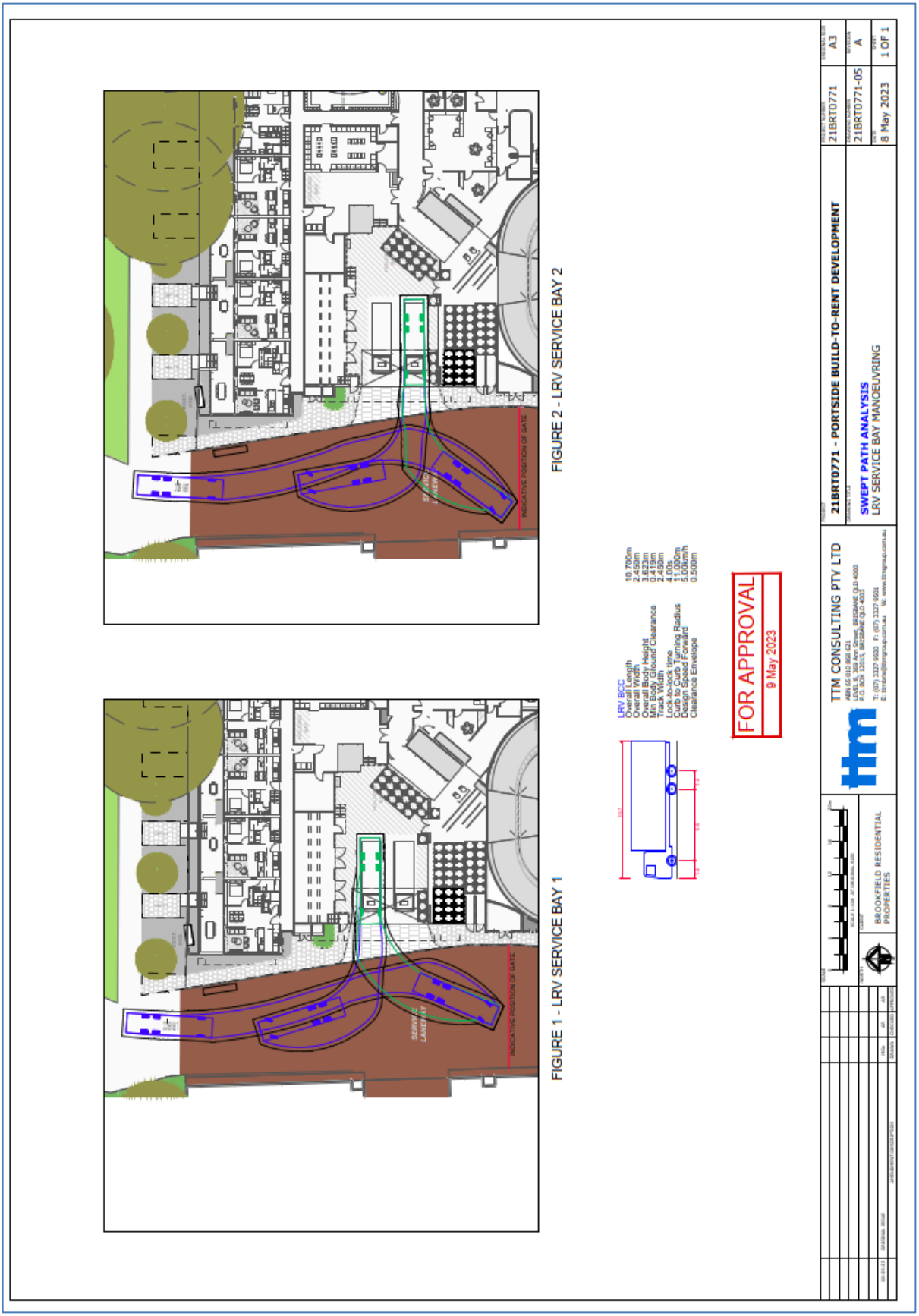


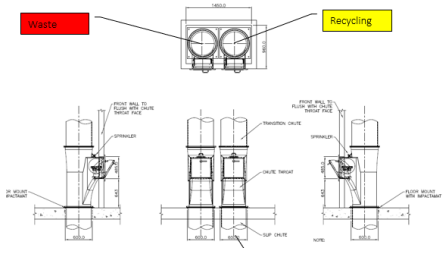
FIGURE 2 - LRV SERVICE BAY 2
FIGURE 1 - LRV SERVICE BAY 1
LRV BCC
Overall Length 10.700m
Overall Width 2.450m
Overall Body Height 3.623m
Min Ground Clearance 0.415m
Track Width 2.450m
Lock-to-lock time 4.00s
Curb to Curb Turning Radius 11.000m
Design Speed Forward 15.000km/h
Clearance Envelope 0.500m
FOR APPROVAL
9 May 2023
TTM CONSULTING PTY LTD
21BRT0771 - PORTSIDE BUILD-TO-RENT DEVELOPMENT
SWEPT PATH ANALYSIS
LRV SERVICE BAY MANOEUVRING
21BRT0771
21BRT0771-05
A
8 May 2023
1 OF 1
BROOKFIELD RESIDENTIAL PROPERTIES

Appendix B Systems and Specifications

B.1 Specified Refuse Equipment

The table below provides contextual examples of the equipment specified within this OWMP and is not intended to provide an exhaustive list of all potential options of the required equipment.

Bin Types	Waste Streams	Examples	Information
Residential unit bins	General waste and recycling	 	Various options and sizes. Built and standalone bin available. Examples: https://www.bunnings.com.au
Commercial Back-of-house bins	General waste, recycling, food waste, paper / cardboard		Various options and sizes available. Tenant to supply depending on preference and space available. Example: 60L multisort bins https://www.sourceseparationsystems.com.au-/product/multisort
Caddy Bins	Food Waste		Example: https://pulpmaster.com.au/pulpmaster-caddy-system
1100L bins	General waste, recycling, paper / cardboard	 	Dimensions approx. 1070 x 1240 x 1330mm (L x W x H) (dimensions depend on contractor) Examples: http://www.justwheeliebins.com.au, https://www.australianwastemanagement.com.au
Refuse / Cleaners Trolleys	All Streams	 	Assisted manual transfer of refuse Examples: https://rubbermaidcommercial.com.au/products/waste-management/mega-brute https://www.materialshandling.com.au/products/deluxe-compact-cleaning-carts

Bin Types	Waste Streams	Examples	Information
Portable Cooking Oil Storage	Used Cooking Oil		Cooking oil recycling Example: https://www.cookers.com.au Cooking oil delivery, used oil collection and provision of required equipment
Dual Chute system	General waste, recycling, food waste		Refuse disposal in multi-storey buildings through refuse chutes: options include single chute for waste only, single chute with diverter system or dual chute for disposal of waste and recycling Examples: https://www.wastech.com.au/products/chutes https://www.elephantsfoot.com.au/products/chutes
Chute Discharge Compaction	General waste		Compactors designed for integration with the refuse chute to minimise the volume of general waste. Examples: https://www.elephantsfoot.com.au/products/compactors/carousel-linear https://wastech.com.au
Automated Bin Rotation	General waste, recycling, food waste		Bin rotation (e.g. linear or carousel) to manage bin fill level and prevent overflow under chutes Example: https://www.elephantsfoot.com.au/products/compactors/carousel-linear https://wastech.com.au
Bin Towing Equipment	General waste, recycling, food waste, paper / cardboard		Assisted transfer of refuse Examples: http://ev.spacepac.com.au/categories/tugger, https://mgplastics.com.au/tow-hook-system-kit-for-1100l-plastic-bins.html

Appendix C Refuse Signage

C.1 Refuse Signage

All waste stream signage used should be colour coded to be compliant with *AS 4123.7–2006 Mobile waste containers – Part 7: Colours, markings and designation requirements.*

Waste signage guideline are provided by the Queensland government: https://www.qld.gov.au/environment/pollution/management/waste/recovery/recycling/signage.

General Refuse Signage

Other Refuse Signage

Colour coding as per AS 4123.7-2006

Mixed (Commingled) Recycling	*PMS 108*
General waste (landfill)	*PMS 032C*
Organics	*PMS 15-0343*
Paper and cardboard recycling	*PMS Process Blue C*
Soft Plastics	*PMS 1655*
Used Cooking Oil	*Grey*

C.2 Other Refuse, Facility and Safety Signage

Various signage including refuse area, safety and facility signage should be arranged through certified signage providers. Example signs can be found at http://www.signblitz.com.au, https://www.wayout.com.au or https://www.smartsign.com.

Example Refuse Room Signage

Example Facility Signage

Example Safety Signage

Appendix D Terms and Abbreviations

In this OWMP, a term or abbreviation has the following meaning unless indicated otherwise:

TERM	ABBREVIATION	DEFINITION
Equipment		
Bin (Refuse Bin)		A plastic or steel container for disposal and temporary storage of waste or recycling items. Various types and sizes exist for different items and purposes. Examples include residential unit bins, bulk bins, MGB, steely bins and specialised for medical waste or cigarette butts.
Bin Storage Area		An enclosed area designated for storing on-site refuse bins or a refuse compactor within the property.
Bulk Bin		A galvanized or steel bin receptacle that is greater than 360L in capacity generally ranging from 1.00m³ to 4.50m³ used for the storage of refuse that is used for on-site refuse collection.
Bulk Mobile Garbage Bin	Bulk MGB	A plastic (polypropylene) receptacle that is greater than 360L in capacity generally ranging from 660L to 1100L used for the storage of refuse.
Collection Point		An identified position where refuse bins are stored for collection and emptying. The collection point can also be the bin storage area.
Compactor		A receptacle that provides for the mechanical compaction and temporary storage of refuse. It allows to reduce bin numbers and collection frequency.
Composter		A container or machine used for composting specific food scraps and/or organic materials.
Food Waste Recycling System		Defined as a vacuum or pump-based system for shredding, macerating or pulping of food waste. The food waste is transferred through pressure (service) pipes to sealed liquid storage tanks.
Green Waste		All vegetated organic material such as small branches, leaves and grass clippings, tree and shrub pruning, plants and flowers.
Liquid Waste		Non-hazardous liquid waste generated by commercial premises should be connected to sewer or collected for treatment and disposal by a liquid waste contractor (including grease trap waste).
Mobile Garbage Bin	MGB	A plastic (polypropylene) bin or bins used for the temporary storage of refuse that is up to 360L in capacity and may be used in kerbside refuse collection or on-site collection.
Putrescible Waste		Putrescible waste is the component of the waste stream liable to become putrid and usually breaks down in a landfill to create landfill gases and leachate. Typically applies to food, animal and organic products.
Recycling		Recycling contains all material suitable for re-manufacture or re-use, e.g. glass bottles and jars; plastics such as PET, HDPE and PVC; aluminium aerosol and steel cans and lids; milk and juice cartons; soft drink, milk and shampoo containers; paper, cardboard, junk mail, newspapers and magazines.
Refuse		Refuse is material generated and discarded from residential and commercial buildings including general waste, recyclables, green waste and bulky items.
Refuse Storage Room		An area identified for storing on-site MGBs or Bulk Bins within the property.
Refuse Tolley		A cart on wheels that can be used to collect smaller quantities of refuse from different areas or rooms of a building or site, and wheel the collected refuse to a (bulk) bin storage area where it is disposed. Refuse trolleys are commonly used in hotels or offices.
Regulated Waste		Regulated waste is waste prescribed under legislation as regulated waste.

TERM	ABBREVIATION	DEFINITION
Transfer (Manual Transfer)		Manual transfer means physical transfer of refuse material and associated bulk bins or trolleys without assistance.
Waste		Waste is referred to as refuse material with the exclusion of recycling, green waste, hazardous waste, special waste, liquid waste and restricted solid waste.
Waste (General Waste)		General waste is generally referred to as material free of any actual or apparent contamination such as pathological / infectious, radioactive materials and / or hazardous chemical. Reporting use is for material considered to be free of food waste.
Wheelie Bin		A MGB of up to 360L, usually with 2 wheels for easy transfer. A common type is a 240L wheelie bin used for kerbside collection in many residential areas.
Measures		
Cubic Metre	m^3	Volume in cubic metre(s) related to refuse management equipment.
Ground Floor Area	GFA	The GFA of all storeys of a building is measured from the outside of the external walls or the centre of a common wall. It is commonly measured in square metres.
Kilogram	kg	Kilogram(s) related to refuse weight.
Litre	L	Litre(s) related to refuse volumes.
Square Metre	m^2	Square metre(s) related to refuse areas.
Ton	T	Ton(s) related to refuse weight.
Collection Vehicles		
Body Truck		A conventional heavy vehicle with a covered loading area. It is generally not specifically designed for emptying the content of bins into the truck during refuse collections, but can be used to carry entire (full) bins for servicing by bin swap-over.
Refuse Collection Vehicle	RCV	A vehicle specifically designed for collecting and emptying refuse bins and refuse compactors.
Rear-End-Loading Refuse Collection Vehicle	REL RCV	A truck specially designed to collect municipal solid waste and recycling, typically 240L wheelie bins to 1100L bulk bins, from rear loading mechanism and haul the collected waste to a solid waste treatment facility.
Tank Truck		An RCV that is specifically designed to collect liquid wastes such as waste cooking oil and food waste pulp. The waste is typically pumped from a waste storage tank into the truck via a hose. Liquid waste management equipment is often provided by the contractor who collects the waste and operates the truck.