PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2024/1502

Date: 22 November 2024

Queensland Government

Operational Waste Management Plan

Bowen Centre – Proposed Conference Centre

At 10 – 12 Campbell Street, Bowen Hills

On Behalf of Construction Forestry Mining & Energy Industrial Union of Employees QLD State Construction & General Division

About TTM

For 30 years, we've been at the centre of the Australian development and infrastructure industry. Our unique combination of acoustics, data, traffic and waste services is fundamental to the success of any architectural or development project.

We have over 50 staff, with an unrivalled depth of experience. Our industry knowledge, technical expertise and commercial insight allow us to deliver an exceptional and reliable service.

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Acoustics Data Traffic Waste

Revision Record

Issue No.	Author	Reviewed/Approved	Development Stage / Revision Description	Date
1.	N. Lee	S. Kenny	Schematic Design – OWMP Draft	09/04/2024
2.	N. Lee	S. Kenny	Schematic Design – OWMP DA Issue	12/04/2024

Approval

I Brian Camilleri *B. Eng (Civil), RPEQ,* certify that the information provided within this Operational Waste Management Plan has been prepared by a suitably qualified person.

Brian Camilleri
Principal Director | RPEQ 7577
TTM Consulting Pty Ltd

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1 Introduction

1.1. Background

TTM Consulting has been engaged by Construction Forestry Mining & Energy Industrial Union of Employees QLD State Construction & General Division to prepare an Operational Waste Management Plan (OWMP) to support 'Bowen Centre', the proposed conference centre development located at 10 – 12 Campbell Street, Bowen Hills. It is understood that a development application will be lodged with Economic Development Queensland (EDQ).

1.2. Scope and Client Brief

The content of this OWMP is intended to provide information on the typical movement of waste streams from generation to collection. Information on the minimum standard of refuse management is provided as well as recommendations for better practice management to reduce the volume of waste to landfill.

The proposed development intends to deliver a conference centre as Stage 1 while investigating the potential option of delivering a Stage 2. A potential Stage 2 would leverage underutilised portions of the site to deliver a residential component in the future. Design considerations for the implementation of Stage 2 have been broadly considered in the design phase of Stage 1 but do not form part of this application.

The items covered within the OWMP are described in Table 1.1.

Table 1.1: Scope Items

Item	Description
Refuse streams	Identification of refuse streams & anticipated development 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, recommended refuse management equipment and system specifications, common refuse signage as well as a list of terms and abbreviations are provided in the appendices.

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.

1.3. Site Analysis

The site is located at 10 – 12 Campbell Street, Bowen Hills and is formally described as Lots 4 and 5 on RP10074 as depicted in Figure 1.1.

The site has dual frontages on Campbell Street and a local road with all vehicular access occurring via the local road frontage. Campbell Street is recognised as a suburban road and the local road is accessed via Hurworth Street recognised as a neighbourhood road on BCC's road hierarchy.

The site is located within the Bowen Hills Priority Development Area (PDA), with the overarching area defined as an Emerging Community. The site falls within the Mixed-Use Zone within the Bowen Hills PDA.

Figure 1.1: Site Location
Source: Brisbane City Council City Plan 2014 Interactive Mapping

1.4. Site Statistics

The proposed development consists of a conference centre designed to accommodate a maximum of 478 patrons. The conference centre features a tiered theatre, bar and kitchen facilities and roof terrace. A lower ground level provides carparking, service vehicle facilities and refuse storage.

Table 1.2 below provides a summary of the development as context for the volume information provided in Section 2.

Table 1.2: Development Summary

Level	Description	Measure *
Upper Ground (Campbell Street)	Conference Centre / Function Space	751.50m^2 GFA
Level 1	Conference Centre / Function Space	413.58m^2 GFA
Roof Terrace	Conference Centre / Function Space	304.80m^2 GFA
Total		**478 Seats**
		1,470m^2 GFA

2 Regulatory Refuse Management Requirements

This section provides the detailed refuse calculations and describes the arrangements for the collection, storage, transfer and disposal of refuse within the development as deemed to satisfy council's current assessment benchmarks. This includes associated bin quantities, storage capacities, equipment details, collection frequencies and site access details.

2.1. Regulatory and Governance Considerations

2.1.1. Council's Refuse Planning Scheme

As the referral agency for EDQ, this plan has been prepared to align with Brisbane City Council's (BCC) refuse requirements of SC6.26 Refuse Planning Scheme Policy v29, additionally, PO2, PO63 of the Centre or mixed use code and PO8 of the Infrastructure design code.

As the development, subject to this application is a non-residential use site, TTM has referred to BCC requirements as outlined in the Refuse PSP under section 2, 3 and 5 as these sections are related directly to non-residential uses. Specific design details addressed to achieve compliance with BCC's Refuse PSP requirements is located in *Appendix A*.

2.1. Prescribed Refuse Volumes

The generation rates and service frequency used for the calculation of 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.

A collection frequency of 2 days per week for each stream has been established. The established frequency represents the maximum permissible service frequency for non-residential uses within an 'Emerging Community' Zone as specified in 'Table 2 – Non-residential service frequency requirement' of the Refuse PSP. However, as the site falls within a Mixed-Use zone of the Bowen Hills PDA, a service frequency of 3 times per week is considered appropriate and may be adopted by development operators.

Table 2.1: Refuse Generation Rates

Generation Rate	Applied To	Measure	General Waste	Recycling	Days of Operation
Conference centre / reception centre *(With preparation of food or liquor for consumption)*	Total GFA	L / 100m² / Day	250	120	7

The developments total GFA has been used as a conservative base measure for the purposes of refuse calculations. The total GFA includes storage, circulation and amenities typically excluded from refuse generation calculations. The conservatively applied refuse calculations evince the adequacy of the refuse storage area provided.

The prescribed 'Recycling' generation rate has been split in line with the expected refuse composition at the following ratio:

- Commingled recycling: 50%
- Paper / cardboard: 50%

Table 2.2: Refuse Calculations

Area Description	Measure	Quantity	General Waste L/Week	Commingle Recycling L/Week	Paper / Cardboard L/Week
Conference Centre – Total GFA	GFA (m²)	1,470	25,723	6,173	6,173
Total Weekly Volumes Compacted (L / Week)			8,574*	N/A	2,058*
Volumes per Day (L / Day)			1,225*	882	294*
Volumes per Collection (L / Collection)			4,287*	3,087	1,029*
Collection and Equipment Details	Collections per Week		2	2	2
	Storage Capacity		4 Days	4 Days	4 Days
	Equipment Size		1100L	1100L	1100L
	Equipment Quantity Required		4	3	1

*Compaction ratio of 3:1 used for calculation purposes

2.2. Refuse Bin, Equipment Requirements and Specification

Table 2.3 and Table 2.4 below outline the number of bins and additional equipment required for the development based on the generation calculations above.

As refuse volumes may vary from assessment benchmarks, bin numbers and sizes may need to be altered to suit the building operation. The tables show the maximum number of bins and equipment expected.

Table 2.3: Bin Requirements

Refuse Stream	Bin / Storage – Size or Type	Number Required
General Waste	1100L	4
Commingled Recycling	1100L	3
Paper / Cardboard	1100L	1

Table 2.4: Additional Equipment

Description	Quantity	Capability / Specification – See *Appendix C* for Detail
660L / 1100L Bin Press	1	For use with general waste and paper / cardboard streams only. If required, will achieve an average reduction ratio of 3:1. *Waste Initiatives 660L / 1100L Bin Press used for architectural design purposes. Comparable model may be installed.*
Refuse / Cleaners Trolleys	TBD	Used to assist in the manual transfer of refuse to the bulk bins in the refuse room for final disposal.
Used Cooking Oil Storage	1 (If required)	Portable storage tank stored BOH. Required for food preparation / kitchens using fry vat equipment. Bulk oil tanks may be used in the refuse store where significant volumes are generated.

2.3. Refuse Disposal

The tables in this section summarise general recommended disposal arrangements for frequently generated and infrequently generated refuse for each development component. Section 2.3.1 describes the frequently generated refuse streams that are generated in high volumes for any given period and require significant capacity for storage prior to collections. Section 2.3.2 describes the infrequently generated refuse streams that are generated in relatively low volumes, and where minimal provision for storage can be easily managed by collection frequency and ad hoc storage arrangements.

2.3.1. Frequently Generated Refuse

Table 2.5: Disposal of Frequently Generated Refuse

Refuse Stream	Disposal Details
WASTE	
General Waste	The site operator will be required to provide receptacles for each separate refuse stream in a sufficient quantity to temporarily store one day or events' worth of refuse in each relevant back-of house area of the development. After each day of operation or between peak operating periods as required, refuse will be transferred by staff / cleaners to the refuse room via the goods lift and decanted into the appropriate bulk bins. The number of and location of bins provided will be determined during tenancy fit out and careful consideration should be given to the placement and types of bins to optimise source separation. A commingled recycling bin should be positioned wherever a general waste bin is positioned. Kitchen and food preparation area waste will be captured in bins up to 60L that will be placed within the kitchen or back-of-house area to meet the design or layout criteria of the operators. Bar and servicing area waste will be captured in bins up to 90L located behind the bar or alternate back-of-house location. Staff will circulate patron areas to collect waste as generated. Bins will also be required within patron areas.
Organic (Food) Waste	Separating organic or food waste from general waste is recommended to reduce the total amount of general waste produced. Separation may be considered and begin at any stage during the operational phase of the development. Where food waste is separated, caddy bins or bins no larger than 60L should be used in high volume situations such as commercial kitchens, for disposal of food waste. The bins are then transferred to the refuse room for collection. The content is then manually decanted in bulk bins or processing equipment provided within the refuse enclosure.

Refuse Stream	Disposal Details
RECYCLING	
Commingled, including • glass • aluminum • steel cans • tins • cardboard • semi rigid plastics	The site operator will be required to provide receptacles for each separate refuse stream in a sufficient quantity to temporarily store one day or events' worth of refuse in each relevant back-of house area of the development. After each day of operation or between peak operating periods as required, refuse will be transferred by staff / cleaners to the refuse room via the goods lift and decanted into the appropriate bulk bins. The number of and location of bins provided will be determined during tenancy fit out and careful consideration should be given to the placement and types of bins to optimise source separation. A commingled recycling bin should accompany each general waste bin. Commingled recycling will be captured in bins up to 90L that will be placed within the relevant back-of-house area to meet the design or layout criteria of the operators. Staff will circulate patron areas to collect recycling as it is generated. Bins will also be required within patron areas.
	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 point. Storage space or dedicated bins within the units or refuse rooms can be provided.
Cardboard and Plastic (plastic film / low-density polyethylene / high density polyethylene)	Cardboard and plastics can be disposed separately from comingled recycling if large quantities are produced. In this case, cardboard and plastics must not be mixed. They must be stored individually (and baled individually if equipment is selected). Where possible, large cardboard boxes and plastic film or packaging should be removed from the refuse stream prior to going into the building. This involves decanting at the loading dock and providing trolleys or stackable containers for use in transporting the decanted goods to the relevant areas of the building. Where this material does make it into the building or to each a level, a bin, trolley or mobile container should be placed for disposal. Cardboard, plastic film and packaging should not be placed on floors in refuse rooms or compartments. When placed in a bin or trolley, this material is easily transferred to the refuse rooms and decanted into the appropriate bin or baling equipment.

2.3.2. Infrequent Waste

Table 2.6: Disposal of Infrequently Generated Waste

Refuse Stream	Disposal Details
Garden Organics refuse / Green Waste	Garden organic refuse also referred to as green waste will be produced from landscaped areas or potted plants around this development. The volume of green waste is produced on a largely weather or seasonal dependent basis and based on plant selections. Green waste is usually removed by the designated maintenance contractor. Interim storage is not provided. 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	The bulk bins provided will also be utilised for bulky waste disposal. Where items are unsuitable for bulk bin disposal or where significant volumes are generated, such as during refits, coordinated collection arrangements will be made and goods items moved to the loading dock for collection. When storing bulky goods in a loading area, 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. Batteries are highly volatile and must be disposed of separately and never in the general waste or commingled recycling bins. TTM recommends a communal disposal point is provided by site management and located in the refuse room. It is expected 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.

2.4. Refuse Storage and Access Requirements

All refuse generated by each area on each level of the building will be consolidated into a single storage point; all refuse will be stored within wheeled bulk bins housed within the dedicated refuse room located on Lower Ground Level. The refuse room is located directly adjoining the RCV loading bay and conveniently accessible to the goods lift.

Access to the refuse room will be limited to building staff / cleaners and the collecting contractor.

The refuse room is sufficiently sized to accommodate all of the bins and equipment required for the development as outlined in Table 2.3 and Table 2.4. Furthermore, is suitably sized to accommodate alternate combinations of bin sizes and numbers based on the specific operation and refuse generation of the site.

Figure 2.1 shows a potential configuration of the refuse room in context of the loading bay and goods lift. The potential layout below includes one bin stored beneath the bin press as would be typically arranged during operation.

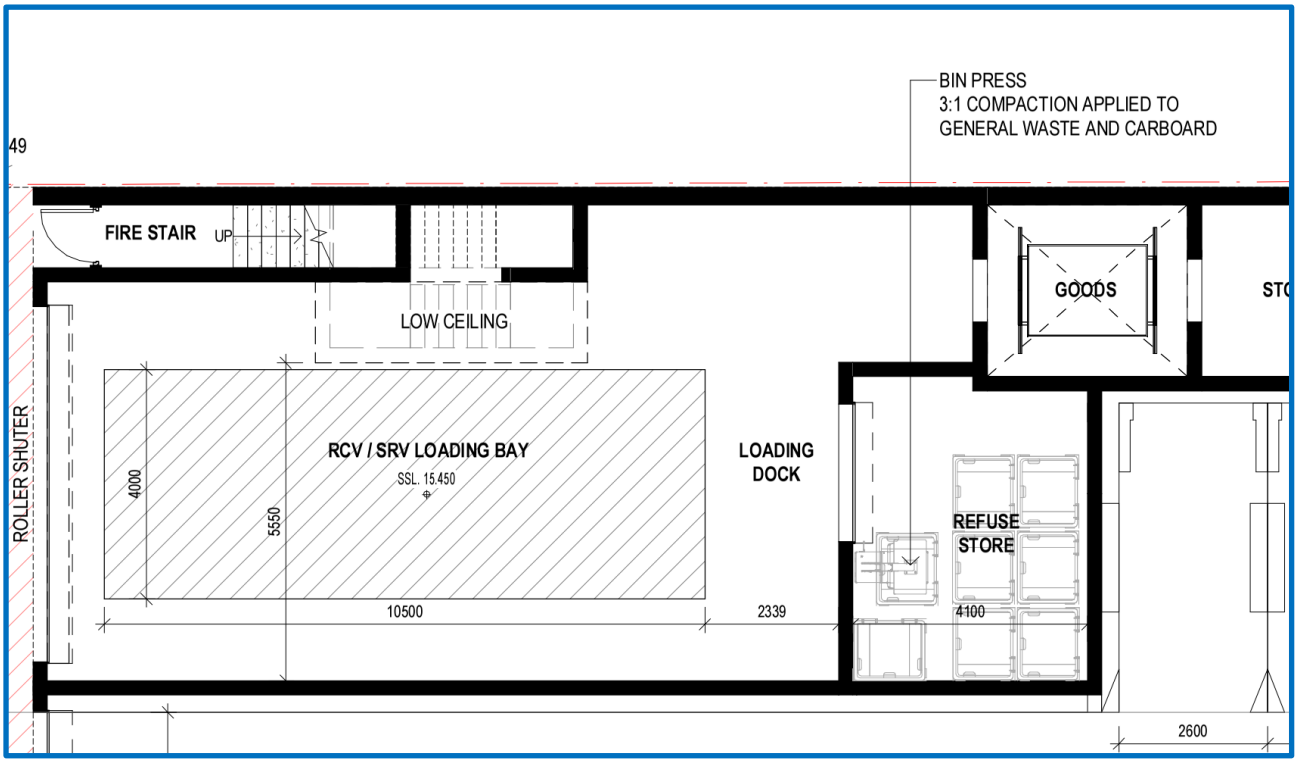


Figure 2.1: Potential Refuse Storage Area Layout
Source: Nettletontribe, Project: Bowen Centre – Auditorium and Conference Centre, Drawing: Lower Ground Floor Plan, Drawing Number: 13190_DA10, Issue: 5

Table 2.7 outlines the refuse storage area design criteria addressed in order to minimise odours, deter vermin, protect surrounding areas, and make it a user-friendly and safe area.

Table 2.7: Refuse Storage Area Design Requirements

Positioning Considerations
Positioned in immediate proximity of the designated loading point
Is in a purpose-built storage area which is vermin proofed and used solely for the storage of refuse leaving the site or specifically designed for service vehicle use only.
Not located adjacent to or within any habitable portion of a building or place used in connection with food preparation (including food storage).
Is positioned away from entrances to shops or residential premises
Is over 5m from any door, window or fresh air intake within the development or any adjoining site.
Visual Amenity Considerations
Is enclosed on all sides except for the access points to ensure bins are not visible from a public place, neighbouring properties, passing vehicles or pedestrian traffic external to the site.
Is designed to minimise their visual impact on the surrounding areas.
Functional Design Considerations
Is of sufficient size to accommodate the bins with sufficient clearance around the combined bin area
Doors / shutters wide enough to allow for the easy removal of the largest container to be stored.
Permits unobstructed access for removal of the containers to the service point.
The height of the bin storage area allows for waste bins to be opened and closed.
Does not have any steps or lips.
Adequate artificial lighting.
Bin Washing and Room Cleaning Considerations
A hose cock provided inside the room for cleaning bins and the enclosures.
The walls, ceilings, floors and equipment are to be designed and constructed of impervious material with a smooth finish to allow for easy cleaning.
The floors to be graded to fall to a drainage point.
Drainage points connected to sewer in accordance with trade waste requirements.
Roofed and designed to prevent entry by rainwater.

2.5. Refuse Transfer

Building staff / cleaners will transfer all refuse generated from the various areas within the building to the refuse room for final disposal via the goods lift. Cleaners or refuse trolleys may be used to reduce manual handling input and increase volume of refuse transferred per trip.

The collecting contractor will collect all bins directly from the refuse room and manoeuvre a short distance to the RCV lifting mechanism and return after service.

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 impede traffic flow.
Does not extend through any habitable parts of a building or food premise
Does not have any lips, stairs or steps for bins to be manoeuvred easily.

2.6. RCV and Bin Servicing Arrangements

All refuse will be collected by Private Contractor utilising Rear Loading RCV. All RCV's will perform a single reverse entry manoeuvre to enter the site via the driveway crossover on the local road into the RCV/SRV loading bay. Once the collections service is complete, RCV's will exit site onto the local road in a forward gear.

All refuse will be collected directly from the refuse room directly adjacent the RCV/SRV loading bay. Once the bins have been serviced, they will be returned to the refuse room where building staff / cleaners will clean the bins as required for everyday use.

All vehicular movements within the shared loading area will be managed by building management under an operational management plan to reduce instances of conflict in movements in the loading bay when vehicles are required to remain on site for periods greater than 15 minutes.

Figures 2.2 depicts the swept paths for a BCC rear loading RCV as specified in the BCC Refuse PSP. Further details on vehicle access and on-site manoeuvring can be found in the transport report submitted with the development application submission.

The bin servicing area 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 not adjacent to a kitchen or eating area for public use.
Is over 5m from any door, window or fresh air intake within the development or any adjoining site.
Is screened sufficiently to minimise the view of bins from neighbouring properties or passing vehicles and pedestrian traffic external to the site.
Is positioned away from entrances to shops or residential premises.

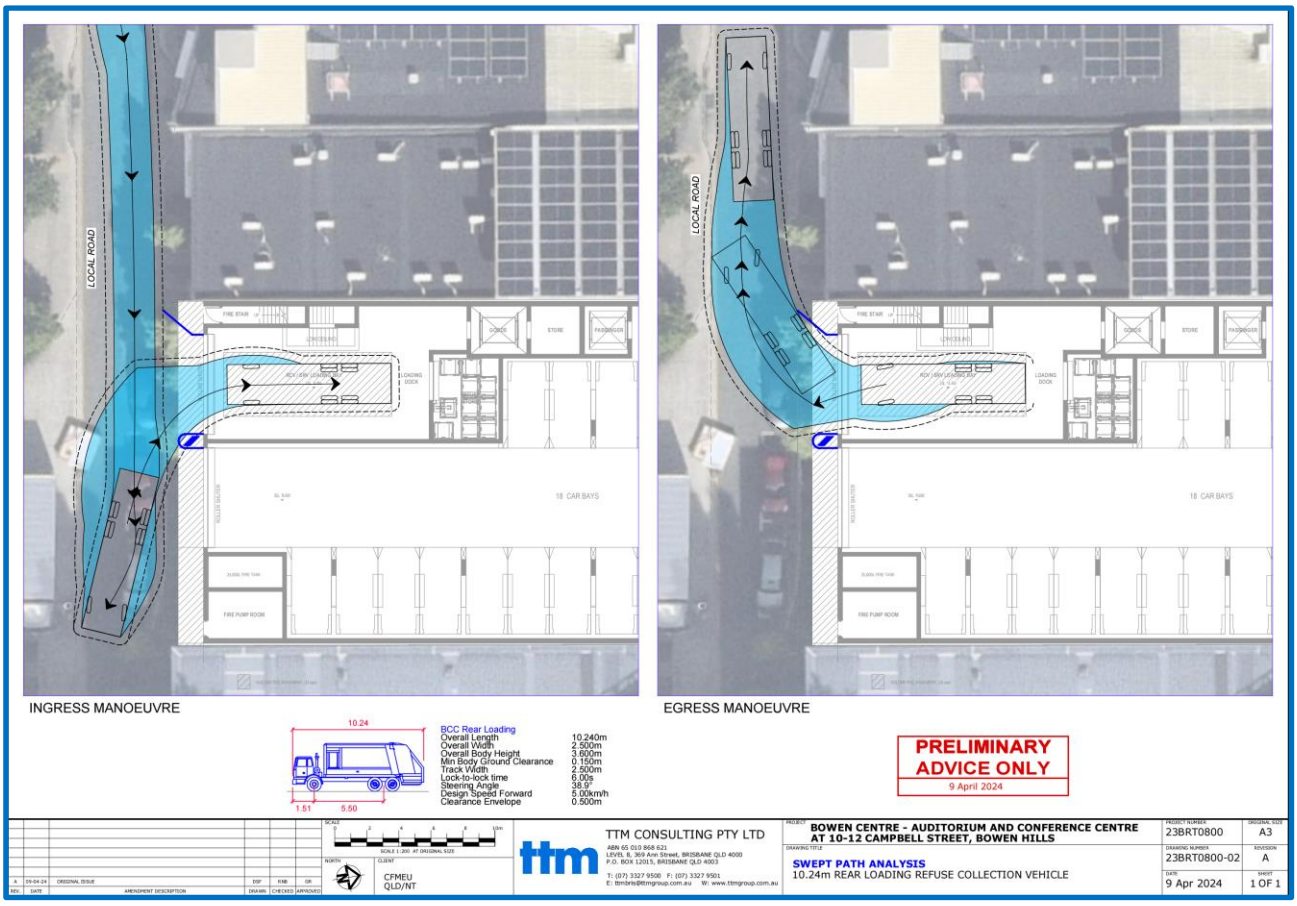


Figure 2.2: RCV Swept Path

3 Recommended Operational Refuse Management

This section does not contain information relevant for regulatory assessment.

This section relates to the outcomes and waste management practices of the development during the operational phase as recommended by TTM. It is intended for use as a live document by the end user of the development to assist with the ongoing management of the development.

3.1. Anticipated Refuse Volumes

The volume of refuse generated within conference and function centres correlates directly to both the number of patrons attending / capacity of an event and the level of catering offered at each event.

Very limited volumes of refuse are generated as a result of day to day running of the centre outside of events. Activities outside of event times typically involve administration activities and event setup.

Based on both TTM's experience with event and entertainment developments as well as published third-party data, when factoring in day-to-day generation, TTM anticipate the average rate of total refuse generation will be approximately 5L per patron per event.

TTM note, BCC's Self-Assessable Event's Rule specifies a minimum refuse storage provision at a rate of 1L of general waste and 0.5L of commingled recycling per attendee.

3.1.1. Refuse Profile and Stream Separation

Food waste constitutes approximately 20% of all catered event waste. Where onsite preparation of food occurs (excluding finishing or serving) this can exceed 25%. Where food waste is separated a maximum storage interval of 2 days between services is recommended to prevent odour amenity issues.

Where alcohol is served in or from bottles, glass can comprise over 15% of the total refuse volume and should be collected as a dedicated Container Deposit Scheme (CDS) stream. Single item recycling streams such as CDS or cardboard only offer a higher value recyclable product than achieved through commingled recycling.

Cardboard is also generated in substantial volumes as a result of food and drink or marketing materials packaging.

Single use items are also generated in large quantities per event such as name tags, vinyl banners and event specific decals. Procurement of consumables including single use items should consider the item lifecycle and opportunities for reuse. Where possible items should be purchased in bulk quantities to reduce the overall recycling generation.

3.1.2. Recommended Refuse Bins and Equipment

Table 3.1 below outlines the number of bins likely to be required for the development **per event**, based on the refuse composition and generation commentary above.

These recommendations are provided to assist in the instigation of collection services and provided based on TTM's recommended stream separation for each use within the development.

Services may be provided utilising the refuse storage area proposed within the development application. TTM note the below bin quantities do **not** include compaction.

Table 3.1: Recommended Bin Requirements

Refuse Stream	Bin / Equipment - Type or Size	Bins Required
General Waste	1100L	1
Food Organics	240L	2
Commingled Recycling	140L	1
Glass / CDS	140L	2
Cardboard	660L	1
Mixed Batteries	Countertop Receptacle	1

3.2. On-going Management

The tables below relate to a cycle of ongoing implementation, operation, review and amendment of the refuse strategy. These tables are intended to serve as a live document to be completed and updated during the operational phase of the development and therefore intentionally left blank.

Responsibilities have to be assigned for all on-going refuse management related activities during the operation of the development. TTM recommend the appointment of dedicated personnel to champion refuse management and sustainability. The following lists (Table 3.2 to Table 3.4) are designed to help manage and assign responsibilities and monitor the refuse operations. On-going management of the refuse strategy will maintain efficient services, a safe environment and improve on sustainability outcomes.

3.2.1. Implementation Phase

Refuse management tasks during the implementation of the refuse strategy are required prior to and during the early stages of building occupancy. An opportunity to revisit these tasks is provided at set intervals with the review of the refuse strategy.

Table 3.2: Implementation Checklist

Task	Assigned	Remarks
Certify the as-built form of all refuse related areas. This task does not refer to building certification but is typically undertaken by a specialist waste consultant prior to building certification. This provides an opportunity to identify variances in building form versus design and recommend alternate or mitigating refuse management strategies. This task may also be required during building refits and change of use in tenancies.		
Appoint personnel to oversee or undertake refuse management tasks. A facilities or dock manager is typically appointed undertakes most operational tasks, engaging contractors for specialist tasks.		
Conduct internal safety review. An internal safety review is required to be undertaken to identify potential hazards in the implementation of the refuse strategy and risk mitigation opportunities. This includes the use of any refuse management equipment installed, as well as refuse transfer paths		
Development of policy and procedures Must be undertaken after safety review and abide by all relevant occupational health and safety legislation, regulations and guidelines to ensure site safety for visitors, staff and contractors. Also includes assessment of any manual handling risks and preparation of a manual handling control plan for waste and bin transfers.		

Task	Assigned	Remarks
Engage refuse collection contractors. Private contractor must conduct a site visit for the purposes of risk assessing the site prior to conducting services. Contractors must ensure that a full risk assessment of equipment, surfaces and related gradients is complete and procedural documentation is provided to the appropriate personnel. RCV manoeuvrability testing and the establishment of service frequency and timing is also undertaken at this time.		
Install signage in all refuse disposal and storage points. Signage is required to be installed to educate building occupants on location of disposal and refuse storage points. Additionally, to identify the accepted items disposed of in each refuse. The installed signage should be colour coded in accordance with AS 4123.7 – 2006 Mobile waste containers. Examples of signage are provided in the appendices.		
Leasing / Body Corporate Agreements Any body corporate, leasing or service contracts should contain clauses pertaining to waste management arrangements and use of any associated equipment. This should also extend to on charging of costs and concessions for waste reduction and recycling performance.		
Education and Training. Provision of equipment manuals, induction, training, health and safety procedures, risk assessments and personal protective equipment (PPE) to all staff / contractors associated with all waste management activities in order to control hazards. The step is repeated through the operational phase of the development as required due to changes is users or personnel.		
Consider fit out and move-in refuse. Higher volumes of waste are generated during the initial move-in or final fit out. This typically includes large volumes of cardboard. Additional bins or collections may be required. This also applies to high turnover events and refits.		
Baseline Refuse Auditing A baseline audit once the development reaches 80% occupancy undertaken by a specialist waste consultant is recommended to identify refuse volumes and stream composition. This information is then used to establish potential recoverable material percentage based on initial waste practices and set recycling rate targets.		

3.2.2. Occupation / Operational Phase

Refuse management tasks during the occupation or operational phase of the development relate to the day to day and business as usual operational tasks that must be undertaken to execute the refuse strategy.

Table 3.3: Occupation / Operation Checklist

Task	Assigned	Remarks
Facilitate disposal from communal areas, public realm and tenancies. Appointed staff are required to transfer refuse generated in communal areas and the public realm to the refuse storage area for final disposal, this includes litter removal. Best practice operations include having dedicated cleaning staff assigned to handle all waste generated, rather than tenancy staff. This results in maximum recovery of available streams.		
Manage rotations of bins to ensure convenient access. Check bin fill levels and rotate / swap bins as required. Sufficient capacity must be provided for the disposal of all streams at all times including reduced personnel on site. Where equal access to a refuse stream is not maintained, other streams may be contaminated leading lost resources.		
Manage bin transfers or access to agreed servicing point. Bins are required to be presented to and access is available to the agreed servicing point prior to the scheduled service time and ensure the area is free from obstruction. Late bin placement or servicing obstruction may lead to missed bin services.		
General cleaning. Regular cleaning and maintenance of all refuse management facilities is important to maintain a safe and hygienic environment for visitors, staff and contractors. General cleaning is required for all refuse holding and transfer areas including • Refuse bins, rooms and storage areas • Refuse transfer areas including lifts and staircases • Any other refuse management equipment		
Perform spot checks on bin contents and refuse streams. Appointed staff regularly check for compliance and stream contamination. Early intervention prevents the development of poor practice and lost resources. Feedback and education is provided to the relevant parties (see below).		
Ongoing 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. Appointed personnel should be actively involved in education of occupants and encouraging participation in recycling activities. Widespread communication of the achievements of the refuse strategy and areas for improvement encourage participant buy-in.		

3.2.3. Review and Amendment Phase

The review and amendment refuse management tasks relate to tasks undertaken on a routine (e.g. quarterly, bi-annually or annually) or ad hoc basis. At the completion of the review and amendment phase, the cycle restarts with the implementation of the amended refuse strategy.

Table 3.4: Review and Amendment Checklist

Task	Assigned	Remarks
Coordination of specialised cleaning contractors as required. Typical specialised cleaning services may include cleaning internal areas of compaction equipment (if selected); this reduces risk of blockage, odour and risk of fire.		
Maintenance and servicing of refuse management equipment as per schedule. Frequency depends on equipment, building operation and manufacturer specification. Routine maintenance reduces downtime and detrimental impact of unscheduled equipment breakdown.		
Coordination of specialised equipment contractors as required. May extend to ad hoc services requiring specialist equipment such as bulky / hard waste removal.		
Internal safety review. Routine safety reviews are required to identify changes to the site, work practices or legislation that may impact existing policies and procedures. Reviews should include visual inspection of equipment and user PPE. Any policy or procedure updates arising from a safety review must be immediately communicated.		
Audit operational refuse volumes and composition. As similarly undertaken at the beginning of occupancy a review by a specialist waste consultant is recommended to identify refuse volumes and stream composition. This information is then used to establish potential recoverable material percentage and identify opportunities for improvement in refuse strategy. Alternatively, an internal audit may be undertaken by visual inspection during on-site waste management handling activities. For example, cleaners may observe contents of waste receptacles when decanting caddies in larger bins and recording results, this method is less accurate than a comprehensive audit, however, give immediate indicative results and may be undertaken on an ongoing basis.		
Review bin quantities and refuse management equipment. Reviewing bin quantities and equipment is required ensure operational sustainability of refuse volumes and equipment remains fit for purpose. Consideration should be given where alternate equipment may provide improved outcomes. This review may form part of the external audit process (above) as recommendations made.		

Task	Assigned	Remarks
Review service frequency and methodology on 6 monthly intervals with collecting contractor. The service frequency and service methodology should be reviewed to ensure the optimum cost efficiency in services provided and explore options for additional services. Any potential changes to the bin numbers or bin sizes should be made in liaison with the appointed contractor to confirm cost or contract implications.		
Review of recycling rate target to target continual improvement. Once benchmarked performance has been assessed against the existing targeted recycling rate a new target can be established that strives for continual improvement. Any changes in targeted recycling rates and the achievements of the refuse strategy should be widely communicated to all uses.		
Update and amend OWMP based on review outcomes. On completion of the refuse strategy review the OWMP should be updated to reflect refuse strategy amendments and to enable implantation of refuse strategy.		

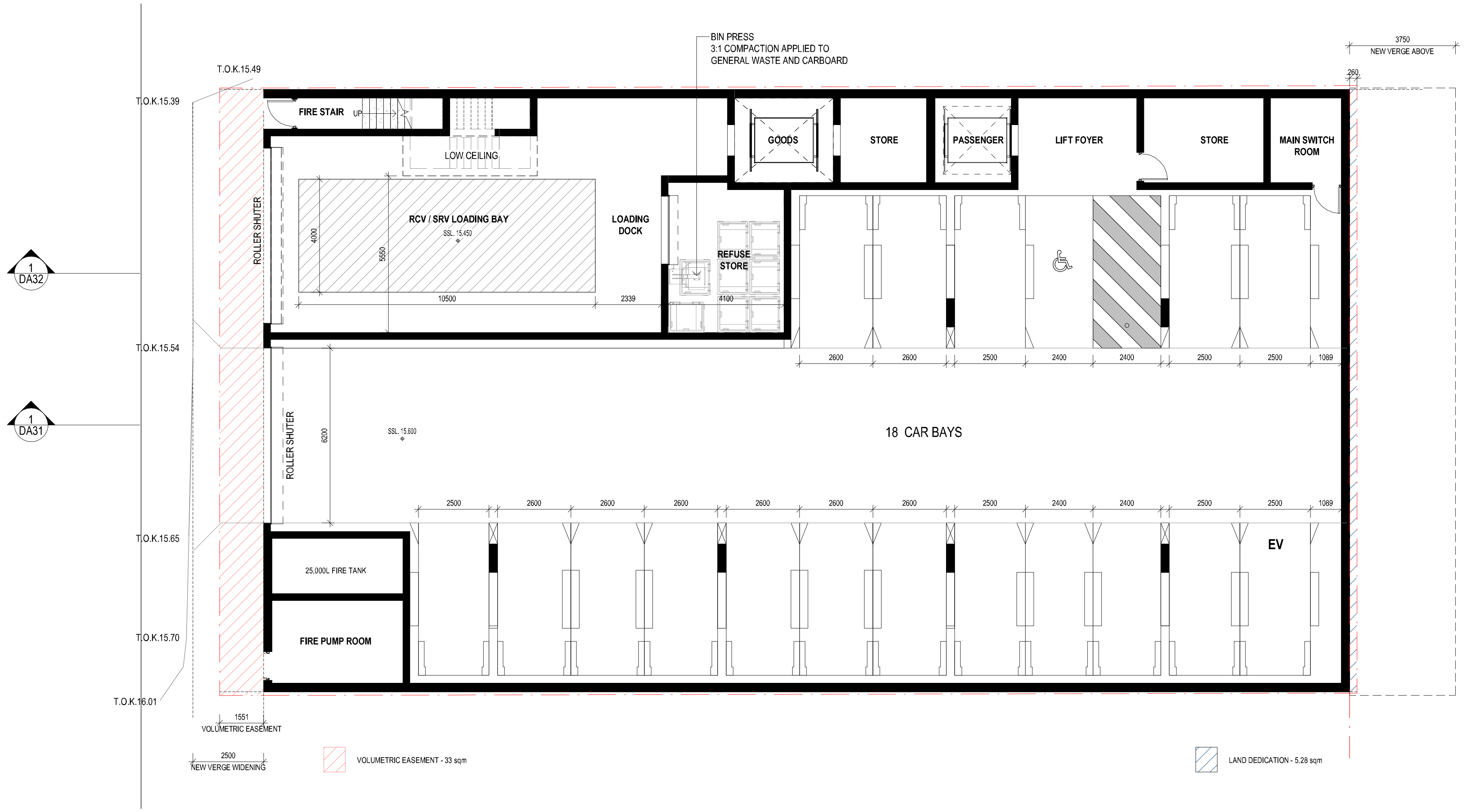
Appendix A OWMP Compliance Checklist

BCC SC6.26 Refuse Planning Scheme Policy		
Item	Requirement	Compliance / Comment
Section 2 – General Requirements		
(1)	A written design proposal for waste collection is to be provided giving full details of the proposed solution, bin sizes, number of bins and the storage and collection areas, frequency of collection and the refuse collection vehicle size. Table 1 provides the dimensions and types of bins. Table 3 provides the specifications and types of collection vehicles.	Details provided in this OWMP.
(2)	The collection of refuse is to be considered during the planning phase of development. This includes the physical manoeuvring area for the refuse collection vehicle and the bin storage areas and collection points. Access for other road users including pedestrians, cyclists, motorists and other service providers (e.g. postal) is to be maintained.	Considerations provided within this OWMP.
(3)	The type of refuse service that is to be used (domestic or commercial) is identified, including whether the refuse collection vehicle is to be front loading, side loading or rear loading (sufficient height must be available).	Commercial refuse collected by rear loading RCV. Min. 3.6m provided
(4)	Uses with high trip-end densities provide a transport impact assessment report in accordance with the Transport, access, parking and servicing planning scheme policy with an assessment of refuse storage and collection included.	Refer to Transport engineering documentation for details.
(5)	Where a Refuse Collection Vehicle (RCV) is required to manoeuvre from an on-site position, allow an additional 500mm clearance for vehicle turning dimensions (swept paths) and servicing. Three clear swept path lines must be demonstrated for the RCV, namely wheel path, vehicle body path and 500mm clearance path.	Refer to Transport engineering documentation for details.
(6)	The waste collection system is to achieve the following outcomes: a. both the customer and service provider can access the bin storage area and collection point conveniently; b. the location, design and operation of the bin storage and collection system do not have unreasonable adverse acoustic, odour or visual impacts on the development, surrounding properties or the streetscape; c. the supply and servicing of either mobile garbage bins or bulk bins or refuse compactors complies with the requirements of this planning scheme policy. *Note— Where alternative waste servicing solutions are proposed, advice may be sought directly from Council's waste service area prior to lodgement of the development application.*	Complies Complies – Collection service will be undertaken wholly on site. Complies
Section 3 - Access and Manoeuvrability		
(1)	The manoeuvring of the refuse collection vehicle is undertaken in a safe and efficient manner, without detrimental impacts to pedestrian amenity or safety, Council or private infrastructure or the function of the road network.	Refer to Transport engineering documentation for details.
(2)	For multiple dwelling development accessed via a local, neighbourhood, district or suburban road, the refuse collection vehicle may enter the site in a reverse gear in a single movement.	Complies – Reverse entry proposed.
(3)	For multiple dwellings development accessed via an arterial road, or where the refuse collection vehicle cannot reverse onto the site in a single movement, the refuse collection vehicle must enter and leave the site in a forward gear.	N/A
(4)	For development (other than a multiple dwelling) accessed via an arterial, suburban, district or minor road adjacent to an intersection with a major road, the refuse collection vehicle must enter and leave the site in a forward gear.	N/A

Section 3 - Access and Manoeuvrability - Continued		
(5)	Where refuse collection is from an on-site position, the area trafficked by the refuse collection vehicle must comply with requirements under the Transport, access, parking and servicing planning scheme policy including a minimum aisle/carriageway width of 6.5m wide. *Note—Service area design standards, including maximum gradients, minimum aisle widths, minimum vertical clearance and bay design are contained in the Transport, access, parking and servicing planning scheme policy.*	Refer to Transport engineering documentation for details.
(6)	For detached dwellings on rear lots, pavements/carriageways trafficked by a refuse collection vehicle have a minimum width of 5.5m.	N/A
(7)	All entry and exit points are of a width and design that allows for sufficient ingress and egress for the refuse collection vehicle, including a minimum 6.5m crossover which is free from overhead projections inclusive of gardens or trees.	Complies
(8)	To maximise safety, the distance required for refuse collection vehicles to reverse on-site is minimised. Where on-site turnaround of the refuse vehicle cannot be achieved, the bin storage area and collection point is located within 20m of the street frontage.	Complies
(9)	Turnaround facilities for a refuse collection vehicle exist or are provided for where involving staged subdivision developments or where development is located on a no through road. Turning and manoeuvring facilities for refuse collection vehicles are provided to meet design requirements for the vehicles identified in Table 3.	N/A
(10)	Subdivision layouts are to provide for the safe and efficient operation and manoeuvring of a side-lift loading refuse collection vehicle. Layouts that require a refuse collection vehicle to reverse more than 20m are to be avoided. Where the provided transport network results in a stub road for a proposed future road connection, interim turnaround facilities must be provided in compliance with the Transport, access, parking and servicing planning scheme policy and the Infrastructure design planning scheme policy.	N/A
(11)	Adequate lift clearances are provided to overhanging trees and wires in accordance with Table 3.	Complies – Min. 3.6m provided
(12)	The required vertical and horizontal clearances are provided for the service to operate safely and efficiently. Operational clearance dimensions are shown in Table 3 for various types of collection arrangements.	Complies
(13)	Access for a refuse collection vehicle to the collection point is maintained at all times.	Complies – Loading Bay access to be managed
(14)	Where non-residential development is proposing to use an alternative design vehicle other than those named in Table 3, written confirmation from the proposed licensed waste collection contractor giving full details of the bin size and the refuse collection vehicle size must be provided.	N/A
(15)	In instances where the gradient of the on-site manoeuvring area is greater than 5% (1:20), the pad that the collection vehicle will stand on while accessing refuse bins at the collection point, is to have a maximum gradient of 2% (1:50). *Note—Access arrangements, including maximum gradients are contained in the Transport, access and parking planning scheme policy.*	N/A
Section 4 - Residential Refuse Collection – N/A Non-residential site only		
Section 4.1 - Kerbside Collection (MGB's) – N/A Non-residential site only		
Section 4.2 – On-site Collection (Bulk Bins) – N/A Non-residential site only		

Section 5 – Non-Residential Refuse Collection		
(1)	Non-residential development is to provide sufficient capacity to achieve low-frequency servicing in line with Table 2.	Complies – 2 services per week proposed.
(2)	Refuse generation rates for specific uses are provided in Table 4. These figures are to be used to calculate the refuse and recycling capacity required. *Note—Where a refuse generation rate is not defined in Table 4, the applicant is responsible for providing evidence in support of the refuse generation proposed.*	Complies
(3)	Sufficient information is provided to demonstrate that refuse collection can occur in an efficient and safe manner on site without adverse impact on amenity (acoustic, odour or visual impacts) and pedestrian and vehicular traffic.	Complies
(4)	This information may include evidence from a refuse collection contractor to demonstrate that collection will occur outside normal service/delivery or business times, where seeking permission to allow a refuse collection vehicle to use service bays or parking spaces on the site for access.	Details on servicing provided within this OWMP.
(5)	Bulk bins of 1.1m3 or less are positioned so that collection personnel do not have to move them more than 5m. If a gradient is evident, speed bumps are provided to stop bulk bins from rolling away from the collection point. *Note—Standard design arrangements, including gradients, are contained in the Transport, access, parking and servicing planning scheme policy.*	Complies
(6)	Bulk bins of 1.5m3 or more are positioned so that front-lift refuse collection vehicles can drive directly to the container without relocating the bulk bin. If this cannot be achieved due to physical constraints, then the bulk bins are not moved more than 3m from the storage area to the collection point.	N/A 1.1m^3 bins proposed.
(7)	The storage area for refuse bins are: a. contained either within a building or a roofed and wholly screened enclosure of sufficient size for the bin quantity required. Table 1 provides the bin types and dimensions; *Note—Where screening is utilised to form part or all of a refuse storage area, the screening is to have a maximum of 25% openings, with a maximum opening dimension of 50mm, and are to be permanently fixed, durable and maintainable.* b. easily accessible for occupants and for the required servicing of bins; *Note—Allow for at least an additional 0.5m clearance surrounding each container, or for the storage of multiple bins, 1.5m clearance around the combined bin area (whichever is lesser).* c. screened from neighbouring properties to mitigate impacts from odour, amenity and noise; d. of a design to mitigate the harbourage of vermin or attraction of scavenging animals; e. provided with natural or temperature-controlled ventilation if in an enclosed room; f. of a design which maintains a minimum internal vertical clearance of 2.1m; g. kept clear of obstructions, such as fixed bay separators, that impede the ability to change from existing bin sizes or which otherwise limit future refuse collection options; h. are not to contain other amenities such as air-conditioning compressors, hot water systems or electrical hubs.	Complies
(8)	Best practice may include allowing additional space for the storage of extra containers to separately store either organic waste or other recyclables in the future.	Refuse area sufficiently sized.
(9)	Where disposal of industrial or commercial liquid waste by discharge to a road tanker, the road tanker is to be wholly on-site during collection.	Complies

Appendix B Site Plans and Swept Path Analysis



1 LOWER GROUND
1 : 100

Client

Issue	Description	Date
5	Refuse	2024.04.09
4	Development Application	2024.04.08
3	For Information	2024.04.05
2	Draft for Coordination	2024.03.27
1	For Information	2024.03.13

DEVELOPMENT APPLICATION

Builder

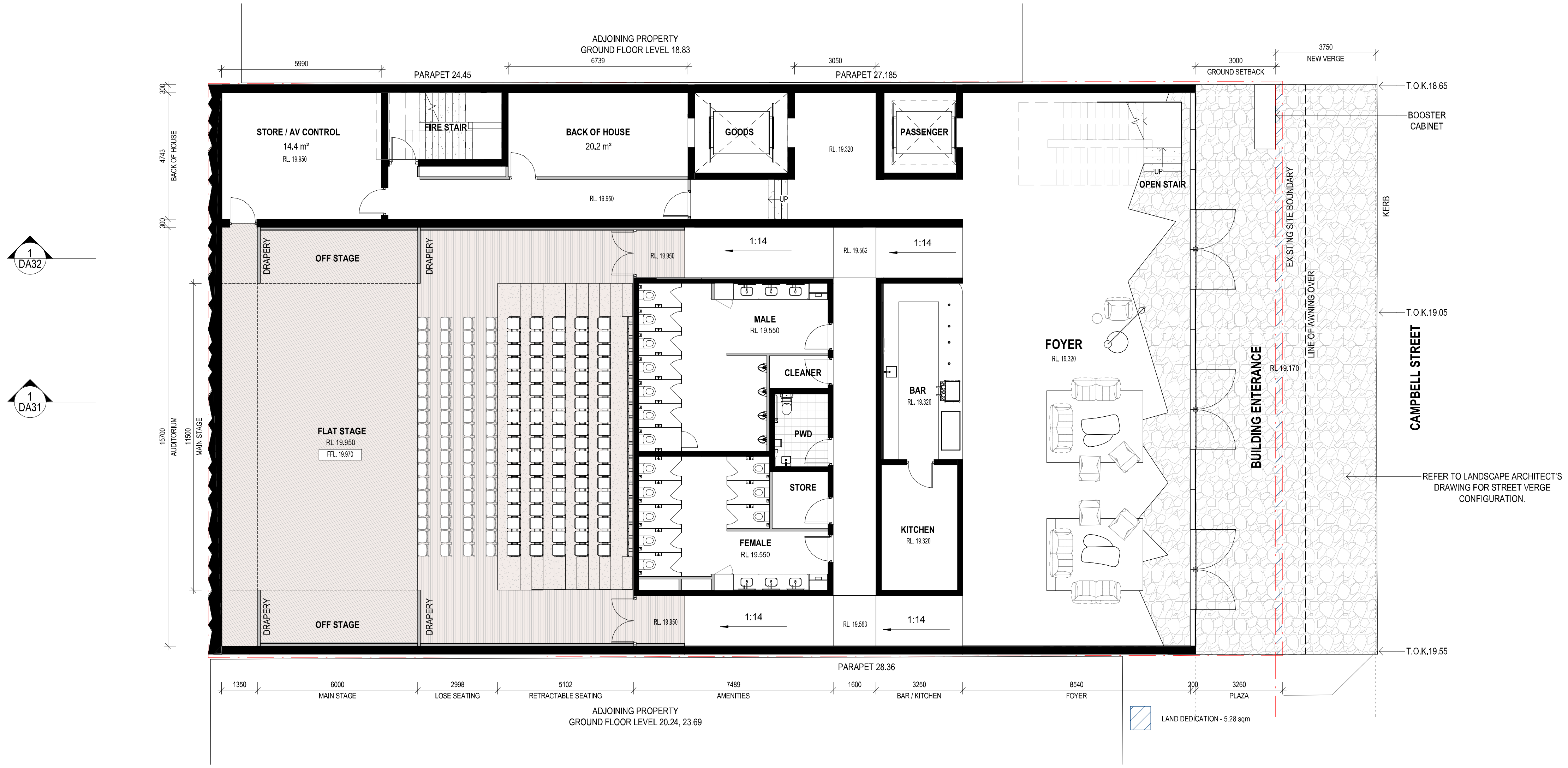
Project Name
Bowen Centre - Auditorium and Conference Centre
Project Address
10-12 Campbell Street, Bowen Hills

Key Plan
0 2000 5000

Drawing Title:
LOWER GROUND FLOOR PLAN

Author: TT
Checker: RM
Sheet Size: A1
Scale: 1:100
Drawing Number: **13190_DA01**
Issue: **5**

nettleton tribe partnership pty ltd ABN 58 161 683 122
117 Willoughby Road, Crows Nest, NSW 2065
t +61 2 9431 6431
e: sydney@nettletontribe.com.au w: nettletontribe.com.au



1 Upper Ground Level
1 : 100

Client

Issue	Description	Date
4	Development Application	2024.04.08
3	For Information	2024.04.05
2	Draft for Coordination	2024.03.27
1	For Information	2024.03.13

DEVELOPMENT APPLICATION

Builder

Project Name
Bowen Centre - Auditorium and Conference Centre

Project Address
10-12 Campbell Street, Bowen Hills

Key Plan

0 2000 5000

Drawing Title:
UPPER GROUND FLOOR PLAN

Author:	Checker:	Sheet Size:	Scale:
TT	RM	A1	1:100

Drawing Number: **13190_DA02**
Issue: **4**

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85 Bowen Street, Spring Hill, QLD 4000
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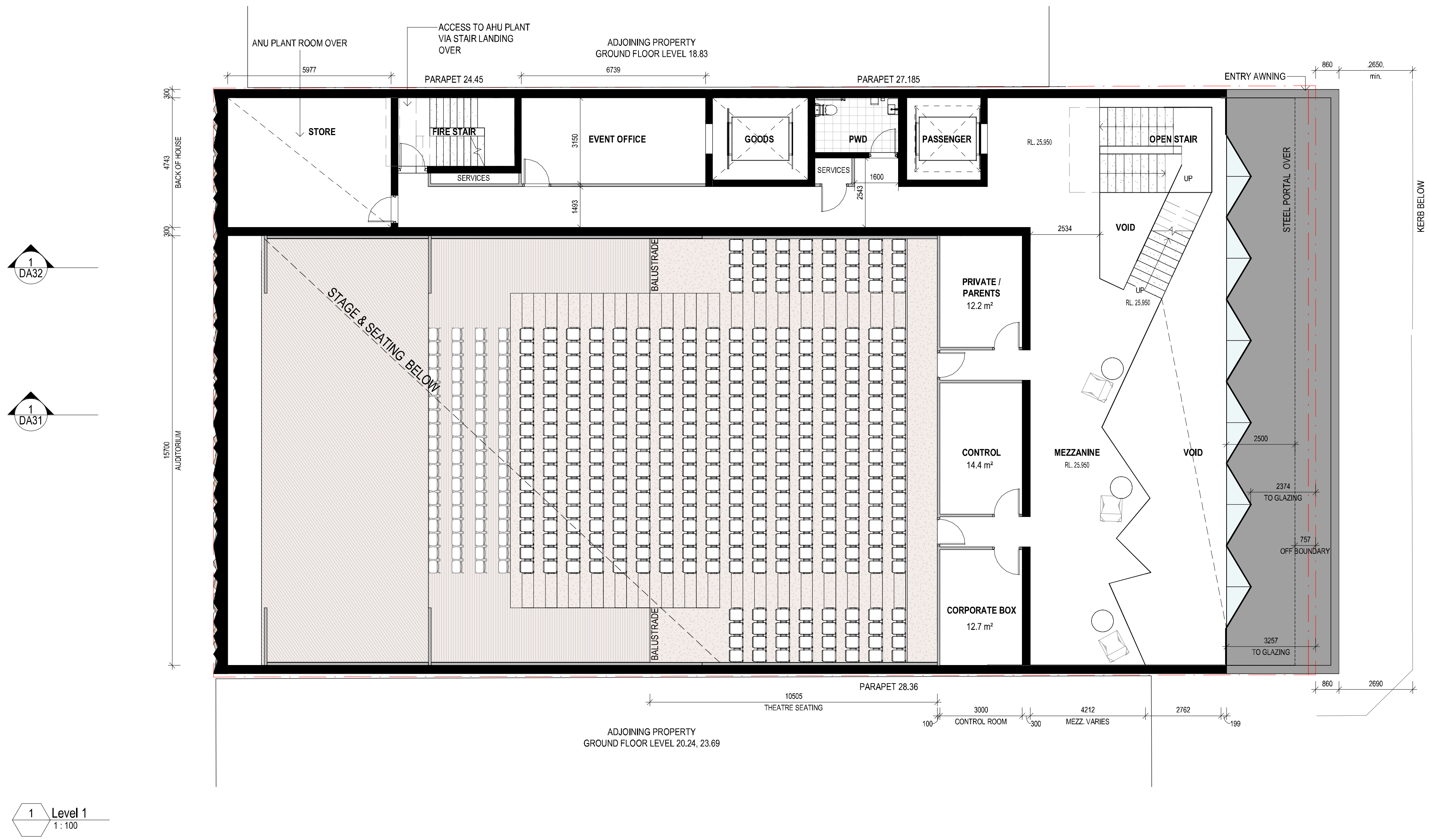

1 Level 1
1 : 100

Client

Issue	Description	Date
4	Development Application	2024.04.08
3	For Information	2024.04.05
2	Draft for Coordination	2024.03.27
1	For Information	2024.03.13

DEVELOPMENT APPLICATION

Builder

Project Name
Bowen Centre - Auditorium and Conference Centre
Project Address
10-12 Campbell Street, Bowen Hills

Key Plan
0 2000 5000

Drawing Title:
LEVEL 1 FLOOR PLAN

Author:	Checker:	Sheet Size:	Scale:
TT	RM	A1	1:100

Drawing Number: **13190_DA03**
Issue: **4**

nettletontribe

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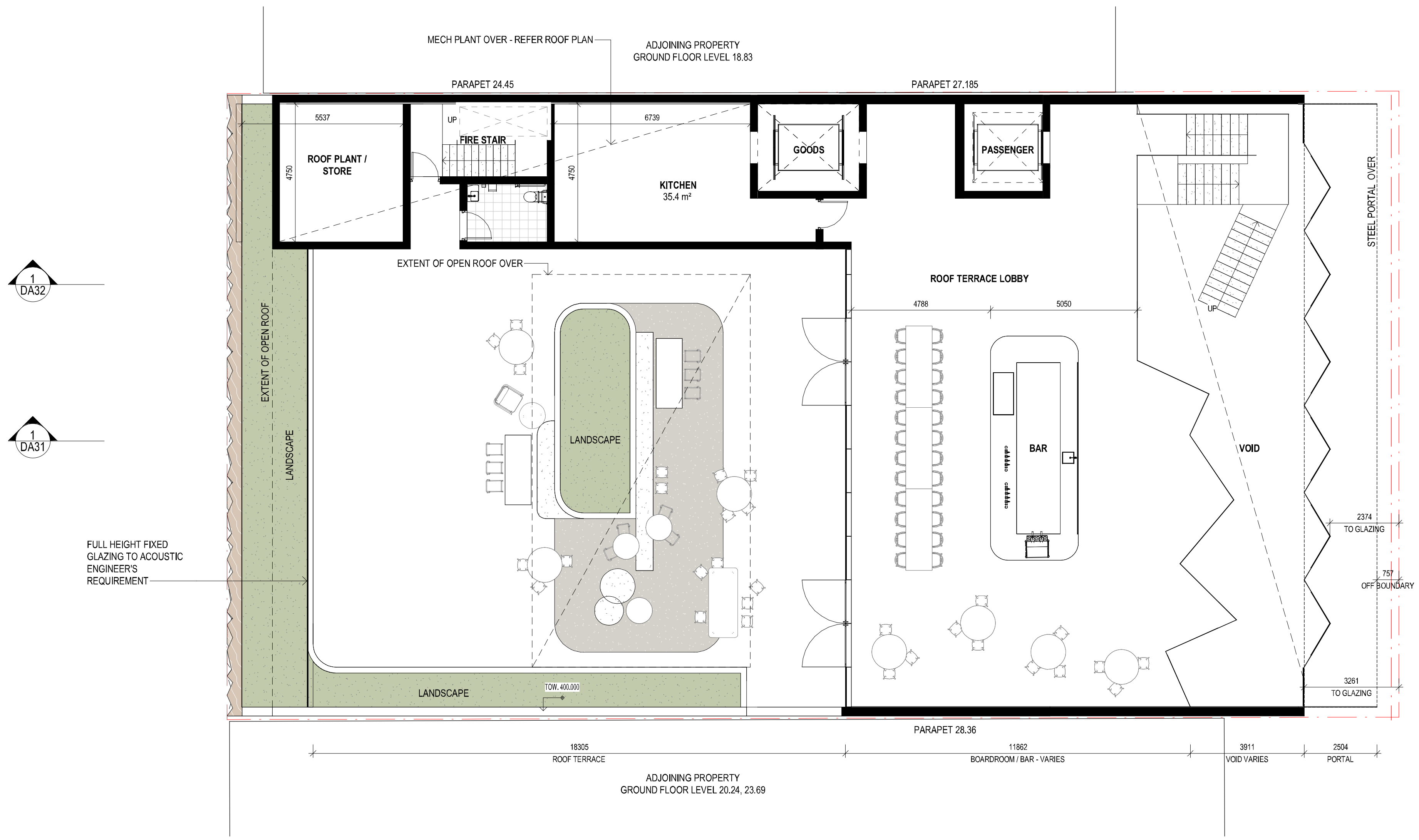

1 Roof Terrace
1 : 100

Client

Issue	Description	Date
4	Development Application	2024.04.08
3	For Information	2024.04.05
2	Draft for Coordination	2024.03.27
1	For Information	2024.03.13

DEVELOPMENT APPLICATION

Builder

Project Name
Bowen Centre - Auditorium and Conference Centre
Project Address
10-12 Campbell Street, Bowen Hills

Key Plan
0 2000 5000

Drawing Title: **ROOF TERRACE FLOOR PLAN**

Author: TT | Checker: RM | Sheet Size: A1 | Scale: 1:100
Drawing Number: **13190_DA04** | Issue: **4**

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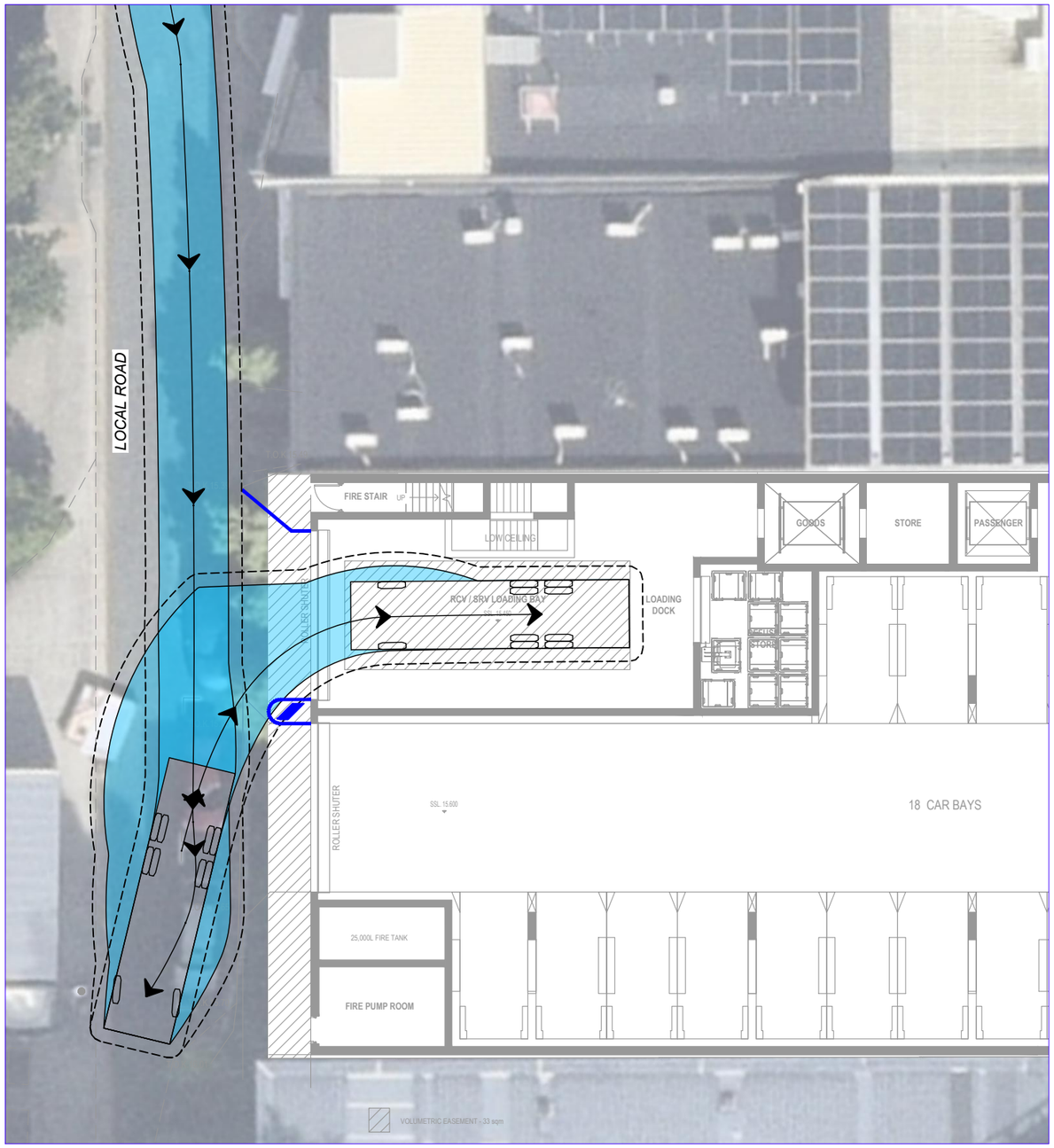
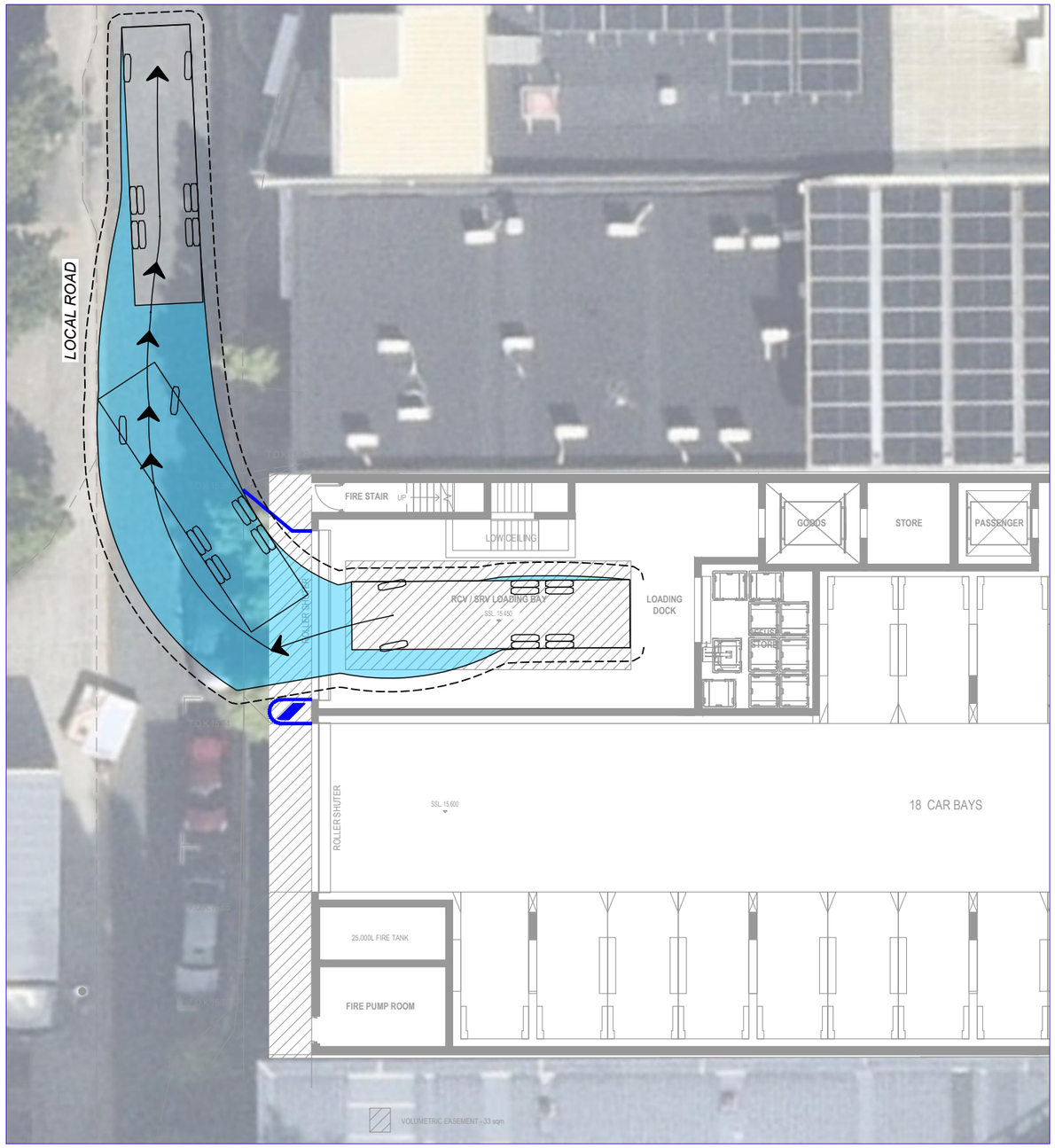
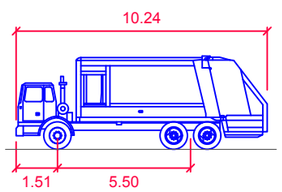


INGRESS MANOEUVRE



EGRESS MANOEUVRE



BCC Rear Loading	
Overall Length	10.240m
Overall Width	2.500m
Overall Body Height	3.600m
Min Body Ground Clearance	0.150m
Track Width	2.500m
Lock-to-lock time	6.00s
Steering Angle	38.9°
Design Speed Forward	5.00km/h
Clearance Envelope	0.500m

D.S Watkins
SENIOR ASSOCIATE DIRECTOR
DARRYL WATKINS RPEQ 23854
APPROVED 9 April 2024

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
A	09-04-24	ORIGINAL ISSUE	DSF	RNB	GR

SCALE 0 2 4 6 8 10m
SCALE 1:200 AT ORIGINAL SIZE
NORTH
CLIENT: CFMEU QLD/NT

TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
P.O. BOX 12015, BRISBANE QLD 4003
T: (07) 3327 9500 F: (07) 3327 9501
E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au

PROJECT: **BOWEN CENTRE - AUDITORIUM AND CONFERENCE CENTRE AT 10-12 CAMPBELL STREET, BOWEN HILLS**

DRAWING TITLE: **SWEPT PATH ANALYSIS**
10.24m REAR LOADING REFUSE COLLECTION VEHICLE

PROJECT NUMBER	ORIGINAL SIZE
23BRT0800	A3
DRAWING NUMBER	REVISION
23BRT0800-02	A
DATE	SHEET
9 Apr 2024	1 OF 1

23BRT0800-F03A V00 RCV ACCESS.DWG

Appendix C Systems and Specifications

C.1 Specified Refuse Management Equipment

The table below provides contextual examples of the specific equipment types specified in 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
Back of House area 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
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
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
660/1100L Bin Press	General waste, paper / cardboard	 	Can achieve an average compaction / waste reduction ratio of 3:1. Requires 415vpower supply. Examples: https://wasteinitiatives.com.au/products/waste-compactors https://www.materialshandling.com.au-/products/bin-press-compactor/
Portable Cooking Oil Storage (If required)	Used Cooking Oil	 	Cooking oil recycling Example: https://www.cookers.com.au Cooking oil delivery, used oil collection and provision of required equipment

Bin Types	Waste Streams	Examples	Information
120-140L bins (optional)	General waste, paper, recycling, organic waste		Dimensions approx. 550 x 480 x 930mm (L x W x H) (dimensions may depend on contractor) Examples: http://wheeliebinsonline.com.au, https://ksenvironmental.com.au
240L bins (optional)	General waste, paper, recycling, organic waste		Dimensions approx. 740 x 580 x 1080mm (L x W x H) (dimensions may depend on contractor) Examples: http://www.justwheeliebins.com.au, http://wheeliebinsonline.com.au
Counter-top E-Waste Recycling (Optional)	Electronic Waste		Prepaid battery collection Example: https://envirostream.com.au/product/prepaid-countertop-battery-recycling-box/ https://www.ecoactiv.com.au/product/4l-battery-recycling-prepaid-service/ Toner cartridge collection https://zerowasteboxes.terracycle.com.au-/products/ink-and-toner-catridges-zero-waste-boxes

Appendix D Refuse Signage

D.1 Refuse Signage

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

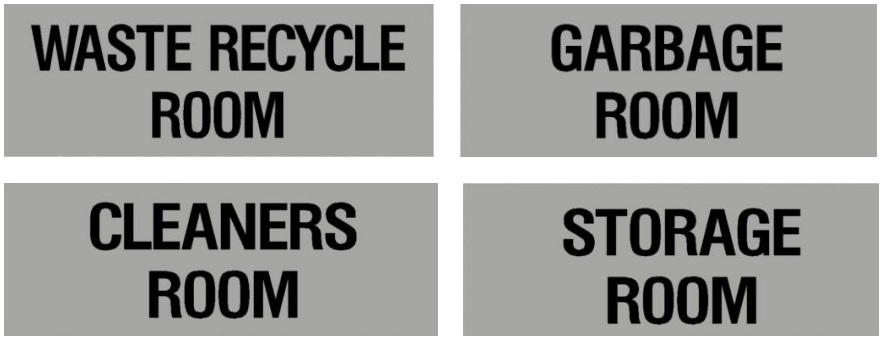
Colour coding as per AS 4123.7-2006

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*

D.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 E 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.