PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2024/1488

Date: 30/09/2024

Queensland Government

MODUS
Transport & Traffic Engineering

Operational Waste Management Plan

Project:

67-69 Shore Street East, Cleveland

Contact Information

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Document Information

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Project: 67-69 Shore Street East, Cleveland	

Document Control

Version	Date	Description of Revision	Prepared by	Reviewed By
A	12/06/24	DRAFT for review and comments	Y.S.	A.S.
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Definitions

In this OWMP, a term has the following meaning unless otherwise specified and is shown below.

Term	Description
Bin carting / transfer route	The proposed route to move bins between the refuse room (storage point) and the servicing point.
Bin (bulk / wheelie)	A container (steel or plastic) use for disposal and storage of refuse items. Bins come in various types and sizes from MGB's to up 360L and bulk from 660L to 4500L.
Collection / Servicing point	The designated area allocated to the temporary storage of waste bins for the period of servicing only. The point may be within or external to a development.
Composter	A container or machine used for composting specific organic material.
General waste	Waste, other than domestic clean-up waste, green waste, recyclable waste, interceptor waste or waste discharged to a sewer, produced as a result of the ordinary use or occupation of domestic or commercial premises.
Gross Floor Area (GFA)	The GFA of all stories 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 (m^2).
Hazardous waste	Solid waste that is or contains toxic material, for example light bulbs, fluorescence lights, batteries.
Mobile Garbage Bin (MGB)	A plastic bin used for the storage and collection of refuse that is up to 360L in capacity. MGB's are typically used for kerbside collection for residential dwellings and on-site collection for commercial development.
Organic Waste	Waste that comes from plants or animal that is biodegradable for example green waste and food waste.
Recycling	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 Chute	Refuse disposal in multi-storey buildings through refuse chutes, which typically includes access at all floors and discharging in bulk bins in ground floor or basement refuse room. Examples include single chute for waste only, or single chute with diverter system or dual chute for disposal of waste and recycling.
Refuse Room / Storage point	The area allocated to the permanent storage of waste bins. This is the normal location of the waste bins and excludes the period where the bin is serviced. A storage point may be a common storage point or an individual bin storage point.
Waste Collection Vehicle (WCV)	A vehicle specifically designed for collecting and emptying refuse bins and refuse compactors.
Rear-End-Loading WCV	A truck specially designed to collect refuse (typically 240L bins), from rear loading mechanism and haul the collected waste to a solid waste treatment facility.
Transfer	Manual transfer means physical transfer of refuse material and associated bulk bins or trolleys without assistance.

1 Introduction

1.1 Overview

Modus has been engaged by Karote PL ATF The Chippers Trust to prepare an Operational Waste Management Plan (OWMP) in support of the proposed residential development, located at 67-69 Shore Street East, Cleveland.

This OWMP is to be used as guide during the operational phase of the development only and additional requirements for demolition and/or construction phases will need a separate WMP. The purpose of the OWMP is to satisfy the Economic Development Queensland (EDQ) and Redland City Council's (RCC) requirements and detail the following information:

- Refuse (type and quantity) likely to be generated during the occupancy of the proposed site.
- Refuse collection arrangements, including disposal, storage and transfer, during the occupancy of the proposed development.
- Operational requirements, including equipment and systems, and design requirements for the proposed development.

This OWMP has been prepare to respond to item 8 of the EDQ further issues request, dated 18 April 2024 (application reference DEV2024/1488). The key items are summarised as follows:

- Submit a waste management plan, prepared by a suitably qualified person.
- Confirm the discrepancy between the bin numbers indicated in the planning report and plans.
- Confirm the height clearance and rear lift operations for servicing. The bin sizes proposed will allow for a Rear Lift vehicle to service the bins.

1.2 References

For the purpose of this assessment, the following references have been utilised:

- Proposed development plans by RC Design
- RCC Planning Scheme Policy 2 – Infrastructure works (Section 2.4 and 3.9)
- Traffic Engineering Report, prepared by Amber Organisation

1.3 Limitations

Modus has completed this OWMP in accordance with the usual care and thoroughness of the consulting profession. The assessment is based on accepted waste management practises and standards applicable at the time of undertaking the assessment. Modus disclaims responsibility for any changes to project planning or equipment requirements that may occur after completion of the assessment.

2 Existing Conditions

2.1 Site Location

The development site is located at 67-69 Shore Street East, Cleveland, and is bounded by Shore Street East to the north, GJ Walter Park to the south and residential dwellings to the east and west.

The site is identified in the RCC Planning Scheme as medium-residential zone and is surrounded by similar zones in all directions, with the exception of the recreation and open space zone to the south. The site is also positioned within the Toondah Harbour Priority Development Area (PDA), designated by EDQ.

The site location is shown on Figure 2-1.

Figure 2-1 Site Location

2.2 Existing Development and Refuse Arrangements

The site is currently occupied the by two (2) residential dwellings. Currently 240L bins are stored onsite and collected via the kerbside on Shore Street East.

3 Proposed Development

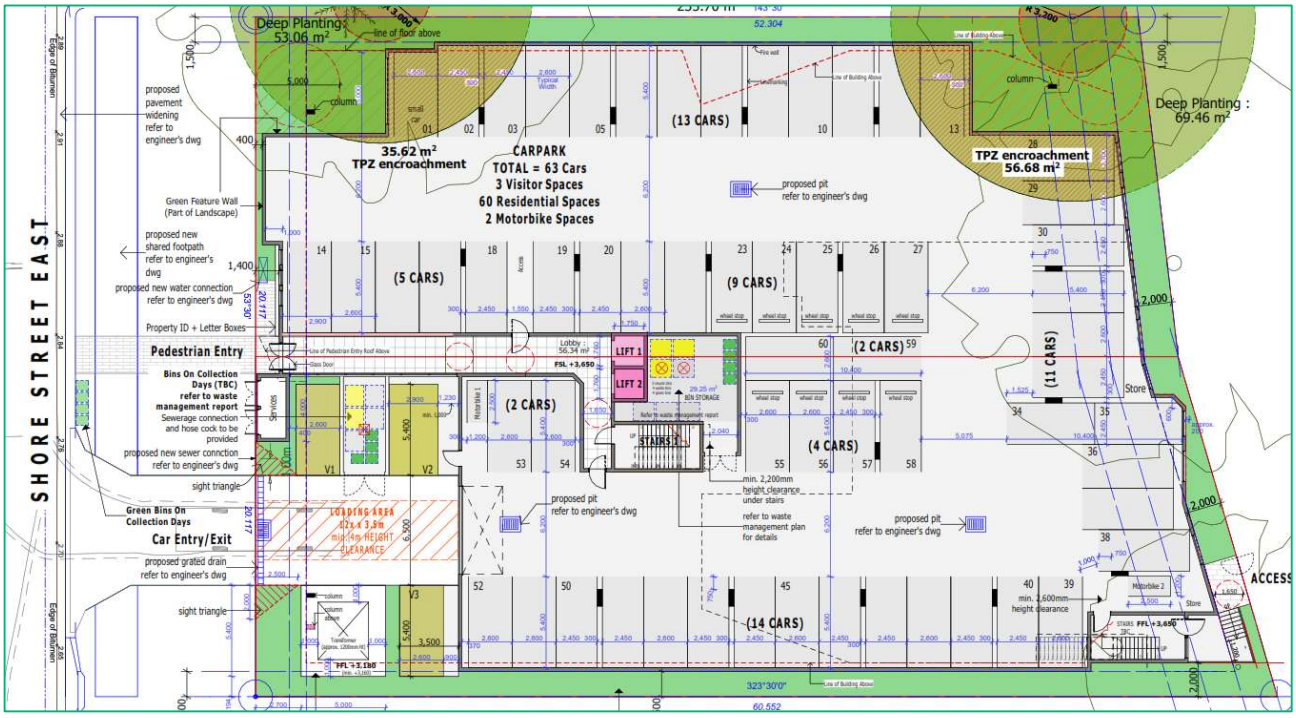
The proposed development consists of a 30-unit multiple dwelling with five (5) storeys and communal facilities on the first floor. The proposal development yield has been outlined in Table 3-1.

Table 3-1 Development Summary

Dwellings	Proposed Yield (m²)
3 Bedroom +	30

The proposed site plan is illustrated on Figure 3-1. A copy of the development plans can be found in **Appendix A**.

Figure 3-1 Proposed Development



Source: RC Design, drawing 2.7, revision D7, dated 04/06/24 – Ground Floor

4 Refuse Generation

4.1 Refuse Calculations

The anticipated refuse to be generated by the proposed development may consist of the streams outlined in **Appendix B**.

To assess the waste generation for the proposed site, Modus has applied the current RCC generation rates, as outlined below in Table 4-1.

Table 4-1 Refuse Calculations

Use	(L / 100m² / day)			Units	(L / Week)		
	General Waste	Commingled Recycling	Green Waste (L / 100m² / landscaping)		General Waste	Commingled Recycling	Green Waste
3+ bedroom	100	70	240	30	3,000	2,100	828

The refuse volumes are considered to be conservative and may vary according to the operation of the development and each dwelling. As such, bin numbers and collection frequencies may need to be altered to suit the building operation once operational.

4.2 Bin Numbers

The required equipment for the development is based on the volumes calculated in Table 4-1. Additional waste management / minimisation equipment may vary depending on the operation of the development and each dwelling.

Table 4-2 shows the bin requirements (number & size) and area required to accommodate the bins.

Table 4-2 Bin Requirements

Description	Dwellings	General Waste	Commingled Recycling	Green Waste
Total	30	3,000	2,100	828
Daily Volumes (L per day)		429	300	118
Collection Frequency (per week)		1	1	Once a month or as needed
Collection Volumes (L per week)		3,000	2,100	828
Bin Size (L)		1100	1100	240
No. Bins (+bins under chute)		3^{+1}	2^{+1}	4
Bin Area		5.3m²	4m²	1.7m²
Refuse Storage Room Area		29.25m²		
Bin Servicing Room Area		13.9m²		

4.3 Equipment

The refuse bins to be utilised for the proposed development is outlined below in Table 4-3.

Table 4-3 Refuse Bins

Type	Dimensions	Comments
80L-120L	559 x 279 x 635mm (L x W x H)	For general waste and recycling Residents and tenant to supply and positioned in various locations. Several options and sizes available from numerous suppliers, depending on preference and space available.
240L	740 x 580 x 1100mm (L x W x H)	For green waste Generally supplied by Council / private contractor prior to operation. Sizes may vary slightly depending on contractor.
1100L	1240 x 1070 x 1330mm (L x W x H)	For general waste and recycling Generally supplied by Council prior to operation. Sizes may vary slightly depending on contractor.

Depending on the attitude of building management and each dwelling, additional refuse minimisation equipment and procedures can be implemented. Refuse minimisation and recommendations are detailed in Section 6.

4.4 Additional Equipment

The proposed arrangements for additional refuse equipment to be utilised is outlined below.

- Due to the size of the development, refuse chutes are required in accordance with the Planning Scheme Policy. The development proposes a dual refuse chute (for waste and recycling), to terminate into the appropriate bins in the refuse room on the ground floor. A hopper will be located on each residential level for disposal.
- Further detail on the proposed arrangements will be reviewed in the detail design stage with the nominated chute manufacturer.

5 Refuse Arrangements

5.1 Refuse Disposal

The proposed disposal arrangements are provided in Table 5-1

Table 5-1 Refuse Disposal Process

Stream	Process
General Provisions (Waste and Recycling)	▸ Each dwelling will at least one day worth of storage capacity for their refuse. ▸ Small bins / receptacles will be provided around various locations within each dwelling. ▸ As required, residents will dispose of their refuse to the appropriate receptacles / bins within their dwelling during the day. ▸ Residents will collect the refuse from their dwelling after each day of operation, or as required. The refuse material will be disposed directly to the dual chute on each level. ▸ Building management will be responsible for disposing any communal refuse, if required.
General Waste	▸ Bins should always be lined with bags and tied before removal. ▸ Waste should not exceed 3kg in weight or the dimensions of the receptacles or the waste chute. ▸ Waste bins should be accompanied by a commingled recycling bin.
Commingled Recycling	▸ Items for recycling must not be bagged and disposed in loose form. ▸ Recycling waste should not exceed 3kg in weight or the dimensions of the receptacles or diverter chute. ▸ Larger recycling items that cannot be disposed via the recycling chute are to be arranged with building management or be provided with a small bin / crate in a communal area to be decanted into the appropriate bin for disposal to the refuse storage room. ▸ Recycling bins should be accompanied by a general waste bin.
Green waste	▸ Bins may be lined with compostable bags and tied before removal (optional) ▸ Where required, green waste will be transferred directly to the green waste bins in the refuse storage or collection room. ▸ If collected by RCC, bins will be taken to the kerbside for servicing on the designated day. ▸ If collected by a contractor, green waste can be collected and disposed directly to a resource recovery / composting facility to avoid landfill.

5.2 Refuse Rooms

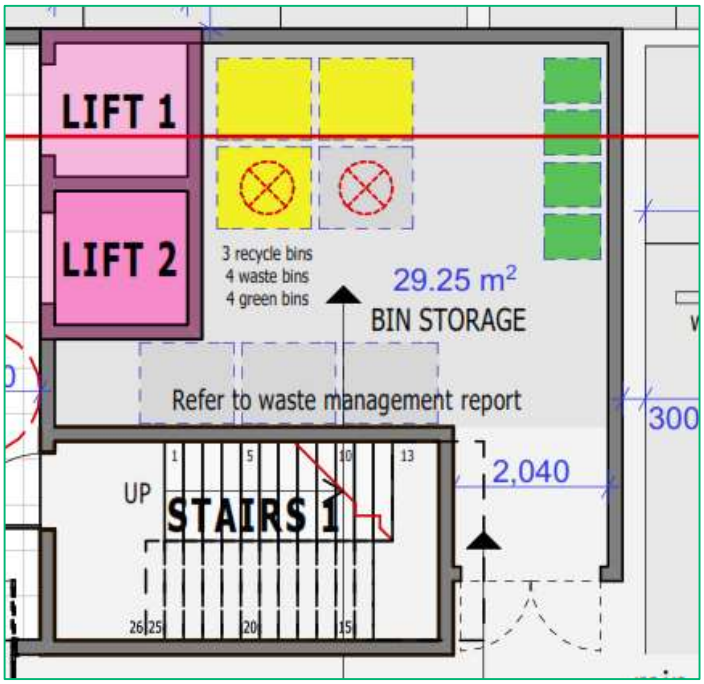
The proposed refuse room arrangements are as follows:

- An enclosed refuse storage room is provided on the ground floor to accommodate all required bins (consisting of 4x 240L green waste bins, 2x 1100L recycling bins and 3x 1100L waste bins including two (2) bins to be stored under the chutes at all times) and associated chute equipment.
- The chute discharge area is recommended to be partitioned for safety purposes to allow collection personnel to enter the refuse storage room to safely transfer bins to the refuse collection room.
- A refuse collection room is provided to accommodate 5x 1100L bins and 4x 240L wheelie bins for temporary storage of bins on collection day.
- Bin wash facilities will be provided within the refuse collection room.
- The refuse collection room is located within 5m of the temporary loading area.

The configuration and size of the refuse rooms are provided to ensure the bins are accessible to all users and easily rotated. The refuse rooms generally provide sufficient area to accommodate a combined 1m clearance around the bins.

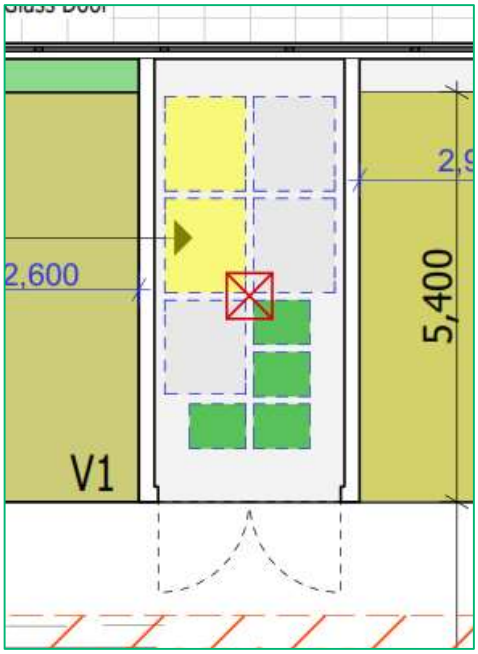
The refuse rooms are shown in Figure 5-1 and Figure 5-2. The recommended refuse room requirements are detailed in **Appendix C**.

Figure 5-1 Refuse Storage Room



Source: RC Design, drawing 2.7, revision D7, dated 04/06/24 – Ground Floor

Figure 5-2 Refuse Collection Room



Source: RC Design, drawing 2.7, revision D7, dated 04/06/24 – Ground Floor

5.3 Refuse Transfer

The proposed transfer arrangements are as follows:

- As required throughout the week, the waste caretaker will rotate full bins under the chutes.
- Prior to servicing, the waste caretaker will be responsible for transferring the bins from the refuse storage room to the refuse collection room and return once serviced.
- Bins will be transferred along flat grade and approximately 20m between refuse rooms.
- RCC contractors will be responsible for collecting bins directly from the refuse collection room to the loading areas. Due to the nature of the rear-loading RCV, bins will be required to be moved approximately 5m for servicing, along a flat grade.

The transfer path requirements are detailed in **Appendix D**.

5.4 Servicing Arrangements

Given the small scale of the development and infrequent servicing provisions, Modus considers that an informal standing on the driveway in lieu of any dedicated loading bays is an acceptable outcome.

It is important to note that if a dedicated loading bay is proposed, or the driveway was widened to accommodate unimpeded visitor access to enter and exit the parking spaces, this would not be a good outcome for the building design in accordance with PO21 of the Transport, Servicing Access and Parking Code. As such, this would result in an excessive solution for the occasional access of the RCV.

Therefore, the proposed servicing provisions are as follows:

- Bulk bin servicing will be conducted onsite by RCC via a rear-loading RCV.
- The RCV will perform a single reverse manoeuvre into the site from the 6.5m wide access crossover on Shore Street East and exit in a forward gear.
- The RCV will stand onsite in an informal loading area, on the exit side of the driveway, which has minimum dimensions of 3.5m (W) x 12m (L) which includes an additional 1.5m operational clearances behind the vehicle for bin servicing. The loading area is approximately 5m from the refuse collection room, with contractors to directly collect bins and return once serviced.
- Servicing will have minimum 4m height clearance and be conducted on a flat grade, in accordance with the Planning Scheme Policy.
- Vehicle access and manoeuvring is shown in the traffic report drafted by Amber Organisation.
- General waste and recycling will be serviced with a maximum collection frequency of once per week. Green waste will be collected on an as needed basis. All collections will be coordinated and managed onsite by the building manager / staff.
- Wheelie bins can be collected via the kerbside by RCC, or on-site via a maintenance contractor via a ute.

Based on the above, the proposed refuse collection arrangements are suitable due to the following:

- Providing a built form which does not have a significant impact on the visual amenity from the streetscape, including the bulk and scale.
- The existing carriageway conditions do not allow a suitable on-street arrangement.
- Shore Street East is a no through road and traffic movements will be limited to development traffic only. Additionally, it is classified as a minor road, which has lower volumes compared to a major road. As such, reversing movements are not expected to have an impact for vehicles on the external road network.
- The RCV movement is permitted under AS2890.2 and has adequate sight distance.
- Refuse collection will occur twice per week, with servicing likely to be conducted outside of peak road times and visitor times, therefore reducing the probability of conflicting vehicles.
- The driveway can cater for passing opportunities when the loading area is occupied.
- Consistent with developments across QLD and Redlands City Council, particularly the following recent local examples:
    - 218 – 220 Middle Street, Cleveland
    - 228 Middle Street, Cleveland
    - 67 – 69 Shore Street East, Cleveland

In addition to the above, and the probability analysis conducted by Amber, Modus has further outlined the probability of conflicting vehicles based on the anticipated servicing times for the bulk bins.

Based on a conservative estimate, Modus has assumed that it will take approximately 1 minute to service a bin (including time for bin transfer etc). As such, this equates to the RCV being onsite for a maximum of 3-5 minutes during the course of the day (for a total of 2 times per week).

Assuming visitors will stay on-site for a minimum of 30 minutes, this would equate to a maximum turnover of up to 6 vehicles in any given hour period for the 3 visitor spaces on-site. Based on the Poission Distribution of Random Vehicle Arrivals as detailed in the Austoads Guide to Traffic Management - Part 2: Traffic Theory, the anticipated RCV servicing time and hourly turnover for visitors would result in a 4% chance that visitors would access/egress a parking space in this period.

As such, this likelihood is considered to be low, however given that the RCV will be on-site for a maximum of two (2) times per week (i.e. once for waste and once for recycling), the probability would reduce further. Over the course of one (1) week (i.e. 168 hours), each hour will have a 4% chance of visitors accessing/egressing the parking space which would result in a less than 0.2% chance of an occurrence within any given week.

Notwithstanding the above, if there is an instance where the RCV is blocking a visitor car from being able to enter/exit the parking space, a driver would typically only have to wait for up to 5 minutes (at most) which is not considered unreasonable given the rareness of such an event occurring and any delay to a visitor car is also not likely to result in any external road impacts.

Further to this, as the driveway is wide enough to accommodate passing opportunities, access to all other parking spaces within the car park can be maintained. Therefore, there would be no adverse impact to the internal operations of the rest of the car park.

Based on the above information, Modus considers the proposed development will not have an adverse impact on the internal operation of the visitor parking or on the surrounding road network. Additional information on the suitability of the proposed arrangements are provided in the traffic response by Amber Organisation.

5.5 Operational Management

The operational management and procedures can vary based on the operation of the development.

Appendix E details the minimum recommended arrangements for roles and responsibilities, maintenance and cleaning, training and education, safety, signage and monitoring and review. A blank table is also provided, to be completed by the appropriate personnel as required.

6 Refuse Minimisation

Refuse minimisation is an important part of any site operation and ensuring that diversion from landfill is minimised, to achieve the desired target rates as outlined in the QLD sustainability requirements.

To determine the feasibility of collection volumes and assist with achieving desired landfill diversion targets, it is recommended that a baseline audit is undertaken at various stages of building occupancy (i.e. at a minimum of 50% and 80%) by an external contractor.

Based on the outcome of the audit, a management plan can be developed and implemented for continual improvement of the operational performance of the site and assist with implementation of waste minimisation strategies.

6.1 Equipment

Refuse minimisation is an important part of any site operation. Minimisation systems are summarised in Table 6-1 and are presented as options only. To assess the feasibility, further investigation is required by the developer at the concept stage and/or building management at the operational stage. Additional refuse management equipment is detailed in Table 6-2. The equipment suppliers are further outlined in **Appendix F**.

Table 6-1 Refuse Minimisation Equipment

Type	Streams	Comments
Composter / digestor	Food Waste	Compost bins and piles are a way of processing compostable material and garden organics on-site. This not only reduces the volume of waste but also creates a useful soil enhancer (compost). There are a variety of compost bin arrangements and systems that are commercially available. The footprint area requirement for a typical compost bin is 1m^2.
Waste Conversion	General waste	Converting waste by reducing its volume and weight means less material to be disposed of, which results in fewer WCV trips. This allows cost savings in logistics and has a positive environmental effect due to less fuel used per amount of waste to be disposed. As an example, OMPECO provide a solution for converting waste into a sterilised, dehydrated ground material. The process involves loading the sterilisation chamber with waste material and crushing / shredding of the material by rotors to produce a fine ground. During the process, the material is heated by friction to 100˚C which causes the moisture in the waste material to evaporate. After evaporation, the material is heated further to sterilisation or pasteurisation. The ground material is then cooled down to be unloaded from the converter. The final product has excellent long-term handling and storage properties, the it has up to 80% less volume and 50% less weight than the original waste material. It can be used in waste to energy systems as it is comparatively dry with a high calorific value.
Container deposit schemes	Eligible plastic / glass / aluminium bottles	Container deposit / refund schemes are currently in place in several states in Australia. Various models exist including bottle return facilities and (automated) reverse vending machines. Tenants, staff and cleaners should be encouraged to separate containers that qualify for the schemes from the waste or recycling streams, and return them to one of the return points. Storage space or dedicated bins within tenancies, apartments or communal areas should be provided.

Table 6-2 Refuse Management Equipment

Type	Streams	Comments
Dual Chute	General waste, commingled recycling	A hopper will be located on each residential level for disposal of all waste and recycling. The dual chute will terminate into the appropriate bins in the refuse room on the ground floor.
Refuse Trolley	General waste, recycling, food waste, paper / cardboard	Safety and mobility disposal can be assisted by trolleys for everyday use. Multi-purpose bin trolleys are used to transport bulky and awkward loads and are used widely in hospitals, laundries, manufacturing, and warehouses.

6.2 Signage

Waste signage guidelines are provided by the Queensland government. Various signage for the refuse area, safety and facility should be arranged through appropriate signage providers. Example signage for the site including refuse room and equipment, and safety signage is demonstrated in **Appendix H**.

7 Summary

Modus has been commissioned by Karote PL ATF The Chippers Trust to provide waste management advice in relation to a proposed residential development located at 67-69 Shore Street East, Cleveland. Modus has the following findings:

Refuse Equipment

- 3x 1100L waste bins (incl. 1 under chute at all times)
- 2x 1100L recycling bins (incl. 1 under chute at all times)
- 4x 240L green waste bins
- 1x dual chute arrangement (waste and recycle)

Refuse Disposal

- Receptacles for daily storage of waste and recycling will be provided within each dwelling.
- Once a day, or as required, residents will transfer all refuse materials directly to the dual chutes.

Refuse Storage

- A refuse storage room is provided on the ground floor for storage of all bins and chute equipment.
- A refuse collection room is provided in close proximity to the loading area, for temporary storage of bins on servicing day.
- Bin washing facilities will be provided within or in close proximity to the refuse collection room.

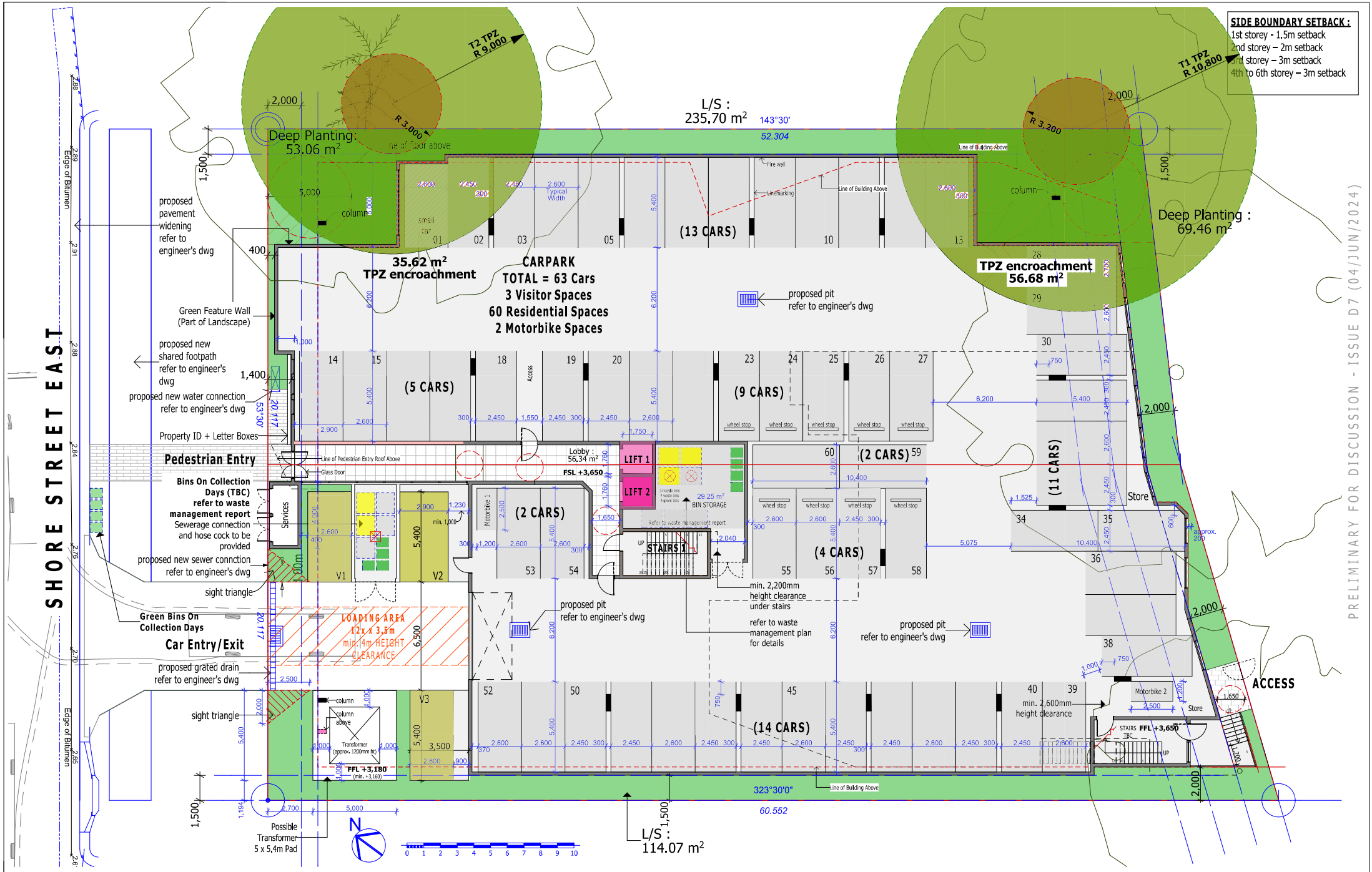
Refuse Transfer

- Building management will be responsible for rotating all full bins under the chutes, and transferring bins between the refuse storage room and collection room.
- RCC contractors will collect bins from the refuse collection room, along a flat grade and maximum distance of 5m.

Refuse Servicing

- Servicing will be conducted by RCC via a rear-loading RCV. The RCV will perform a single reversing movement into the site from Shore Street East and stand within an informal temporary loading area.
- The loading area is located on a flat grade and has minimum dimensions of 3.5m (W) x 12m (L), with a 4m height clearance.
- General waste and recycling will be collection on a maximum frequency of once per week. Green waste will be collected on an as needed basis.

APPENDIX A - Development Plans



RC+ Design	BSA License Number 1212835 Email info@rcplusdesign.com.au Phone 0421197117	**CLIENT** TBC **LOCATION** LOT 12 #67 SHORE STREET EAST, CLEVELAND,QLD	**DRAWING NAME** *GROUND FLOOR **DESIGNER**

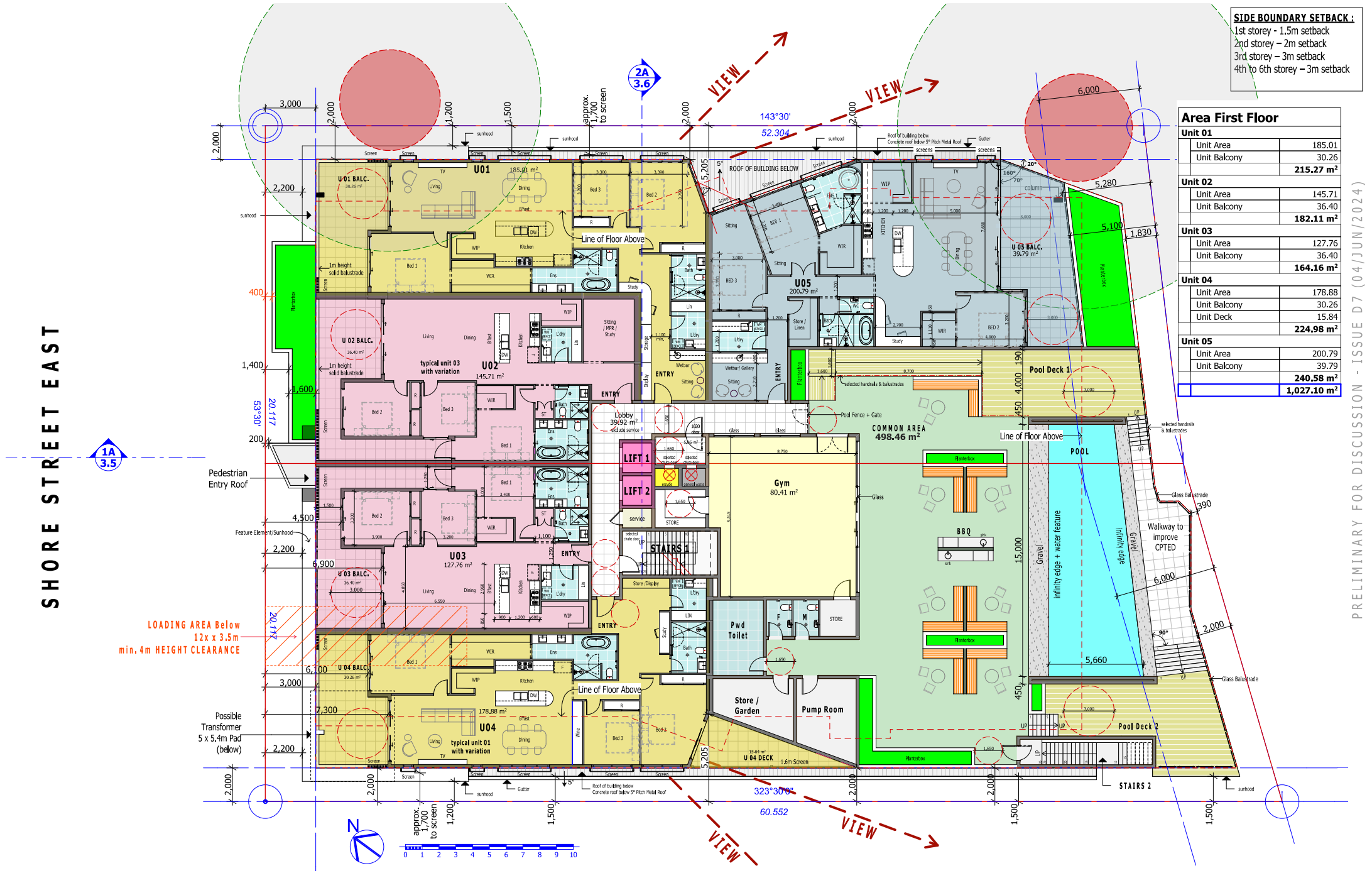
ISSUE

D7	04/JUN/2024	Floor Plans Amended	VT
D6	01/JUN/2024	Sketch Typical Plan	VT
D5	23/MAY/2024	Sketch Typical Plan	VT

Refer to signed contract documents for final selections and inclusions

NORTH	SCALE	JOB NUMBER	DRAWING	REVISION
	1:200 @A3 PAPER		2.1	D7

G:\2023\CLEVELAND, SHORE ST EAST, LOT 12 #67\ISSUE D7\DESIGN 2_ARCH_LOT 12 #67 SHORE ST EAST, CLEVELAND_ISSUE D7_ch20240426_V20240804 GABUNGAN_.dn | 4/06/2024 | 7:33 PM



SIDE BOUNDARY SETBACK :
1st storey - 1.5m setback
2nd storey – 2m setback
3rd storey – 3m setback
4th to 6th storey – 3m setback

Area First Floor

Unit 01		
	Unit Area	185.01
	Unit Balcony	30.26
		215.27 m²
Unit 02		
	Unit Area	145.71
	Unit Balcony	36.40
		182.11 m²
Unit 03		
	Unit Area	127.76
	Unit Balcony	36.40
		164.16 m²
Unit 04		
	Unit Area	178.88
	Unit Balcony	30.26
	Unit Deck	15.84
		224.98 m²
Unit 05		
	Unit Area	200.79
	Unit Balcony	39.79
		240.58 m²
		1,027.10 m²

PRELIMINARY FOR DISCUSSION - ISSUE D7 (04/JUN/2024)

RC+ Design
BSA License Number 1212835
Email info@rcplusdesign.com.au
Phone 0421197117

CLIENT
TBC

LOCATION
LOT 12 #67 SHORE STREET EAST, CLEVELAND,QLD

DRAWING NAME
*FIRST FLOOR

DESIGNER

ISSUE

D7	04/JUN/2024	Floor Plans Amended	VT
D6	01/JUN/2024	Sketch Typical Plan	VT
D5	23/MAY/2024	Sketch Typical Plan	VT

Refer to signed contract documents for final selections and inclusions

NORTH

SCALE
1:200
@A3 PAPER

JOB NUMBER	DRAWING	REVISION
	2.2	D7

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SIDE BOUNDARY SETBACK :
1st storey - 1.5m setback
2nd storey – 2m setback
3rd storey – 3m setback
4th to 6th storey – 3m setback

Area Second Floor

Unit 06		
	Unit Area	197.20
	Unit Balcony	34.34
	Unit Balcony	5.11
		236.65 m²
Unit 07		
	Unit Area	228.52
	Unit Balcony	43.72
		272.24 m²
Unit 08		
	Unit Area	231.09
	Unit Balcony	82.88
		313.97 m²
Unit 09		
	Unit Area	229.63
	Unit Balcony	46.01
		275.64 m²
Unit 10		
	Unit Area	193.31
	Unit Balcony	5.11
	Unit Balcony	34.34
		232.76 m²
		1,331.26 m²

SHORE STREET EAST

PRELIMINARY FOR DISCUSSION - ISSUE D7 (04/JUN/2024)

RC+ Design	BSA License Number 1212835 Email info@rcplusdesign.com.au Phone 0421197117	**CLIENT** TBC **LOCATION** LOT 12 #67 SHORE STREET EAST, CLEVELAND,QLD	**DRAWING NAME** *SECOND FLOOR (TYPICAL) **DESIGNER**	**ISSUE** D7 04/JUN/2024 Floor Plans Amended VT D6 01/JUN/2024 Sketch Typical Plan VT D5 23/MAY/2024 Sketch Typical Plan VT Refer to signed contract documents for final selections and inclusions	**NORTH**	**SCALE** 1:200 @A3 PAPER	**JOB NUMBER**	**DRAWING** 2.3	**REVISION** D7

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APPENDIX B – Proposed Refuse Streams

Stream		Description
Frequently Generated		
General Waste	General Waste, Food Waste	General waste items are non-recyclable and can be putrescible (organic matter which can break down) or non-putrescible (non-organic matter which cannot break down).
Commingled Recycling	Semi-rigid plastics, paper, cardboard, glass, aluminium, steel / tin cans, glass	Commingled recycling includes everyday items that are collected and later processed for recycling into new products and resources. Recycling separation diverts waste to landfills
Infrequently Generated		
Green Waste	Landscaping, trees, potted plants	This development does not generally produce green waste (other than landscaping). Maintenance contractors are typically engaged to remove material and should be directed to send to a resource recovery / composting facility to avoid landfill.
Hard Waste / Bulky Goods	Furniture, white goods, appliances	Storage and collection should be coordinated with building management or designated staff. Where available, space can be provided in the refuse room or within a designated area. When transferring heavy material, it is recommended to utilise assisted transfer such as pallet jacks or forklifts. Please refer to local and QLD government websites for further information.
Hazardous Waste	Paints, fluorescent globes, mobiles, batteries and cartridges Electronic Waste (computers, printers, TV's)	Storage and collection should be coordinated with building management or designated staff, and handled with care. Space should be provided in a secure and separate area. Please refer to local RCC and QLD government websites for further information.

APPENDIX C – Refuse Room Design Requirements

Component	Requirement
Refuse Room / Storage point	▸ Allow the bins to be serviced in-situ or easily transported to a separate servicing point (no steps or lips on bin-carting route). ▸ Waste-carting distance should not exceed 60m and in any case be reasonable to ensure ease of use. ▸ Generally positioned away from entrances to shops or residential premises and located at least 5m from any door, window or fresh air intake within the development (habitable rooms) or any adjoining site (excluding the storage of wheelie bins at each individual dwelling), particularly food preparation areas (including food storage). ▸ Screened to ensure bins are not visible from a public place or sensitive land use. ▸ Safe access to the disposal area. ▸ Of sufficient size to accommodate the required number of bins. Allowance is to be made for a minimum of 0.1m clearance surrounding each container, or for the storage of multiple bins – one metre clearance around the combined bin area (whichever is the lesser). ▸ Provide adequate storage and unobstructed access for all users to safely and easily access via the provision of suitably located bulk bins or wheelie bins. ▸ The floors, walls and ceilings of waste and recycling storage areas and chute room(s) are to be finished with a rigid, smooth-faced impermeable material capable of being easily cleaned. ▸ Is enclosed on all sides except for the gated entrance to ensure bins are not visible from a public place, neighbouring properties, passing vehicles or pedestrian traffic external to the site. A close-fitting and self-closing door or gate operable from within the room is to be fitted to all waste and recycling storage areas. ▸ Doors/gates to the waste and recycling storage rooms are to provide a minimum clearance width of 1.3m. At least one door or gate to the waste and recycling storage area is to have sufficient dimensions to allow the entry and exit of waste containers of a capacity nominated for the development. ▸ The height of the bin storage area to be a minimum of 2.1m in accordance with the National Construction Code and Building Code of Australia, to allow for waste bins to be opened and closed. ▸ Lightweight roller shutter-type doors or grilles should be considered for access to waste and recycling storage areas, as these do not impact on the available storage space. If these types of doors or grilles are used, the requirement for a close-fitting and self-closing door remains, so that waste collectors can access the waste and recycling storage area other than through the roller door or grille. Where required, the refuse room is to be fire rated in accordance with the National Construction Code and Building Code of Australia. ▸ The design shall restrict the entry of trespassers, vermin or other animals into the area. ▸ The waste and recycling storage area is to be provided with an adequate supply of water for cleaning purposes with a hose cock. This does not include within chute rooms. ▸ The storage area is to be adequately ventilated by either: i. Natural ventilation openings to external air. The dimension of the openings are not to be less than 5% of the bin bay or bin room floor area.

	ii. A mechanical exhaust ventilation system in accordance with relevant Australian standards. ▸ Waste and recycling areas are to be provided with artificial light controlled by switches located both outside and inside the storage area. ▸ Any facet of the waste and recycling management system that is visible from outside the building is to be in keeping with the dominant design of the remainder of the development.
Bin wash-down facility	▸ Constructed hardstand area with a solid concrete base or acceptable equivalent. ▸ Roofed and designed to prevent entry to rainwater. ▸ The floors are graded to fall to a drainage point. The floor is to be provided with a ramp to the doorway where necessary. ▸ Drainage point connected to sewer in accordance with trade waste requirements. ▸ Provided with a hosecock for cleaning. ▸ Not be located within a building structure, unless it is: i. in a purpose-built storage area which is air locked, fly and vermin proofed, and used solely for the storage of waste; ii. in a well-ventilated portion of the basement and not within 30m of an opening to a food premises or food handling area; or iii. demonstrated that no / minimal putrescible / organic waste is generated by the proposed development type.
Refuse Chutes	▸ be compliant with the National Construction Code (NCC); ▸ have adequate strength for its purpose, including additional reinforcing where necessary at joins, bends and hopper intersections; ▸ be insect and vermin proof; ▸ be constructed and installed to prevent the following during use and operation of the system: i. transmission of vibration to the structure of the premises; ii. excessive odour – there must not be a noticeable odour beyond the waste disposal and storage points; iii. excessive noise to the occupants of the building; ▸ comply with the waste chute manufacturer's technical specifications and/or operational limitations, including installation design features and ancillary equipment required to prevent blockages and noise disturbances; ▸ be fitted with a shutter at the base of the chute for closing off the chute manually during bin exchange and automatically in case of fire; ▸ be fitted with fire sprinklers; and, ▸ have chute pipes with access provided at appropriate levels and a nylon brush or similar appliance on a pulley system, for clearing obstructions and cleansing.

APPENDIX D - Servicing Requirements

Component	Requirement
Bin servicing point	▸ Is of sufficient size to accommodate the bins. ▸ Sufficient access and clearance for the collection vehicles to service the bins, including adequate unobstructed overhead space for the swinging arm action of the collection vehicle. ▸ Bins serviced safely while minimising the impediment of traffic flow during servicing. ▸ Separated from car parking bays, loading bays, footpaths and pedestrian access, and any other similar areas. ▸ Clear of speed control devices or similar provisions (including entry and exit to the site) which inhibit direct access to the bins for servicing. ▸ Positioned on a level pad devoid of stairs, lips or ramps and allows bins to be manoeuvred easily. ▸ Over 5m from any door, window or fresh air intake within the development (habitable rooms) or any adjoining site (excluding the storage of wheelie bins at each individual dwelling), particularly food preparation areas (including food storage). ▸ Bins to be removed from and returned to the storage point. ▸ Constructed hardstand with a solid concrete base or acceptable equivalent. ▸ If serviced from a public roadway: i. where a site fronts more than one roadway, be provided adjacent to the roadway of the lowest order where possible ii. positioned on a level pad within the site, level with the kerbside and adjacent to a driveway or other approved crossover on the public roadway. iii. connected to the crossover by a paved path so that the bin can be manoeuvred for servicing without lifting the bin over raised surfaces (pram ramp). iv. not be situated within 20m of an intersection (including opposite a T-intersection) or roundabout. v. allow for at least an additional 0.5m clearance surrounding each container, or for multiple bins, a minimum of 0.3m between each side of the bins and any barrier around the location. An individual bin should be accessible via bin rotation within the area. The height of the servicing area must allow for waste bins to be opened and closed. ▸ Screened to minimise the view of bins from neighbouring properties, or passing vehicles and pedestrian traffic external to the site. ▸ Positioned away from entrances to shops or residential premises.
Bin carting	▸ The route must be via hard stand pathways / internal roads, and can be easily moved to the temporary storage area, and is not stored on a section of the driveway that falls away (e.g. to the basement). The route must occur within the property boundary. ▸ The route must allow bins to be easily manoeuvred and be devoid of steps or steep rises. ▸ The route must not impede traffic flow and extend through habitable parts of a building, or a food premises, and only occur through common property or publicly accessible locations.

APPENDIX E – Operational Management

Process	Procedure
Roles and Responsibilities	Responsibilities have to be assigned for all on-going refuse management operations. This is generally completed by a building manager, staff and / or cleaners. The on-going responsibilities help managing responsibilities and monitor the refuse operations in order to maintain efficient services and a safe environment. These include and are not limited to the following: ▸ Scheduling / organising refuse collections ▸ Transferring bins to and from the refuse area ▸ Washing bins ▸ Ensuring users / occupants are informed of all waste, recycling, organics and bulky waste arrangements ▸ Coordination of contractors, including specialised equipment and cleaning ▸ Monitoring and reviewing all waste management procedures
Maintenance and Cleaning	Regular on-going maintenance and cleaning is required to maintain a clean and hygienic environment for all users, including management / staff, visitors and contractors. This includes, and is not limited to the following: ▸ Refuse storage areas ▸ Refuse transfer areas ▸ Refuse equipment
Training and Education	Training and education is required to ensure operational efficiency and sustainability of the equipment and facilities within the development. Training and on-going education should be conditioned within all body corporate and leasing contracts. It is recommended that building management circulate ongoing recycling rate results to highlight current rate and performance against benchmarked recycling rate target.
Safety	Safety is an important part of all refuse management operations and is the responsibility of all users. A full risk assessment should be conducted by building management and all contractors. Contractors must provide required documentation to appropriate personnel prior to development occupancy and delivery of equipment.
Signage	All receptacles, bins and other refuse management equipment must have adequate signage. Standard signage will be provided in and around waste collection / storage areas and will be colour coded in accordance with AS 4123.7–2006 mobile waste containers and all local government regulations. Signage should be included, and not limited to the following: ▸ Refuse storage and collections areas ▸ Refuse transfer areas ▸ Refuse disposal points ▸ Refuse equipment All signage should be clear, legible and easy to read.
Monitoring and Review	Regular monitoring and reviews will ensure operational efficiency and sustainability of the refuse management arrangements for the development. This includes, and is not limited to the following: ▸ Refuse equipment ▸ Refuse area ▸ Refuse volumes, including diversion rates and targets to meet the required sustainability targets ▸ Service frequency and site operations / methodologies It is recommended that waste auditing / reviews are conducted a minimum of at least once every 12 months. Audits may be undertaken by external contractor or internally by visual inspection during on-site waste management handling activities. Additionally, refuse weights and movements should be noted to assist with economic feasibility.

A blank operational checklist is provided below to be appropriately filled out as required by building management / staff. This table has been designed to maintain efficient services and a safe environment and help manage responsibilities / monitor the refuse operations.

Task	Responsibility	Checked	Comments

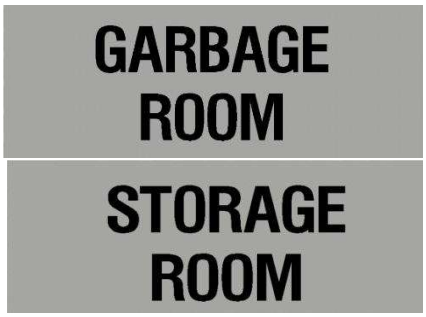
APPENDIX F – Equipment / Systems Manufacturers and Suppliers

Manufacturer / Supplier	Equipment / Systems
Elephants Foot Recycling Solutions http://www.elephantsfoot.com.au	Compactors, Chutes, Bin Rotation, Bin Lifters
Waste Initiatives https://wasteinitiatives.com.au	Compactors and Balers, Shredders, Sorting Equipment
Wastech http://wastech.com.au	Compactors, Chutes, Bin Rotation, Bin Lifters
Miltek http://www.miltek.com.au	Compactors
Closed Loop Organics https://closedloop.com.au/upcycling-products,	Composting
Materials Handling https://www.materialshandling.com.au	Bin Lifters, Spill containment, Bins, Bin Cleaning
Spacepac Solutions http://www.spacepac.com.au	Bin tugs / trailers, trolleys / assisted transfer equipment
Draffin https://draffin.com.au	Bin lifters
Electrodrive / Lift Master http://www.electrodrive.com.au	Bin tugs / trailers, bin lifters
Absorbenviro http://www.absorbenviro.com.au	Spill containment equipment
Trade Environmental http://www.tradeenviro.com.au	Spill containment equipment
Spillstationaustralia www.spillstation.com.au	Spill containment equipment
Compost Revolution https://compostrevolution.com.au	Composting
Urban Composter https://www.urbancomposter.com.au	Composting
Rubbermaid https://rubbermaidcommercial.com.au/products/waste-management	trolleys / assisted transfer equipment, spill containment, bins
Sulo http://www.sulo.com.au	trolleys / assisted transfer equipment, bins, composting
Australian Waste Management https://www.australianwastemanagement.com.au/products	Bin lifters, bins
ReturnIT https://www.returnit.com.au/qld/	Container deposit / refund schemes are currently in place in Queensland. Various models exist including bottle return facilities and (automated) reverse vending machines

APPENDIX H – Example Signage

Standard Signage

Refuse Room



Facility Signage

Safety Signage

Refuse Equipment

Refuse Chute Signage