MODUS
Transport & Traffic Engineering

Operational Waste Management Plan

3-5 Fingal Street, Brunswick Heads
Proposed Mixed-Use Development

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Document Information

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Project: 3-5 Fingal Street, Brunswick Heads	

Document Control

Version	Date	Description of Revision	Prepared by	Reviewed By
A	26/01/25	DRAFT for review and comments	A.S	
B	22/04/25	Final	Y.S	A.S
C	02/05/25	Final	Y.S	A.S.
D	19/09/25	RFI Response	Y.S	A.S
E	23/09/25	RFI Response	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.
Compactor / Compaction unit	A container or machine used for composting specific organic material
Composter	Waste, other than domestic clean-up waste, green waste, recyclable waste, interceptor waste or waste discharged to a sewer, produced due to the ordinary use or occupation of domestic or commercial premises.
General waste	The GFA of all stories of a building is measured from the outside of the external walls or the centre of a common wall and is measured in square metres (m^2).
Gross Floor Area (GFA)	Solid waste that is or contains toxic material, for example, light bulbs, fluorescence lights, and batteries.
Hazardous waste	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.
Mobile Garbage Bin (MGB)	Waste that comes from plants or animals that is biodegradable, for example, green waste and food waste.
Organic Waste	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.
Recycling	Refuse is material generated and discarded from residential and commercial buildings including general waste, recyclables, green waste and bulky items.
Refuse	The area allocated to the permanent storage of waste bins. This is the normal location of the waste bins and excludes the period when the bin is serviced. A storage point may be a common storage point or an individual bin storage point.
Refuse Room / Storage point	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.
Refuse Collection Vehicle (RCV)	A vehicle specifically designed for collecting and emptying refuse bins and refuse compactors.
Side-End-Loading RCV	A truck specially designed to collect refuse (typically 240L bins), from side loading mechanism and haul the collected waste to a solid waste treatment facility.
Rear-End-Loading RCV	A truck specially designed to collect refuse (typically 1100L 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 Momentum Project Group Pty Ltd to prepare an Operational Waste Management Plan (OWMP) in support of the proposed mixed-use (residential and commercial) development, located at 3-5 Fingal Street, Brunswick Heads.

This OWMP is to be used as a 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 Byron Shire Council's (BSC) requirements and detail the following information:

- Refuse (type and quantity) likely to be generated during the occupancy of the proposed development.
- 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.

1.2 References

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

- Development plans prepared by CHROFI,
- BSC Development Control Plan 2014 – Chapter B8 Waste Minimisation and Management,
- NSW EPA - Better practice guide for resource recovery in Residential developments,
- NSW EPA - Better practice guidelines for Waste Management and Recycling in Commercial and Industrial Facilities

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 3-5 Fingal Street, Brunswick Heads and bounded by Fingal Street to the south, Balun Lane to the north, commercial developments to the east and west.

The site is identified within the BSC Local Environmental Plan as local centre zone and is surrounded by similar zones in all directions, with exception of a low-density residential zone to the south of the site.

The site location is shown on Figure 2-1.

Figure 2-1 Site Location

Source: Nearmap

2.2 Existing Development and Refuse Arrangements

The site is occupied by a residential flat building and commercial office. Currently, wheelie bins are stored on-site and collected via Balun Lane for both sites.

3 Proposed Development

The proposed development consists of a residential flat building with two (2) levels built above the ground floor shops and F&B uses.

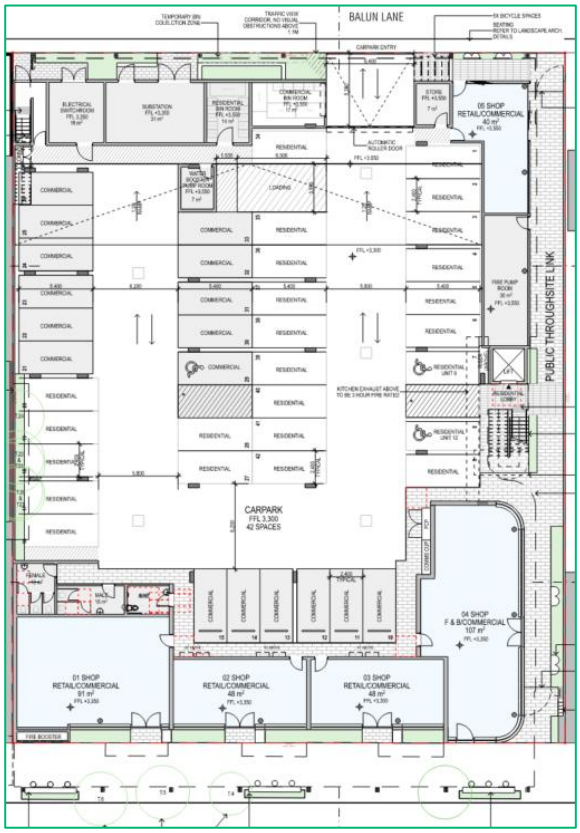
The proposed development yield has been outlined in Table 3-1.

Table 3-1 Development Summary

Proposed Use	Proposed Yield (units/m²)
2-Bedroom	5 units
3-Bedroom	8 units
Shop 1 (Retail)	91m²
Shop 2 (Retail)	48m²
Shop 3 (Retail)	48m²
Shop 4 (F&B)	107m²
Shop 5 (Retail)	40m²
Total	**13 units and 334m²**

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 (Site Plan)



Source: CHROFI, Drawing No. A-DA-200 rev 5, Date: 16/09/25 – Ground Floor

4 Refuse Generation

4.1 Residential Refuse

4.1.1 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 BSC generation rates, as outlined below in Table 4-1. Further to the above and based on discussions with BSC, Modus has been advised that food organics / green organics is required and to be considered in accordance with the City of Melbourne requirements, as per discussions with BSC.

Table 4-1 Residential Refuse Generation

Use	Generation Rate (L/unit/week)			Units	Generation (L/Week)		
	General Waste	Commingled Recycling	FOGO		General Waste	Commingled Recycling	FOGO
2 bedroom	80	40	25	5	400	200	125
3 bedroom	80	40	30	8	640	320	240
Total	-	-	-	13	**1,040**	**520**	**365**

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.

4.1.2 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 Residential Bin Requirements

Description	Units	General Waste	Commingled Recycling	FOGO
Total	13	1,040	520	365
Daily Volumes (L per day)		149	74	52
Collection Frequency (per week)		1	1	1
Collection Volumes (L per week)		1,040	520	365
Bin Size		240	240	240
No. Bins		5	3	2
Bin Area		2.2m²	1.3m²	0.86m²
Refuse Room Area		14m²		

4.2 Commercial Refuse

4.2.1 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 BSC generation rates, as outlined below in Table 4-3. The calculations have been based on a 7-day per week operation for all uses. Further to the above and based on discussions with BSC, Modus has been advised that food organics / green organics is required and to be considered in accordance with the City of Melbourne requirements, as per discussions with BSC.

Table 4-3 Commercial Refuse Generation

Use	Generation Rate (L/m²/day)			GFA (m²)	Generation (L/Week)		
	General Waste	Commingled Recycling	FOGO		General Waste	Commingled Recycling	FOGO
Shop 1 (retail)	50	25	25	91	319	159	159
Shop 2 (retail)	50	25	25	48	168	84	84
Shop 3 (retail)	50	25	25	48	168	84	84
Shop 4 (F&B)	10L/1.5 m²	2L/1.5 m²	200	107	4,993	999	1,498
Shop 5 (retail)	50	25	25	40	140	70	70
Total	-	-	-	**334**	**5,788**	**1,396**	**1,895**

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

4.2.2 Bin Numbers

The required equipment for the development is based on the volumes calculated in Table 4-3. Additional waste management / minimisation equipment may vary depending on the operation of the development and each tenancy.

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

Table 4-4 Commercial Bin Requirements

Description	GFA (m²)	General Waste	Commingled Recycling	FOGO
Total	334	5,788	1,396	1,895
Daily Volumes (L per day)		827	199	271
Collection Frequency (per week)		3	2	2
Collection Volumes (L per week)		1,929	698	948
Bin Size		1100	1100	240
No. Bins		2	1	4
Bin Area		2.7m²	1.35m²	2.12m²
Refuse Room Area (Storage and Collection)		17m²		

4.3 Equipment

The refuse bins to be utilised for the proposed development is outlined below in Table 4-5.

Table 4-5 Refuse Bins

Type	Dimensions	Comments
240L	735 x 580 x 1080mm (L x W x H)	For general waste and recycling Generally supplied by Council contractor prior to operation. Sizes may vary slightly depending on contractor
1100L	1240 x 1070 x 1360mm (L x W x H)	For general waste and recycling Generally supplied by a private contractor prior to operation. Sizes may vary slightly depending on contractor

Depending on the operation of the development and each unit / tenancy, additional refuse minimisation equipment and procedures can be implemented. Refuse minimisation and recommendations are detailed in Section 6.

4.4 Bulky Goods

In accordance with BSC requirements, provision for bulky goods is to be provided. It is important to note that there is no minimum requirement indicated in the BSC Development Control Plan, however Modus recommends a minimum of 4m^2 is provided for residential developments with up to 20 units.

This area requirement has been proposed and included within the residential refuse room on the ground floor.

5 Refuse Arrangements

5.1 Refuse Disposal

5.1.1 Residential Refuse

The proposed disposal arrangements are provided in Table 5-1.

Table 5-1 Refuse Disposal Process

Stream	Process
General Provisions (Waste and Recycling)	▸ Small bins / receptacles will be provided around various locations within each dwelling. ▸ Residents will dispose of their refuse to the appropriate receptacles / bins as required throughout the day. ▸ Residents will collect the refuse from their dwelling once a day, or as required and dispose their waste and recycling directly to the bulk bins in the refuse room via the lifts and stairs.
General Waste and Food 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. ▸ Waste bins should be accompanied by a bin from each stream.
Commingled Recycling	▸ Items for recycling must not be bagged and disposed in loose form. ▸ Bins should be accompanied by a bin from each stream.

5.1.2 Commercial Refuse

The proposed disposal arrangements are provided in Table 5-2.

Table 5-2 Commercial Refuse Disposal Process

Stream	Process
General Provisions (Waste and Recycling)	▸ Small bins / receptacles will be provided around various locations within the tenancy, typically within back of house / staffroom areas and seating areas. ▸ As required, staff will dispose of their refuse to the appropriate receptacles / bins during the day. ▸ Staff / cleaners will be responsible for transferring the refuse and disposing directly to the refuse room on the ground floor.
General Waste and Food 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. ▸ Waste bins should be accompanied by a recycling bin.
Commingled Recycling	▸ Items for recycling must not be bagged and disposed in loose form. ▸ Bins should be accompanied by a waste bin.

5.2 Refuse Room

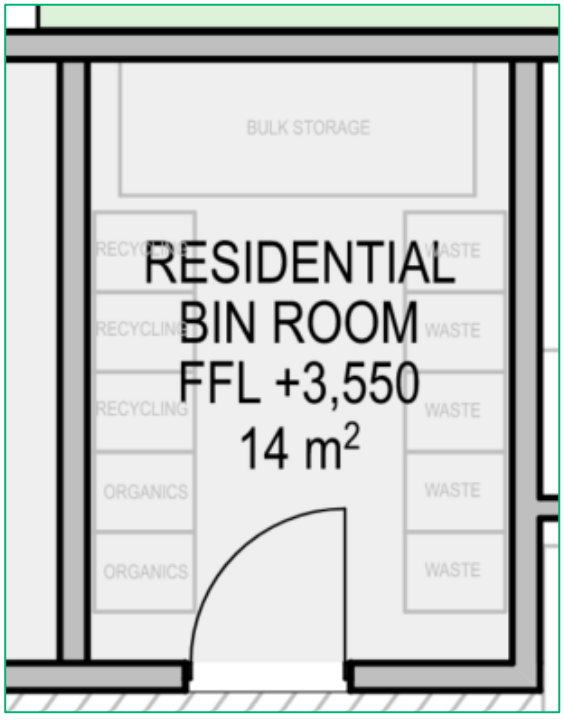
5.2.1 Residential Refuse

The proposed refuse room arrangements are as follows:

- An enclosed refuse room is provided to accommodate all required bins (10x 240L wheelie bins) for storage and collection.
- A storage area for bulky goods is also been provided in the refuse room.
- Bin wash facilities will be provided within the refuse room.
- The refuse room is enclosed to improve amenity impacts (odour, visual and noise).

The configuration and size of the refuse room ensures the bins are accessible to all users and easily rotated. The refuse rooms are adequately sized to store all bins for collection and shown in Figure 5-1. The recommended refuse room design requirements are detailed in Appendix C.

Figure 5-1 Residential Refuse Room



Source: CHROFI, Drawing No. A-DA-200 rev 5, Date: 16/09/25 – Ground Floor

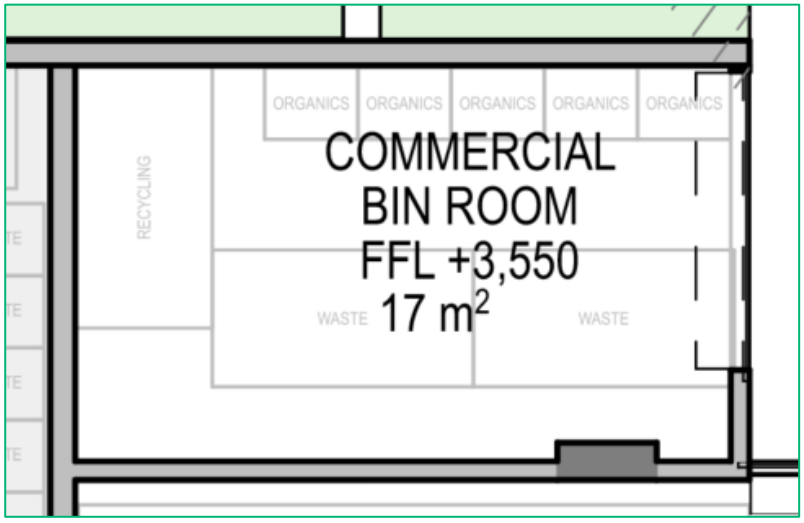
5.2.2 Commercial Refuse

The proposed refuse room arrangements are as follows:

- The refuse room can accommodate all required bins (3x 1100L bulk bins and 4x 240L wheelie bins).
- Bin wash facilities will be provided within the refuse room.
- The refuse room is enclosed and screened to improve amenity impacts (odour, amenity and noise).

The refuse room is adequately sized to store all bins for collection and shown in Figure 5-2. The recommended refuse room design requirements are detailed in **Appendix C**.

Figure 5-2 Commercial Refuse Room



Source: CHROFI, Drawing No. A-DA-200 rev 5, Date: 16/09/25 – Ground Floor

5.3 Refuse Transfer

The proposed transfer arrangements for both uses are as follows:

- Prior to collection, residents / designated staff will be responsible for transferring refuse from the dwellings / tenancies directly to the bins in their respective refuse room.
- On servicing days, the building manager will collect the residential bins directly from the refuse room for servicing via the laneway. To improve visual amenity along the laneway, the refuse rooms will be accessed via the internal driveway.
- Once serviced, the building manager will return the empty bins directly to the refuse room to preserve the amenity of the laneway.

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

5.4 Servicing Arrangements

5.4.1 Residential Refuse

The proposed servicing provisions are as follows:

- Servicing will be conducted by a BSC contractor via a side-lift loading RCV.
- The RCV will enter and exit Balun Lane in a forward gear.
- The RCV will stand within the laneway, adjacent to the property boundary.
- Servicing will have an unrestricted height clearance and will be conducted on a generally flat grade.
- The refuse collection area is located within the property boundary, as demonstrated on the architectural plans.
- BSC contractors will collect the bins directly from the laneway.
- Each stream will be serviced with a maximum collection frequency of once per week. All collections will be coordinated and managed onsite by the building manager.

The recommended refuse room design requirements are detailed in **Appendix D**.

5.4.2 Commercial Refuse

The proposed servicing provisions are as follows:

- Servicing will be conducted on-site by a private contractor (i.e. Richmond Waste) via a rear-lift RCV.
- The RCV will enter and exit the site in a forward gear, via Balun Lane.
- The RCV will stand on-site and stand within the loading area for servicing.
- Servicing will have a minimum 2.9m height clearance and will be conducted on a generally flat grade.
- Contractors will collect the bins directly from the refuse room and return them once serviced.
- General waste will be serviced with a maximum collection frequency of three times per week. Commingled recycling and FOGO will be serviced with a maximum collection frequency of twice per week. All collections will be coordinated and managed onsite by the building manager / designated staff.

The recommended refuse room design requirements are detailed in **Appendix D**.

5.5 Operational Management

The operational management and procedures can vary based on the operation of the development and each dwelling / tenancy.

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 prior to commencement of operations.

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 NSW 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 for the residential and commercial uses (i.e. at a minimum of 50% and 80% occupancy or 0-1 month, 1-3 months, 3-6 months, 6-12 months and yearly thereafter) by building management or an external contractor.

Based on the audit outcome, a management plan can be developed and implemented for continual improvement of the operational performance of the site and assist with implementation 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 / digestors can process compostable material and garden organics on-site. This reduces the volume of waste to landfill and converts organic materials into soil or mulch through natural decomposition. A variety of compost bin arrangements and systems are commercially available for use.
Container deposit schemes	Eligible plastic / glass / aluminium bottles	Container deposit / refund schemes are currently in place in NSW. This includes 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 a designated return points. Dedicated storage space or bins should be provided within tenancies or communal areas.

Table 6-2 Refuse Management Equipment

Type	Streams	Comments
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 local and state government. Various signage for the refuse areas including safety and facility signage should be arranged through appropriate providers. Example signage for the site including refuse room and equipment, and safety signage is demonstrated in **Appendix G**.

7 Summary

Modus has been commissioned by Momentum Project Group Pty Ltd to provide waste management advice in relation to a proposed mixed-use (residential and commercial) development located at 3-5 Fingal Street, Brunswick Heads. Modus has summarised the following findings:

Refuse Equipment

	Residential Refuse	Commercial Refuse
General Waste	▸ 5x 240L wheelie bins	▸ 2x 1100L bulk bins
Commingled Recycling	▸ 3x 240L wheelie bins	▸ 1x 1100L bulk bin
FOGO	▸ 2x 240L wheelie bins	▸ 4x 240L wheelie bins

Refuse Disposal

Residential Refuse

- Each dwelling will be provided with receptacles for storage of daily refuse volumes.
- Once a day, or as required, residents will dispose all refuse material to the refuse room located on the ground floor.

Commercial Refuse

- Receptacles for storage of daily refuse volumes will be provided around various locations within each tenancy.
- Once a day, or as required, designated personnel will transfer all refuse materials directly to the refuse room.

Refuse Storage

Residential Refuse

- An enclosed refuse room is provided for storage of all required bins (10x 240L wheelie bins).
- Bulky goods will be stored in the refuse room as required.
- Bin wash facilities will be provided within the refuse room.

Commercial Refuse

- An enclosed refuse room is provided for storage of all required bins (3 x 1100L bulk bins and 4x 240L FOGO bins).
- Bin washing facilities will be provided within the refuse room.

Refuse Transfer

- Prior to collection, residents / designated staff will be responsible for transferring refuse from the dwellings / tenancies directly to the bins in their respective refuse room.
- On servicing days, the building manager will transfer the residential bins from the refuse room to the laneway for servicing.
- Once serviced, the building manager will return the empty bins directly to the refuse room to preserve the amenity of the laneway.

Residential Refuse Servicing

- Servicing will be conducted by a BSC contractor via a side-loading RCV.
- The RCV will enter and exit Balun Lane in a forward gear, and stand within the laneway, adjacent to the property boundary, for servicing.
- Servicing will have an unrestricted height clearance and will be conducted on a generally flat grade.
- The refuse collection area is located adjacent to the property boundary.
- All residential refuse streams will be serviced with a maximum collection frequency of once per week.

Commercial Refuse Servicing

- Servicing will be conducted on-site by a private contractor (i.e. Richmond Waste) via a rear loading RCV.
- The RCV will enter and exit the site in a forward gear, via Balun Lane.
- The RCV will stand on-site and stand within the loading area for servicing.
- Servicing will have a minimum 2.9m height clearance and will be conducted on a generally flat grade.
- Contractors will collect the bins directly from the refuse room and return them once serviced.
- General waste will be serviced with a maximum collection frequency of three times per week. Commingled recycling and FOGO will be serviced with a maximum collection frequency of twice per week.

APPENDIX A - Development Plans

BRUNSWICK HEADS

3-5 FINGAL ST

DRAWING LIST

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PROJECT SUMMARY

SITE AREA : 2,024m2

PROPOSED GFA:

	AREA (m2)
RETAIL	232
F&B	107
WC & STORE	38
TOTAL RESIDENTIAL	1,667
TOTAL GF	**377 (18%)**
RESIDENTIAL	**1,667 (82%)**
TOTAL	**2,044m2**
FSR	**1.01:1**

APARTMENT MIX:
2 BEDROOM - 5x
3 BEDROOM - 8x
TOTAL APARTMENTS - 13

PARKING

COMMERCIAL 1 per 20m2	
339m2	17 spaces
RESI (2 per 3 Bed, 1 per 2 bed)	
8x3 Bed	16 space
5x2 Bed	5 spaces
1 Visitor per 4 dwelling	4 spaces
TOTAL REQUIRED :	**42 spaces**
TOTAL PROPOSED:	**42 spaces**

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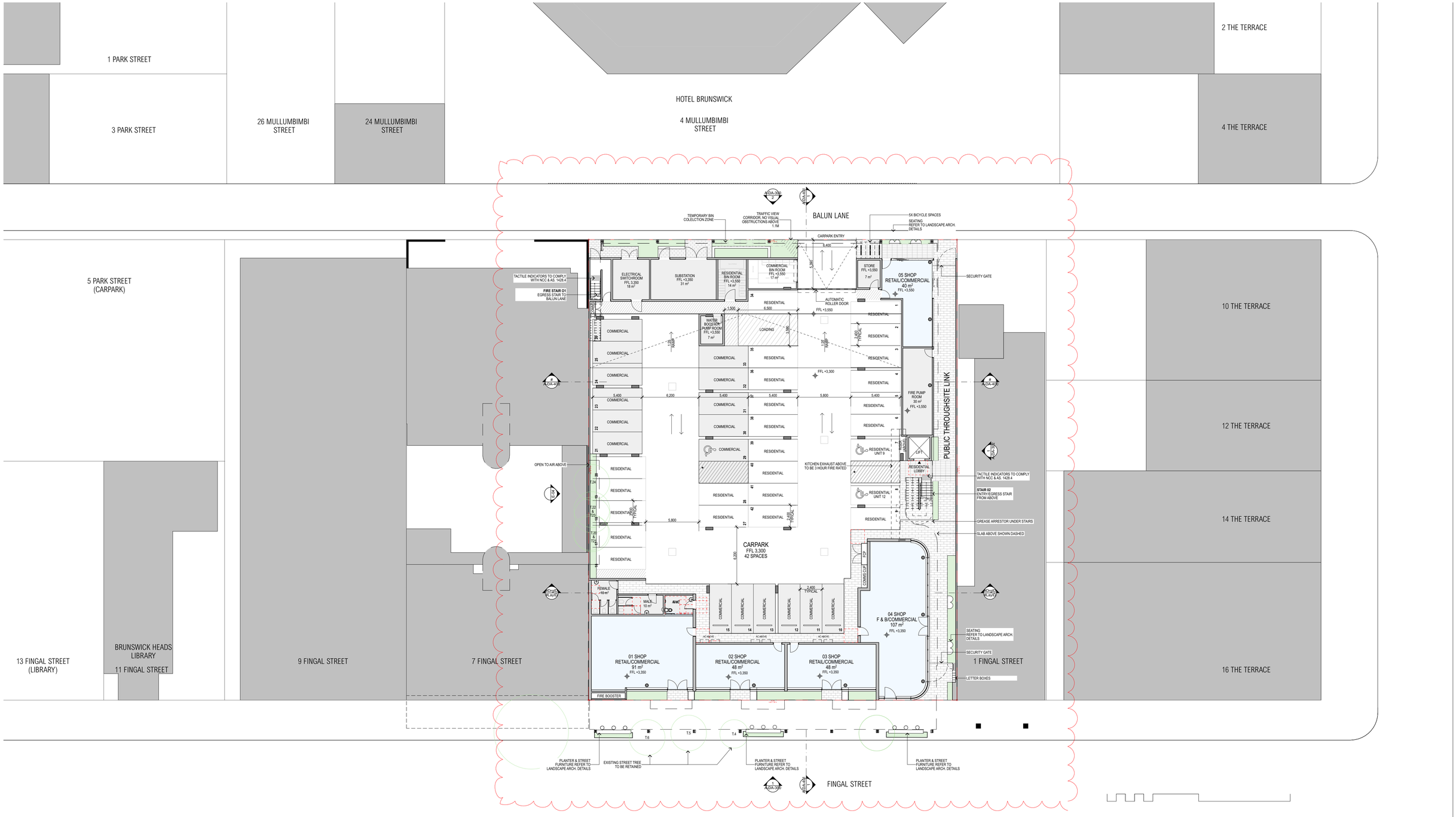
REV	DATE	ISSUE
01	30/1/2025	For Information
02	2/4/2025	Issue for DA
03	16/4/2025	Issue for DA
04	1/5/2025	Issue for DA
05	16/9/2025	Issue for DA

PROJECT
Brunswick Heads
3-5 Fingal Street, Brunswick Heads

PROJECT NUMBER	PLOT DATE	DRAWN	CHECKED	SHEET SCALE	SHEET SIZE	NORTH
210110	16/9/25				A1	

DRAWING TITLE
COVER PAGE

DRAWING NUMBER	REVISION
A-DA-000	05



1 / - GROUND 1:200

AREAS SHOWN ON FLOOR PLAN ARE CALCULATED FROM INTERNAL WALL TO INTERNAL WALL (NLA). FOR GFA CALCULATION REFER TO **DA-603 GFA SCHEDULE**

ARCHITECT

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PROJECT

Brunswick Heads

3-5 Fingal Street, Brunswick Heads

PROJECT NUMBER	PLOT DATE	DRAWN	CHECKED	SHEET SCALE	SHEET SIZE	NORTH
210110	16/9/25			1:200	A1	N

DRAWING TITLE

GROUND FLOOR PLAN

DRAWING NUMBER	REVISION
A-DA-200	05

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PROJECT

Brunswick Heads

3-5 Fingal Street, Brunswick Heads

PROJECT NUMBER	PLOT DATE	DRAWN	CHECKED	SHEET SCALE	SHEET SIZE	NORTH
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FIRST FLOOR PLAN

DRAWING NUMBER	REVISION
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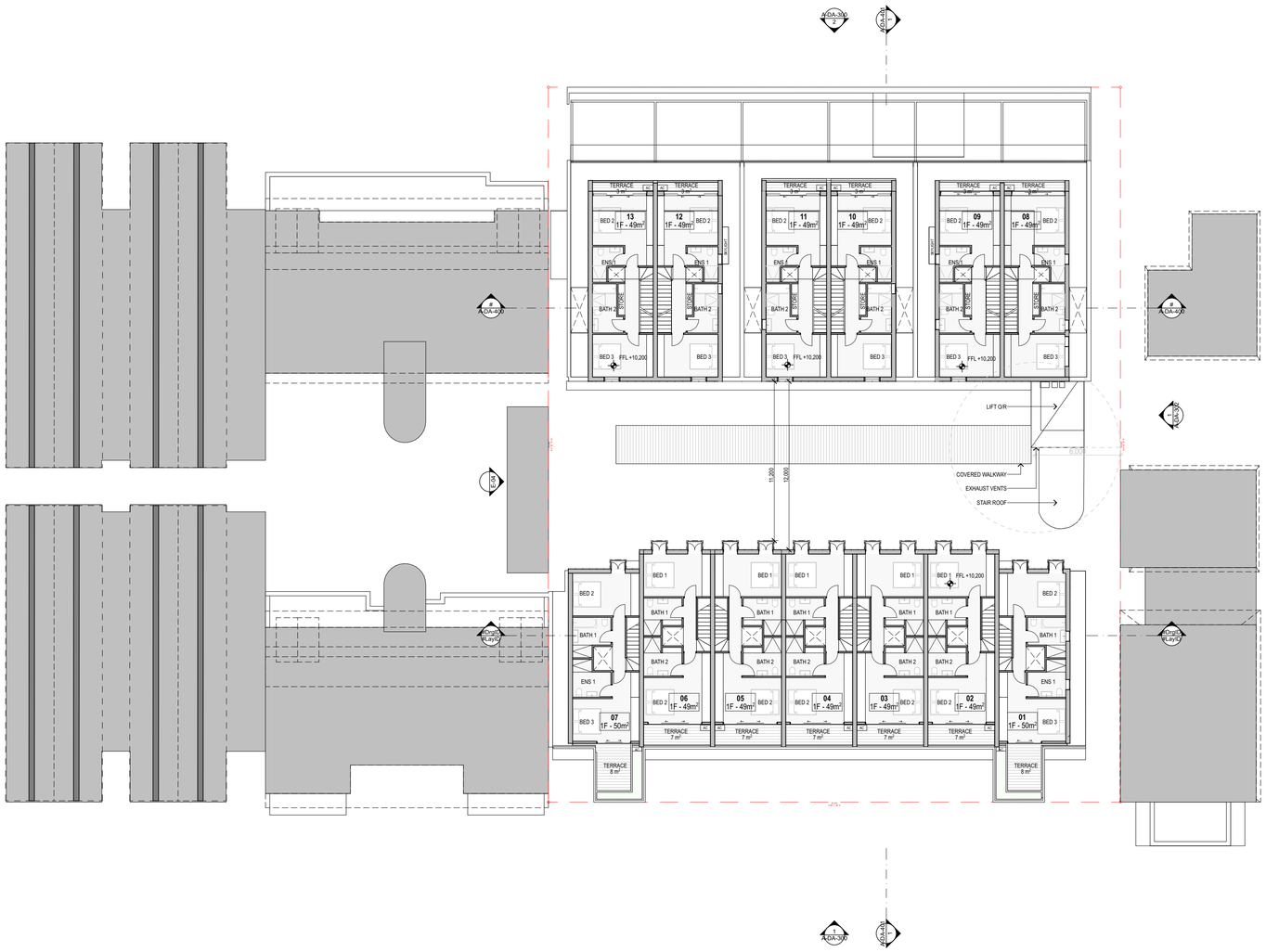

AREAS SHOWN ON FLOOR PLAN ARE CALCULATED FROM INTERNAL WALL TO INTERNAL WALL (NSA). FOR GFA CALCULATION REFER TO **DA-603 GFA SCHEDULE**

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PROJECT

Brunswick Heads

3-5 Fingal Street, Brunswick Heads

PROJECT NUMBER	PLOT DATE	DRAWN	CHECKED	SHEET SCALE	SHEET SIZE	NORTH
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DRAWING TITLE

SECOND FLOOR PLAN

DRAWING NUMBER	REVISION
A-DA-202	04

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, glass, aluminum, steel / tin cans, glass, cardboard, paper	Commingled recycling includes everyday items that are collected and later processed for recycling into new products and resources. Recycling separation diverts waste to landfill.
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. Dedicated bulky goods rooms are provided on the basement for residents and ground floor for commercial tenants.. When transferring heavy material, it is recommended to utilise assisted transfer such as pallet jacks or forklifts. Please refer to local and NSW 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. Refer to local and state government websites for further information.

APPENDIX C – Refuse Room Design Requirements

Component	General 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 generally 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 compactors or mechanical devices, if permitted for the mechanical handling and storage of waste and recycling, are to be fitted with safety operating and cut-off systems. ▸ 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.

APPENDIX D - Servicing Requirements

Component	General 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. ▸ Must be positioned to allow collection vehicles to enter and exit the site in a forward gear (internal servicing roadway). ▸ 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, entire pad not more than 5m from the property boundary, 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 following lists (Table 3.4 to Table 3.10) are designed to. 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

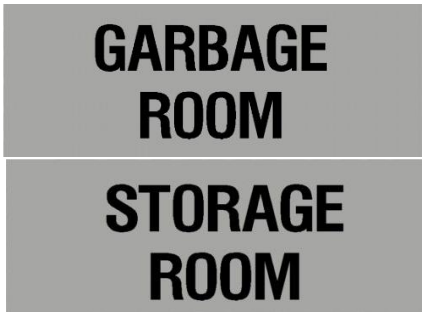
Manufacturer / Supplier	Equipment / Systems
Elephants Foot Recycling Solutions http://www.elephantsfoot.com.au	Compactors, Bin Lifters
Waste Initiatives https://wasteinitiatives.com.au	Compactors and Balers, Shredders, Sorting Equipment
Wastech http://wastech.com.au	Compactors, Bin Lifters
Pakmor http://pakmor.com.au	Compactors, Bin Lifters
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
ORCA Digester https://www.feedtheorca.com	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/nsw/	Various models exist including bottle return facilities and (automated) reverse vending machines

Contractors / Service Providers	Streams
JJ Richards	Commercial waste & recycling, cooking oils, hazardous waste, liquid waste, industrial waste, construction and demolition waste
Cleanaway	Commercial waste & recycling, cooking oils, hazardous waste, construction and demolition waste
Veolia	Commercial waste & recycling, Hazardous waste, liquid waste, industrial waste, construction and demolition waste, secure document destruction
Suez	Commercial waste & recycling, Liquid waste, electronic waste, construction and demolition waste
Toxfree	Hazardous waste, electronic waste, industrial waste
Ace Waste	Hazardous waste, industrial waste

APPENDIX G –
Example Signage

Standard Signage

Refuse Room / Facility Signage



Safety Signage

Refuse Equipment