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Uniting Kingscliff 24A Kingscliff Street, Kingscliff Waste Management Plan for Development Application March 2024

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1. Introduction

This Waste Management Plan (WMP) has been developed by Waste Audit & Consultancy Services (Aust) Pty Ltd (Waste Audit) to provide advice and guidance to the proposed development located at 24A Kingscliff Street, Kingscliff NSW regarding the effective management of general waste and recycling generated from operational, demolition, and construction activities and compliance with current Tweed Shire Council requirements and general best practice standards.

The intent of the WMP is to ensure that waste management practices are consistent across all areas and tenancies of the development, with the maximum quantity of materials directed away from landfill to more environmentally beneficial outcomes.

2. Project Description

The Seniors Housing development proposal comprises both independent living units (ILUs) and a residential aged care (RAC) facility, that will be supported by a range of other services. Specifically, the proposal includes:

- 199 independent living units, across 6 buildings ranging from 1 to 3 bedrooms with study;
- A 120 place residential aged care facility comprising private rooms with ensuites facilities;
- Onsite kitchen and laundry facilities;
- A seniors wellness centre;
- Medical and allied health consulting rooms;
- Recreational facilities and services such as a café, seniors' gym, function and activity spaces, cinema, hairdresser, day spa and outdoor swimming pool;
- Landscaped community gardens and outdoor gathering areas;
- Staff offices, meeting rooms and facilities; and
- Basement car parking.

The proposed works will be undertaken in two stages, generally being:

- Stage 1 – Demolition of the Lorien Way residences and construction of the Lorien Way entrance, 3 ILU buildings and the RAC;
- Stage 2 – Demolition of remaining existing aged care facilities, construction of the Kingscliff Street entrance and remaining 3 ILU buildings.

Under the *Environmental Planning & Assessment Act 1979* (EP&A Act), development consent for the proposal is being sought through the State significant development pathway.

3. Reference Documents

The following documents have been used as references in compiling this WMP:

- Tweed Shire Council Development Control Plan Section A15 *Waste Minimisation and Management*
- NSW Government *Planning Secretary's Environmental Assessment Requirements – Seniors Housing*
- Dunnings Consulting Engineers – *Acid Sulfate Soil Management Plan – PG7738 V3*
- Dunnings Consulting Engineers - *Geotechnical Investigation – PG7738 V4*
- ptc *Transport Impact Assessment* March 2024
- Greencap *Compliance Hazardous Materials and Risk Assessment* August 2022

4. SEARs Requirements

The following Secretary's Environmental Assessment Requirements (SEARs) requirements are applicable to the development:

18. Waste Management

- Identify, quantify and classify the likely waste streams to be generated during construction and operation
- Provide the measures to be implemented to manage, reuse, recycle and safely dispose of this waste
- Identify appropriate servicing arrangements for the site
- If buildings are proposed to be demolished or altered, provide a hazardous materials survey (note: this is outside Waste Audit's scope and will be provided by another consultant)

5. General Waste & Recycling Generation

5.1 Apartment Buildings A-F:

Table 1 shows expected weekly volumes of materials from the residential apartments. These have been calculated based on the following Tweed Shire Council waste generation rates:

General Waste: 80 litres/week per dwelling / Mixed Recycling: 40 litres/week per dwelling

Table 2 shows general waste and recycling generation in litres/week for Buildings A-F, based on the following dwellings per building:

Building A: 16

Building B: 25

Building C: 48

Building D: 34

Building E: 34

Building F: 42

Table 2: Apartment General Waste & Recycling Generation (Litres/Week)

| Material Stream | Building | | | | | | Total Litres/Week |
|-----------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------------|
| | A | B | C | D | E | F | |
| General Waste | 1,280 | 2,000 | 3,840 | 2,720 | 2,720 | 3,360 | 15,920 |
| Mixed Recycling | 640 | 1,000 | 1,920 | 1,360 | 1,360 | 1,680 | 7,960 |
| Total | 1,920 | 3,000 | 5,760 | 4,080 | 4,080 | 5,040 | 23,880 |

Three shared external bin storage areas have been provided for residents from Buildings A-F to take their general waste and recyclables to as shown in Appendix B:

Area 1 - Buildings A-C

Area 2 - Building D

Area 3 - Buildings E-F

Calculations showing bins and sizes of each of these areas are shown in Table 3 and are based on 3 times per week general waste collection and 2 times per week recycling collection by

private waste contractor. Adequate space has been allowed in each area for bins, access, and circulation.

Table 3: Apartment Bins & Storage

| Material Stream | Collection Frequency | Storage Area | Bin Size (litres) | Litres/ Week | Number of Bins per Storage Area | | |
|--|----------------------|--------------|-------------------|---------------|---------------------------------|------------|-------------|
| | | | | | Area 1 | Area 2 | Area 3 |
| General Waste | 3 per week | Area 1 | 660 | 7,120 | 4 | | |
| Mixed | 2 per week | Area 1 | 660 | 3,560 | 3 | | |
| General Waste | 3 per week | Area 2 | 660 | 2,720 | | 2 | |
| Mixed | 2 per week | Area 2 | 660 | 1,360 | | 2 | |
| General Waste | 3 per week | Area 3 | 660 | 6,080 | | | 4 |
| Mixed | 2 per week | Area 3 | 660 | 3,040 | | | 3 |
| Total | | | | 23,880 | 7 | 4 | 7 |
| Footprint per Bin (m²) | | | | | 1.2 | 1.2 | 1.2 |
| Total Footprint (m²) | | | | | 8.4 | 4.8 | 8.4 |
| + 50% for Access & Circulation | | | | | 4.2 | 2.4 | 4.2 |
| Total Storage Area Required (m²) | | | | | 12.6 | 7.2 | 12.6 |
| Room Size (m²) | | | | | 18.5 | 7.8 | 15.5 |

5.2 RACF

The development will also include a Residential Aged Care Facility (RACF) containing a variety of office, communal, and recreational areas on Ground Level, and 120 apartments on Levels 1-3. The following waste generation rates have been used to calculate ongoing volumes of operational general waste and recycling for the RACF Ground Level:

General Waste: 80 litres/day/100 m² floor area

Mixed Recycling: 50 litres/day/100 m² floor area

For residential units, the Tweed Shire Council's standard waste generation rates are used:

General Waste: 80 litres/week per dwelling / Mixed Recycling: 40 litres/week per dwelling

Table 4 shows expected weekly volumes of materials in litres/week based on the above generation rates, the RACF's internal area of 7,179 m² and 120 residential apartments, and 7 days/week operation. The location of the RACF waste storage room is shown in Appendix B.

Table 4: RACF & Residential Apartments General Waste & Recycling Generation (Litres/Week)

| Material Stream & Area | Bin Size (litres) | Litres/ Week | Collection Frequency | Number of Bins Required | Total Bin Footprint |
|--|-------------------|---------------|----------------------|-------------------------|---------------------|
| General Waste - RACF | 660 | 6,615 | | | |
| Mixed Recycling - RACF | 660 | 4,135 | | | |
| General Waste - Residential | 660 | 9,600 | | | |
| Mixed Recycling - | 660 | 4,800 | | | |
| Total Litres/Week General Waste | | 16,215 | 3 per week | 9 | 10.8 |
| Total Litres/Week Mixed Recycling | | 8,935 | 2 per week | 8 | 9.6 |
| Total Bins | | | | 17 | 20.4 |
| + 30% for Access & Circulation | | | | | 6.1 |
| Total Storage Area Required (m²) | | | | | 26.5 |
| Room Size (m²) | | | | | 26.7 |

An 8 m² enclosed room will be situated in the RACF's external loading area for storage of bulky waste items such as furniture, mattresses, and other materials too large to fit into the site's 660-litre mobile bins. A 4 m² bunded bin washing facility will also be provided in this area.

6. Waste Storage, Access, & Loading

6.1 Storage Areas

The following is based on Tweed Shire Council's guidelines for waste storage and loading areas, **Appendix G: Commercial/Industrial Waste and Recycling Storage Areas**:

Building Code of Australia

Waste/recycling storage areas must be constructed in accordance with the requirements of the Building Code of Australia (BCA).

Location and Appearance

Waste/recycling storage areas must be integrated into the design of the overall development. Materials and finishes that are visible from outside should be similar in style and quality to the external materials used in the rest of the development.

Waste/recycling storage areas must be located and designed in a manner that reduces adverse impacts upon neighbouring properties and the streetscape. The location and design of the areas should minimise adverse impacts associated with:

- The proximity of the area to dwellings
- The visibility of the area
- Noise generated by any equipment located within the area
- Noise generated by collection vehicles accessing the site; and
- Odours emanating from the area.

The external waste storage areas will be provided with roofing compatible with the development's overall design and aesthetics to reduce visual impacts and improve user amenity (i.e. shade and protection from rain). As bins will be wheeled out of these areas for collection by the waste contractor, this provision will not impact waste servicing operations.

Size

Waste/recycling storage areas must be of adequate size to comfortably accommodate all waste and recycling bins associated with the development.

Waste/recycling storage areas must be able to accommodate separate general waste bins and recycling bins which are of sufficient volume to contain the quantity of waste generated (at the rate described in Appendix B) between collections.

Layout

The gradient of waste/recycling storage area floors and the gradient of any associated access ramps must be sufficiently level so that access for the purpose of emptying containers can occur in accordance with WorkCover NSW Occupational Health and Safety requirements.

Within waste/recycling storage areas, containers used for the storage of recyclable materials should be kept separate from (but close to) general waste containers — so that the potential for contamination of recyclable materials is minimised.

Access: Waste/Recycling Collection

The development must be designed to allow access by collection vehicles used by the nominated waste contractor. Wherever possible, the site must be configured to allow collection vehicles to enter and exit the site in a forward direction and so collection vehicles do not impede general access to, from and within the site. Access driveways to be used by collection vehicles must be of sufficient strength to support such vehicles.

Servicing arrangements for the emptying of bins must be compatible with the operation of any other loading/unloading facilities onsite. Access for the purpose of emptying waste/recycling storage containers must be able to occur in accordance with WorkCover NSW Occupational Health and Safety requirements.

Access: General

In commercial development, public buildings and industrial development, there must be convenient access from each tenancy to the waste/recycling storage area(s). There must be step-free access between the point at which bins are collected/emptied and the waste/recycling storage area(s).

Arrangements must be in place so that the waste/recycling storage area is not accessible to the general public.

Vermin must be prevented from entering the waste/recycling storage area.

Surfaces

Waste/recycling storage areas must have a smooth, durable floor and must be enclosed with durable walls/fences that extend to the height of any containers kept within.

Doors/Gates

Doors/gates to waste/recycling storage areas must be durable. There must be a sign adjacent to the door/gate that indicates that the door/gate is to remain closed when not in use. All doors/gates are to be openable from both inside and outside the storage area and must be wide enough to allow for the easy passage of waste/recycling containers.

Services

Waste/recycling storage areas will be provided with a cold-water bin washing facility. The hose cock must be protected from the waste containers and must be located in a position that is easily accessible when the area is filled with waste containers.

The floor must be graded so that any water is directed to a sewer authority (Tweed Shire Council) approved drainage connection located upon the site.

Signage

Waste/recycling storage areas must include signage that clearly describes the types of materials that can be deposited into recycling bins and general garbage bins.

Management

Arrangements must be in place for the regular maintenance and cleaning of waste/recycling storage areas. Waste/recycling containers must only be washed in an area which drains to a sewer authority (Tweed Shire Council) approved drainage connection.

The Better Practice Guide for Waste Management in Multi-Unit Dwellings gives detailed information about waste/recycling storage rooms and facilities. The Guide was reviewed in 2007 and is available on the OEH website (www.environment.nsw.gov.au).

6.2 Truck Access & Loading

The private waste contractor vehicle will drive through the development and stop at each bin storage area and the RACF waste storage room for loading to be done by contractor staff.

Collections will comply with Council's time restrictions, ensuring that the loading and bin return process occurs with minimal disruption to other site traffic, and that no litter or spills are created. Once all bins have been emptied, vehicles will exit the site in a forward direction.

Uniting's private waste contractor will assist in this process by bringing the empty bins back to each room and rearranging the bins correctly.

Specifications of private contractor collection vehicles are detailed in Appendix A.

6.3 Management Practices

The development will ensure that the following regularly scheduled tasks are carried out:

- Maintaining all equipment and storage areas in a clean and organised manner
- Uniting's maintenance contractor will undertake regular washing of bins under a proactive maintenance plan to prevent accumulation of dirt and odours in bins and storage areas
- Uniting's private waste contractor will ensure all bins are correctly returned to and arranged in each of the waste storage areas (external areas 1-3 and the RACF waste room)
- Monitoring of waste contractor performance including timing of collections, spillages, and condition of bins and equipment

As detailed in Section 5.2, a bulky waste store will be provided for the use of all residents. Access will be provided by RACF staff and, if required, assistance with moving bulky items from individual dwellings to this room.

7. Resident, Tenant, & Staff Education

All site occupants and staff (residents, facilities management, and cleaning contractors) will receive detailed information on recycling and waste management as part of the general building induction and orientation process. Refresher training activities will be conducted annually to promote and reinforce correct practices.

Uniting's management team will be responsible for guiding this initiative.

Examples of suitable educational signage are shown in Appendix C.

8. Demolition Waste

Table 5 shows estimated quantities of demolition waste to be generated, and management strategies for each type of material, based on the structures to be demolished, vegetation removal, and the earthworks and excavation works to be undertaken.

Uniting's waste contractor will be able to advise on the most cost-effective and environmentally sustainable solution for the development to ensure the highest possible levels of resource recovery.

Table 5: Demolition Waste - Expected Materials Streams

| Materials on Site | | | | Destination/Processing/Disposal | | |
|--|---------------------|---------------|--------------------|---|---|---|
| Type of Material | Est. m ³ | Recovery Rate | Net m ³ | Onsite | Offsite | Disposal |
| Asphalt/ Bricks | 300 | 98% | 294 | Separated on site and crushed for use in pavement and/or temporary access road construction | Acceptable quality bricks collected by contractor for reuse. Unusable bricks collected and recycled at recycling facility to be used in aggregate gravel products | No disposal to landfill |
| Trees & Vegetation | 150 | 100% | 150 | Possible onsite reuse | Material to be taken to organic waste facility for processing for reuse in landscaping works if feasible | No disposal to landfill |
| Metals - Roofing & Structural | 200 | 99% | 198 | No on-site reuse or recycling | Collected in mixed content bin then taken to recycling facility for separation and processing | No disposal to landfill |
| Floor Coverings | 80 | 95% | 76 | No on-site reuse | Collected in designated bin and sent for recycling if of sufficient quality; otherwise sent to landfill | Material that cannot be recycled will be sent to landfill |
| Structural Timber | 100 | 95% | 95 | Possible onsite reuse | Untreated timber collected and recycled at timber yard. Unrecyclable timber will be sent to landfill | Material that cannot be recycled will be sent to landfill |
| Plasterboard | 80 | 98% | 78 | No on-site reuse | Material to be separated onsite and collected by contractor for recycling for use as soil improver with gypsum removed by recycler | Material that cannot be recycled will be sent to landfill |
| Glazing | 50 | 100% | 50 | No on-site reuse or recycling | Sent for reuse if feasible and/or recycling depending on condition | No disposal to landfill |
| Wiring, Electrical Fittings | 30 | 100% | 30 | No on-site reuse | Collected by specialist metal subcontractor for separation into different metal types for recycling | No disposal to landfill |
| Plumbing, Fixtures – Gas Tank and Pipework | 60 | 100% | 60 | No on-site reuse | Gas Tank and Pipework Collected by specialist contractor Collected by specialist metal subcontractor for separation into different metal types for recycling | No disposal to landfill/ Specialist Recycler |

| Materials on Site | | | | Destination/Processing/Disposal | | |
|---|---------------------|---------------|--------------------|---|--|-------------------------|
| Type of Material | Est. m ³ | Recovery Rate | Net m ³ | Onsite | Offsite | Disposal |
| Lighting Fixtures, Lamps (Non-Hazardous) | 40 | 100% | 40 | No on-site reuse or recycling | Collected by specialist contractor for recycling | No disposal to landfill |
| Roofing Tiles | 150 | 100% | 150 | No on-site reuse or recycling | Collected by specialist contractor for recycling | No disposal to landfill |
| Bathroom & Kitchen Tiles | 20 | 100% | 20 | No on-site reuse or recycling | Sent for reuse if feasible and/or recycling depending on condition | No disposal to landfill |
| General Waste (All Materials Unsuitable for Reuse/Recycling) | 50 | 0% | 0 | No on-site reuse or recycling | Collected by contractor for treatment and correct disposal | Disposal to landfill |
| TOTAL MATERIALS | 1,310 | 94.8% | 1,241 | The construction stage will produce around 1,310 m³ of waste materials, of which 1,241 m³ or 94.8% can potentially be diverted from landfill, by being reused on site, or recycled off-site at specialised facilities. | | |

9. Construction Waste

The project's waste management objectives and targets for construction waste will include:

- Meeting all waste management standards while ensuring the health and safety of all workers on the project during demolition and construction
- Maximising the quantities of materials diverted from landfill by reusing materials onsite and offsite, and recycling/reprocessing materials off-site
- The diversion from landfill of 80% of construction waste by weight, to meet the criteria of the NSW Government's waste legislation, policy settings and regulatory regime
- Disposal of no more than 20% of residual waste materials to a licensed landfill in accordance with both regulatory and legal requirements

Waste contractors and construction contractors will be required to provide monthly reports to the Project Manager on waste reused, reprocessed/recycled, and sent to landfill.

All reports will include the following information:

- Date and time material removed
- Material type and amount (in kg and/or cubic metres)
- Processing facility material taken to, and facility licensing information
- Vehicle registration and waste contractor's company details

If hazardous materials are encountered, the relevant contractor will be required to implement a standard Unexpected Findings procedure. Details of this procedure will be provided to Uniting and its project managers before commencement of any work.

Table 6 shows estimated quantities in cubic metres of construction waste, and management practices and processing/disposal outcomes for each material type, including materials generated from deliveries, such as pallets, pallet wrap, cardboard packaging, and general waste and recyclables disposed of by contractor staff.

There are a limited number of licensed local facilities that will be suitable for processing of collected materials. Uniting's waste contractor will be able to advise on the most cost-effective and environmentally sustainable solution for the development to ensure the highest possible levels of resource recovery.

Table 6: Construction Waste - Expected Materials Streams

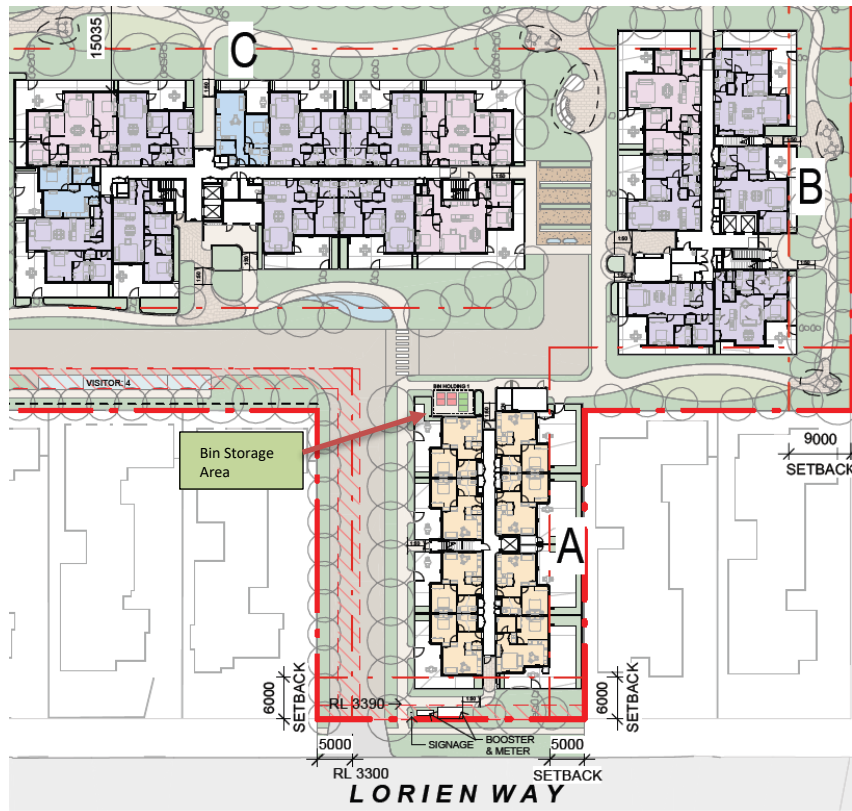
| Materials on Site | | | | Destination/Processing/Disposal | | |
|----------------------------------|---------------------|---------------|--------------------|---------------------------------|---|---|
| Type of Material | Est. m ³ | Recovery Rate | Net m ³ | Onsite | Offsite | Disposal |
| Excavation Material (Soil, Rock) | 90,000 | 20% | 18,000 | No reuse/recycling | Collected via truck and taken to disposal facility as likely contaminated ASS | Dispose of residual materials to landfill |
| Pallet Wrapping (Soft Plastic) | 87 | 95% | 82 | Reuse where possible | Collected in mixed content bin then taken to recycling facility for separation and processing | Dispose of residual materials to landfill |
| Used Pallets | 84 | 90% | 75 | Reuse where possible | | Dispose of residual materials to landfill |
| General Waste | 70 | 0% | 0 | No reuse/recycling | Collected in mixed content bin then taken to recycling facility for separation and processing | Disposal to landfill |

| Materials on Site | | | | Destination/Processing/Disposal | | |
|----------------------|---------|---------------|--------|---|---|---|
| Type of Material | Est. m³ | Recovery Rate | Net m³ | Onsite | Offsite | Disposal |
| Cardboard Recycling | 67 | 100% | 67 | Reuse where possible | Collected in mixed content bin then taken to recycling facility for separation and processing | No disposal to landfill |
| Metal Offcuts | 59 | 98% | 58 | No reuse/ recycling | Collected in mixed content bin then taken to recycling facility for separation and processing | Dispose of residual materials to landfill |
| Plasterboard Offcuts | 53 | 90% | 48 | No reuse/ recycling | | Dispose of residual materials to landfill |
| Floor Coverings | 50 | 90% | 45 | No reuse/ recycling | | Dispose of residual materials to landfill |
| Plastics Recycling | 42 | 95% | 40 | No reuse/ recycling | | Dispose of residual materials to landfill |
| Timber Offcuts | 39 | 95% | 37 | Potential for onsite reuse | Collected in mixed content bin then taken to recycling facility for separation and processing | Dispose of residual materials to landfill |
| Concrete (Excess) | 34 | 98% | 33 | No reuse/ recycling | Collect in designated bin and send for recycling | No disposal to landfill |
| Glass (Excess) | 28 | 98% | 27 | No reuse/ recycling | | No disposal to landfill |
| TOTAL MATERIALS | 90,612 | 97.8% | 18,513 | The construction stage will produce around 90,612 m³ of waste materials, of which 18,513 m³ or 97.8% (non-excavation materials) can potentially be diverted from landfill, by being reused on site, or recycled off-site at specialised facilities. | | |

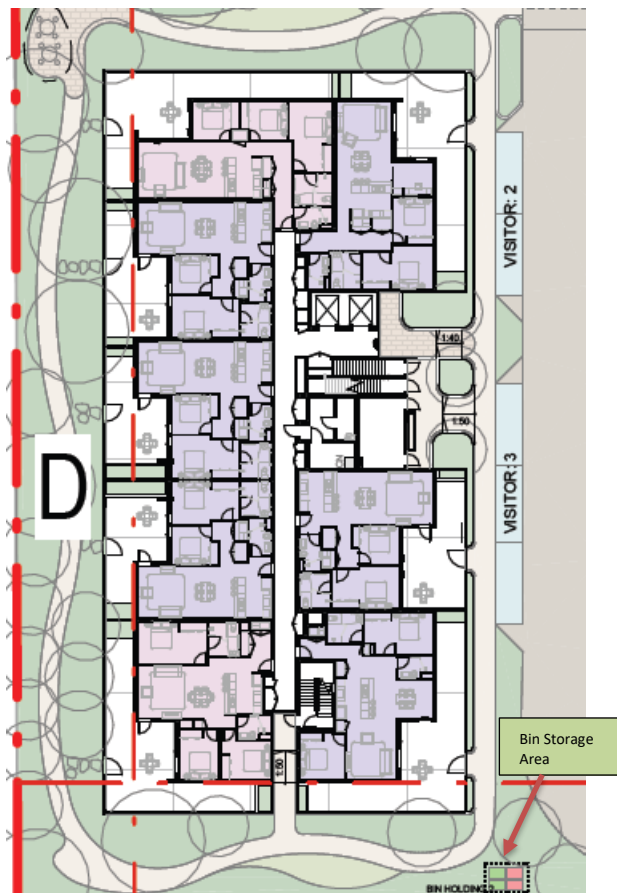
*Due to high likelihood excavation materials are acid sulphate soils – not included in recoverable materials.

Appendix A: Waste Storage Areas

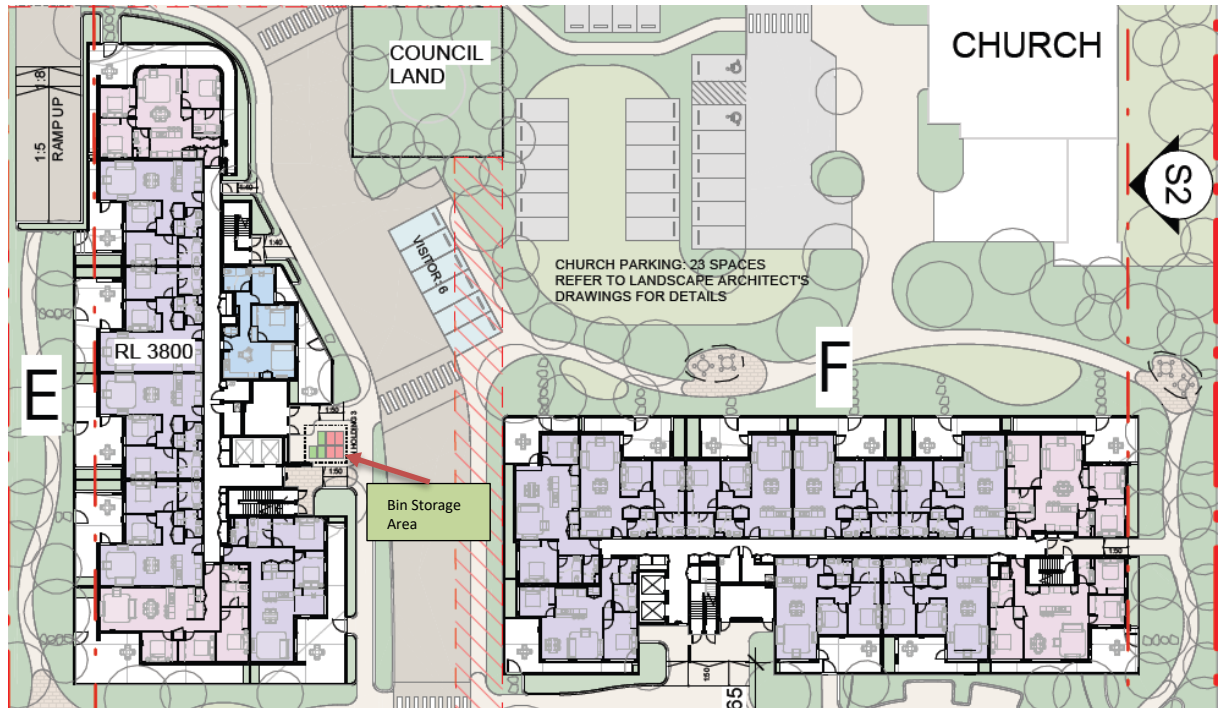
Buildings A-C



Building D



Buildings E-F



RACF



Appendix B: Storage Area Design, Layout, & Signage

The photographs below show examples of best practice in storage area design and layout:



The signage examples below are for illustration purposes only and actual signage should include suitable site-specific branding.



Appendix C: Waste Collection Vehicle Swept Paths

The following drawing extract from ptc traffic consultants' *Transport Impact Assessment* dated 3/10/23 shows vehicle swept paths for private contractor trucks that will be used for collections of the development's operational general waste and recycling.

Swept path analysis for waste collection vehicles has been based on standard Heavy Rigid Vehicle (HRV) dimensions as specified in AS 2890.2 Part 2, as follows:

| | |
|--------------------------|-------------------------|
| Overall Length: | 12.5 metres |
| Width: | 2.5 metres |
| Clearance Height: | 2.5 metres waste |
| Turning Radius: | 12.5 metres |

