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# 171 Wattle Road, Shellharbour Seniors Housing Development

Stage 1 Residential Detailed Development  
Application Submission

## Operational Waste Management Plan

July 2025

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## 1. Introduction

This Operational Waste Management Plan (OWMP) has been developed by Waste Audit & Consultancy Services (Aust) Pty Ltd (Waste Audit) to provide advice and guidance to the proposed seniors housing development located at 171 Wattle Road, Shellharbour NSW regarding the effective management of operational general waste and recycling and compliance with current legislation and best practice standards.

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

## 2. Project Background

Uniting is responsible for the Uniting Church's ministry for older people, particularly those who are disadvantaged, vulnerable and isolated. Uniting operates more than 200 aged care services, with more than 14,000 clients in residential and community care programs and employs over 3,500 full time equivalent staff across NSW/ACT.

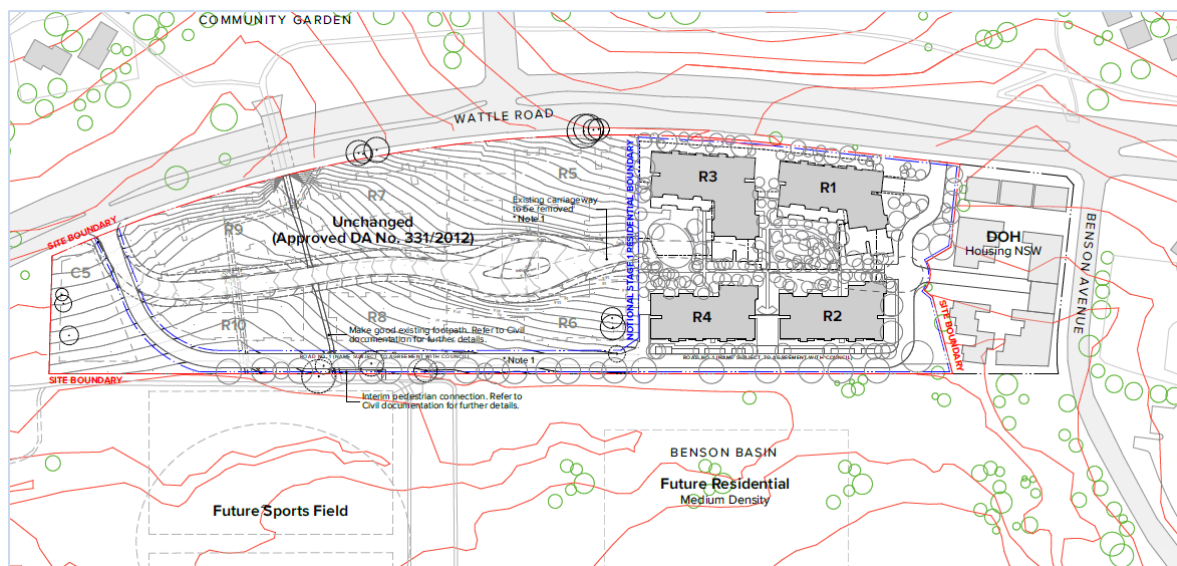
In 2014 approval was obtained for a Seniors Housing masterplan proposing 45,800 m<sup>2</sup> of GFA in 11 separate buildings spread across the site.

The site is known as Lot 2 in DP 1043053 and has an area of 4.263ha. It is broadly rectangular, with a curved boundary to Wattle Road and is approx. 107m wide along its southern boundary and 56 m wide along its northern boundary. The eastern and western boundaries are each approx. 430m long. It is bounded by Wattle Road to the east, residential land and a drainage reserve to the north and west, and a residential housing development.

The only structures on the site are:

- a private cul-de-sac running north to south for the length of the site immediately to the south (this cul-de-sac is known as Davey Close), and
- a concrete footpath running east to west across the site and linking the pedestrian underpass beneath Wattle Road to the footpath parallel to and immediately outside the sites' western boundary.

Figure 1: Site Plan – 171 Wattle Road, Shellharbour



### 3. Project Proposal

The construction of this seniors housing project will be done in several stages, with the current proposal being stage 1.

The first residential stage of an approved Seniors Housing development comprising of 4 buildings, between 4 and 6 storeys in height and containing 152 independent living units, common area uses, Ground Level parking and the construction of a new roadway servicing the development. 152 Independent Living Units (ILUs), being a mix of 1, 2 and 3 bed typologies. There will also be a range of communal uses such as meeting rooms, communal area and lobby.

### 4. Reference Documents

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

- Shellharbour Council DCP – *Chapter 15, Waste Minimisation and Management*
- Department of Environment - *Better Practice Guide for Waste Management in Multi-Unit Dwellings 2008*
- City of Sydney's - *Guidelines for Waste Management in New Developments 2018*
- NSW EPA - *Better Practice Guide for Resource Recovery in Residential Developments 2019*

### 5. General Waste & Recycling Generation

#### 5.1 ILUs

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

General Waste: 80-litre/ unit/ week

Mixed Recycling: 40-litre/ unit/ week

*(Better Practice Guide for Waste Management in Multi-Unit Dwellings)*

Table 1 shows general waste and recycling generation in litres/week for Buildings R1, R2, R3 and R4, based on the following dwellings per building:

Building R1: 44

Building R2: 28

Building R3: 52

Building R4: 28

Table 1: Residential ILU General Waste & Recycling Generation

| Material Stream | Building |       |       |       | Total<br>Litres/Week |
|-----------------|----------|-------|-------|-------|----------------------|
|                 | R1       | R2    | R3    | R4    |                      |
| General Waste   | 3,520    | 2,240 | 4,160 | 2,240 | 12,160               |
| Mixed Recycling | 1,760    | 1,120 | 2,080 | 1,120 | 6,080                |
| Total           | 5,280    | 3,360 | 6,240 | 3,360 | 18,240               |

Table 2 shows the following numbers of bins required per building, based on the following collection schedules:

Table 2: ILU Bins & Storage

| Material Stream                   | Bin Size (litres) | Building |      |       |      | Collection Frequency |
|-----------------------------------|-------------------|----------|------|-------|------|----------------------|
|                                   |                   | R1       | R2   | R3    | R4   |                      |
| General Waste                     | 660               | 3        | 2    | 4     | 2    | 2 x weekly           |
| Mixed Recycling                   | 660               | 2        | 2    | 3     | 2    | 2 x weekly           |
| Total Bins                        |                   | 5        | 4    | 7     | 4    |                      |
| Footprint/Bin (m <sup>2</sup> )   |                   | 1.51     | 1.51 | 1.51  | 1.51 |                      |
| Total Footprint (m <sup>2</sup> ) |                   | 7.55     | 6.0  | 10.57 | 6.0  |                      |

Bin footprints and storage area figures include a margin of 200 mm space between bins.

Table 3 provides a breakdown, by building, of the storage rooms that have been provided in the development's common ground level to manage the volumes of materials that will be generated on a weekly basis.

Table 3: ILU Bin Storage Room Sizing

| Material Stream                   | Bin Size (litres) | Building |        |          |        |
|-----------------------------------|-------------------|----------|--------|----------|--------|
|                                   |                   | R1       | R2     | R3       | R4     |
| Total Bins                        | 660               | 5        | 4      | 7        | 4      |
| Footprint/Bin (m <sup>2</sup> )   |                   | 1.51     | 1.51   | 1.51     | 1.51   |
| Total Footprint (m <sup>2</sup> ) |                   | 7.55     | 6.0    | 10.57    | 6.0    |
| Room Sizing (m <sup>2</sup> )     |                   | 16       | 14     | 29       | 13     |
| Chute System                      |                   | Linear   | Linear | Carousel | Linear |

Rooms have been sized to allow adequate space for bins and chute systems (both linear bin tracks & carousel system inside the waste rooms), and space for staff access and movement.

## 5.2 Internal Communal, Retail and Resident Areas

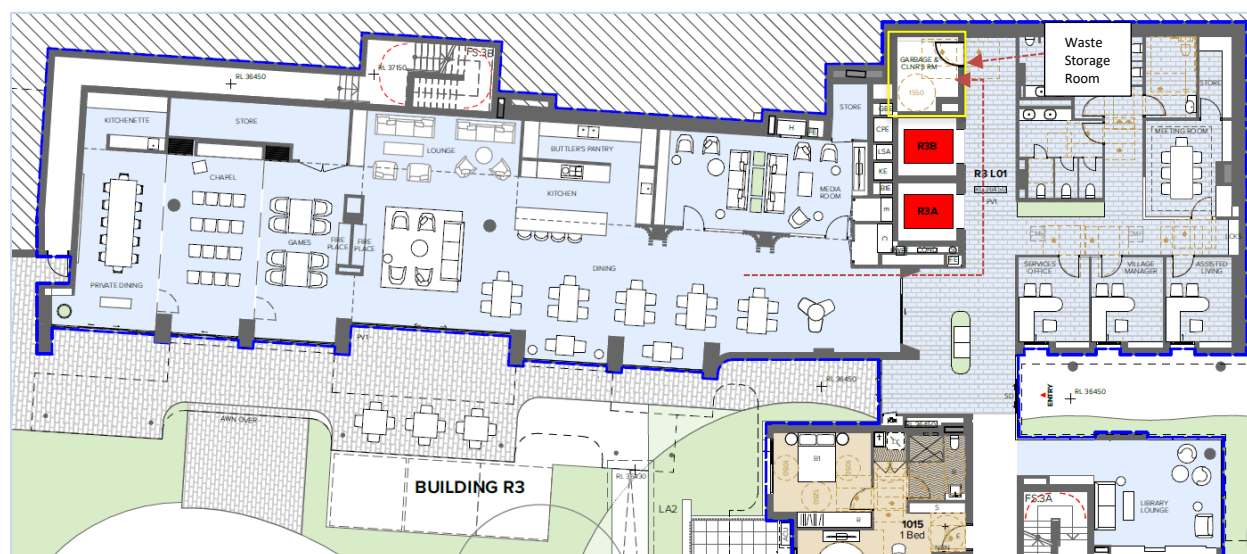
The development will also include internal communal facilities across the buildings, for the use of residents and their guests. These areas will consist of lounge area, dining, games area, kitchenette, media room and meeting rooms. Domestic cooking facilities will be available in clubrooms and it is envisaged this will predominantly be reheating of food.

On occasion caterers will use the facilities for larger functions. These areas will produce general waste and recycling based on the generation rates below:

General Waste: 10 litres of material/100 m<sup>2</sup> of floor area/day  
Mixed Recycling: 10 litres of material/100 m<sup>2</sup> of floor area/day

The waste storage area in figure 2 will house four 240 litre MGB's which will be used to contain the small amount of waste generated by these communal facilities.

Figure 2: Internal Communal, Retail and Resident Areas



### 5.3 Communal Areas

The development will also include external communal facilities across the site, for the use of residents and their guests. Barbeque facilities will be available on R1, R3 and R5 and it is envisaged this will be used on occasion for social events and larger functions.

|                                        |                      |
|----------------------------------------|----------------------|
| Level 1: Communal Garden and Courtyard | 3,568 m <sup>2</sup> |
| Level 3: Communal Paved                | 464 m <sup>2</sup>   |
| Level 5: Communal Terrace              | 355 m <sup>2</sup>   |

Communal areas will furnish only small numbers of waste bins and influence residents to 'take their waste with them'. These areas will produce small amounts of general waste, recycling, garden pruning's and organic based on the generation rates below:

|                  |                                                           |
|------------------|-----------------------------------------------------------|
| Green Organics:  | 5 litres of material/100 m <sup>2</sup> of floor area/day |
| General Waste:   | 5 litres of material/100 m <sup>2</sup> of floor area/day |
| Mixed Recycling: | 5 litres of material/100 m <sup>2</sup> of floor area/day |

Gardeners employed by building management will be strictly required to remove their own waste as the complete their tasks and leave site.

A limited number of 660L MGB's will be available to collect garden waste across the week, where foliage has come down and during extreme weather events.

### 5.4 Additional Waste Management Practices

Additional waste management practices that will be used within the Shellharbour development are as follows;

- Gardeners are required to remove their own waste from site when they leave
- Communal areas are to remain largely bin-less and influence residents to 'take their waste with them' when they leave the area
- The use of a Bin-tug to transport bins across the extents of the development
- The monitoring, by management, of the chute rooms and the help with waste bin placement
- The monitoring, by management, of bulky goods and the help with storage

## 6. Chute System

### 6.1 ILUs

A chute system will be implemented in each ILU building for general waste. Residents will access chutes on each level as shown in Figures 3 to 6, with the chutes terminating in the respective storage rooms in ground level.

Recycling management is outlined below in section 8.3.

Site staff will manage the servicing of the bins via the lift to the ground level and also by monitoring the cleanliness and organisation of each chute room. Empty bins will be washed out in each bin room on a regular basis.

Figure 3: Building R1 Residential Chute Location

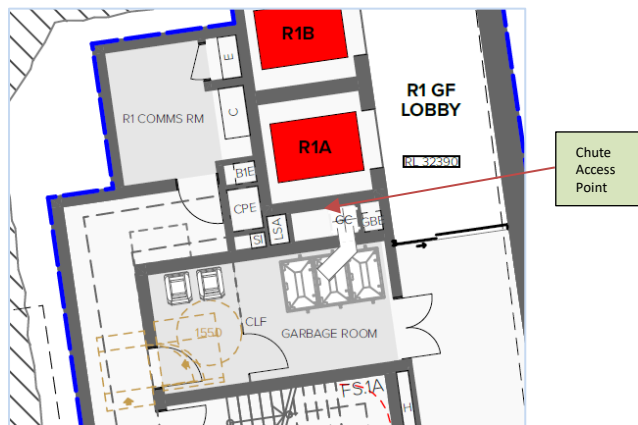


Figure 4: Building R2 Residential Chute Location

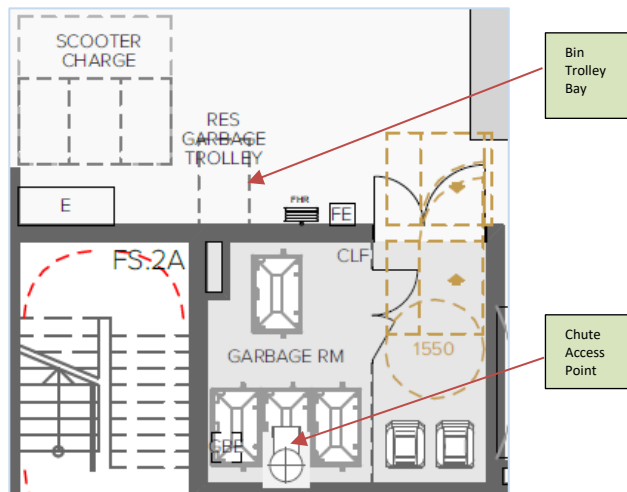


Figure 5: Building R3 Residential Chute Location

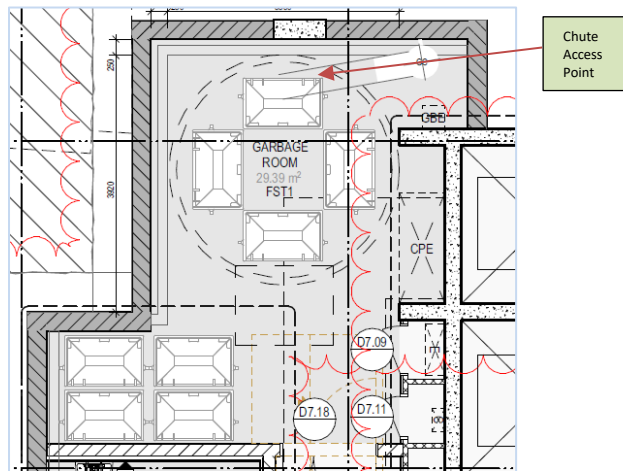
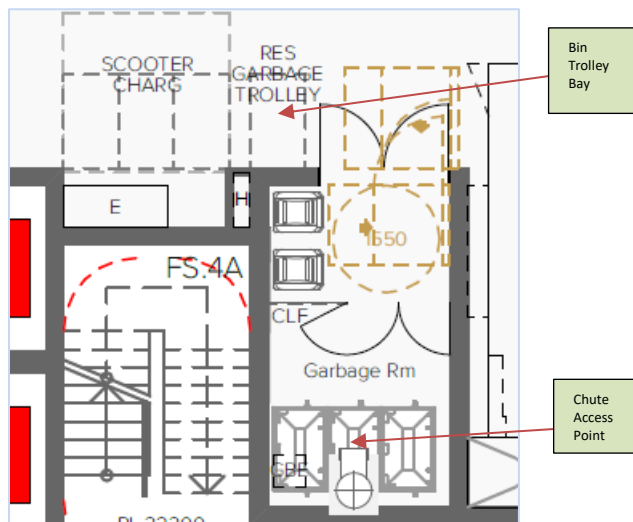
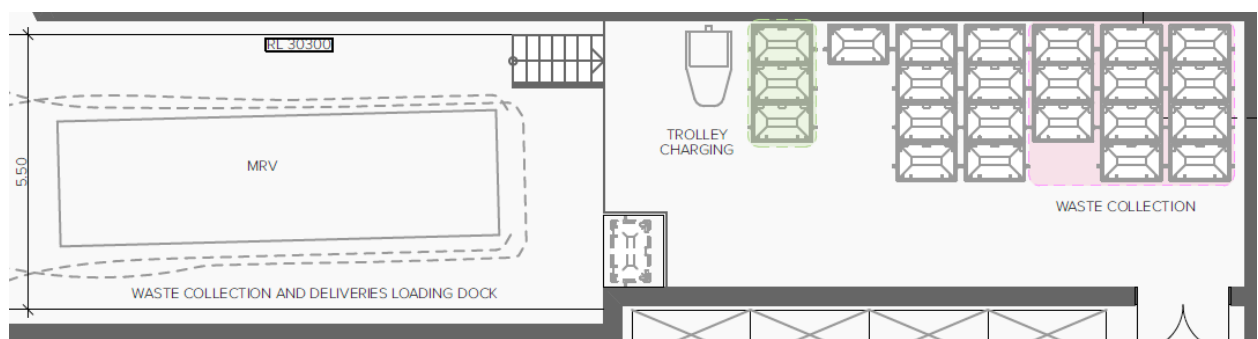


Figure 6: Building R4 Residential Chute Location



To ensure the chute systems function correctly, residents will be provided with information on proper segregation and disposal of general waste and recyclables as detailed in Sections 8 & 9.

Figure 7: Waste Collection Area (Loading Dock)



## 6.2 Garbage Chute Requirements

The extract below describes the type of chute system that will be provided for the development:

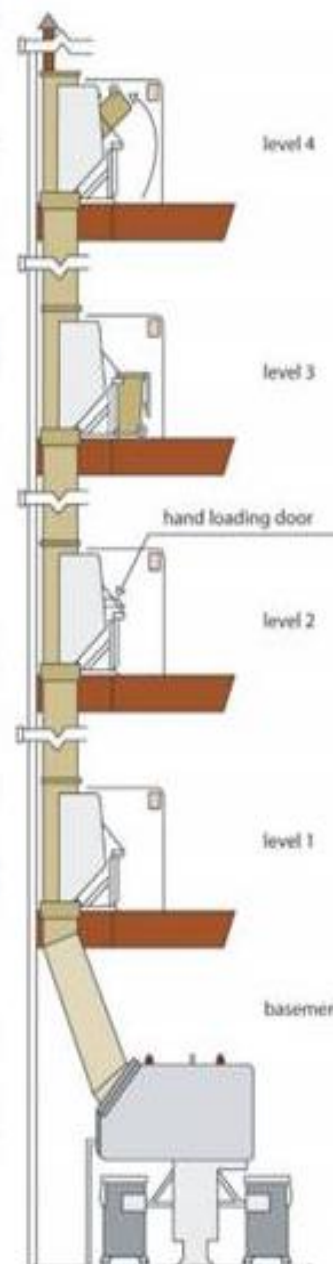
### Garbage Chutes, Compactors and Service Lifts Guidelines

#### Garbage chute design

- Garbage chutes must be constructed in accordance with the requirements of the *Building Code of Australia (BCA)*.
- Garbage chutes must be located and insulated in a manner that reduces noise impacts.
- Chutes, service openings and charging devices must be constructed of material (such as metal) that is smooth, durable, impervious, non-corrosive and fire resistant.
- Chutes, service openings and charging devices must be capable of being easily cleaned.
- Chutes must be cylindrical and should have a diameter of at least 500mm.
- There must not be any bends (or sections of reduced diameter) in the main shaft of the chute.
- Internal overlaps in the chute must follow the direction of waste flow.
- Chutes must deposit rubbish directly into a bin or compactor located within a waste/recycling storage room.
- A cut-off device must be located at or near the base of the chute so that the bottom of the chute can be closed when the bin or compacting device at the bottom of the chute is withdrawn or being replaced.
- The upper end of a chute should extend above the roofline of the building.
- The upper end of a chute should be weather protected in a manner that doesn't impede the upward movement of air out of the chute.

#### Garbage chute service room design

- The service opening (for depositing rubbish into the main chute) on each floor of the building must be located in a dedicated service room.
- The charging device for each service opening must be self-closing and must not project into the main chute.
- Branches connecting service openings to the main chute are to be no more than 1m long.
- Each service room must include containers for the storage of recyclable materials. Signage regarding the materials that can be recycled should be displayed near these containers.
- Each service room must be located for convenient access by users and must be well ventilated and well lit.
- The floors, walls and ceilings of service rooms must be finished with smooth, durable materials that are capable of being easily cleaned.
- Service rooms must include signage that clearly describes the types of materials that can be deposited into the garbage chute and the types of materials which should be deposited into recycling bins.



\*Charging Devices are not required to be used within chute rooms on resident floors.

(The Department of Environment and Climate Change NSW - Better Practice Guide for Waste Management in Multi-Unit Dwellings.)

#### Management:

- Garbage chutes are not to be used for the disposal of recyclable materials. Signage to this effect should be displayed near service openings.
- Arrangements will be in place for the regular maintenance and cleaning of garbage chutes and any associated service rooms and service openings.
- Arrangements will be in place for the regular transfer of recyclable materials (which are stored in service rooms) to the main waste/recycling storage room.

Detailed schematic diagrams and advice on waste chute and compaction systems can be obtained by contacting:

Elephants Foot: [www.elephantsfoot.com.au](http://www.elephantsfoot.com.au)

Compacs: [www.compacs.com.au](http://www.compacs.com.au)

Wastech: [www.wastech.com.au](http://www.wastech.com.au)

## 7. Bulky Wastes

The general waste collection area will be used for the collection of bulky waste materials (furniture, household goods, mattresses, etc.) and other items that are too large or otherwise unsuitable for disposal in the site's mobile waste bins. Site staff will utilise a bin tug/ bin trolleys to safely transport these materials to the Ground Floor waste collection area, from where they will be collected by the development's commercial waste contractor.

## 8. Waste Storage, Access, & Loading

### 8.1 Storage Areas

The locations of the bin holding rooms are shown in Appendix B. The following is based on both Shellharbour requirements and best practice storage area guidelines detailing design and operational requirements for waste storage and loading areas.

- The room is to be large enough to accommodate the entire fleet of bins plus 0.2m between bins to allow adequate manoeuvrability.
- 1.8m unobstructed clearance zone between the stored bins and the entrance to permit access and manoeuvrability.
- Suitable dual door access for the service of bins with a minimum width of 1.8m and accessed by a 1.8m unobstructed access corridor.
- The room is to be located within close proximity to the on-site loading bay.
- The room is to be fully enclosed, walled and not permit through access to other on-site waste infrastructure. Separate unobstructed access is required.
- The floor is to be waterproofed, non-slip and sealed in accordance with the Building Code of Australia to permit the use of wash facilities.
- The floor is to be graded to a central drainage point connected to the sewer, enabling all waste to be contained and safely disposed of.
- The room is to be partitioned and enclosed with a minimum 2.7m unobstructed internal room height in accordance with the Building Code of Australia.
- The room is to be provided with an adequate supply of water through a centralised mixing valve and hose cock.
- The room is to incorporate of adequate lighting and natural/mechanical ventilation in accordance with the Building Code of Australia.

## 8.2 Truck Access & Loading

Private contractor collection vehicles will drive into the ground level via Road Number 1 access at the northern end of the ground and back into the waste collection area for loading to occur by contractor staff. Forward in/ forward out will ensure that the process occurs with minimal disruption to other site traffic, and that no litter or spills are created during the loading process. Once all bins have been emptied, collection vehicles will drive out of the ground level in a forward direction.

Uniting's site staff will assist in this process by bringing the empty bins back to each garbage room and rearranging the bins correctly and replacing them on bin carousels where required.

Collections for both general waste and recycling will take place during the early morning and will conform with Council's time restrictions for waste collection. Specifications for private contractor collection vehicles are shown in Appendix A.

## 8.3 Residential Recycling Movement

Current recycling waste arrangements at other Uniting Care sites have been operating effectively for many years. Residents deliver small quantities of recycling to their dedicated recycling bins via the lifts on a day-by-day basis. Where residents require help to deliver their recycling, small hand-held trolleys can be deployed for use by the residents, alternatively staff can assist with larger bulky items.

Recycling chute systems tend to be excessively noisy due to the disposal of for example glass and hard items, and can disturb residents. Further they require high levels of maintenance due to the disposal of hard materials that create internal stress over time.

## 9. 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 typical educational signage are shown in Appendix C.

## 10 Internal Communal Bins

All communal areas used by residents will be required to be equipped with 2-stream bin hubs for:

- Commingled Recycling
- General Waste

Bins will be situated in areas which effectively service communal areas and lobbies, as opposed to having bins under every desk; this improves cleaner efficiencies by reducing the number of bins that require collection, and also reduces the number of bin liners required. Furthermore, when residents leave their area to dispose of materials they are required to make a considered decision about how they dispose of these materials, and are thus more likely to separate recyclable items from general waste. Buildings where these types of systems have been implemented consistently record higher rates of recycling than those with bins at each desk or workstation.

The following figure shows an example of bins commonly used in building applications. Colour-coded translucent bin liners are recommended to assist cleaning staff to distinguish the two recycling streams from general waste and from each other, and enable them to identify contamination prior to final disposal in the bins in the central storage room.



Figure 8: Two Stream Stand-Alone Bin Setup

## 11 Conclusion

The Stage 1 Residential Detailed DA aligns with the modified concept, as proposed in the s.4.55 modification application in that waste management is largely maintained.

Assessment of the calibre of the Stage 1 Residential Detailed DA is made in relation to the following points;

- No significant adverse impacts in alignment between the Stage 1 Residential Detailed DA and the modified concept, as proposed in the s.4.55 modification application.
- Stage 1 utilises good design and the inclusion of efficient waste systems.
- A beneficial amenity outcome is achieved with the appropriate mix of systems and policies which support and guide the correct disposal of waste.

The OWMP, importantly, complies with all related controls and reference documents including the Shellharbour Council DCP, Chapter 15 - Waste Minimisation and Management, and best practice waste management embodied by the City of Sydney's - Guidelines for Waste Management in New Developments 2018.

## Appendix A: Waste Collection Equipment

The following image shows the dimensions of private contractor vehicle that will be used for collections of the development's operational general waste and recycling:

### SUEZ - Rear Loading Collection

## Vehicle specifications

|                       |       |
|-----------------------|-------|
| Overall length        | 8.0m  |
| Overall width         | 2.5m  |
| Height (travel)       | 3.4m  |
| Height (in operation) | 3.4m  |
| Weight (vehicle only) | 13.0t |
| Weight (payload)      | 9.5t  |
| Turning circle        | 25.0m |



SUEZ has procedures in place to help ensure our operations are conducted in a manner that protects the health and safety of our employees, customers, contractors, suppliers and the general public, providing a safe and healthy working environment.

## Overview

- Best suited for lightweight and small to mid-sized waste volumes
- Ideal for workshops, offices, restaurants and retail outlets
- Suits businesses that generate odorous food wastes as the waste can be bagged and cleared daily
- Perfect secondary partner for a primary Front Lift or Roll-on/Roll-off (RORO) system
- Convenient range of standard containers from 120L to 1100L capacities
- Bins are colour-coded to Australian Standards for easy identification of waste streams
- Reduced labour costs when bin is located close to waste generation source
- Easily maneuverable due to solid rubber wheels
- Equally suitable for indoor or outdoor use
- Carts can be supplied in a range of sizes ensuring flexibility and total compatibility with the customer's site

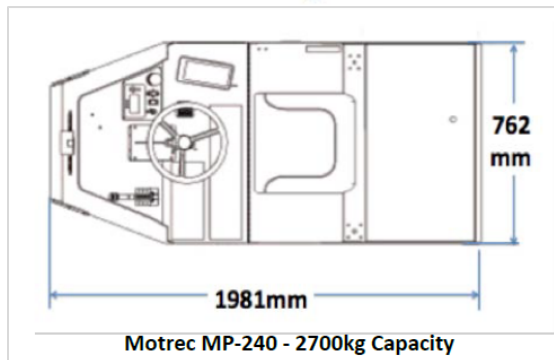
## Ride on/ Seat on Tug – Bin Mover



DEC Bull with  
Bin Towing Devices

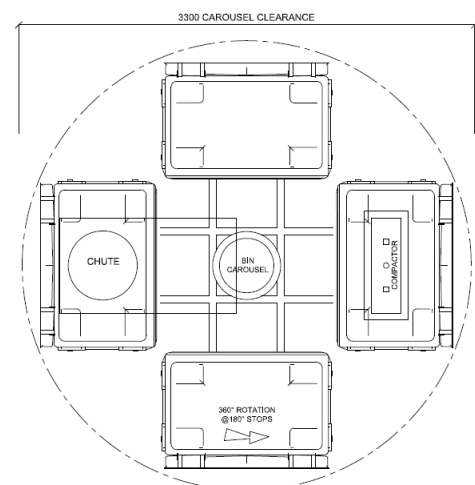
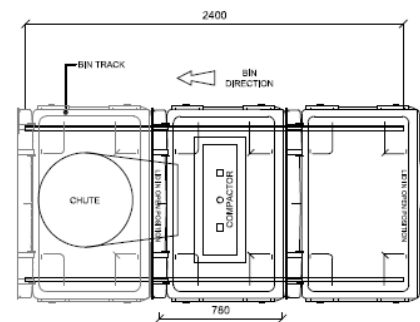
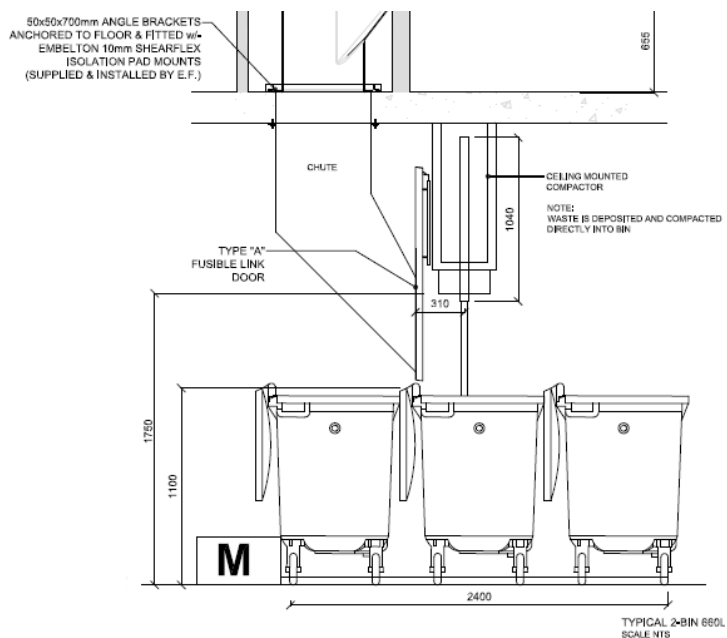


Cushman 5/8K with  
Bin Towing Devices

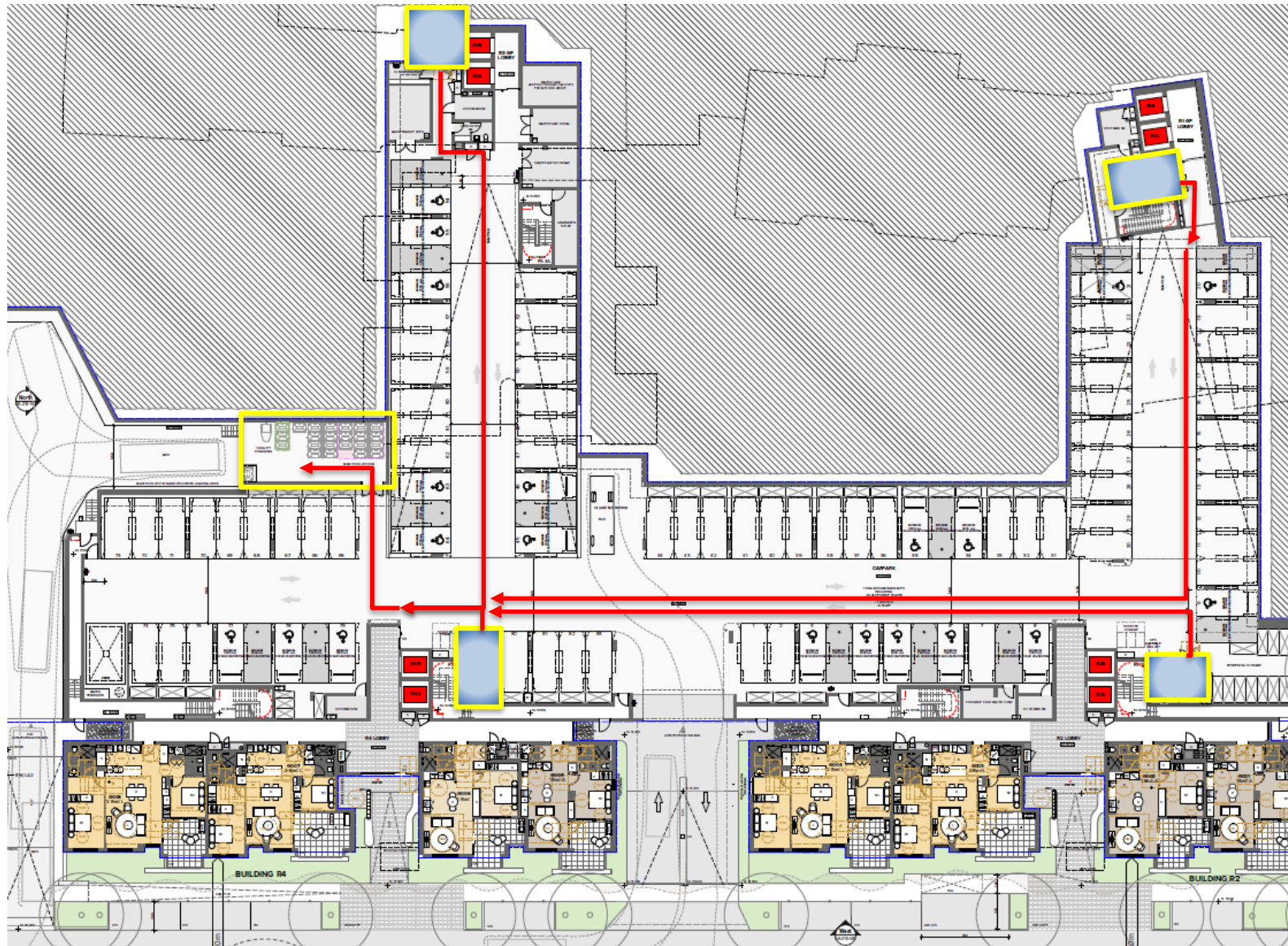


Small Rigid Vehicle (SRV) the SRV represents light trucks to a maximum load capacity of 10 ton and typically having a single rear axle and either single or dual tyres. Typically used in service areas where small commercial vehicles are preferred.

## Compactor Diagram – Linear & Carousel



## Appendix B: Ground Level Waste Storage Areas & Pathways



## Appendix C: 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. Smaller versions (e.g. A4 size) would be suitable for posting within individual tenancies.



## Appendix D: Swept Pathways

Swept pathways are for the use of an MRV

