D22-128205

Low Impact Development Consulting

Waste Management Plan

Comprehensive Aged Care & Retirement Village

62-94 Jackson Road, Mulgrave VIC 3170

Prepared for: Ryman Healthcare Pty Ltd
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Date: 30/3/2022

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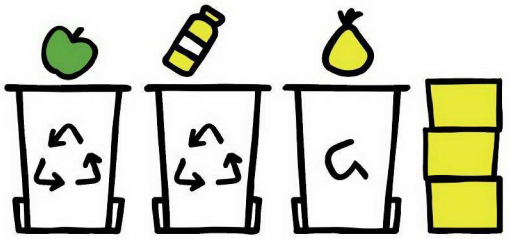


Version	Date	Description	Prepared by	Checked by
1.0	10/12/2021	**WM Issue**	**LR**	**LR**
2.0	17/12/2021	**Final**	**LR**	**LR**
3.0	20/3/2022	**Revised – Council Checklist review**	**LR**	**LR**

Disclaimer

The content of this document represents the entirety of work output or recommendations offered by LID Consulting for this particular project. This content supersedes all other verbal discussions undertaken by LID Consulting representatives in relation to this project.

Commercial waste calculations are based on rates provided by government organisations and adopted and used as an industry standard. Bin numbers and spatial requirements have been calculated in accordance with these guidelines. The end user requirements may vary from this depending on the business use, type and operational practice.

Contents

LID acknowledges and pays respect to the Australian Aboriginal and Torres Strait Islander people, to their ancestors and elders, past, present and emerging, as the traditional custodians of the lands upon which we work and live. We recognise Aboriginal and Torres Strait Islander people's deep cultural and spiritual relationships to the water, land and sea, and their rich contribution to society.

1 Waste Collection Summary

A private collection service is proposed to collect the following bins at the indicated frequency.

Residential Villas	**Private Collection Service – collection from within the site**	
Waste stream	**No. of bins and capacity**	**Collection frequency**
Landfill	1 x 120L	Once weekly
Co-mingled Recycling	1 x 240L	Fortnightly
FOGO	1 x 240L	On the Alternate Fortnight
Glass (future provision)	1 x 80L	Monthly
Hardwaste & eWaste	Own storage	Annually

Independent Living Units (B01) T1, T2 & T3	**Private Collection Service – collection from within the site**	
Waste stream	**No. of bins and capacity**	**Collection frequency**
Landfill	10 x 660L	Once weekly
Co-mingled Recycling	12 x 660L	Once weekly
Food Organics	22 x 120L	Once weekly
Glass (future provision)	22 x 120L	Once weekly
Hardwaste & eWaste	12m2 + 120L eWaste bins	As required to maintain space

Main Care Building (B01)	**Private Collection Service – collection from within the site**	
Waste stream	**No. of bins and capacity**	**Collection frequency**
Landfill	11 x 660L	3 times weekly
Co-mingled Recycling	8 x 660L	3 times weekly
Cardboard and paper	3 x 660L	3 times weekly
Glass	7 x 240L	Weekly
Organic Food Waste	6x 240L	3 times weekly
Hardwaste	4m2	As often as required to maintain space
E-waste	2 x 240L	As often as required to maintain bin
Green Garden waste	10 x 360L	As often as required to maintain bin

The approved Waste Management Plan (WMP) will be the model to be adopted for this development. Detailed design and as-built installation must incorporate the design proposed and approved under this WMP. Any revisions of the WMP or changes to the approved waste system of the development may require Council approval and may require a re-submitted Waste Management Plan. More detail is contained within this report.

2 Waste Management Plan

Low Impact Development (LID) Consulting was engaged by Ryman Healthcare to assess the proposed development at 62-94 Jackson Road, Mulgrave VIC 3170 to provide a Waste Management Plan (as required by Statutory Planning).

A waste management analysis has been undertaken based on the following documents:

a) Sustainability Victoria Better Practice Guide for Waste Management and Recycling in Multi-Unit Developments 2018;

b) Monash City Council's Multi-unit and Commercial Developments Waste Management Plan Guide 2020

c) Monash City Council's planning scheme clauses 11.03-6,19.03-5 and 55.07-11 & 58.06-3 addressing Standard B45 / D23; and

This report is based on the drawing sets:

d) TP00-101 to 105, Revision B, dated 23/3/2022 prepared by Via Architects

The developer is to is responsible to provide a copy of this endorsed Waste Management Plan to the Facility Management (the Operator).

2.1 Proposed Development

Address:	62-94 Jackson Road, Mulgrave VIC 3170
Type:	Comprehensive Aged Care & Retirement Village
Dwellings:	70 Villas,
Break up of units:	105 Independent Living Units 60 Care Beds 54 Assisted Living Beds
TPA No.:	**TPA 47359 A**

The proposed Comprehensive Aged Care & Retirement Village provides 3 types of accommodation for seniors. The Main Care Centre – Building 1 (B01) includes 105 independent living units (ILU) plus high care and assisted living suites (ALS) and associated common facilities. 70 villas have also been provided across the balance of the site.

The main entrance and vehicular access is from Jacksons Road only. There is adequate turning facilities for up to a 9.7m HRV waste vehicle to enter the site, circulate the internal roads at street level and exit the site in a forward direction.

A 6.4m rear mini loader is proposed to collect waste from the basement level – refer sweep paths.

Waste generated from the central community Main Care Centre (Building B01) will be contained and stored in dedicated bin storage areas. All waste streams will be collected via a private collection service – refer Appendix 1 site plan. The Same contractor will collect all waste from the Villas to minimise truck movements to, from and within the site.

The complex facility management will be responsible for the daily management and coordination of all waste streams across the entire complex. They have similar facilities across the country and have a proven operation methodology with regard to waste.
Space for the collection, separation and storage of waste and recyclables has been provided, including opportunities for on-site management of food waste through composting or other waste recovery as appropriate.

2.2 Monash City Council – WMP Purpose

The purpose of this report is to document a Waste Management Plan for the above project, as required by Statutory Planning as follows:

a) Demonstrate the development of an effective waste management system that is compatible with the design of the commercial or multi-unit development (MUD) and the adjacent built environment. An effective waste management system is hygienic, clean and tidy, minimises waste going to landfill, and maximises recycling

b) Provide a waste management system that is supported by scaled drawings to ensure the final design and construction is compliant with the WMP, and is verifiable

c) Form a document that achieves effective communication of the waste management system so that all stakeholders can be properly informed of its design, and the roles and responsibilities involved in its implementation

d) Stakeholders are defined (but not limited to): owners, occupiers, body corporate, property managers/real estate agents, Council, neighbours and collection contractors

e) Ensure residents of MUD's are not disadvantaged in their access to recycling and other responsible waste management options

f) Avoid existing legacy issues that plague many MUD's due to poor design and insufficient consideration for waste management.

2.3 Future 4-bin System

Victoria will implement a 4-bin colour coded waste and recycling system in all residential settings by 2027. Generally, all new developments will look to incorporate space for these waste streams now in the planning phase. **Non-residential developments should also consider and implement these waste streams as this level of recycling rolls out.**

In the meantime, if separate glass collections are not possible, these bins may be temporarily swapped for co-mingled recycling bins. More information can be found at https://www.vic.gov.au/four-bin-waste-and-recycling-system

2.4 Container deposit scheme

Victoria will have a container deposit scheme that will ensure more plastics, aluminium and glass containers are recycled affectively. This will be implemented by 2023.

This will allow everyone to actively participate by taking his or her recyclables directly to an out let in exchange for a monitory refund. More information can be found at https://www.vic.gov.au/container-deposit-scheme

2.5 Council Considerations

a) Utilizing the standard Council kerbside collection service is not possible in this instance for general waste/recycling due to the large volume of bins to be placed kerbside for collection. The volume of commercial waste generated also exceeds the council standard bin allocation for each tenement.

b) Onsite collection is the most feasible option with a waste truck able to enter and exit the site in a forward direction traversing along the internal driveway.

c) Facility Management will be responsible for all aspects of waste management including implementing adequate safe operating procedures. All waste it to be collected, streamed stored and collected from within the site.

2.6 Proposed Residential Villa Waste Solution

Site Layout: Refer to **Appendix 1** for Site Layout Plan

Waste Streaming: Within each unit – include 5-7Lt food waste caddy as well as recycling, glass & landfill bin

Collection Type: Private collection service to collect all waste streams

Collection Location: From within the site

Bin Store Location: Individually stored within each garage or POS.

Residential	**Private collection service Waste generation rates**			**Proposed Villa Solution**		
	No. units	**Allowances**	**Total estimated waste volume**	**No. of Bins**	**Bin Size**	**Collection Frequency**
General Waste (landfill)	70	120L per dwelling per week	8400L to landfill	70	120L	Once weekly
Co-mingled Recycling		240L per dwelling per fortnight	16,800L of recycling	70	240L	Fortnightly
FOGO / Garden waste		240L per dwelling per fortnight (future provision)	16,8000L of food & garden organics	70	240L	On the alternate fortnight
Future Glass[1]		80L per month (future provision)	5600L of glass	70	120L	Monthly
Hard Waste		$2m^3$	See **Section 4** for Had waste Recycling	NA	NA	Annually or as required
E-waste			See **Section 4** for E-Waste Recycling			As per Hard waste

[1] The Age (2019), https://www.theage.com.au/national/victoria/victorians-to-get-cash-for-bottles-scheme-20200224-p543ms.htm

2.7 Independent Living Unit (B01) Waste Solution

Site Layout: Totals for Towers 1, 2 & 3
Refer to **Appendix 1** for Site Layout Plan

Waste Streaming: Within each unit – include 5-7Lt food waste caddy as well as recycling, glass & landfill bin

Collection Type: Private collection service to collect all waste streams

Collection Location: From within the site – basement collection

Bin Store Location: At Basement level of B01

Base Landfill (garbage) generation rate: 80L per unit per week (divert 30% to dedicated food organics collections)

Base Recycling generation rate: 80L per unit per week (divert 20% to dedicated glass collections)

Combined Independent living (B01) T1, T2 & T3	Private collection service Waste generation rates			Proposed Shared ILU Solution		
	No. units	Allowances	Total estimated waste volume	No. of Bins	Bin Size	Collection Frequency
General Waste (landfill)	105	55L per unit per week (30% of 80L diverted to food organics)	5775L to landfill Total	10	660L	Once weekly
Co-mingled Recycling		65L per unit per week (20% of 80L diverted to glass)	6825L of recycling Total	12	660L	Once weekly
FOGO / Garden waste *		25L per unit per week	2625L of food organics Total	22	120L	Once weekly
Future Glass[2] *		15L per unit per week	1575L recycling Total	22	120L	Once weekly
Hard Waste		$12m^3$	See **Section 4** for E-Waste Recycling	NA	NA	Annually or as required
E-waste			See **Section 4** for E-Waste Recycling	16	120L	As per Hard waste
Clothes / Textiles			1	Donation bin	As often as required to maintain bin	
Other items		Batteries, light bulbs, print cartridges	1	Crate	As often as required to maintain bins	

* 1 x 120L glass and food waste bin allowed for each interim bin store per floor per tower

[2] The Age (2019), https://www.theage.com.au/national/victoria/victorians-to-get-cash-for-bottles-scheme-20200224-p543ms.htm

2.8 Proposed B01 Waste Solution

Common Facility Space	**Area / Beds**
Salon, Beauty & Treatment	172m^2
Lounge / Bar	
Café / Dining	1100m^2
Craft, Gym, Activities	850m^2
Garden, workshop, maintenance	790m^2
Administration, Office, Staff	160m^2
	270m^2
Care Beds (Dementia):	60 beds
Assisted Living Beds:	54 Beds
Site Layout:	Refer to **Appendix 1** for Site Layout Plan
Collection Type:	Private collection service to collect all waste streams
Collection Location:	From within the site
Bin Store Location:	Via a dedicated bin store at BOH of B01
Base Rates:	Refer Monash City Council's Multi-unit and Commercial Developments Waste Management Plan Guide 2020
Diversion rates:	Allows 20% of landfill (garbage) diverted to dedicated food waste collections
	Allows 10% of recycling diverted to dedicated glass collections

Commercial (B01)	**Private collection service**		**Proposed solution**		
	Allowances	**Total estimated waste volume**	**No. of Bins**	**Bin Size**	**Collection Frequency**
Garbage	**Refer Appendix 3 - Waste rates & Calculation**	20, 832 landfill TOTAL	11	660L	Three times weekly
Organic Food Waste		5,646L Food organics (with 20% diverted to food waste collections)	6	240L	Three times weekly
Co-mingled Recycling		21, 392 TOTAL of recycling (with 10% diverted to glass collections)	8	660L	Three times weekly
Cardboard			3	660L	Three times weekly
Glass		20% of recycling total 4970L of glass	7	240L	weekly
Green Garden Waste			10	360L	As required
Hard Waste		4m^2 provided	NA	NA	As often as required to maintain space

E-waste		NA	2	240L	As often as required to maintain bin
Other items		Batteries, light bulbs, print cartridges	1	Crate	As often as required to maintain bins

NOTE: Streaming of waste into dedicated bins is encouraged where possible. The type of recycling bins nominated above may be swapped to suit the type of recyclable commercial waste generated (while not altering the number of bins overall). Possible additional waste streams include:

- hard plastics
- soft plastics

3 Waste Management Details

3.1 Management Responsibilities & Communication

Facility Management (the Operator) is responsible for all aspects of waste management including implementing adequate safe operating procedures. Items to be addressed in maintaining the system include:

a) Facility Management (the Operator) is responsible for requesting a copy of the endorsed Waste Management Plan from Council if the developer has failed to provide the WMP to them.

b) The Operator is responsible to ensure minimal contamination occurs in bulk bins prior to collection in order to maximise recycling. This is to be achieved by:

- Providing streamed bin (including recycling, glass, food organics & landfill) in all units and work areas for staff and residents to appropriately stream waste. See **Section 4.2.1.**
- Routine inspection of bins in shared bin stores and interim bin stores to ensure their appropriate use.
- Feedback to occupants if the system is not working properly. Undertake a waste audit should it be suspected waste is not being placed in the correct bins.
- Provision of information to occupants with guides of how to using the various bin systems e.g. boxes to be flattened, containers for recycling washed, bins to not be over-full. See **Section 3.13** for further information about Signage, Education & Safety.

c) The operator is to ensure all residents to Villas & Independent Living units are aware of their responsibility with regard to waste & bin management. An information package is to be provided to all residents including the following information:

- A copy of this endorsed Waste Management Plan
- Methods and techniques for waste reduction and minimisation
- Information regarding bin collection days and requirements
- Residents' responsibility with regard to bin usage, storage and collection
- Residents' responsibility with regard to litter and waste removal from the common property areas.

d) Cleaners & staff for the remaining Main Care Centre in Building 1 (B01) are responsible for placing waste in the appropriate colour coded bins in the bins provided in work areas and then transferring them to corresponding bin in the bulk bin store to ensure all waste types are collected and recycled where possible.

e) Facility Management is responsible for monitoring and rotating bins from interim bin stores via lifts to the basement bulk bin stores under teach town of B01.

f) Facility Management is responsible in providing access for the waste contractor to enter the site and bin store on the day(s) of collection and for also providing information to make building occupants aware that waste vehicles enter the site.

g) Allocation of responsibility to the contractor to retrieve bins directly from the bin store and return emptied bins at the time of collection. Responsibility should include ensuring the contractor collects any waste that spills from the bins during emptying.

h) That bins and bins stores are monitored regularly with bins rotated as required to ensure areas are fully operational with regular cleaning of the bins and bin store spaces and clean-up after collection if necessary.

i) Management and coordination of bulky hard waste & eWaste collections.

j) Managing communal composting areas (if applicable).

3.2 Individual occupants Management Responsibilities

Independent tenants / occupants are responsible for their own waste. Items to be addressed in maintaining the system include:

a) Villa residents are responsible for placing their own bins in the designated collection location along the internal roadway on the night before the allocated collection day. Bins are to be returned by residents on the same day collections occur.

b) Residents living independently in Building 1 (B01) are responsible for placing their waste in the appropriate colour coded bins / chute in the interim bin stores to ensure all waste types are collected and recycled where possible. All organic food waste, cardboard, bulky hard waste items are not to be placed in chutes, but the bins in the interim bin stores on each residential level.

3.3 Bin Store Design

The Bin store design/location must include the following:

a) A layout that allows access to all of the bins with adequate size to allow easy movement/transfer of the required number of bins. There is to be convenient access by residents and made easily accessible to people with limited mobility.

b) All screening must be suitably designed for durability and to blend in with the development. Floor and wall surfaces are to be appropriately durable and easily cleaned.

c) Doors located in the allocated storage areas should be designed for easy access of larger bins sizes, hard waste, for durability and to blend in with the development.

d) Space suitable for bin wash down is to be available in the development. If this is the bin store then the floor is to be graded to a waste outlet with a litter trap. Alternately, a private contractor can be arranged to swap dirty bins for clean ones on a regular basis.

e) If a bin wash is installed, a water tap and hose installed in or near the bin wash areas and correct drainage to sewer (never direct waste to storm water drains) must be designed in accordance with the relevant EPA Bunding Guidelines. Drains to the sewer to be located undercover to prevent rainwater infiltration.

f) Bin stores or bins must be vermin proof - particularly where food waste is included. (The bin store is in the basement that is a closed space and considered to be largely vermin proof). Consider using baits for vermin control and maintained as an ongoing requirement.

g) A waterproof power point in or near the bin store.

h) Adequate mechanical or natural ventilation if not outdoors.

i) Ensure adequate lighting is provided in accordance with National Construction Code (NCC) guidelines if to be accessed after hours.

j) Secure locks (where bin stores are accessible to the street)

k) Space for a tug or bin lifter if required by the waste contractor(s) / facility management.

l) Meter boxes should not be included in bin store areas.

3.4 Bin Store Access

a) Manoeuvrability within the bin store area is open, with 1m minimum to walk between bins.

b) There is to be no significant step at any threshold between the bin store area and the point of collection.

3.5 Bins & Bin Sizes

The following sizes are indicative bin sizes based on the Sustainability Victoria Better Practice Guide specified sizes (Appendix 9). These sizes are the size allowances required by most Councils in bin store areas. Allow 100mm between 4 wheel bins and 50mm between 2 wheel bins for movement.

Size	Width	Depth	Height	Footprint
80L	450mm	530mm	870mm	0.24m²
120L	485mm	560mm	940mm	0.27m²
240L	580mm	735mm	1080mm	0.43m²
360L	600mm	885mm	1100mm	0.53m²
660L	1370mm	850mm	1250mm	1.16m²
1100L	1370mm	1245mm	1470mm	1.71m²

Alternative bin sizes - Different bin suppliers provide different size bins, although these should only be used exceptional cases and may cause issues with Councils.

Example of 660 & 1100L 4-wheeled bins

Examples of a stack ot tubs on top of each other for small other waste streams such as batteris, light glabes and printer cartridges.

Example of Charity Clothes bin – refer section 4.3.3 below.

3.6 Waste Vehicle Requirements

a) A 6.4m rear mini loader or 9.7mm MRV waste vehicle only is to enter the site from Jacksons Road and circulate to collect waste.

b) A 9.7m MRV rear loading waste vehicle is to collect all Villa waste and B01 waste from the back of house area at street level. There is sufficient head clearance in the loading area to accommodate the waste vehicle and s – 3.5m minimum provided.

c) A 6.4m SRV mini rear loading waste vehicle is to collect all basement ILU waste from B01. There is sufficient head clearance in the loading area to accommodate the waste vehicle and collection in the basement – 2.2m minimum provided.

d) The waste contractor will be responsible for retrieving, emptying and returning bins to/from the bin store at the time of collection.

e) The waste vehicle it to turn & exit up the same ramp exiting back onto Jacksons Road in a forward direction.

f) Facility Management is responsible for ensuring the waste contactor has access to the site and bin store on the days of collection. If there is a security code or key required for access, the contractor should be provided with these so they may access the bin store on the specified collection days.

Vehicle	Typical size
Rear mini loader	6.4m long x 2.35m wide truck (basement collections) – 2.2m head clearance
Rear Loading	9.7m long x 2.6m wide truck – 3.5m head clearance
NOTE: Larger vehicle may need to be assessed for clearances prior to entering the site.	

3.7 Collection Times

Collection times: Commercial waste – bin collection shall be in accordance with Council and EPA Noise Control Guidelines Publication 1254, which state:

a) Collections occurring once a week are to be restricted to the hours 6:30 am — 8 pm Monday to Saturday, or 9am – 8am Sundays and public holidays.

b) Collections occurring more than once a week are to be restricted to the hours 7 am — 8 pm Monday to Saturday, and 9am – 8am Sunday and public holidays.

The WMP approved under this permit must be implemented and complied with at all times to the satisfaction of the Responsible Authority. No alterations to the WMP may occur without the written consent from the Responsible Authority.

3.8 Internal Waste Management

a) General landfill **garbage shall be placed in plastic bags** before placement into bins

b) **Recycling materials are <u>not</u> to be bagged** and are to be placed loosely into the recycling bins. (Items in plastic bags in recycling bins are not recycled). Recyclable items in domestic bin collections include:

- Rigid plastic containers
- Paper, cardboard
- Glass bottles and jars

- Steel cans, aluminium cans and aluminium foil are among items that can be recycled.

c) But exclude:

- Plastic bags
- Garden hoses
- Rope (ropes and garden hoses can wrap around and damage equipment in the recycling plant).

d) To improve recycling:

- Empty containers and bottles of any leftover food or liquid. Ideally rinse them out.
- Leave lids on everything
- Don't squash plastic bottles or containers or put anything inside
- Paper – if it can't be ripped, it can't be recycled due to the plastic coating.

3.9 Response to Increasing Waste

a) The total waste capacity exceeds the required allowance calculation by rounding up to the nearest bin size so there is built in capacity should waste levels increase beyond estimates.

b) A waste audit can be undertaken to understand the content of the waste bins. Audits provide feedback to clients of good or poor recycling practices. Images can be helpful to convey feedback.

c) If garbage bins consistently overflow, then residents/staff are to be directed to educational material as to the appropriate streaming of waste including food and other recyclables. (see **Section 4** and **Soft Plastic Recycling** below).

d) If recycling bins continue to overflow, residents/staff should be reminded to crush and flatten all cardboard boxes and plastic containers before placing these in the recycling bin(s). If may also be appropriate to obtain an additional recycling bin.

e) The last option is for more regular collections to occur.

3.10 Reducing Odour

Odour from waste primarily emanates from bin store areas. Control of odour must occur in the bin store area with the provision of suitable natural or mechanical ventilation. If installed the mechanical ventilation system for the bin storage area must not cause a public health nuisance (noise and odour generation) and comply with EPA requirements and in accordance with the ventilation requirements of the Building Code of Australia and AS 1668.2.

a) Villa residence bins are stored privately within each private open space. It is each resident's responsibility to ensure bins are maintained.

b) All bin stores in building 1 (B01) are to monitored daily with mechanical ventilation required.

c) The bin store area and bins are to be monitored and cleaned on a regular basis to remove sources of smells.

3.11 Noise management

Minimizing noise associated with waste movement and collections include:

a) Locating bin stores and collection points at an appropriate distance from both onsite and adjoining residences;

b) Minimising the need for the waste vehicle to reverse;

c) Collections occurring during the stipulated collection times restrict the hours of noise from collections.

d) Collection vehicles should not break up bottles at the point of collection, only once off site. Compaction of waste should only be carried out whilst waste vehicles are on the move.

e) Insulating waste chutes.

3.12 Traffic Management

a) Traffic management along Jacksons Road should not be an issue with collection occurring within the property boundary. The street is considered a local street, traffic volumes would not be expected to be high and the site is not near an intersection.

b) Appropriate engineering standards will need to be addressed in the detailed design stage to ensure adequate pavement depths and clearance height.

3.13 Litter Spread

a) Litter spread is to be managed by ensuring garbage and recycling bins are not overloaded, and lids are always closed.

b) Litter spread is to be managed by the system of contractors collecting bins from within the property. As bins are not left outside overnight, the possibility of vandalism is removed.

c) The private collection contractor's agreement should require their pickup of any waste that spills from the bins during collections.

3.14 Signage, Education & Safety

It will be the responsibility of Facility Management to ensure all staff, cleaners and residents have all of the material available to them and that they adhere to the required practices regarding waste management, sustainability and promoting waste minimisation.

a) All education material will be in accordance with Council requirement or if this is not available, per signage on the following website: https://www.sustainability.vic.gov.au/recycling-and-reducing-waste/waste-systems-in-residential-commercial-and-industrial-buildings/waste-signage

b) Ensure permanent "No Standing" sign / text and line markings are visible where appropriate, indicating the parameters of the rubbish collection zone to ensure access for the collection vehicle.

c) Directional signage should be installed to direct occupants and bin collectors to the bin storage areas including interim bin stores.

d) The hard waste storage zone should also be signed.

e) Instructional signage within shared communal bin stores is to indicate which bin is for landfill and which is for recyclables (or food waste/organics) and also include what items can be included in garbage and recycling bins, and items that need to be disposed of via other services.

Figure 1. Simple, brightly coloured signs, such as those shown above, quickly communicate what items are acceptable for each bin.

f) **A preliminary OHS risk assessment** has been included to identify potential OHS issues, however this risk assessment does not replace the need for the Management and collection contractors to complete their own OHS assessment for the bin collection process. See **Appendix 2** for further detail.

g) A sign will be placed on Villa landfill bins that soft plastics can be recycled at any location identified on the Redcycle website http://www.redcycle.net.au/where-to-redcycle/

Figure 2. A quick guide to some most commonly recycled Soft Plastic item

4 Managing Waste Streams

4.1 Sustainability Initiatives

Residents / Staff are be made aware of Sustainability Victoria's recommendations for waste reduction www.sustainability.vic.gov.au

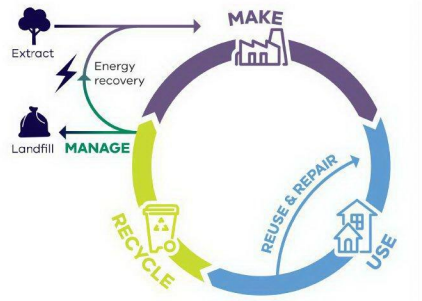
Where possible they should practice the waste reduction hierarchy identified in the Environmental Protection Act 2017;

Further, a circular economy allows waste to be avoided in the first instance to reduce environmental impacts of production & consumption. This is now being implemented across Australia.

The first step to reducing waste, particularly food waste is to avoid and minimise waste from occurring in the first instance. Changing purchasing habits and implementing waste avoidance include:

- Purchase only what you will consume
- Purchase items of quality that can be re-used, sold on donated or up-cycled.
- Use re-usable drink bottles, lunch containers, shopping bags
- Avoid single use plastics
- Compost anything that once was alive
- Meal plan, shop seasonally, shop locally

Linear Economy



Circular Economy

4.2 Separating & Streaming Food Waste

Food waste, when buried in landfill waste is starved of air and rots and producing methane; 26 times more damaging than carbon dioxide. Diverting food waste from landfill is not only a really effective way to reduce greenhouse gas emissions, but also a regenerative solution, creating rich, healthy soil.

The Better Practice Guidelines stipulates diverting food from landfill waste. This can be achieved in a number of ways including on site composting and/or FOGO collections for single residents or via dedicated food waste collections in larger multi-unit developments.

4.2.1 Inside Dwellings

a) Sustainability Victoria provides information for households, schools and businesses alike to reduce food waste through their **Love a List Challenge. Love Food Hate Waste** aims to raise awareness of avoidable food waste from Victorian households. The average family in Victoria loses over $2,000 a year from wasting food. And two thirds of it could have been eaten. https://www.sustainability.vic.gov.au/

b) **Multiple bins for waste streams** - In multi-unit developments streamed waste bins are to be included (perhaps included under the sink) in each dwelling. Bin types include garbage (Landfill) waste, Recycling, Organic Food Waste, Glass.

c) **Bokashi bins** http://www.bokashi.com.au/ are an effective way of reducing waste volumes and breaking down food waste for apartment dwellers. Food scraps are placed in bokashi bins with an accelerator mix added. The volume of waste food is reduced, and the waste in the bin is already on the path to being composted. Bokashi bins can be emptied into compost bins so providing a compost bin on site and having a garden also helps. Bokashi bins are also available from http://www.eco-organics.com.au/about-us.htm

Kitchen Caddy – supplied by council

Apartment Bokashi bin

Pull–out kitchen streaming bins

Figure 3. – Different bins for waste streaming

Tips for FOGO

a) Keep the wheelie bin in a shady spot

b) Use paper towel to line the bottom of plastic bags to soak up any moisture that can cause the liner to break down quicker than normal

c) Double wrap meat, bones and unwanted pet food (with newspaper or paper towel) before placing in your caddy

d) Line the organics bin with newspaper to aid cleaning

e) Wrap fish and seafood waste (in newspaper or paper towel) and place in your freezer until your next collection is due

f) Sprinkle vinegar, baking soda, charcoal or eucalyptus oil in your organics bin to combat odours

g) A mix of garden and food waste helps keep bin odours under control

h) Purchase a Bin Kill tag that can be attached to the inside of your organics bin. The tag emits a vapour that kills flies and maggots. The product is available from Bunnings, Coles or Woolworths supermarkets.

4.2.2 On-site Composting

In the garden – private or communal

a) Aerobic **green cone bio-digester designer compost** is a landscape option for some households, including multi-unit developments to divert a larger range of food waste (including bread, dairy, meat and small bones). Refer to https://www.treehugger.com/lawn-garden/green-cone-solar-food-digester-will-reduce-90-food-waste-your-backyard.html for more info.

b) Alternatively the new **Subpod in-ground composting/worm farm unit** www.subpod/com that composts fast, and ensures worms don't die off as they can often can in unshaded above-ground worm farms. These units can also be located in raised planters and act as seats in common areas. At capacity, 15L of food waste can be processed each month.

c) **Hungry Bin worm farms** are a proven worm farm system that have been used by many private and commercial organisations & businesses to process food waste. The number of bins can be scaled up and down depending on the volume of waste being generated on site. https://www.wormlovers.com.au

Figure 4. Green cone bio-digester

Figure 5.Subpod in-ground compost unit

Figure 6. Hungry Bin worm farm

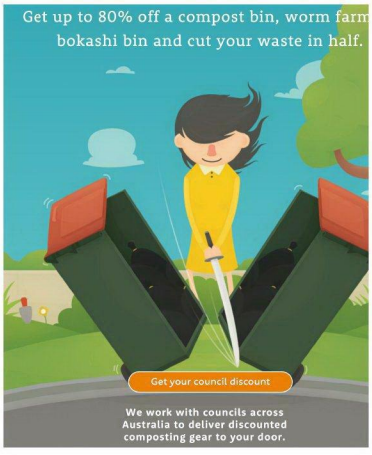
4.2.3 Community Partnerships & Government Initiatives

a) Reducing your food waste can save you money. And it helps the environment by conserving the water, energy and natural resources that are used to grow, transport and then dispose of food waste. There are a number of resources including meal planners, recipes and you can register to take up the challenge.

b) For more information about where your food goes and how you can use it, see https://backtoearth.vic.gov.au

c) **Join the Compost Revolution** **https://compostrevolution.com.au** provides up to a 80% discount on a number of composting bins and accessories. It also has a range of tutorials on how to compost.

d) Co-designed with councils, the Compost Revolution is a multi-award-winning program that educates and equips residents to cut their waste in half through home composting and worm farming. This platform is the only all-in-one education, infrastructure logistics and marketing program of its kind streamlining the process so that councils achieve waste and emissions reduction targets while saving money.



4.2.4 Commercial Food waste

Commercial collection of separated food wastes is being offered by a number of waste collection Contractors.

a) Commercial businesses with high volumes of food waste such as cafes and restaurants are recommended to stream out food scraps from landfill waste. An organics food collection service is recommended for this type of commercial development.

b) Food waste collections should occur a minimum 2-3 times per week (depending on the temperature of the bins) to avoid a build-up of odour and unwanted mess.

c) Consideration should also be given to end of trip / processing of this waste by the engaged waste contractor to ensure this waste stream is appropriately treated and does not end up in landfill.

Current contractors include:

- Sita – 1.5m3, 3m3 & 4.5m3 bin options (via Cleanaway) http://www.sita.com.au/commercial-solutions/resource-recovery-recycling/organic-material/
- KS Environmental – 120L bins (inner metro only) https://ksenvironmental.com.au/services/recycling-services/food-organics/
- Veolia – using 1.5m3 bins only (front lift) https://www.veolia.com/anz/our-services/our-services/recycling-waste-services/recycling/organics
- Easywaste – using 120 & 240L bins http://www.easywaste.com.au
- Waste Ninja – 120 & 240L bins utilising smaller 6.4m rear mini loaders https://www.wasteninja.com.au

Onsite Options for Organics Treatment

On site food and organic waste treatment/pre-processing systems can reduce the footprint area of a bin store by reducing the number of bins required, and can reduce waste collection frequency when food or organics waste can be diverted to these units.

These units reduce food scraps to 90% of their original volume in 24 hours, through heat and agitation, and the by-product is a compost material. These units take all kinds of food ie fruit, vegetables, meat, fish, eggshells so sorting is not an issue. These units prevent generation of the greenhouse gas methane (methane is 25 times more detrimental than carbon dioxide) which otherwise is generated when organic wastes decompose anaerobically in landfills. The suppliers usually can provide Green-house gas cost v benefit assessments of their units. These systems are increasingly being introduced around Melbourne.

- **WasteMaster** is an Australian technology which converts putrescible waste to a concentrated residue within 24 hours. https://www.greenecotec.com
- **Closed Loop Organics** provide CLO'ey bins of different capacity and rental servicing costs. More information available at: http://www.closedloop.com.au/domestic-composter
- Other systems such as **PulpMaster, EcoGuardians (Gaia system) or Biobin** generally provide systems that dehydrate or mash up food waste to reduce total volumes, but operate slightly differently to the above two systems.

Surplus food donation.

There are organisations that collect surplus food for human consumption. Collectors that provide this service within Melbourne include:

SecondBite - SecondBite redistributes surplus fresh food to community food programs around Australia. Food is donated by farmers, wholesalers, markets, supermarkets, caterers and events. This high-quality surplus food is redistributed to community food programs that support people who are homeless, women and families in crisis, youth at risk, indigenous communities, asylum seekers and new arrivals. Contact: Emily Wild Community, Volunteer and Office Manager emily@secondbite.org

FareShare - FareShare, is a not-for-profit organisation, rescuing food to fight hunger. It collects quality food that would otherwise be wasted from Melbourne businesses such as food wholesalers, retailers and caterers. Volunteers in FareShare's kitchen use this food to prepare healthy, nutritious meals that they distribute to over 100 charities providing emergency food relief for the hungry and homeless. Phone: 03 9428 0044 Email: kath.cotter@fareshare.net.au

OzHarvest is the first perishable food rescue organisation in Australia collecting quality excess food from commercial outlets and delivering it, direct and free of charge, to 600 charities providing much needed assistance to vulnerable men, women and children. www.ozharvest.org, Ph: 03 9999 5070 melbourne.info@ozharvest.org

FoodBank - Foodbank is Australia's largest food relief organisation, operating on a scale that makes it crucial to the work of the front line charities who are feeding vulnerable Australians. Foodbank provides more than 70% of the food rescued for food relief organisations nation-wide. https://www.foodbank.org.au PH: 03 9362 8300 info@foodbankvictoria.org.au

4.3 Other Waste Streaming Details

4.3.1 Commercial Waste Streaming, Public Litter & Ash bins

a) Separation of landfill and recycling is to initially occur in all work areas, communal spaces and kitchenettes and then in bin stores. For this reason, the development will include streamed waste bins on each floor or work area. Cleaners and staff would then transfer already streamed waste to the corresponding bin in the main storage area.

b) Correct streaming in these areas in the first instance reduces contamination to ensure more effective recycling occurs.

c) Commercial waste is to be transferred to the shared bulk bin store with minimal manual handling. The tenancy is to include a trolley to cart bags of waste or wheeled bins to transfer waste.

Examples of streamed bins

Example of trolley

Example of 60L wheeled hospitality bins

All bins are to be placed alongside each other to ensure recycling is easy.

d) For larger mixed use and commercial developments with a public interface, litter bins are recommended to be provided within forecourts or public areas for building users to dispose of waste in the correct manner.

e) Outdoor areas where people congregate, where possible should be smoke free zones. Locations where smokers congregate should include an ash box installed on the litter bins or a wall. This will help reduce cigarette butts being left on the ground and entering the stormwater system and creeks.

Example of public litter bins

Example of public litter bins

Example of cigarette Ash bins

4.3.2 Green Garden Waste

a) All residents and staff are encouraged to compost as much garden and food waste as possible within their own tenement. This can be re-used for the own garden. Many Council offer discount rates on a range of compost bins and worm farms.

b) For common areas a private maintenance contractor will be responsible for removing any green garden waste and can also by arrangement, remove green waste from private spaces if required.

4.3.3 Hard Waste & Clothes Collections

In the first instance, unwanted bulky items, clothes and other consumables can be donated to charities, sold on online or at second-hand local market places as is if in good. If repairs are required, seek out repair community centres for re-purposing. The following recyclers may assist:

a) In addition suppliers such as **Ecycle** http://www.ecyclesolutions.net.au will deliver whitegoods and either collect clean polystyrene from retailers or take polystyrene away after delivery.

b) **TerraCycle** is a national initiative where you can look up where to deposit non-recyclable waste such as contact lenses, coffee capsules, mailing satchels, toothbrushes & tubes. http://www.terracyclemap.com

c) Textile recyclers are available Australia wide for public and commercial donators including: https://scrg.com.au and https://texrecaus.com and https://upparel.com.au/toesox-australia/. For larger multi unit developments, a dedicated clothes / textiles bin is to be provided either from a recognised charity or a dedicated collection bin located permanently on site - https://www.bremco.com.au/charity-donation-bin-bmp065/

d) Local information regarding the disposal and recycling of common household items for each Council can be found at:

e) https://www.sustainability.vic.gov.au/You-and-your-home/Waste-and-recycling/Council-waste-and-recycling-services

f) https://recyclingnearyou.com.au/councils/

Finally, if bulky hard waste is to be disposed of, a private waste contractor can be engaged to collect all bulky hard waste and eWaste items at a frequency to maintain storage spaces.

Bulky Hard waste stores and e-Waste bins have been provided for all residents and staf in B01 to to utilise.

4.3.4 E-Waste Recycling

a) As of 1st July 2019 there is a ban on e-waste to landfill in Victoria. Any item with a plug, battery or cord can no longer be placed in kerbside bins and instead must be deposited at a designated e-waste drop-off point. Electronic waste includes old mobile phones, computers, audio devices, refrigerators and other white goods, hair dryers, TVs, heaters, and air-conditioners.

b) eWaste bins have been provided along side all other waste streams to make it easy for residents and staff to recycle properly.

4.3.5 Other Recyclables

a) For multi-dwelling and non residential tenancies with shared bin storage one container with drawers or a number of small stackable plastic crates with minimum footprint 500x500mm is to be supplied to collect recyclables such as:

- batteries
- light globes
- printer cartridges

b) These items are to be recycled periodically as arranged by facility management.

4.3.6 Soft Plastic Recycling

a) Eliminating or reducing the use of single-use plastics can greatly reduce waste volumes both in residential and commercial settings. This includes straws, plastic bags and plastic wraps. Many private waste contractors can commercially collect soft Plastic.

b) **Reground** https://www.reground.com.au/ collect soft plastics and coffee grounds. They provide bags or bins, into which soft plastics or coffee grounds are separately emptied. Reground replace bins and/ or bags on a consistent regular basis, depending on how fast they fill up. They then collect the resource and take them to community gardens and home gardeners or local plastics recyclers who put the waste to positive use.

c) Other commercial waste contractors may also be able to collect streamed soft plastics depending on your location.

d) **Coles and Woolworths** both offer plastic bag and soft plastic recycling for residents. Residents can place all plastics in one plastic bag and add it to the recycling bin at the supermarket for collection. Any location identified on the Redcycle website http://www.redcycle.net.au/where-to-redcycle/ .

4.3.7 The VIC Bag ban

a) As of 1st November 2019 there is a ban on lightweight plastic shopping bags. All retailers including restaurants are not permitted to provide or use these plastic bags.

b) The ban applies to all lightweight plastic shopping bags that have a thickness of 35 microns or less at any part of the bag, including degradable, biodegradable and compostable bags.

c) EPA Victoria is managing compliance monitoring and reports of suspected banned bags. Further information can be found at: https://vicbagban.com.au & https://www.sustainability.vic.gov.au/PlasticBags

5 Supplementary information

5.1 Waste Links

City of Monash Council Waste Directory:

https://www.monash.vic.gov.au/Services/Rubbish-Recycling/Monash-Waste-Transfer-and-Recycling-Station

Waste collection companies in Victoria:

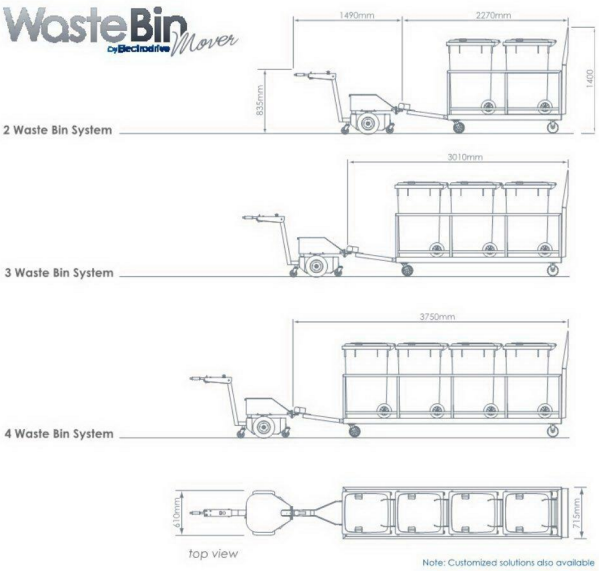
- Waste Wise Environmental www.wastewise.com.au
- CSC Waste https://cscwaste.com.au/ (Melb only at 08/2021)
- Waste Ninja https://www.wasteninja.com.au
- Kartaway http://www.kartaway.com.au/melbourne/index.html
- iDump Waste Management www.idump.com.au
- Wastech www.wastech.com.au
- Easy Waste - http://www.easywaste.com.au
- Citywide www.citywide.com.au
- JJ Richards & Sons www.jjrichards.com.au (Australia wide – depots per https://www.jjrichards.com.au/contact/)
- Suez (incl Sita) – www.suez.com.au/en-au ph 13 13 35
- KS Environmental - https://ksenvironmental.com.au/ (Melbourne only)
- Transpacific-Cleanaway - https://www.cleanaway.com.au, ph 13 13 39
- Veolia - https://www.veolia.com/en
- Australian Box Recycling http://www.australianboxrecycling.com.au/recycling-bins.php

5.2 Mechanical Tug and Bin Trolley Details

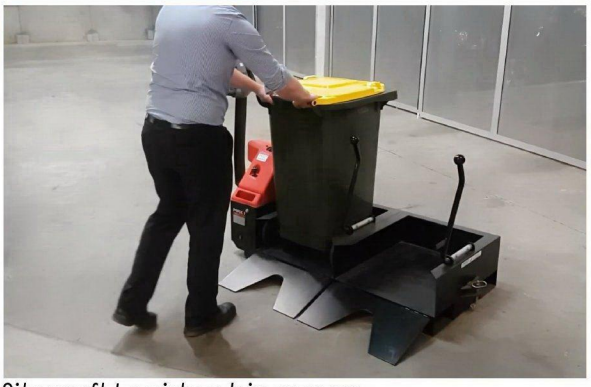
Where mechanical tugs are recommended, the following details will assist.

Suppliers include

- www.electrodrive.com.au
- http://www.mastermover.com.au
- www.sitecraft.net.au
- http://www.hercules.com.au/index.php?tug2.



Two-wheel bins are usually loaded onto a trailer/dolly for transportation. Space is required for storage of the tug unit plus trailer. Tugs can be 1.5m long x 0.8m wide. Trailers can vary in size – allow space larger than the bin footprint.



Sitecraft Logistec bin mover

Four-wheel bins can be towed directly by the tug and require less space as only the tug is required to be stored, not a trailer. Towing brackets and directional wheel locks are available from Sulo www.sulo.com.au and can readily be retrofitted to 660-1100L bins for towing. Towing brackets and wheel locks do not project outside of the bin footprint area.

Mechanical tug systems will usually cost in the range of $10,000 - $15,000, with trailer possibly extra.

Manual wheelie bin handling trolleys provide assistance with the manual handling of 120L to 360L bins. Various models are available with standard manual trolley as well as an electric boosted trolley to carry up to four 2-wheelie bins. They should be included in case of a longer bin movement distance or for the less abled people to safely move the bins if required.

Suppliers include

- https://www.materialshandling.com.au
- https://www.wheeliesafe.com.au/

5.3 Bin Lifters

Electro Hydraulic Bin-Lifters should be provided in each bin room to help staff safely to empty the internal 120L/240L bins into the main 1100L bins placed in the bin store.

Suppliers for Bin-Lifter are as follows:

- LiftMaster http://www.liftmastermh.com.au/
- WasteTech http://www.wastech.com.au/Bin-Lifters/bin-lifters.html
- SPACEPAC Industries Pty Ltd. http://www.spacepac.com.au/Brochures/Lifters/LiftMaster/Bin-Lifters_2pg_np.pdf
- SiteCraft http://www.sitecraft.net.au/materials-handling/recycling-waste-management/wheelie-bin-lifters-bin-tippers/#
- Easylift http://www.easylift.com.au/a/Materials_Handling_Equipment/Wheelie_Bin_Lifters
- Active lifting equipment co. pty ltd. http://www.activelifting.com.au/MaterialsHandling/Binlifters/powered150.htm

5.4 Waste Chutes

Waste chutes can be either single chutes for garbage only (with associated recycling bins on each floor beside the garbage chute), dual chutes for garbage and recycling or a shared single chute with electronic controls that nominate which bin the garbage or recycling will fall into in the bin store.

Some concerns exist in relation to cardboard and glass containers being placed down chutes. Large cardboard boxes may cause blockages in waste chutes and glass containers may break up at the base of the chute. Providing a separate cardboard recycling bin in or near the bin store room will allow cardboard can be excluded from chutes.

Chute and bin room odour control products/services include:

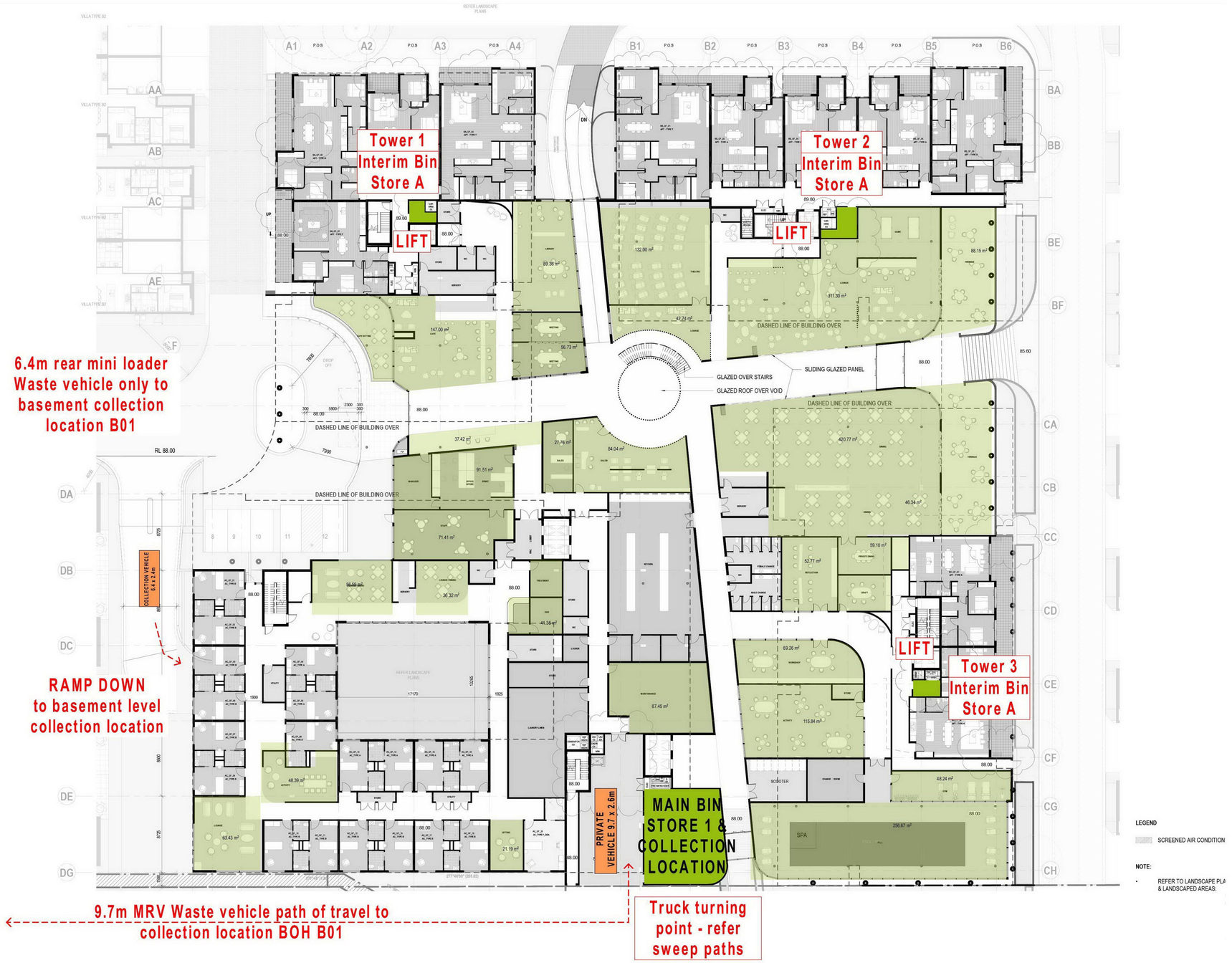
- Garbage doctor http://www.garbagedoctor.com.au/garbage_odour_control_systems.html
- Purifying Solutions http://www.purifyingsolutions.com.au/garbage_chute_cleaning.html
- ASI MacDonald https://www.jdmacdonald.com.au/product/garbage-chute-gc1/

5.5 Bottle Crushing

Onsite crushing of glass bottles via units such as the Bottlecycler www.bottlecycler.com is a significant way to reduce waste volumes and also assist with glass recycling. Bottles without contaminants other than remnant drink are loaded directly into the Bottlecycler and crushed on the spot to reduce bottle volumes by about 80% (5:1 reduction). Broken glass cullet can be sorted by colour off site after collection for recycling

Appendix 1 - Bin Collection Plan

APPENDIX 1



Bin Collection Location Plan
Street Level 1:250

Project
62-94 JACKSON ROAD
MULGRAVE VIC 3170

Drawing
Bin Collection Location Plan B01

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Reg No.	**Drawn**	**Chk.**
	LR	CH
Job No.	**Drawing No.**	**Revision**
	WP.01	d

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D22-128205

Bin Collection Location Plan
L2 (typical) 1:250

Bin Collection Location Plan
Basement 1:250

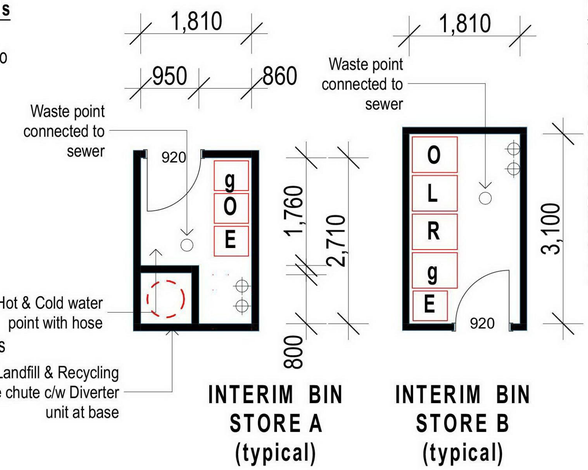
Interim Bin Stores to hold at least a weekends worth of waste for ILU residents.
Food organics & glass bins to be rotated down to bulk bins twice weekly.

O = 1No. 120L Organics Food bin
g = 1No.120L Glass bin

A single chute with diverter unit at base for recycling & landfill waste streams
……
E = 1No. 120L E-waste bin*
4m2 Bulky hard waste (refer plan)*

* collected as often as required to ensure all bins are maintained and serviceable.

120L bin size = 940h x 560d x 485mm w
Bin store to be mechanically vented



Interim Bin Stores for Main Care Building.
Bins to be rotated down to bulk bins daily (end of shift).

O = 1No. 240L Organics Food bin
L = 1No. 240L Landfill bin
R = 1No. 240L Co-mingled recycling bin
g = 1No. 240L Glass bin
E = 1No. 120L Ewaste bin
120L bin size = 940h x 560d x 485mm w
Bin store to be mechanically vented

Interim Bin Store Layouts
1:50

Project
62-94 JACKSON ROAD
MULGRAVE VIC 3170

Drawing
Bin Stores B01

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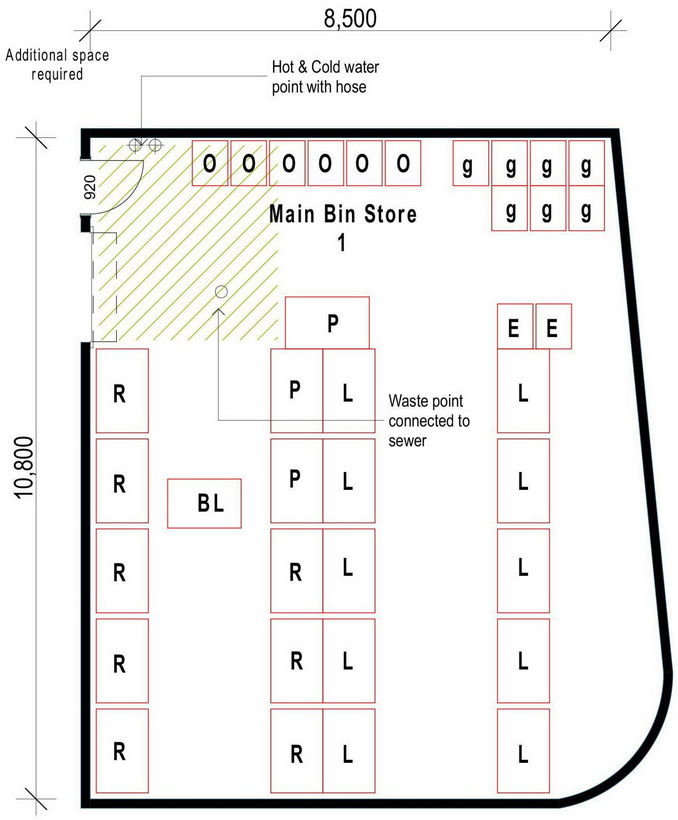

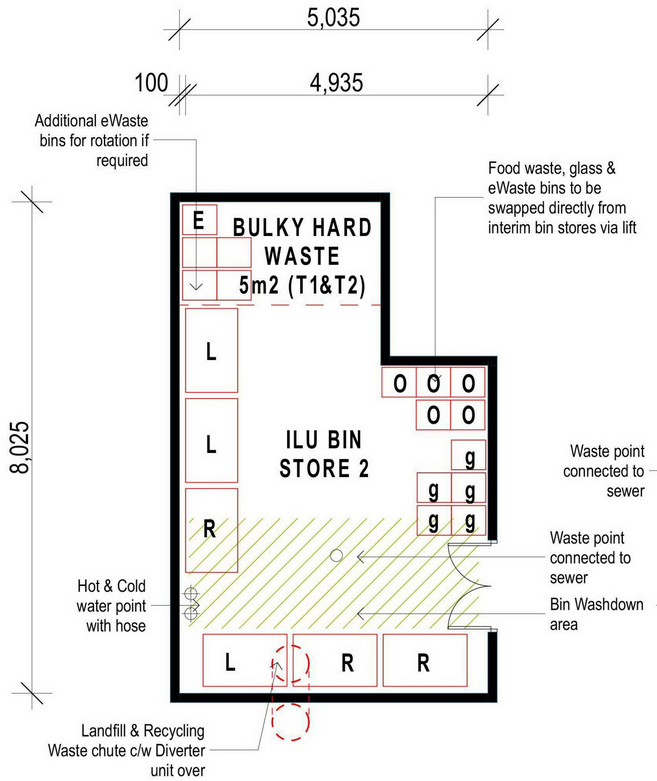

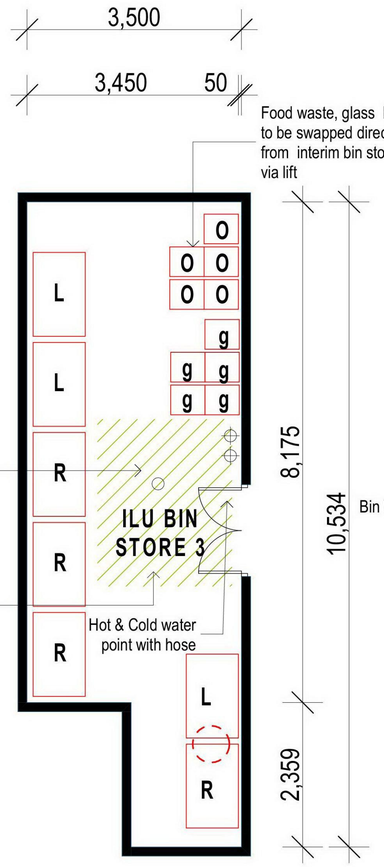

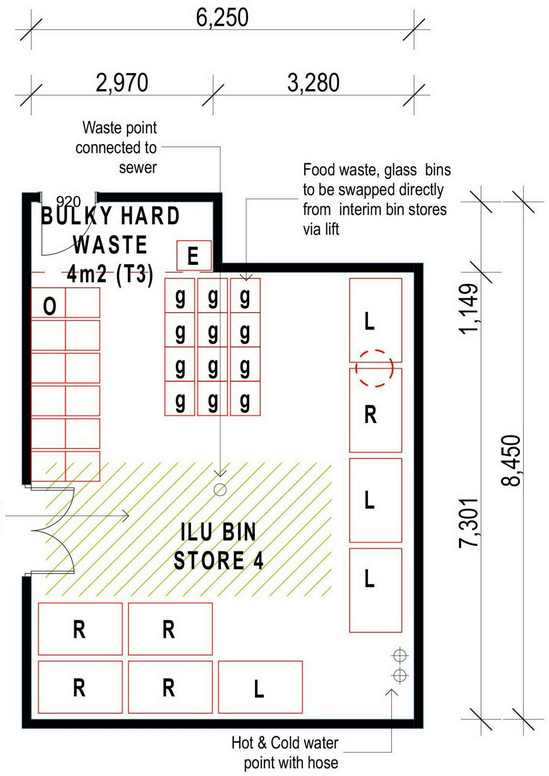

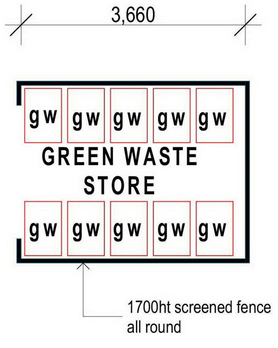

gw = 10No. 360L Green Garden waste bins collected as required

COMMERCIAL WASTE
Collections 3 times weekly :

L = 11No. 660L Garbage Bin
R = 8No. 660L Co-mingled Recycling Bins
P = 3No. 660L Cardboard / Paper Bins
O = 6No. 240L Organic Food Waste Bin
g = 7No. 240L Glass Bins (once weekly)
……..

E = 2No. 240L E-waste bin*
4m2 Bulky hard waste (refer plan)*

* collected as often as required to ensure all bins are maintained and serviceable.

240L bin size = 580 x 735mm
660L bin size = 1370 x 850mm
Bin store to be mechanically vented

ILU Residential Waste - Tower 1
29 Units (5 levels)
Once weekly collections

L = 3No. 660L Landfill bins
R = 3No. 660L Co-mingled Recycling Bins
O = 5No. 120L Food Organics Bins
g = 5No. 120L Glass Bins collected
……..
E = 1No. 120L E-waste bin*
2m2 Bulky hard waste (refer plan)*

* collected as often as required to ensure all bins are maintained and serviceable.

120L bin size = 560 x 485mm
660L bin size = 1370 x 850mm
Bin store to be mechanically vented

ILU Residential Waste - Tower 2
34 Units (5 levels)
Once weekly collections

L = 3No. 660L Landfill bins
R = 4No. 660L Co-mingled Recycling Bins
O = 5No. 120L Food Organics Bins
g = 5No. 120L Glass Bins collected
……..
E = 1No. 120L E-waste bin*
2m2 Bulky hard waste (refer plan)*

* collected as often as required to ensure all bins are maintained and serviceable.

120L bin size = 560 x 485mm
660L bin size = 1370 x 850mm
Bin store to be mechanically vented

ILU Residential Waste - Tower 3
44 Units (6 levels)
Once weekly collections

L = 4No. 660L Landfill bins
R = 5No. 660L Co-mingled Recycling Bins
O = 12No. 120L Food Organics Bins
g = 12No. 120L Glass Bins collected
……..
E = 1No. 120L E-waste bin*
2m2 Bulky hard waste (refer plan)*

* collected as often as required to ensure all bins are maintained and serviceable.

120L bin size = 560 x 485mm
660L bin size = 1370 x 850mm
Bin store to be mechanically vented

Bin Store Layouts
1:50

Project
62-94 JACKSON ROAD
MULGRAVE VIC 3170

Drawing
B01 Bin Stores

Date	Scale	Sheet Size
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Job No.	Drawing No.	Revision
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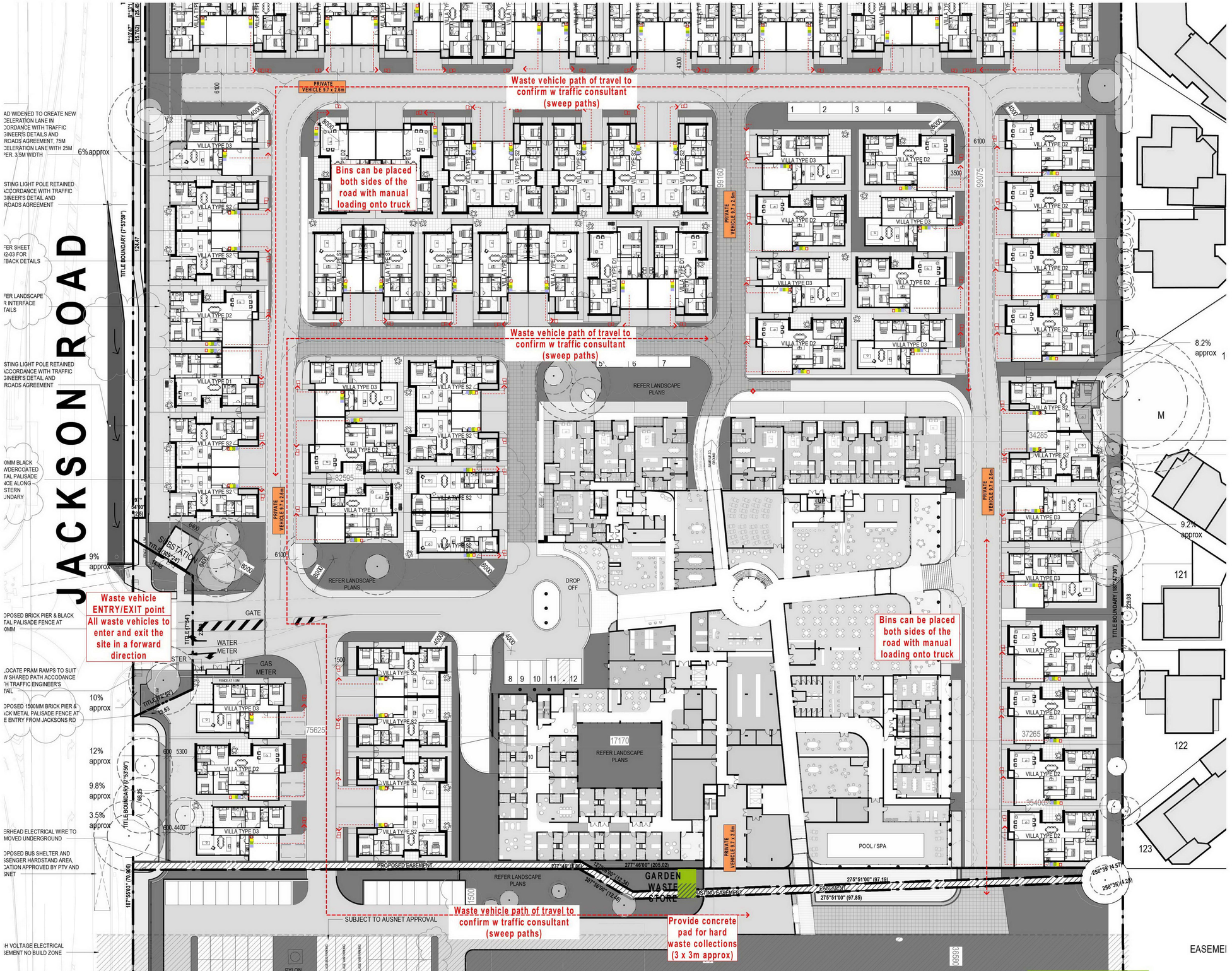

Villa Collection Plan
1:400

Project
62-94 JACKSON ROAD
MULGRAVE VIC 3170

Drawing
Villa Collection Plan

Date	Scale	Sheet Size
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Reg No.	Drawn	Chk.
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Job No.	Drawing No.	Revision
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Appendix 2 - Preliminary Risk Review

Class 1 Risk = Potential to cause death or permanent injury.	**Class 2 Risk** = Potential to cause injury requiring medical attention.	**Class 3 Risk** = Potential to cause an injury treatable with first aid.

Activity	Steps involved in completing activity & risk	Risk level	Risk mitigating measures	Implementation responsibility
Moving of bins from bin store to collection space	Distance bins to be moved approx. 10m. Risk of manual handling injuries	2	Use max bin sizes of 660L Ensure the distance of travel is no more than 40m. The bin transfer grade should not exceed 1:14 The travel path is to be kept free of all obstacles including loose gravel or dirt, steps, kerbs, speed bumps, berms, sills or ramps. Ensure all access points have suitably wide doorways and circulation areas.	Building Designer / Facility Management
Vehicle comes on site for collection	Large vehicle entering site, and reversing before exiting site. Major risk is hitting, particularly when reversing, young children, the elderly or unaware people	1	Vehicle driver entering site is to survey the area for activity. If there is no activity near reversing location, driver to execute reverse move immediately before the situation can change. If there is activity, the driver should ensure the person/persons moving in the area are aware of the pending reversing action, and have time to stay away from the reversing zone or ensure children are away from the reversing zone. Reversing should be at very slow speed. There is no reversing anticipated in public areas. Reversing buzzers to be applied to all trucks.	Waste collection contractor / Facility Management
Emptying apartment waste and recycling in chutes	Resident takes dual waste and recycling bins to waste/recycling chute rooms on each level. Risk of hands in chutes,	3	Signage to ensure hands don't go into chutes. Chute installed to safety standards and manufacturers recommendations.	Developer / Builder

Activity	Steps involved in completing activity & risk	Risk level	Risk mitigating measures	Implementation responsibility
	dropping watches, rings etc in chutes.			
Moving bins within waste / recycling collection room on ground floor	Manual handling or automated bin changing. Risk of manual handling injuries.	2	Appropriate design of collection room and space. Training of designated person	Building Designer / Facility Management
Movement of commercial waste from shops to the bin store	Carting waste from the Care and common areas in Building 1 (B01) to the bin store. Risk of manual handling injuries.	2-1	Staff should ensure their bin sizes are not excessive and cannot carry too much weight to safely negotiate to the bin store. EWheeled transfer of waste is recommended at all times.	Facility Management
Bin loading on internal roads	Moving bins from temporary collection space to collection vehicle parked on street. Collection may occur at the rear of the truck. Risk of being struck by passing vehicles if step outside the line of the width of the truck	1	Bin collection operator's own safety measures incl training	Bin collection operator
Note this assessment is for consideration during the design phase of the project. It is <u>not</u> to replace a risk assessment / Safe Work Method Statement being completed by the contractor and persons undertaking the waste removal process.				

Appendix 3 - Waste rates & calculations

Appendix C - Waste Generation Calculations

62-94 Jackson Road, Mulgrave VIC 3170

Unit types	Waste Generation Rates (L/Week unless specified)				Source	TOTAL number Units / Area	Waste Generated (L/Week)			
	Garbage	*Recycling*	*Food / Organics*	*Glass*			*Garbage*	*Recycling*	*Organics*	*Glass*
ILU - Villas	120	120	120	80	Monash residential Allowance	70	8400	8400	8400	5600
ILU - Independent Living Units - Tower 1	55	65	25	15	Monash - Independant Living	29	1595	1885	725	435
ILU - Independent Living Units - Tower 2	55	65	25	15	Monash - Independant Living	34	1870	2210	850	510
ILU - Independent Living Units - Tower 3	55	65	25	15	Monash - Independant Living	42	2310	2730	1050	630
	Total Litres per Week per stage						**5775**	**6825**	**2625**	**1575**

Weekly Collections	No. 1100L Bins	5.3	6.2	na	na
	No. 660L Bins	8.8	10.3	na	na
	No. 240L Bins	24.1	28.4	10.9	6.6

Care Beds (Dementia)	28	32	7	3	Monash - serviced apt	60	**1680**	1920	420	180
ALS - Assisted Living	4	54	12	6	Monash - Retirement Village	54	**216**	2916	648	324
Salon, Beauty, treatment	60	60	0	0	Monash - Retail (Hairdresser)	172	722	722	0	0
Lounge / Bar	40	40	10	10	Monash - Licenced Bar	1100	**3080**	3080	770	770
Café / Dining*	240	200	64	6	Monash - Café	850	**14280**	11900	3808	357
Craft, Activities.gym, pool, Theatre, billards, library	10	10	0	0	Monash - Gym	790	553	553	0	0
Garden, workshop, maintenance, laundry,	10	10	0	0	Monash - Office	160	112	112	0	0
Administration (Staff room, Office, Meeting, lobby)	10	10	0	0	Monash - Office	270	189	189	0	0
	Total Litres per Week per stage						**20,832**	**21,392**	**5,646**	**1,631**

Weekly Collections	No. 1100L Bins	18.9	19.4	na	na
	No. 660L Bins	31.6	32.4	na	na
	No. 240L Bins	86.8	89.1	23.5	6.8

Appendix 4 - Sweep paths

D22-128205

LOADING BAY - INGRESS

REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	17/12/2021	INITIAL ISSUE	A MONTGOMERIE	W DE WAARD

62 - 94 JACKSONS ROAD, MULGRAVE
PROPOSED AGED CARE AND RETIREMENT VILLAGE

GENERAL NOTES:
500MM VEHICLE BODY CLEARANCE USED FOR SIMULATION

FILE NAME: G30064-02
SHEET NO.: 01

N

SCALE: 1:400 (A3)
0 4 8

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LOADING BAY - EGRESS

REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	17/12/2021	INITIAL ISSUE	A MONTGOMERIE	W DE WAARD

62 - 94 JACKSONS ROAD, MULGRAVE

PROPOSED AGED CARE AND RETIREMENT VILLAGE

GENERAL NOTES:

500MM VEHICLE BODY CLEARANCE USED FOR SIMULATION

FILE NAME: G30064-02

SHEET NO.: 02

SCALE: 1:400 (A3)

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BASEMENT WASTE COLLECTION - BIN STORE 1 & 2

VEHICLE USED IN SIMULATION
(VEHICLE SPEED - 5KM/H)

Waste Wise Mini (Hino 300)

Width	: 1.7m
Front Track	: 1.4m
Rear Track	: 1.44m
Kerb to Kerb Radius	: 12.4m

LEGEND

- REAR WHEELS
- FRONT WHEELS
- VEHICLE BODY
- BODY CLEARANCE
- BIN LOCATIONS

REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	17/12/2021	INITIAL ISSUE	A MONTGOMERIE	W DE WAARD

62 - 94 JACKSONS ROAD, MULGRAVE
PROPOSED AGED CARE AND RETIREMENT VILLAGE

GENERAL NOTES:
500MM VEHICLE BODY CLEARANCE USED FOR SIMULATION

FILE NAME: G30064-02
SHEET NO.: 03

N

SCALE: 1:400 (A3)
0 4 8

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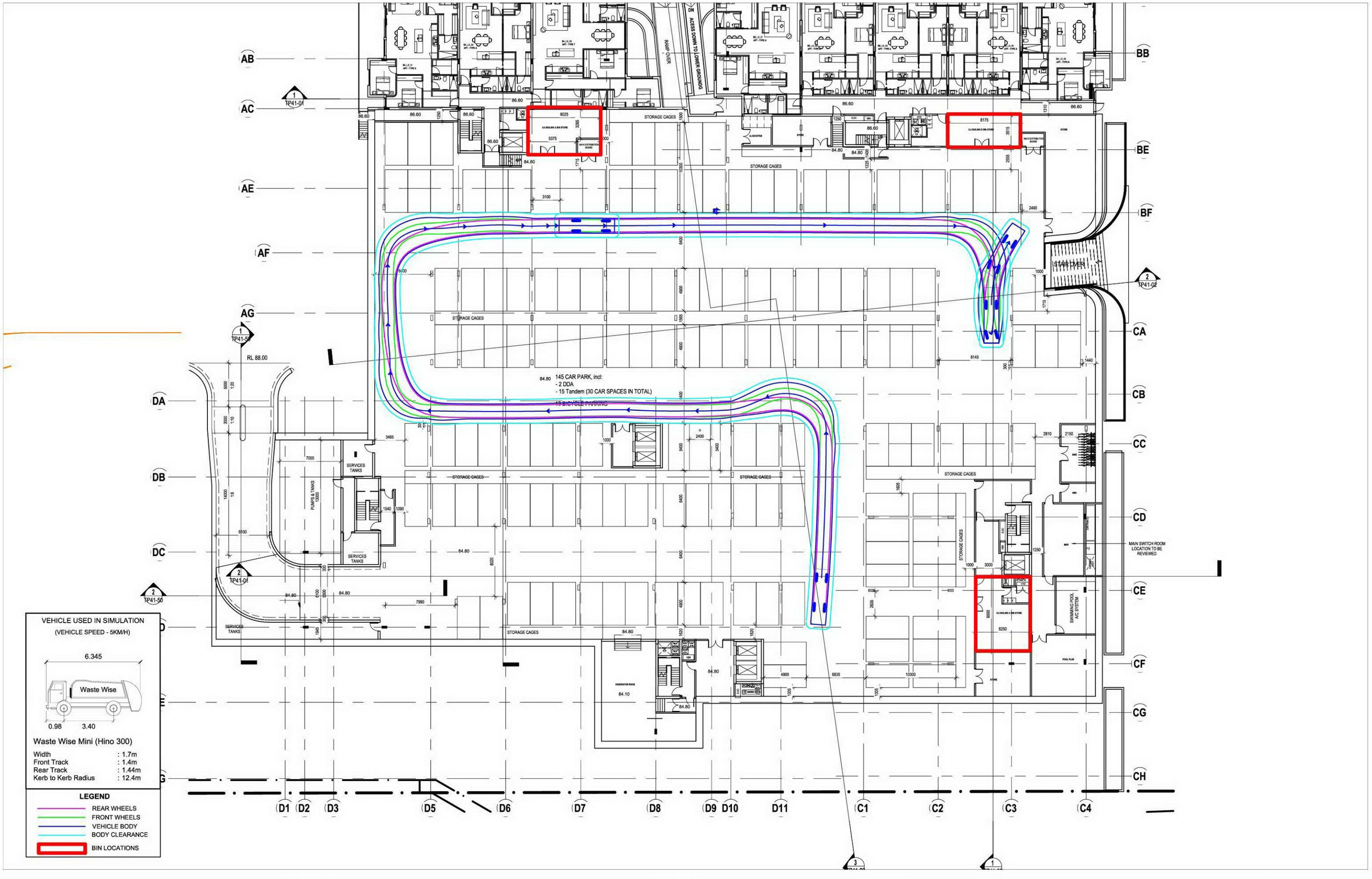
BASEMENT WASTE COLLECTION - BIN STORE 3



VEHICLE USED IN SIMULATION
(VEHICLE SPEED - 5KM/H)

Waste Wise Mini (Hino 300)

Width	: 1.7m
Front Track	: 1.4m
Rear Track	: 1.44m
Kerb to Kerb Radius	: 12.4m

LEGEND

- REAR WHEELS
- FRONT WHEELS
- VEHICLE BODY
- BODY CLEARANCE
- BIN LOCATIONS

REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	17/12/2021	INITIAL ISSUE	A MONTGOMERIE	W DE WAARD

62 - 94 JACKSONS ROAD, MULGRAVE
PROPOSED AGED CARE AND RETIREMENT VILLAGE

GENERAL NOTES:
500MM VEHICLE BODY CLEARANCE USED FOR SIMULATION

FILE NAME: G30064-02
SHEET NO.: 04

SCALE: 1:400 (A3)
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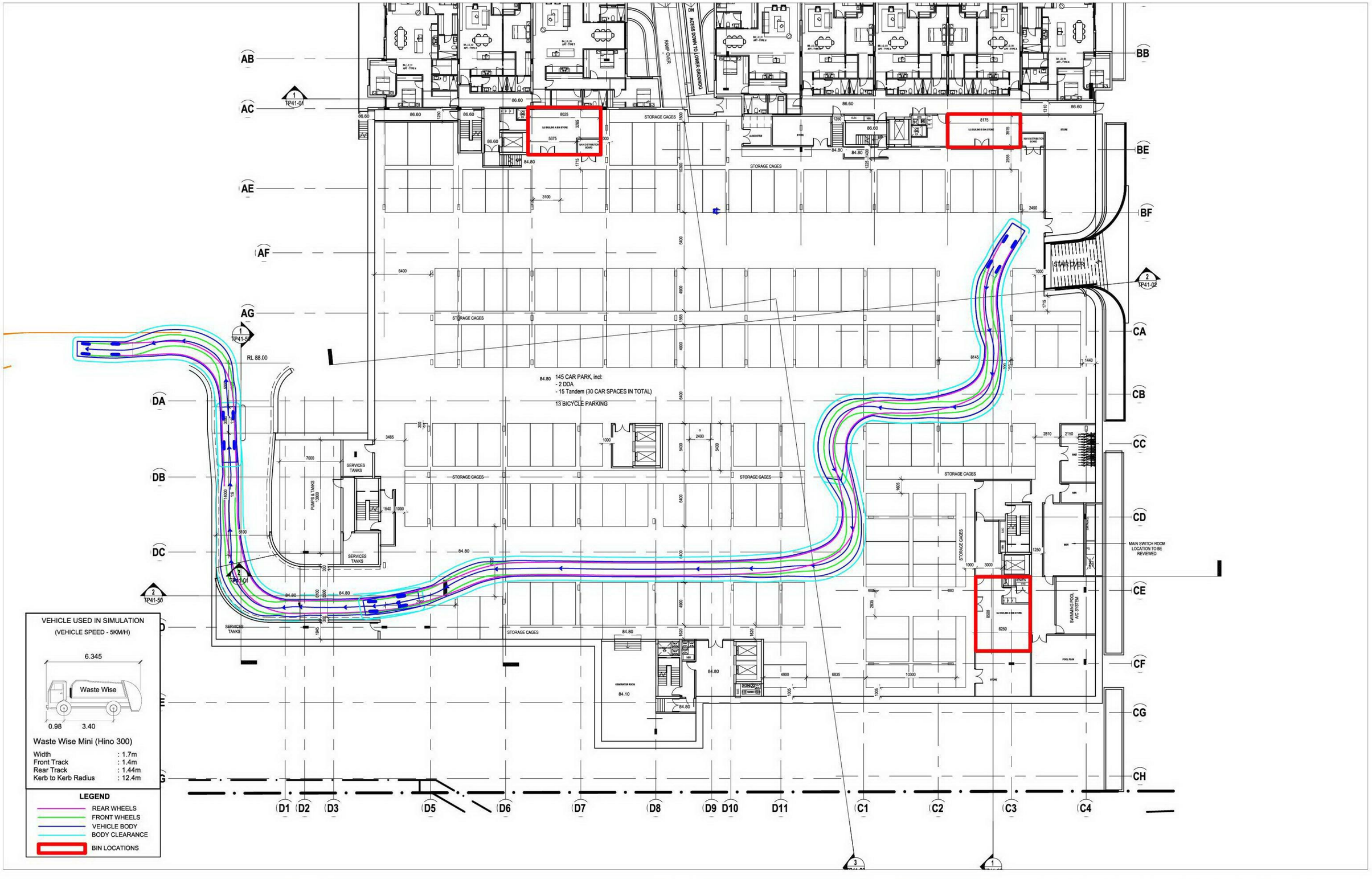
BASEMENT WASTE COLLECTION - BIN STORE 3



VEHICLE USED IN SIMULATION
(VEHICLE SPEED - 5KM/H)

Waste Wise Mini (Hino 300)

Width	: 1.7m
Front Track	: 1.4m
Rear Track	: 1.44m
Kerb to Kerb Radius	: 12.4m

LEGEND

- REAR WHEELS
- FRONT WHEELS
- VEHICLE BODY
- BODY CLEARANCE
- BIN LOCATIONS

REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	17/12/2021	INITIAL ISSUE	A MONTGOMERIE	W DE WAARD

62 - 94 JACKSONS ROAD, MULGRAVE

PROPOSED AGED CARE AND RETIREMENT VILLAGE

GENERAL NOTES:

500MM VEHICLE BODY CLEARANCE USED FOR SIMULATION

FILE NAME: G30064-02

SHEET NO.: 05

SCALE: 1:400 (A3)

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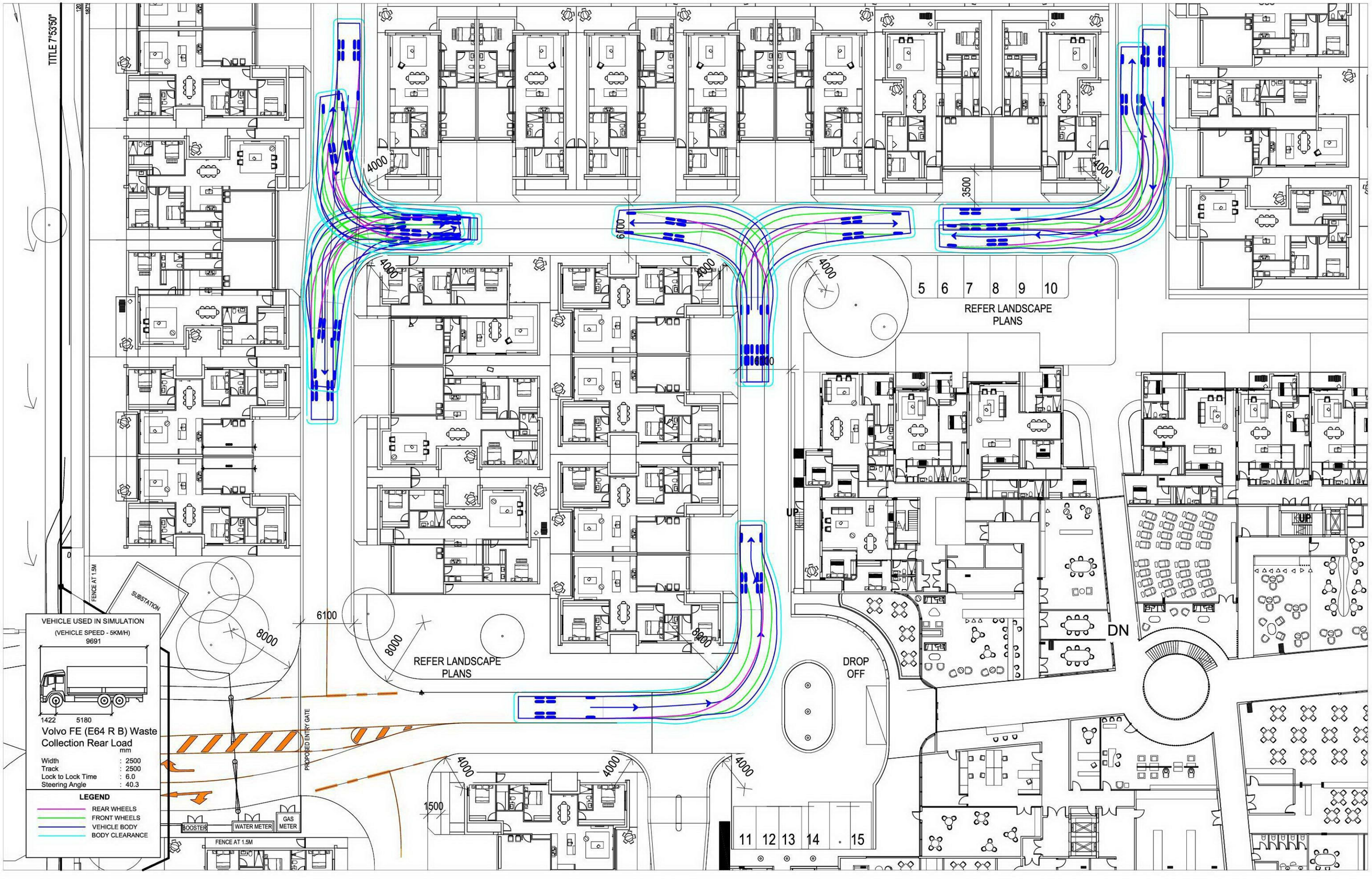
KERBSIDE WASTE COLLECTION - KEY INTERSECTION MOVEMENTS PART 1



REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	17/12/2021	INITIAL ISSUE	A MONTGOMERIE	W DE WAARD

62 - 94 JACKSONS ROAD, MULGRAVE
PROPOSED AGED CARE AND RETIREMENT VILLAGE

GENERAL NOTES:
500MM VEHICLE BODY CLEARANCE USED FOR SIMULATION

FILE NAME: G30064-02
SHEET NO.: 06

N

SCALE: 1:400 (A3) 0 4 8

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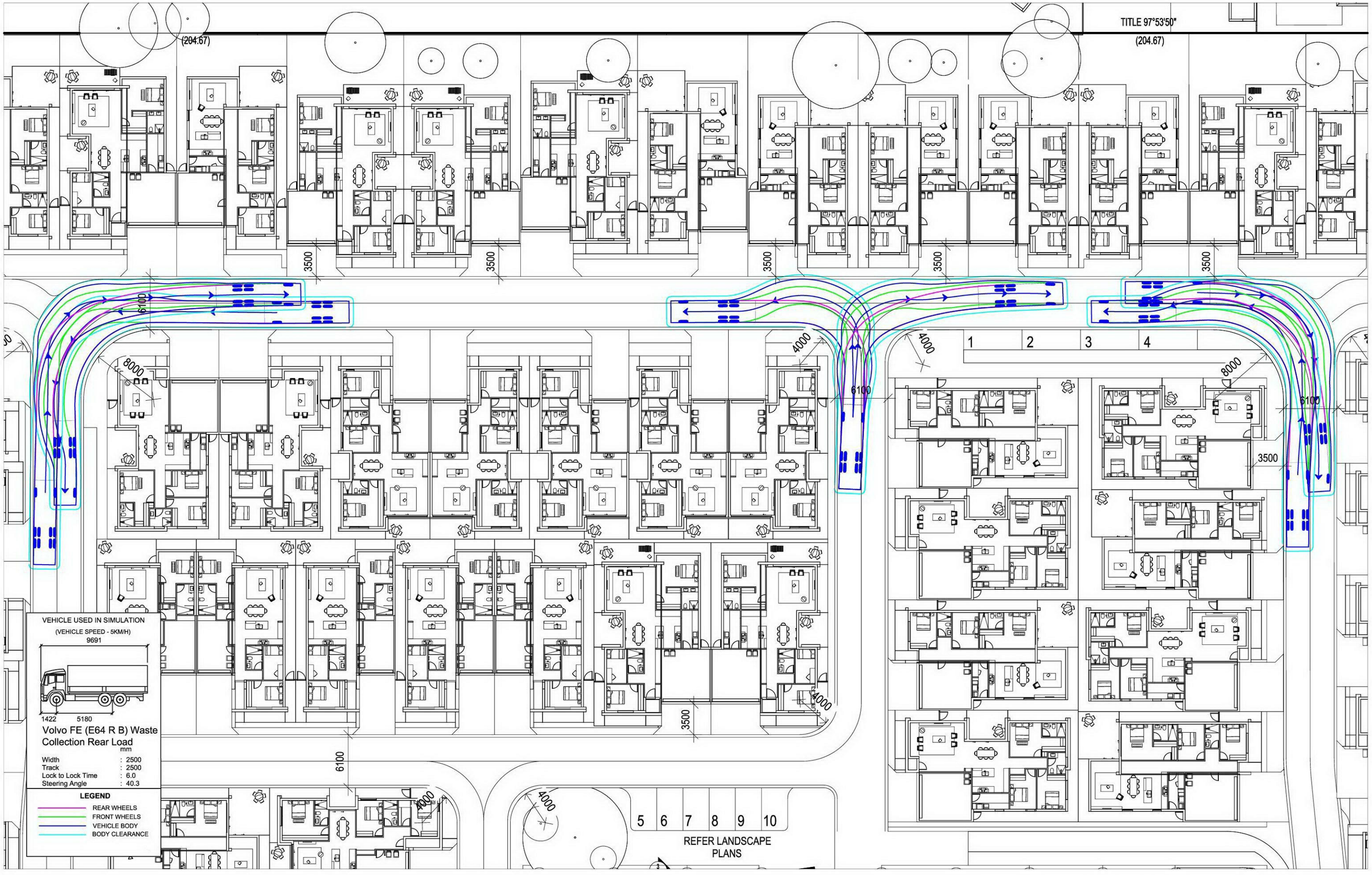
KERBSIDE WASTE COLLECTION - KEY INTERSECTION MOVEMENTS PART 2



REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	17/12/2021	INITIAL ISSUE	A MONTGOMERIE	W DE WAARD

62 - 94 JACKSONS ROAD, MULGRAVE

PROPOSED AGED CARE AND RETIREMENT VILLAGE

GENERAL NOTES:

500MM VEHICLE BODY CLEARANCE USED FOR SIMULATION

FILE NAME: G30064-02

SHEET NO.: 07

N

SCALE: 1:400 (A3)

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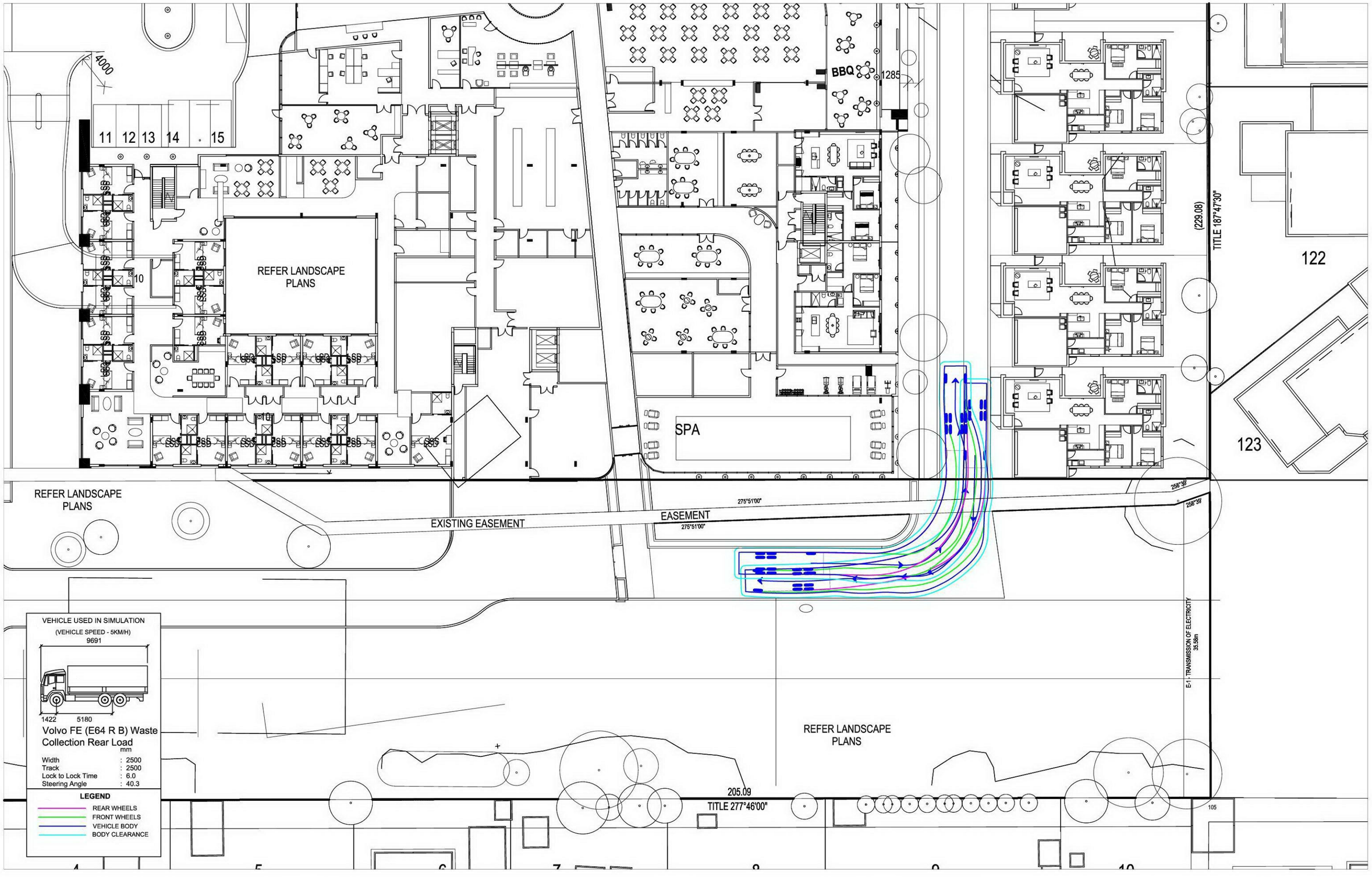
KERBSIDE WASTE COLLECTION - KEY INTERSECTION MOVEMENTS PART 3



REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	17/12/2021	INITIAL ISSUE	A MONTGOMERIE	W DE WAARD

62 - 94 JACKSONS ROAD, MULGRAVE
PROPOSED AGED CARE AND RETIREMENT VILLAGE

GENERAL NOTES:
500MM VEHICLE BODY CLEARANCE USED FOR SIMULATION

FILE NAME: G30064-02
SHEET NO.: 08

SCALE: 1:400 (A3)
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