



Leigh Design

waste management plans for all urban developments

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Waste Management Plan



**Proposed Development: Park Village Stage 1
37 Graham Road, Highett, Victoria**

**Prepared for:
Sunkin Projects Pty Ltd**

Document Control

Report Date: 23 August 2022 (supersedes all prior reports)

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**Bayside City Council
Planning and Environment Act 1987**

ENDORSED PLAN

**This plan complies with
Planning Permit: 5/2022/443/2
Planning Permit issued: 22/12/2022**

**Sheet 1 of 1
(19 Page Report)**

**Endorsed on: 29/6/2023
Endorsed by: Tom Corrie**

TABLE OF CONTENTS

SECTION	PAGE No.
Waste Management Summary.....	2
Glossary.....	2
1 Space and System for Waste Management	3
2 Access for Users, Collectors, and Collection Vehicles.....	6
3 Amenity, Local Environment, and Facility Design	7
4 Management and Sustainability	9
5 Supplementary Information	11
6 Contact Information.....	12
7 Limitations.....	12

Enclosures: Drawings and truck swept paths.

WASTE MANAGEMENT SUMMARY

- The Operator, as defined below, shall be responsible for managing the waste system and for developing and implementing safe operating procedures.
- Waste shall be stored within the development (hidden from external view).
- Users shall deposit sorted waste into the chutes and/or into designated collection bins.
- Waste shall be collected within each building (for townhouses, on-street waste collection shall be provided).
- Waste shall be collected privately.

GLOSSARY

Operator: refers to the townhouse owners, Owners Corporations, who shall manage operations (via cleaners and contractors, if required).

User: refers to residents, who shall utilise the waste system.

1 SPACE AND SYSTEM FOR WASTE MANAGEMENT

1.1 Development Description and Use

This development shall consist of apartments and townhouses (see Table 1).

1.2 Estimated Garbage and Recycling Generation

The following table summarises the waste estimate for garbage and recyclables:

Table 1: Waste Estimate

Waste Source	Base Qty (est.)	Garbage	Recycling
Building G - Apts	No. of units = 84	6.72	6.72
Building J - Apts	No. of units = 83	6.64	6.64
Townhouses	No. of units = 53	4.24	6.36
TOTAL (m³/wk)		17.60	19.72

Note: Waste figures are based on adjusted Sustainability Victoria Guidelines.

1.3 Collection Services

Waste shall be collected privately. As such, the Operator shall choose a waste collection provider, negotiate a service agreement, and pay for these services.

1.4 Location, Equipment, and System Used for Managing Waste

This section outlines typical items for consideration when selecting a waste system.

- Dwelling receptacles for garbage, recycling, glass, and organics (with option for the latter as a benchtop caddy).
- Two Garbage Chutes and two Recycling Chutes (in pairs in each building), each with residential level intakes and Bin Store discharge.
- Two Bin Stores at Basement 1 (one per building).
- Townhouse Bin Areas (one per townhouse).
- Collection bins (kept within the above waste areas - refer to Table 2).

The various collection waste-streams are summarised as follows:

Garbage: General waste shall be placed in tied plastic bags and stored within bins.

Recycling: Two types of bins shall be provided; one type of bin for glass and a second type for all other recyclables (paper, cardboard, aluminium, steel, and plastic codes 1-7). Plastic bags not allowed in recycling. Also, bulk cardboard could be collected in dedicated bins. The Operator shall provide instructions and signage concerning recycling items as noted in Section 4.4.

Green Waste: Council shall maintain municipal parkland. For owner's corporation landscaped zones, a gardening contractor shall be employed. For private open spaces, green waste bins shall be provided (if required).

Organics/Food Waste: Users shall place selected compostable waste into Organics bins. Approved compostable liners shall be considered for these bins and associated receptacles.

Other Waste Streams: The disposal of hard/electronic/liquid and other wastes (printer cartridges, clothes, other, polystyrene, batteries, paint, chemicals and detox items, etc) shall be organised with the assistance of the Operator.

These items shall remain within Bin Stores and townhouses until the Operator arranges a private collection from the subject land. Waste items such as domestic volumes of e-Waste, white goods, paints, batteries, florescent tubes and mixed globes can be taken to Bayside's Waste Transfer and Recycling Centre at 144 Talinga Road, Cheltenham (fees may apply).

The following table summarises bin quantity/capacity, collection frequency, and area requirements (based on Table 1):

Table 2: Bin Schedule and Collection Frequency

Waste Source	Waste Stream	Bin Qty	Bin Litres	Collections per Week	Net Area m²
Building G - Apts (shared bins)	Garbage	5	660	2	6.0
	Organics	3	240	2	1.5
	Recycling	4	660	2	4.8
	Future Glass	4	240	2	2.0
	Hard/E-Waste	-	-	At Call	1.5
Building J - Apts (shared bins)	Garbage	5	660	2	6.0
	Organics	3	240	2	1.5
	Recycling	4	660	2	4.8
	Future Glass	4	240	2	2.0
	Hard/E-Waste	-	-	At Call	1.5
Townhouses (dedicated bins)	Garbage	53	120	Fortnightly	26.5
	Organics	53	80	1	26.5
	Recycling	53	240	Fortnightly	26.5
	Future Glass	53	80	Fortnightly	26.5
Net Waste Storage Area (excludes circulation), m²:					137.6

Notes:

- Private bins shall be sourced by the Operator.
- For the apartments, pending the introduction of glass collections, the above glass bins shall be used as a recycling bins.
- For the townhouses, 140L garbage bins could be considered.
- Subject to stakeholders' preference/capability (and as built constraints), bin sizes and quantities can be changed. Also, recyclables can be either commingled or split into bins for separate recycling streams.

1.5 Planning Drawings, Waste Areas, and Management of the Waste System

The drawings shall illustrate sufficient space for onsite bin storage, as required by the above schedule (including space for access and circulation).

Notwithstanding the above, collection days shall be staged appropriately and the Operator shall stipulate procedures for effective management of the available space.

1.6 Collection Bin Information

The following bins shall be utilised (see Sect. 4.4 for signage requirements):

Table 3: Bin Details

Capacity (litres)	Height (mm)	Width (across front, mm)	Depth (side on, mm)	Empty Weight (kg)	Average* Gross Weight (kg)
80	860	450	530	9	19
120	930	480	545	10	26
140	930	535	615	11	30
240	1060	585	730	13	45
660	1250	1240	780	43	130

Notes:

- * = Average Gross Weight is based on domestic waste studies (which vary subject to locality and waste-type). Expect greater weight for wet or compacted waste.
- Use the above details as a guide only – variations will occur. The above is based on Sulo plastic (HDPE) flat-lid bins. Also, steel 660L bins could be adopted.
- Bins that receive waste under the chutes shall be reinforced to withstand loads from waste falling at high speed.

Table 4: Bayside Colour Coding

Bin	Garbage	Commingled Recycling	FOGO/Green
Lid	Green	Blue	Lime
Body	Green	Blue	Green

Note: Victorian publications illustrate bins with purple lids for glass bins.

2 ACCESS FOR USERS, COLLECTORS, AND COLLECTION VEHICLES

2.1 User Access to Waste Facilities

Apartments: Residents shall dispose sorted garbage and recyclables via dedicated chutes (available at each apartment level), in accordance with instructions from the chute supplier. For wastes unsuitable for chute disposal, residents shall transfer sorted waste directly to their Bin Stores (access via lift/stairs).

Townhouses: Users shall dispose sorted waste into their bins.

Note: The Operator shall have access to the Bin Stores to rotate the bins, ensuring that empty bins are available along the circulation area so that users are able to reach the bins. Also, the Operator shall monitor the filling of the bins under the chutes and change these when full.

2.2 Collection Arrangements and Access to Waste Facilities

Apartments:

- A private contractor shall provide on-site waste collections for each building (waste vehicles shall prop near the Bin Stores).
- Collection staff shall have access to the Bin Stores and transfer bins to the truck and back to the store.
- The waste collection shall be carried-out by rear-lift vehicles (nom. 6.4m long, 2.1m high, and 6.4 tonnes gross vehicle mass, needing a 2.3m high clearance when lifting 660L bins).

Townhouses:

- Residents shall present their bins at designated collection points, as illustrated in the enclosed drawing.
- Collection staff shall transfer bins between the collection points and the truck.
- The waste collection shall be carried-out by rear-lift vehicles (nom. 6.4m long, 2.1m high and 6.4 tonnes gross vehicle mass).

Note: The enclosed drawings illustrate the waste system. Also, the enclosed Swept Paths illustrate truck access.

3 AMENITY, LOCAL ENVIRONMENT, AND FACILITY DESIGN

3.1 Noise Minimisation Initiatives

- Collection bins shall feature rubber wheels for quiet rolling during transfers.
- Chutes, waste areas, and collections shall meet relevant acoustic requirements.
- Local laws shall be observed for all operations in public areas and roads (in particular, Schedule 1 of Bayside City Council Local Law No. 2 Environment Section 15).
- For private services, the hours of waste collections shall be as specified in Council's local laws. Also, Section 5 of the Victorian EPA Noise Control Guideline Publication 1254 (see below) shall be observed to protect the acoustic amenity of the development and surroundings.

Victorian EPA Noise Control Guideline Publication 1254.2 May 2021 (excerpt)

[Section] 5. Domestic [and Commercial] Refuse Collection

The main annoyance produced by domestic refuse collections occurs in the early morning (i.e. before 7:00am). Therefore, if possible, routes should be selected to provide the least impact on residential areas during that time.

Collection of refuse should be restricted to the following criteria:

- Collection occurring once a week should be restricted to the hours: 6am to 6pm Monday to Saturday.
- Collections occurring more than once a week should be restricted to the hours: 7am to 6pm Monday to Saturday.
- Compaction should only be carried out while on the move.
- Bottles should not be broken up at the point of collection.
- Routes which service entirely residential areas should be altered regularly to reduce early morning disturbance.
- Noisy verbal communication between operators should be avoided where possible.

3.2 Litter Reduction and Prevention of Stormwater Pollution

The Operator shall be responsible for:

- Promoting adequate waste disposal into the bins (to avoid waste-dumping).
- Securing the waste areas (whilst affording access to users/staff/contractors).
- Preventing overfilled bins, keeping lids closed and bungs leak-free.
- Abating any site litter and taking action to prevent dumping and/or unauthorised use of waste areas.
- Requiring the private collection contractor to clean-up any spillage that might occur when clearing bins.

The above will minimise the dispersion of site litter and prevent stormwater pollution (thus avoiding impact to the local amenity and environment).

3.3 Ventilation, Washing, and Vermin-Prevention Arrangements

Bin Stores:

- Ventilation in accordance with Australian Standard AS1668. For chute ventilation, a fan with riser to a rooftop exhaust shall be utilised.
- Tight-fitting doors (all other openings shall have vermin-proof mesh or similar).
- Impervious flooring (also, smooth, slip-resistant, and appropriately drained).
- A graded bin wash area, hosecock, hose, and a suitable floor-waste with litter trap connected in accordance with relevant authority requirements (alternatively, the Operator shall engage a suitable contractor to wash bins in a mobile bin-wash vehicle). The bin and wash areas may overlap, as stored bins can be moved so that a bin can be washed.
- A water-flushing nozzle with accessible water cock shall be provided at the head of each chute. Include a floor waste and hosecock near each chute outlet.

The Operator shall regularly clean waste areas/equipment. Also, access doors and bin-lids shall be kept closed.

Townhouses:

- For bins stored within garages, these areas shall be appropriately ventilated to reduce odour. External bin areas shall be ventilated naturally.
- Residents shall regularly clean their bin areas. Also, bin-lids shall be kept closed.
- The Operator shall engage a suitable contractor to wash bins in a mobile bin-wash vehicle.

3.4 Design and Aesthetics of Waste Storage Areas and Equipment

Waste shall be placed within collection bins and stored in designated onsite areas (hidden from external view). Following waste collection activities, bins shall be returned to the storage areas as soon as practicable.

Waste facilities shall be constructed of durable materials and finishes, and maintained to ensure that the aesthetics of the development are not compromised. Shared facilities and associated passages shall be suitably illuminated (this provides comfort, safety, and security to users, staff, and contractors). Access doors shall feature keyless opening from within. The design and construction of waste facilities and equipment shall conform to the Building Code of Australia, Australian Standards, and local laws.

Chutes, associated shafts, and discharge areas shall be sized and designed as recommended by a reputable chute manufacturer (chutes are proprietary items). The chute supplier shall fix safe-operating instructions to each intake-door and place a warning sign on each chute outlet.

For improved safety, each chute outlet shall be shrouded with a suitable rubber skirt and designed to minimise the effect of falling waste into the associated bin (and to stop dispersion of debris). Also, access to each chute outlets shall be restricted to trained personnel only (these areas shall be suitably fenced and kept locked). The Operator shall train staff and waste collectors concerning hazards associated with the chute discharge areas.

4 MANAGEMENT AND SUSTAINABILITY

4.1 Waste Sorting, Transfer, and Collection Responsibilities

Garbage shall be placed within tied plastic bags prior to transferring into the collection bins or chute. Cardboard shall be flattened and recycling containers uncapped, drained, and rinsed prior to disposal into the appropriate bin/chute. Bagged recycling is not permitted.

Refer to Section 2 for waste transfer requirements and collection arrangements.

4.2 Facility Management Provisions to Maintain & Improve the Waste System

The Operator shall manage site operations (refer to the glossary in page 2).

It shall be the responsibility of the Operator to maintain all waste areas and components, to the satisfaction of users, staff, and the relevant authority (users shall maintain their internal waste receptacles).

The Operator shall ensure that maintenance and upgrades are carried-out on the facility and components of the waste system. When required, the Operator shall engage an appropriate contractor to conduct services, replacements, or upgrades.

4.3 Arrangements for Protecting Waste Equipment from Theft and Vandalism

It shall be the responsibility of the Operator to protect the equipment from theft and vandalism. This shall include the following initiatives:

- Secure the waste areas.
- Label the bins according to property address.
- The private collection contractor shall transfer bins between the waste areas and the truck (only townhouse bins allowed to await collection outside each unit, which once collected, shall be promptly returned to the storage areas).

4.4 Arrangements for Bins/Equipment Labelling and Ensuring Users and Staff are Aware of How to Use the Waste System Correctly

- The Operator shall provide appropriate signage for the bins. Signage is available at the following internet address: www.sustainability.vic.gov.au.
- The Operator shall publish/distribute “house rules” and educational material to:
 - Inform users/staff about the waste management system and the use/location of the associated equipment (provide the summary in page 2 of this report).
 - Improve facility management results (lessen equipment damage and chute blockages, reduce littering, and achieve cleanliness).
 - Advise users/staff to sort and recycle waste with care to reduce contamination of recyclables.

4.5 Sustainability and Waste Avoidance/Reuse/Reduction Initiatives

The *Environment Protection Act 1970* includes principles of environment protection and guidance for waste management decision making. Also, the *Sustainability Victoria Act 2005* established Sustainability Victoria as the statutory authority for delivering programs on integrated waste management and resource efficiency.

From a design perspective, the development shall support the acts by providing an adequate waste system with ability to sort waste.

The Operator shall promote the observance of the acts (where relevant and practicable) and encourage users and staff to participate in minimising the impact of waste on the environment. For improved sustainability, the Operator shall consider the following:

- Observe the waste hierarchy in the *Environment Protection Act 1970* (in order of preference): a) waste avoidance, b) reuse, c) recycle, d) recovery of energy, e) treatment, f) containment, and g) disposal.
- Peruse the Sustainability Victoria website: www.sustainability.vic.gov.au.
- Participate in Council and in-house programs for waste minimisation.
- Establish waste reduction and recycling targets; including periodic waste audits, keeping records, and monitoring of the quantity of recyclables found in landfill-bound bins (sharing results with users/staff).

4.6 Waste Management Plan Revisions

For any future appropriate Council request, changes in legal requirements, changes in the development's needs and/or waste patterns (waste composition, volume, or distribution), or to address unforeseen operational issues, the Operator shall be responsible for coordinating the necessary Waste Management Plan revisions, including (if required):

- A waste audit and new waste strategy.
- Revision of the waste system (bin size/quantity/streams/collection frequency).
- Re-education of users/staff.
- Revision of the services provided by the waste collector(s).
- Any necessary statutory approval(s).

5 SUPPLEMENTARY INFORMATION

- The Operator shall observe local laws and ensure that bins aren't overfilled or overloaded.
- Waste incineration devices are not permitted, and offsite waste treatment and disposal shall be carried-out in accordance with regulatory requirements.
- For bin traffic areas, either level surfaces (smooth and without steps) or gentle ramps are recommended, including a roll-over kerb or ramp. Should ramp gradients, bin weight, and/or distance affect the ease/safety of bin transfers, the Operator shall consider the use of a suitable tug.
- The Operator and waste collector shall observe all relevant OH&S legislation, regulations, and guidelines. The relevant entity shall define their tasks and:
 - Comply with Worksafe Victoria's Occupational Health and Safety Guidelines for the Collection, Transport and Unloading of Non-hazardous Waste and Recyclable Materials (June 2003).
 - Assess the Manual Handling Risk and prepare a Manual Handling Control Plan for waste and bin transfers (as per regulatory requirements and Victorian COP for Manual Handling).
 - Obtain and provide to staff/contractors equipment manuals, training, health and safety procedures, risk assessments, and adequate personal protective equipment (PPE) to control/minimise risks/hazards associated with all waste management activities. As a starting point, these documents and procedures shall address the following:

Task (to be confirmed)	Hazard (TBC)	Control Measures (TBC)
Sorting waste and cleaning the waste system	Bodily puncture. Biological & electrical hazards	Personal protective equipment (PPE). Develop a waste-sorting procedure
Bin manual handling	Sprain, strain, crush	PPE, staff training. Maintain bin wheel-hubs. Limit bin weight. Provide mechanical assistance to transfer bins
Chute discharge	Strike & debris from falling waste	PPE, staff training, and signage, maintain access restrictions. Include a suitable curtain/skirt and a locked mesh fence around the discharge zone of the chute
Bin transfers and emptying into truck	Vehicular strike, run-over	PPE. Develop a Hazard Control Plan for transfers and collections. Maintain visibility. Use a mechanical bin-tipper
Truck access (reversing & manoeuvring)	Vehicular incident, strike, run-over	PPE. Use a trained spotter. Develop a truck-manoeuving and traffic-control procedure

Note: The above shall be confirmed by a qualified OH&S professional who shall also prepare site-specific assessments, procedures, and controls (refer to Section 6).

6 CONTACT INFORMATION

Bayside City Council (local Council), ph 03 9599 4444
Waste Wise Environmental (private waste collector), ph 1300 550 408
Kartaway (private waste collector), ph 1300 362 362
Eco-Safe Technologies (odour control equipment supplier), ph 03 9706 4149
FJP Safety Advisors Pty Ltd (OH&S consultant), ph 03 9255 3660
Warequip (tug supplier – for bin transfers), ph 1800 337 711
Sabco Commercial (supplier of cleaner’s trolleys), ph 1800 066 522
Sulo MGB Australia (bin supplier), ph 1300 364 388
One Stop Garbage Shop (bin supplier), ph 03 9338 1411
Wastedrive Equipment (steel bin supplier), ph 02 9630 9333
Wastech Engineering Pty Ltd (chute supplier), ph 1800 465 465
ASI JD MacDonald Pty Ltd (chute supplier), ph 03 8558 7200
Elephant’s Foot (chute supplier), ph 02 9780 3500

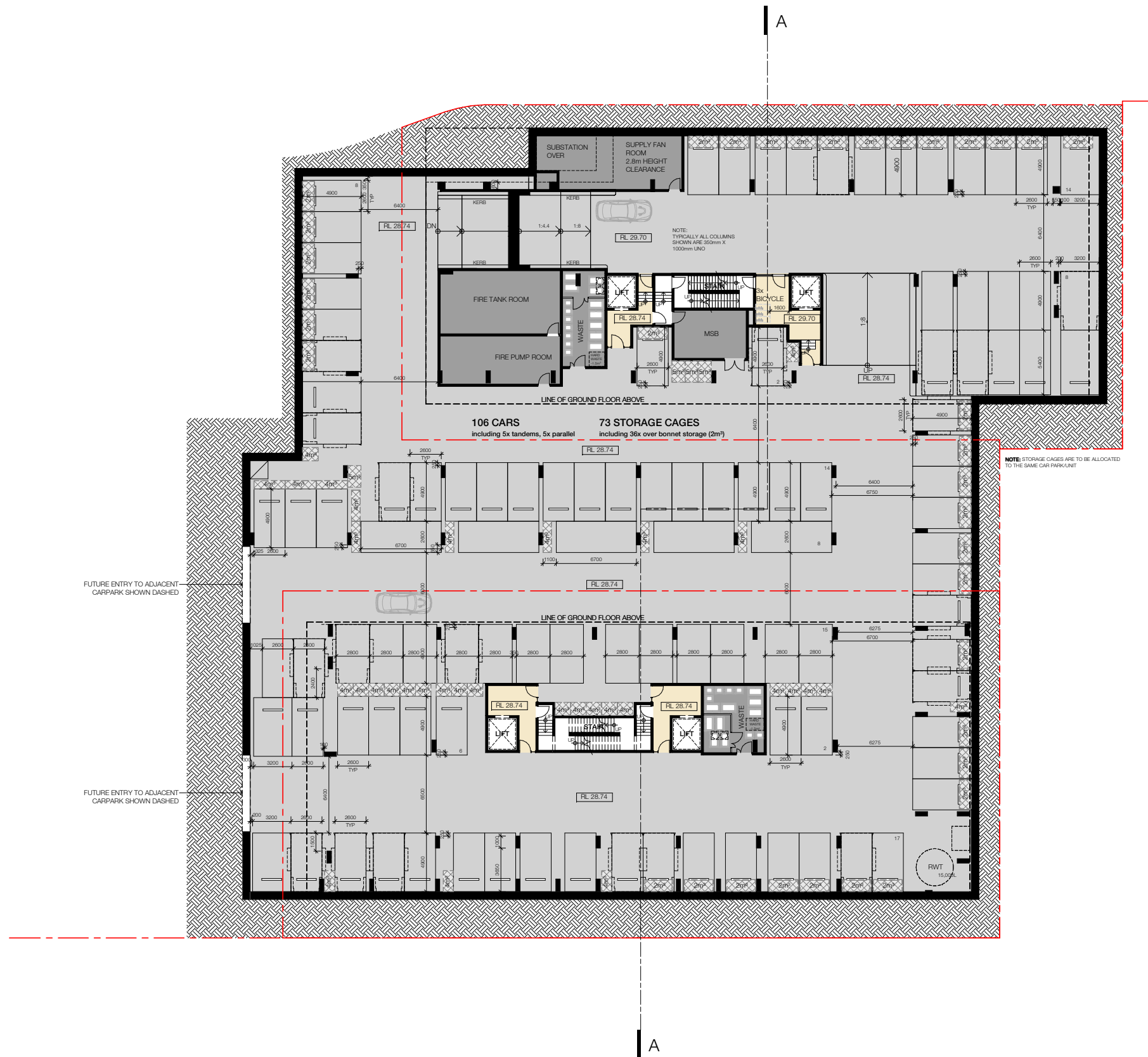
Note: The above includes a complimentary listing of contractors and equipment suppliers. The stakeholders shall not be obligated to procure goods/services from these companies. Leigh Design does not warrant (or make representations for) the goods/services provided by these suppliers.

7 LIMITATIONS

The purpose of this report is to document a Waste Management Masterplan to guide and accompany a Development Plan.

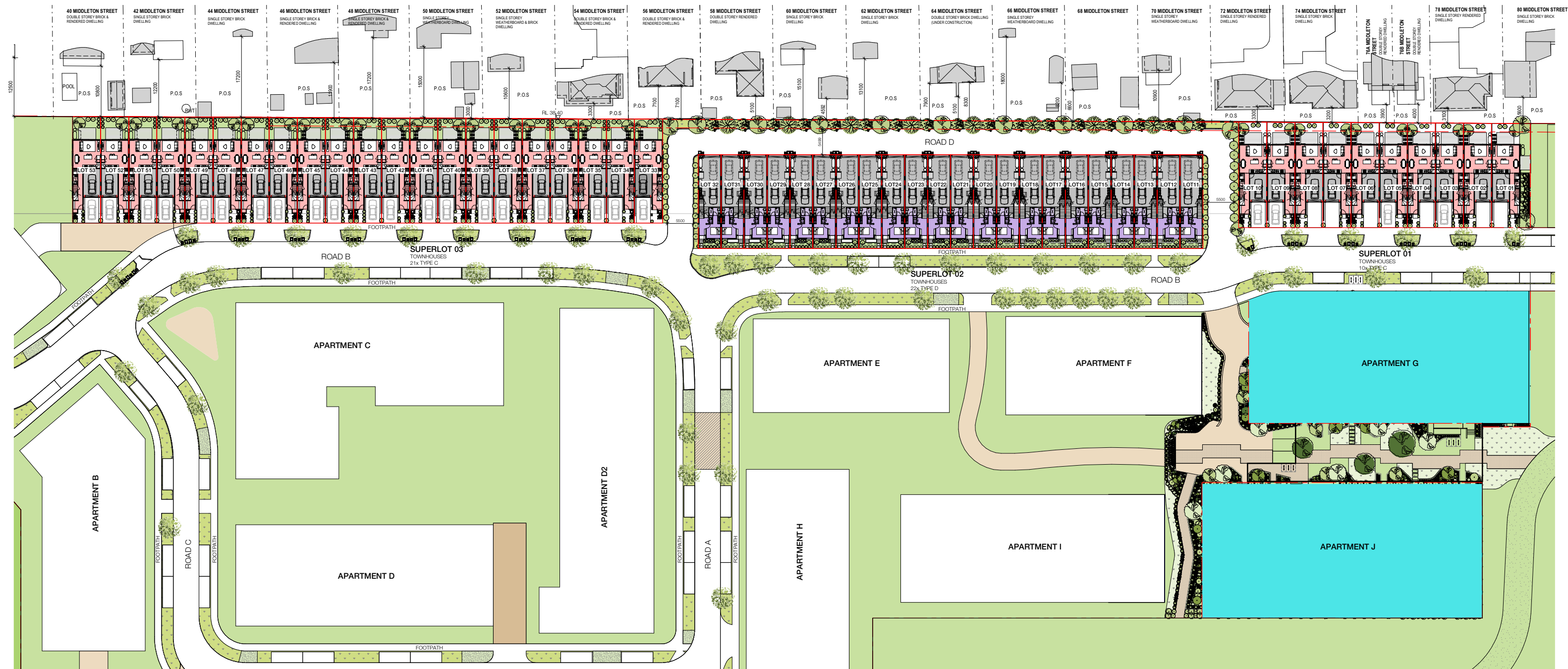
This report is based on the following conditions:

- Operational use of the development (excludes demolition/construction stages).
- Drawings and information supplied by the project architect.
- Waste figures presented in this report are estimates only (these shall reviewed as part of a future assessment and planning application).
- This report shall not be used to determine/forecast operational costs, or to prepare feasibility studies, or to document operational/safety procedures.



Legend - Abbreviations

1700 SCR	1700mm HIGH PRIVACY SCREEN
1800 SCR	1800mm HIGH PRIVACY SCREEN
1200 FENCE	1200mm HIGH FENCE
1800 FENCE	1800mm HIGH FENCE
2100 FENCE	2100mm HIGH FENCE
A/C	AIR CONDITIONER CONDENSER UNIT
EX	EXISTING
HORIZ SCR	1400mm HIGH BALUSTRADE WITH 400mm DEEP HORIZONTAL PRIVACY SCREEN
HW	HIGHLIGHT WINDOW (SILL MIN. 1700mm AFL)
NH WIN	NON HABITABLE WINDOW
OB	OBSCURE GLAZING
500 RET WALL	500mm HIGH RETAINING WALL
RWT	RAINWATER TANK
ST	STORAGE
WIN	HABITABLE WINDOW



Site Information

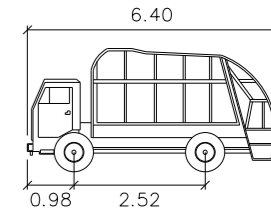
Stage 01
 Total Area:
 Superlot 01 Total Area = 1393.97m²
 Superlot 02 Total Area = 2156.0 m²
 Superlot 03 Total Area = 2827.92m²
 Building G + J Total Area = 4531.56m²
Total Site Area = 10,909.35 m² (Excluding Roads)

Site Coverage

Stage 01
 Total Site Area = 10,909.35m²
 Total Site Coverage = 7494.326m² (68.7%)

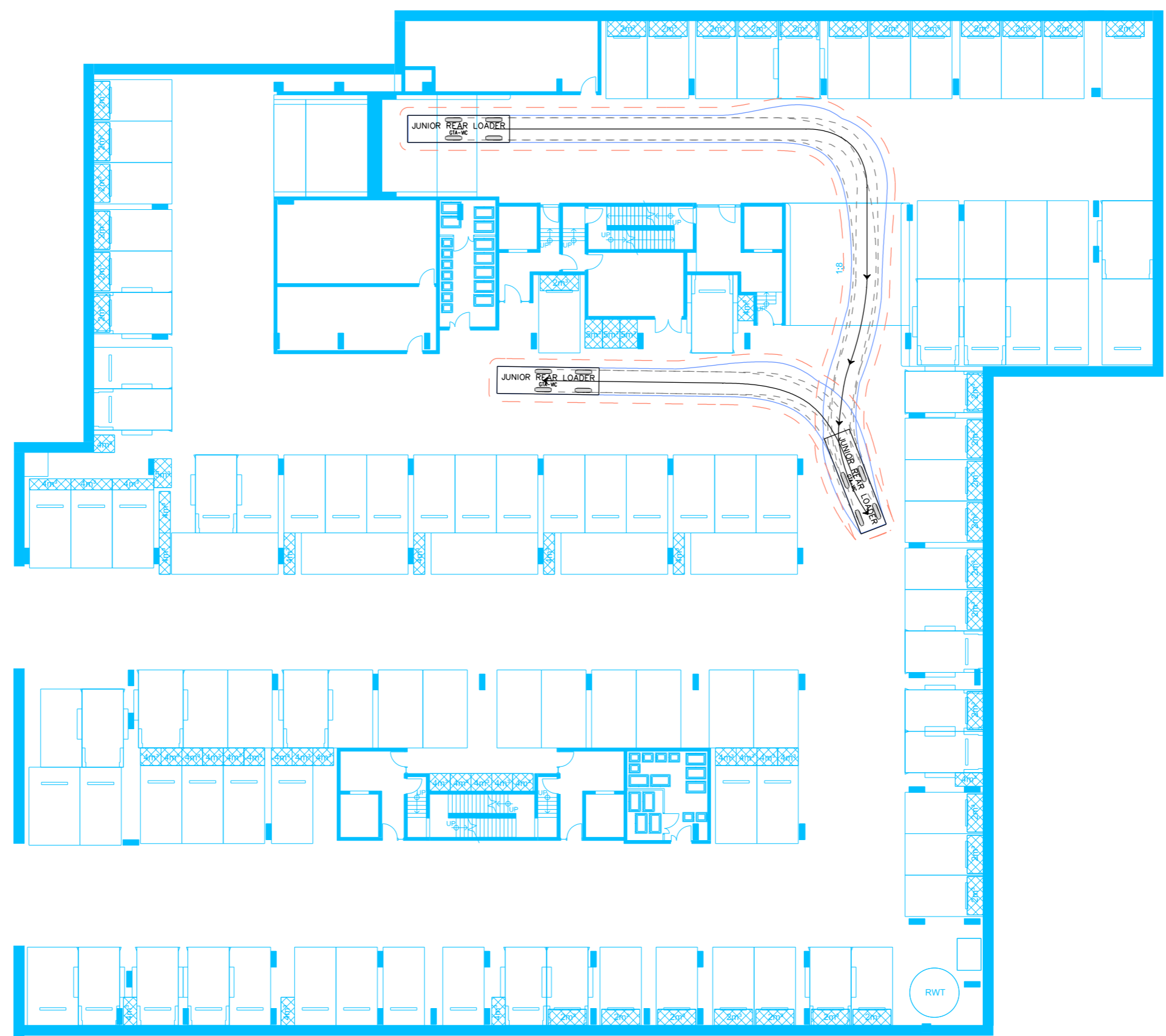
Site Permeability

Stage 01
 Superlot 01 Total Permeability = 390.05m² (27.98%)
 Superlot 02 Total Permeability = 202.95m² (9.4%)
 Superlot 03 Total Permeability = 730.86m² (25.84%)
 Building G + J Total Permeability = 564.79m² (12.46%)



JUNIOR REAR LOADER

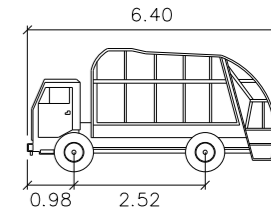
	units
Width	: 1.70
Track	: 1.40
Lock to Lock Time	: 6.0
Steering Angle	: 36.7



SWEPT PATH KEY

- VEHICLE CENTRE LINE
- - - VEHICLE TYRE PATH
- - - VEHICLE BODY PATH
- - - 500mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 5km/h



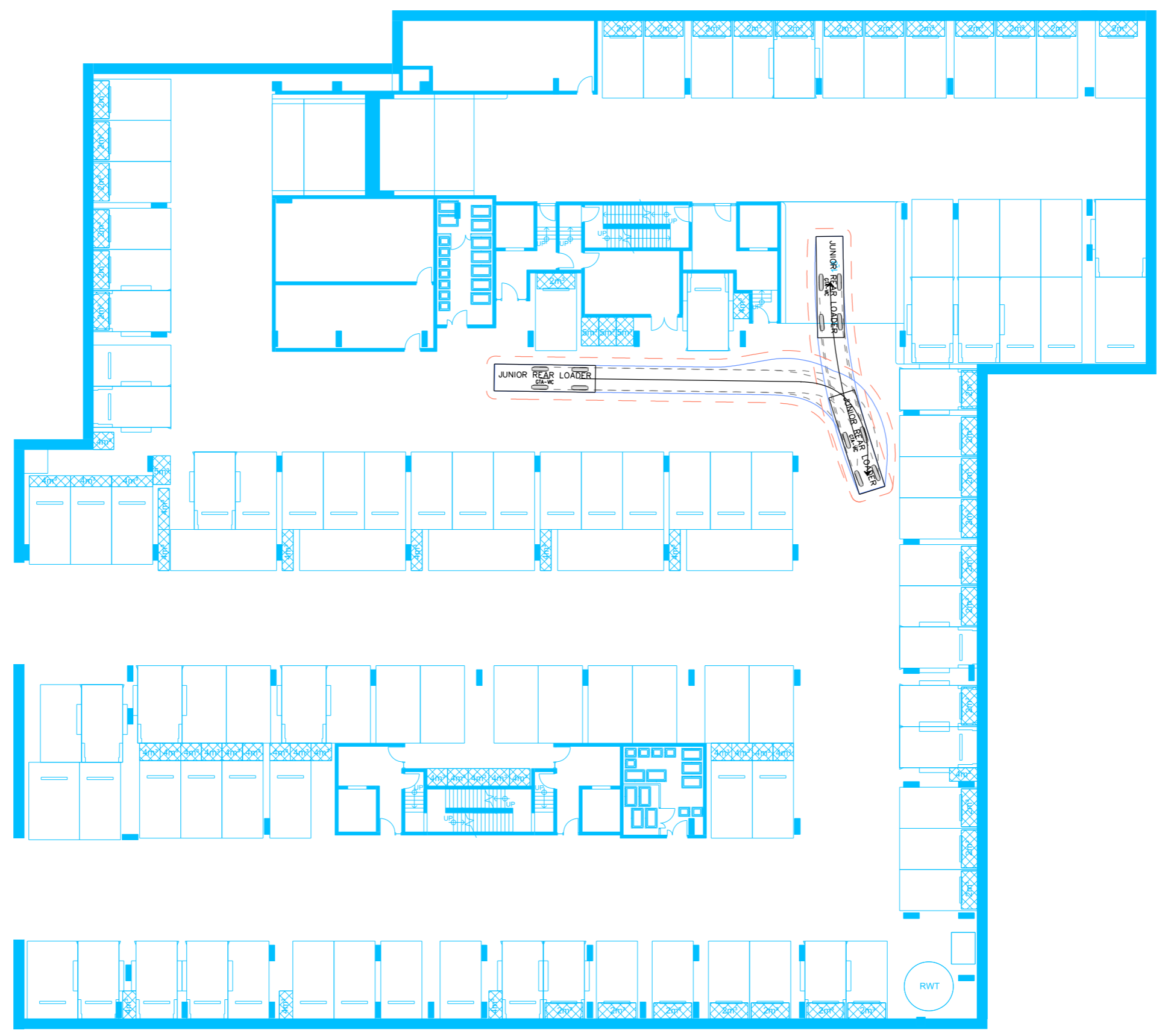
JUNIOR REAR LOADER

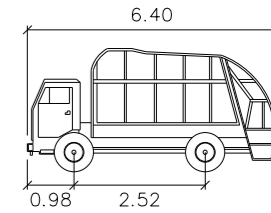
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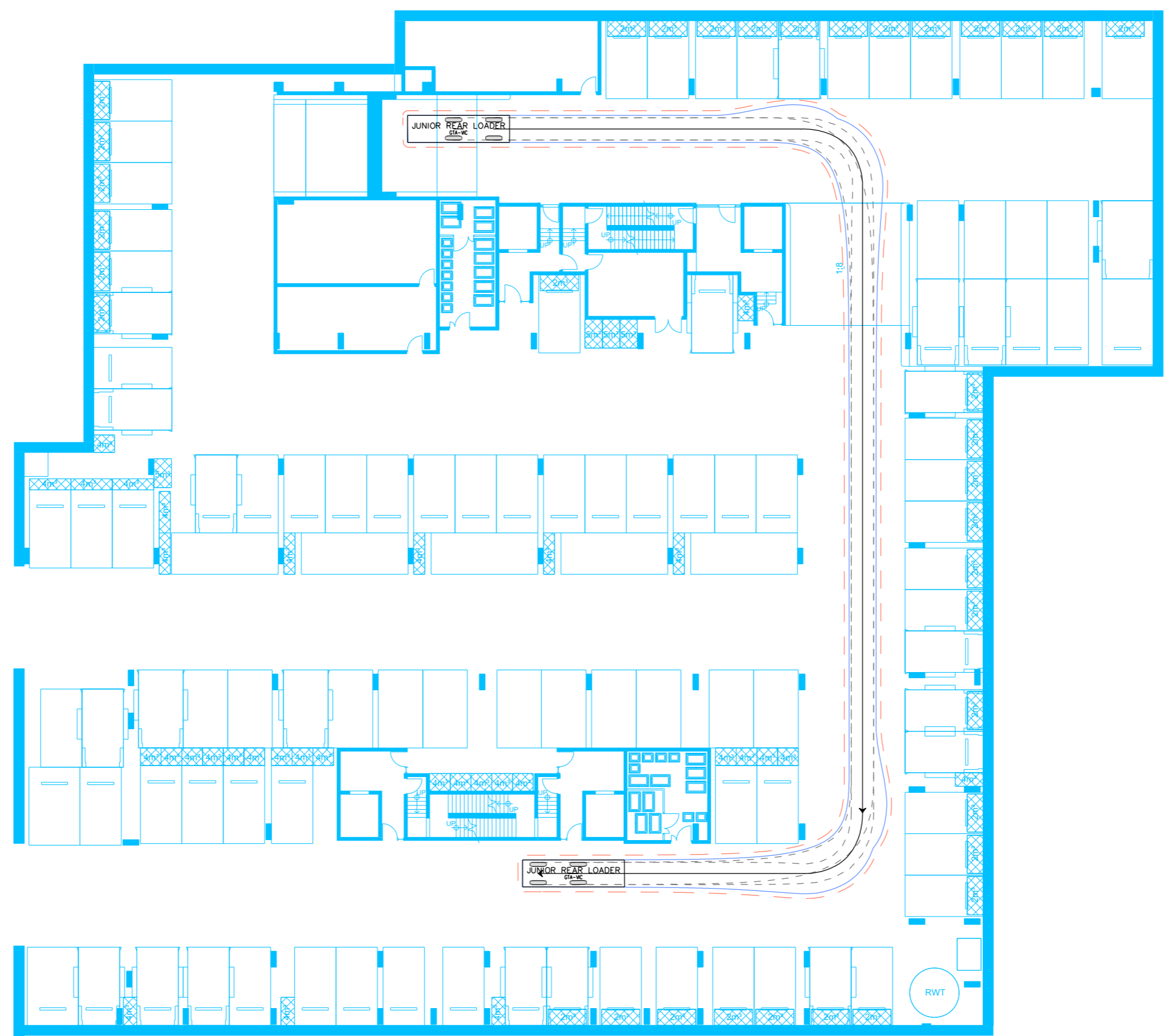
ASSUMED SPEED 5km/h





JUNIOR REAR LOADER

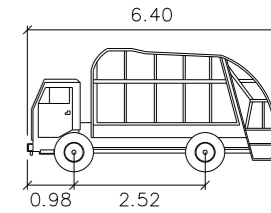
	units
Width	: 1.70
Track	: 1.40
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Steering Angle	: 36.7



SWEPT PATH KEY

- VEHICLE CENTRE LINE
- - - VEHICLE TYRE PATH
- - - VEHICLE BODY PATH
- - - 500mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 5km/h



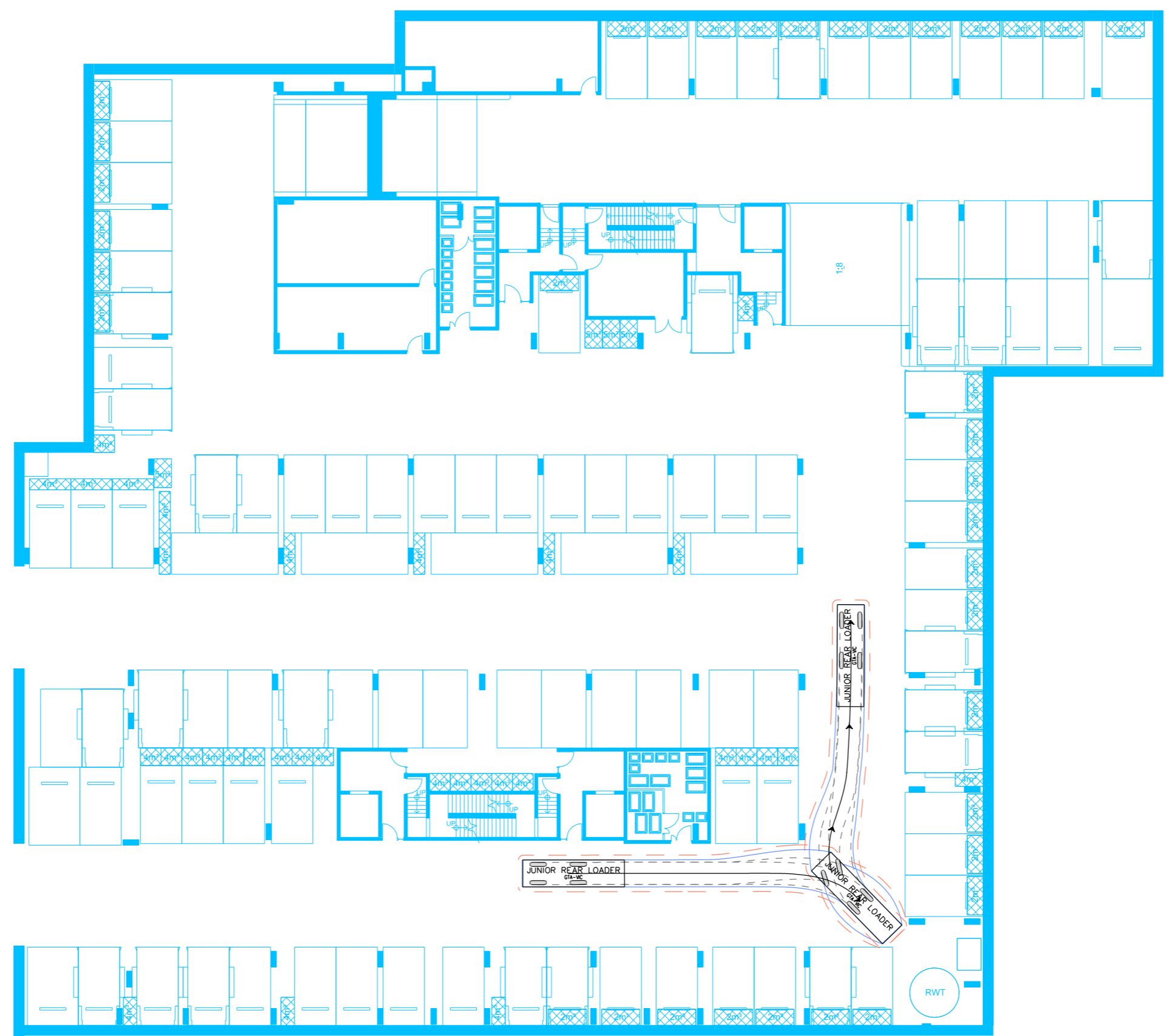
JUNIOR REAR LOADER

	meters
Width	: 1.70
Track	: 1.40
Lock to Lock Time	: 6.0
Steering Angle	: 36.7

SWEPT PATH KEY

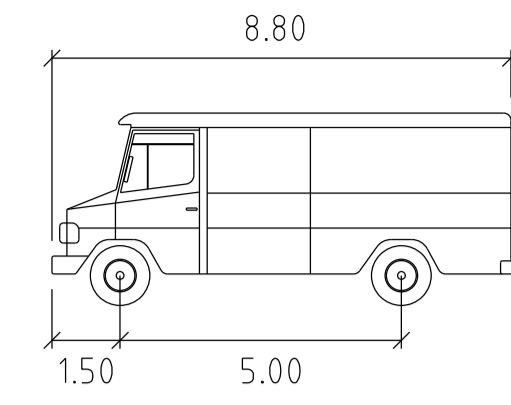
- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- - - 500mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 5km/h

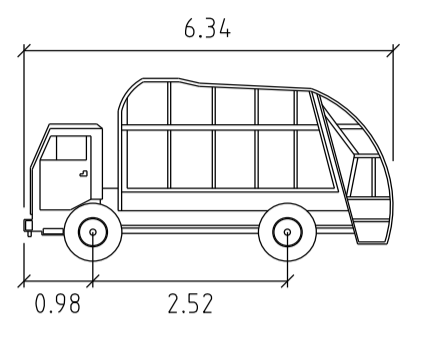
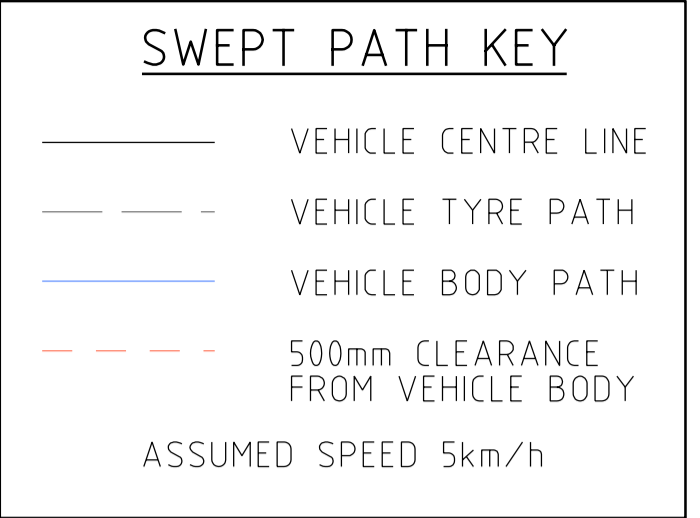


NOTE:

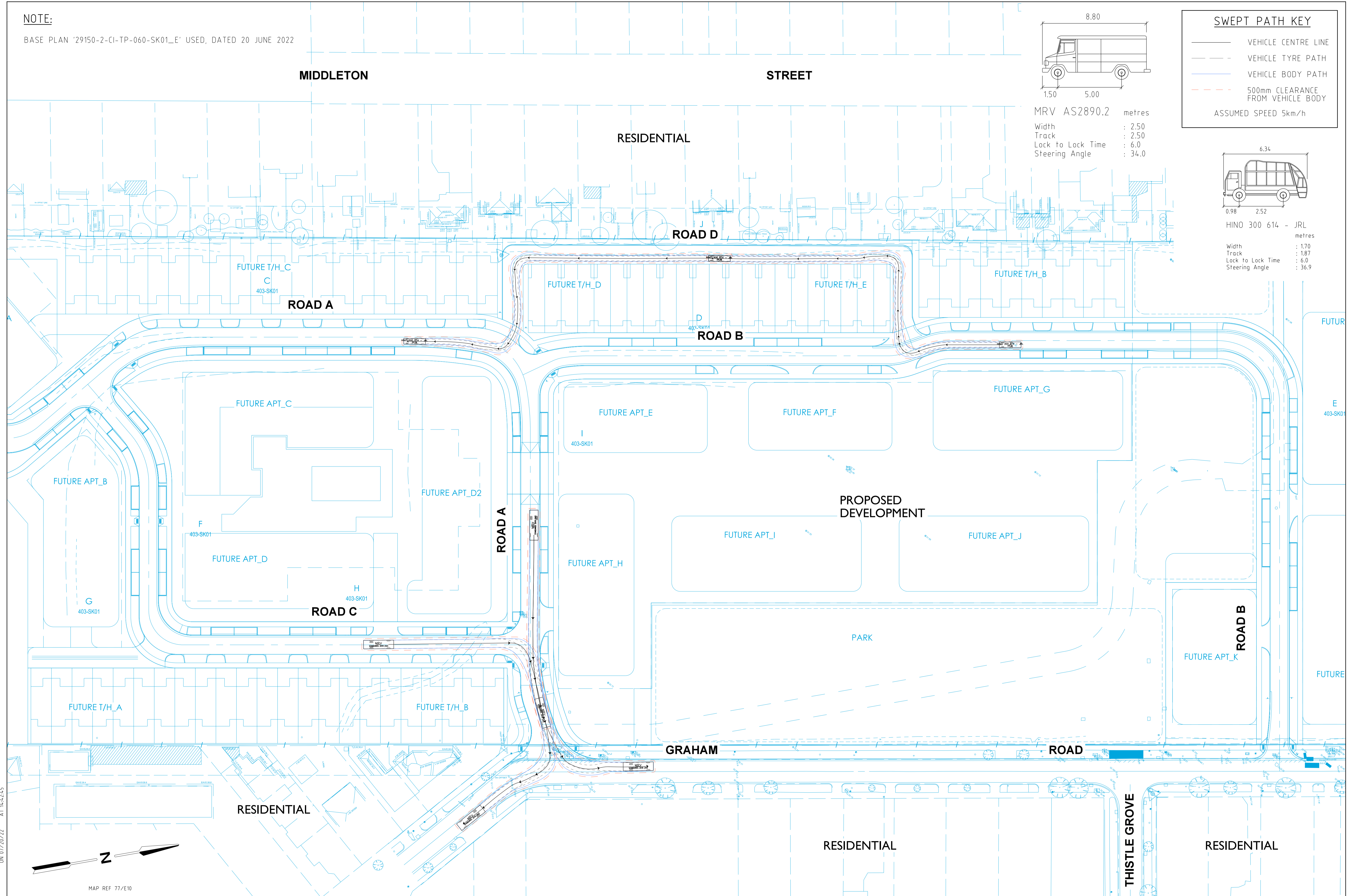
BASE PLAN '29150-2-CI-TP-060-SK01_E' USED, DATED 20 JUNE 2022



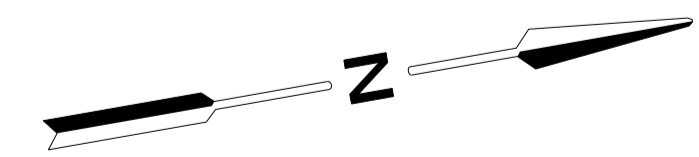
MRV AS2890.2 metres
 Width : 2.50
 Track : 2.50
 Lock to Lock Time : 6.0
 Steering Angle : 34.0



HINO 300 614 - JRL metres
 Width : 1.70
 Track : 1.87
 Lock to Lock Time : 6.0
 Steering Angle : 36.9



PLOTTED BY : dhuynh ON 07/20/22 AT 16:42:45



MAP REF 77/E10



PRELIMINARY PLAN
 FOR DISCUSSION PURPOSES
 ONLY SUBJECT TO CHANGE
 WITHOUT NOTIFICATION

WARNING
 BEWARE OF UNDERGROUND SERVICES
 THE LOCATIONS OF UNDERGROUND SERVICES ARE
 APPROXIMATE ONLY AND THEIR EXACT POSITION
 SHOULD BE PROVEN ON SITE. NO GUARANTEE IS
 GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DESIGNED
 D. HUYNH
 APPROVED BY
 T. DE YOUNG

DESIGN CHECK
 T. DE YOUNG
 DATE ISSUED
 23 JUNE 2022

SCALE
 A3 0 10 20 1:1000
 CAD FILE NO.
 300303826-01-P1.dgn

PROPOSED RESIDENTIAL DEVELOPMENT
 37 GRAHAM ROAD, HIGHTETT
SWEPT PATH ASSESSMENT
 DRAWING NO. 300303826-01-09

ISSUE P1