

The Glen Residential

Waste Management Plan



170416WMP001B-F
27 September 2017

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1 INTRODUCTION

onemilegrid has been requested by Golden Age Glen Pty Ltd to prepare a Waste Management Plan for the proposed residential development at The Glen Shopping Centre.

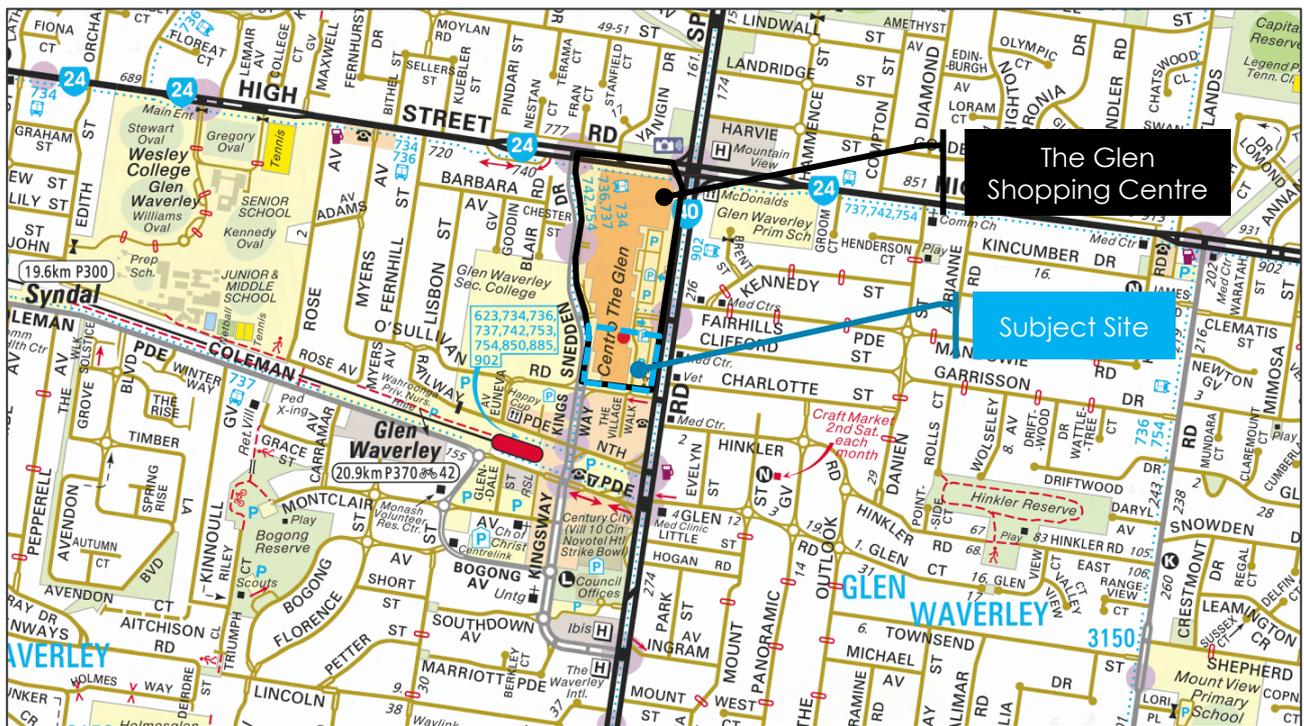
The preparation of this management plan has been undertaken with due consideration of the Sustainability Victoria Best Practice Guidelines for Waste Management in Multi-Unit development and relevant Council documentation.

2 EXISTING SITE CONDITIONS

The subject site is situated at the southwest corner of the Springvale Road / High Street Road intersection, as shown in Figure 1. The site is generally bound by Springvale Road, High Street Road, Snedden Drive and O'Sullivan Road.

Land use to the south of the site is immediately to the south of the site comprises a mixture of commercial uses, while land use in the broader area is generally residential in nature. Notable land uses in the vicinity of the site include Glen Waverley Railway Station approximately 160 m to the southwest, Glen Waverley Secondary College on the western side of Snedden Drive, and Glen Waverley Primary School at the southeast corner of the Springvale Road / High Street Road intersection.

Figure 1 Site Location



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3 DEVELOPMENT PROPOSAL

3.1 General

It is proposed to construction three residential towers on top of the current retail redevelopment. Table 1 provides an overview of the proposed development schedule.

Table 1 Table Title

	<i>One-Bedroom</i>	<i>Two-Bedroom</i>	<i>Three-Bedroom</i>	<i>Total</i>
Tower A	76	143	25	244
Tower B	34	122	9	165
Tower C	17	106	23	146
Total	127	371	57	555

A lower ground level car park is proposed on-site with vehicle access to the site will be provided via Snedden Drive.

3.2 Waste Management

It is proposed to utilise a Private Contractor, to manage the collection and disposal of garbage and recycling associated with the development.

Each residential level is provided with a dual chute system, one for waste and one for recycling, adjacent the stair and lift core of each residential tower.

Residents will be responsible for disposing of bagged garbage, or recyclables, into the appropriate chute.

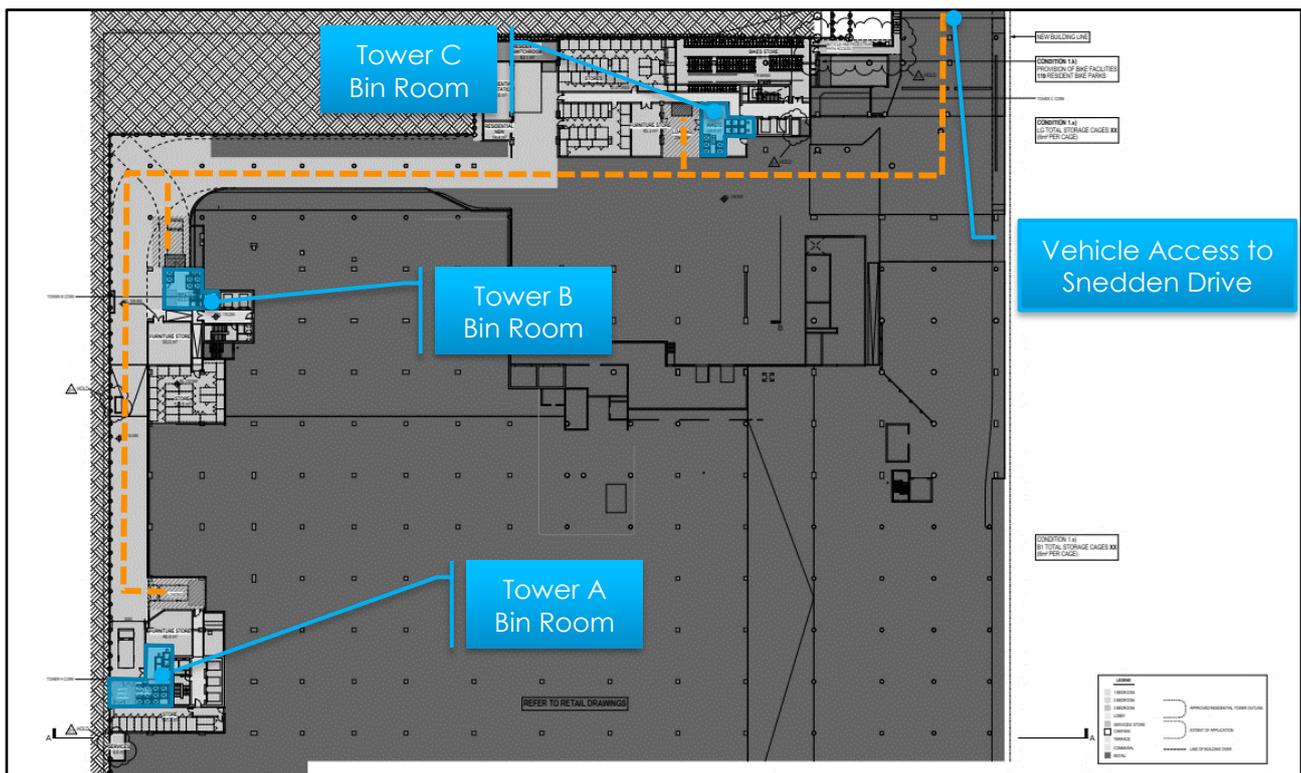
The chutes will lead to common waste rooms on the lower ground floor for each of the three residential towers of the development. Bins will be rotated underneath the waste chute by an automated 2-Bin Linear Track system with a ceiling mounted compactor. The owner's corporation will be responsible for the management of each bin room, to ensure that bins will be rotated within the linear track system by an appointed building manager, and to ensure bins do not overfill and manage odours.

On collection days, the private waste vehicle will enter the site via Snedden Drive at the western side of the site. The truck will prop in loading zone adjacent each bin storage room and undertake collection. Once complete, the truck will manoeuvre to the next bin storage room and undertaken collection. Upon completion, the truck will depart the site via the access point to Snedden Drive in a forward direction.

Swept paths for the associated waste vehicles, prepared by GTA Consultants and assessed by Traffix Group, are shown in Appendix A.

The collection location and expected transfer route is shown in Figure 2.

Figure 2 Bin Storage Room and Collection Details



4 WASTE GENERATION

4.1 Residential Waste Survey

The Victorian Local Government Annual Survey assesses the kerbside waste management and recycling services by local governments, and provides household yields for both recyclables and garbage.

In order to estimate the expected waste generation of the proposed dwellings, information from the 2013-2014 Annual Survey was sourced for the City of Monash, which indicates that approximately 55 litres of garbage and 80 litres of commingled recyclables are generated per household per week.

It should be noted that the Local Government Annual Survey provides an average waste yield per dwelling, and does not distinguish between different dwelling types. As the development proposal includes predominantly one or two bedroom apartments, the above projection is expected to be conservatively high.

4.2 Sustainability Victoria Recommended Rates

Waste generation rates published within Sustainability Victoria's "Guide to Best Practice for Waste Management in Multi-Unit Developments" suggest the following rates are an appropriate Rule of Thumb for multi-unit developments:

- 120L/unit/week for garbage; and
- 120L/unit/week for commingled recycling.

4.3 Expected Waste Generation

4.3.1 Garbage and Recycling

onemilegrid has undertaken a review of the standard waste generation rates adopted by various municipalities and those rates recommended by the EPA NSW and Sustainability Victoria, and has analysed typical residential waste generation rates identified by the Victorian Local Government Annual Survey for garbage and recycling generation. Based on the above, the following rates have been adopted for multi-unit developments.

Table 2 Multi-Dwelling Residential Developments – Adopted Waste Generation Rates

Dwelling Type	Garbage	Recycling
One-bedroom unit/apartment	50 L per week	60 L per week
Two-bedroom unit/apartment	60 L per week	70 L per week
Three or more-bedroom unit/apartment	70 L per week	85 L per week

The above rates are considered to be appropriate for the proposed development, and are aimed to encourage garbage minimisation and increased recycling.

Based on the above waste generation rates, the following weekly waste generation is expected.

Table 3 Expected Waste Generation

Component – Stream	No of Dwellings	Rate/Dwelling	Total Waste / Week
Tower A - Garbage	244	50 – 70 litres	14,130 litres
Tower A - Recycling	244	60 – 85 litres	16,695 litres
Tower B - Garbage	165	50 – 70 litres	9,650 litres
Tower B - Recycling	165	60 – 85 litres	11,345 litres
Tower C - Garbage	146	50 – 70 litres	8,820 litres
Tower C - Recycling	146	60 – 85 litres	10,395 litres

4.3.2 Green Waste

Given the nature of the proposed development (being multi-unit/multi-level), it is expected that green waste generation will be minimal or negligible, and therefore a green waste collection service is not expected to be required.

It is expected that any maintenance and gardening undertaken on common property will be managed by a contractor appointed by the Owner's Corporation. The appointed contractor will be responsible for the disposal of any green waste accumulated during the course of their duties.

4.3.3 Hard Waste

Hard Waste services will also be provided by the private contractor, under the management of the Owners Corporation. Allocated hard waste storage areas are provided within each residential tower's bin storage area, that will store hard waste under the management of the Owners Corporation, with collections to occur within the adjacent loading zone to the relevant bin storage area.

5 BIN REQUIREMENTS

5.1 Waste Compaction

As previously mentioned, it is proposed to implement a ceiling mounted compactor above the 2-bin linear track system proposed each residential tower's bin storage room.

Compactors can achieve a compaction ratio of up to 2:1, to ensure bin weight not excessive. Compaction will be managed by the engaged building contractor. The compactor will be used for the main office levels only.

Table 4 Expected Waste Generation - Compacted

Component	Compaction Ratio	Waste/week	Post compaction Waste/week
Tower A - Garbage	2:1	14,130 litres	7,065 litres
Tower A - Recycling	2:1	16,695 litres	8,348 litres
Tower B - Garbage	2:1	9,650 litres	4,825 litres
Tower B - Recycling	2:1	11,345 litres	5,673 litres
Tower C - Garbage	2:1	8,820 litres	4,410 litres
Tower C - Recycling	2:1	10,395 litres	5,198 litres

Specification sheets for the combined 2-Bin Linear Track and Compactor system is attached in Appendix B.

5.2 Bin Provision and Specifications

It is proposed to utilise a private waste contractor waste collection for all waste services of the proposed development.

Consequently, the following bins will be required for the proposed development.

Table 5 Bin Provision

Component – Stream	Total Waste / Week	Bin Size	Collection Frequency	Bins Required
Tower A - Garbage	7,065 litres	1,100 litres	Weekly	7 bins
Tower A - Recycling	8,348 litres	1,100 litres	Weekly	8 bins
Tower B - Garbage	4,825 litres	1,100 litres	Weekly	5 bins
Tower B - Recycling	5,673 litres	1,100 litres	Weekly	6 bins
Tower C - Garbage	4,410 litres	1,100 litres	Weekly	4 bins
Tower C - Recycling	5,198 litres	1,100 litres	Weekly	5 bins

Table 6 Bin Specifications

Capacity	Width	Depth	Height
1,100 litres	1.25m	1.10m	1.35m

5.3 Bin Storage

As indicated in Figure 2, it is proposed to provide a bin storage area on the lower ground floor for each residential tower of the proposed development. Tower A, B and C's bin storage areas are capable of accommodating fifteen, eleven and nine 1,100 litre bins as shown in Figure 3 to Figure 5. Each proposed bin storage room is provided with sufficiently floor area and is therefore appropriately sized to accommodate the provision of bins, inclusive of four bins within the proposed linear track systems.

Figure 3 Bin Storage Area – Tower A

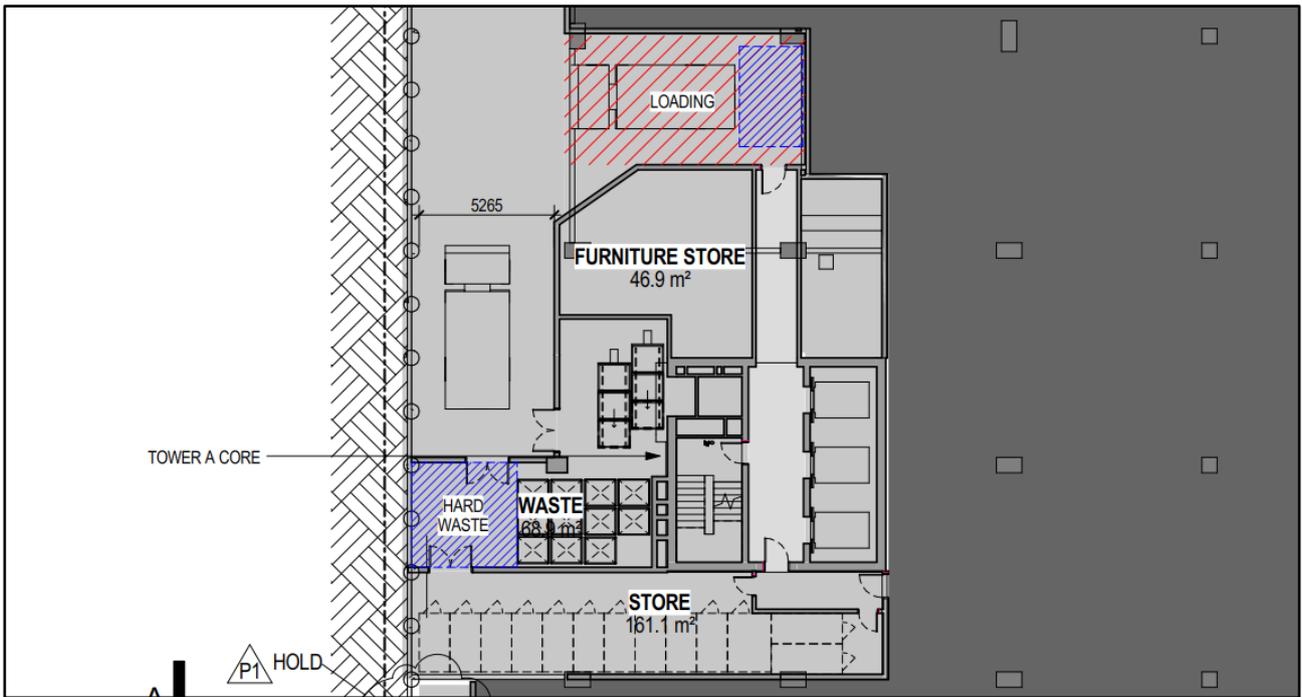


Figure 4 Bin Storage Area – Tower B

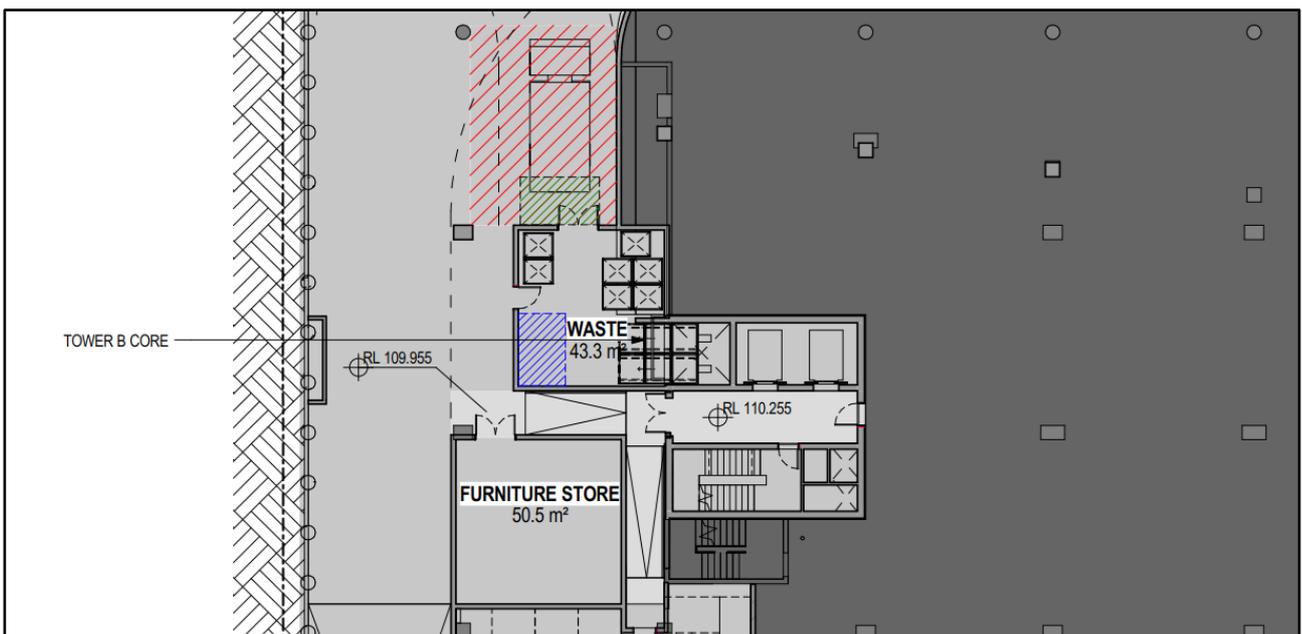
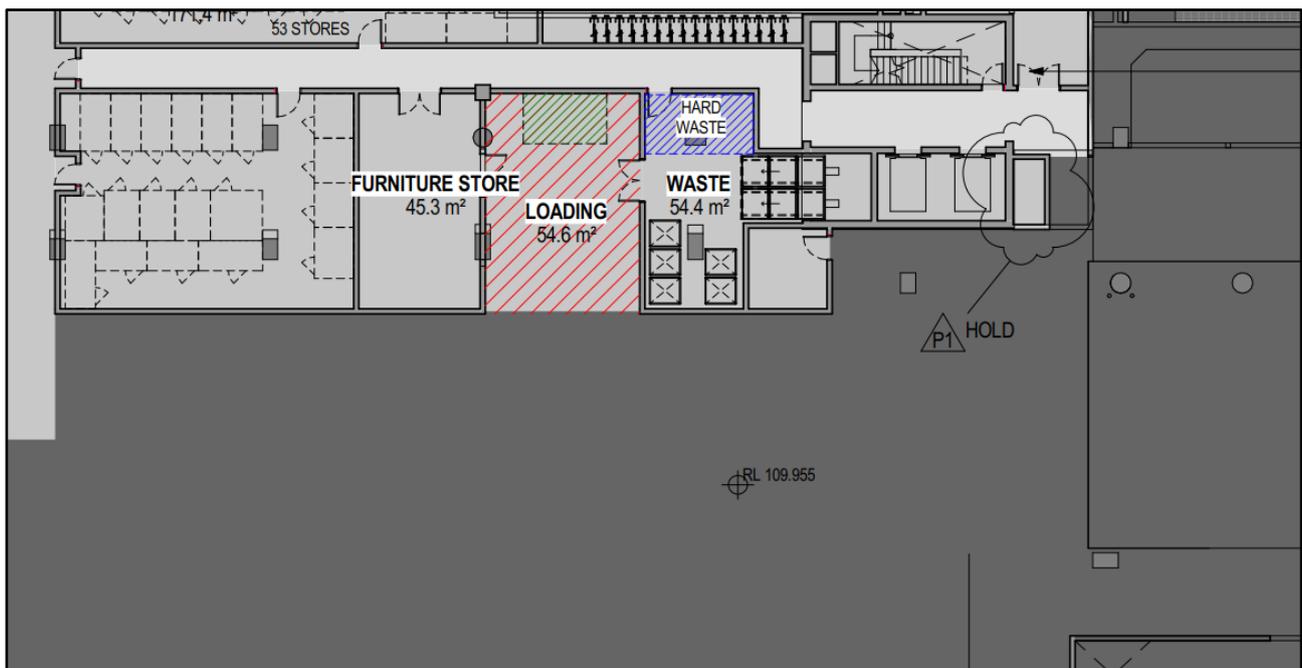


Figure 5 Bin Storage Area – Tower C



Furthermore, the bin storage room is located appropriately for access by residents, and is secured from the common areas.

The bin storage room should be vermin proof, and have appropriate lighting and drainage.

5.4 Bin Collection

A private waste contractor will be engaged to manage the collection and disposal of all waste streams generated by the development. The contractor will utilise a small rear-lift collection vehicle (6.4m long) to undertake waste collection within the basement. The truck will drive into the site via the site access point to Snedden Drive and prop in each residential tower's loading zone, adjacent each bin storage room. As shown on the swept paths, the truck is able to enter and exit the site in a forward direction.

5.5 Bin Cleaning

The Owners Corporation shall ensure that the shared residential bins are kept in a clean state, to minimise odours and to discourage vermin. This may include regular cleaning by a third party, or maintenance by residents.

6 WASTE MANAGEMENT

6.1 Best Practice Waste Management

Best Practice Waste Management is an initiative designed to reduce the amount of waste generated through encouraging a change of behaviour and action on waste management and moreover recycling.

The benefits of reducing waste generation are far reaching and has been identified as significantly important by Council and the Victorian Government.

The Victorian Waste and Resource Recovery Policy "Getting Full Value" has been prepared by the Victorian Government, and "sets out a position and an approach that will position Victoria as a national leader in resource recovery".

One of the primary goals of the policy is to "Assist Victorians to reduce the waste they generate and save Victorians' money through efficient use of resources", for which the following strategic directions are listed:

- Support commercial, not-for-profit and Victorian public sector organisations to achieve financial savings through waste reduction;
- Provide households with the information and support they need to reduce waste by using household goods more efficiently;
- Continue to work in partnership with the Commonwealth Government through the National Waste Policy: Less Waste, More Resources, and take a lead role in national strategies that harness Victoria's strengths and capabilities

This policy builds on the Towards Zero Waste strategy, which was launched in 2005.

The Owners Corporation shall encourage residents to participate in minimising and reducing solid waste production by:

- Promoting the Getting Full Value Strategy and the Municipalities Waste Management Strategy, including the use of The Waste Hierarchy, which in order of preference seeks to:
 - ✦ Avoid waste generation in the first place;
 - ✦ Increase the reuse and recycling of waste when it is generated; and
 - ✦ Recover, treat or contain waste preferentially to;
 - ✦ Its disposal in Land Fill (which is least desirable).
- Providing information detailing recyclable materials to ensure that non-recyclable materials do not contaminate recycling collections;
- Providing information regarding safe chemical waste disposal methods and solutions, including correct battery and electronics disposal methods;
- Encouraging composting for residents; and
- Providing tips for recycling and reusing waste, including encouraging the disposal of reusable items in good condition via donations to Opportunity Shops and Charities.

6.2 Bin Usage

Residents shall sort their waste and dispose garbage and recyclables via a dual chute system provided on all levels of each residential tower above the lower ground floor level, adjacent to the stair core. Bins will be rotated from within the linear track system underneath the waste chute by a building manager to ensure even distribution of waste and recyclables. Cardboard boxes should be flattened and containers rinsed and cleaned prior to disposal in the provided bins.

6.3 Common Property Litter and Waste Removal

The proposed development includes a number of common property areas, including foyers, hallways, parking areas and the bin storage areas.

A building manager will be appointed by the Owners Corporation and shall ensure that:

- All waste storage areas are regularly kept clear of litter;
- Bins are maintained and cleaned on a regular basis; and
- All common property areas, shared and accessed by tenants are kept clear of litter, and that all waste is removed from common areas on a regular basis.

These measures will act to minimise the impact upon local amenity and on the operation, management and maintenance of car parking areas in particular, to discourage vermin.

It is noted that the proposed bin storage areas are provided with separate vehicle access to the residential car parking area. Additionally, the bin storage areas are not expected to be visited regularly by tenants given waste will be disposed of via the dual waste chute systems.

6.4 Signage

To avoid contamination between garbage streams, bin lids will be colour coded generally in accordance with Council standards, to ensure the bin type is easily distinguishable. Furthermore, bins should include typical signage (preferably on the bin lid) to reinforce the appropriate materials to be deposited in each bin.

6.5 Resident Information

To ensure all residents are aware of their responsibilities with regard to waste and bin management, an information package should be provided to all residents, including the following information:

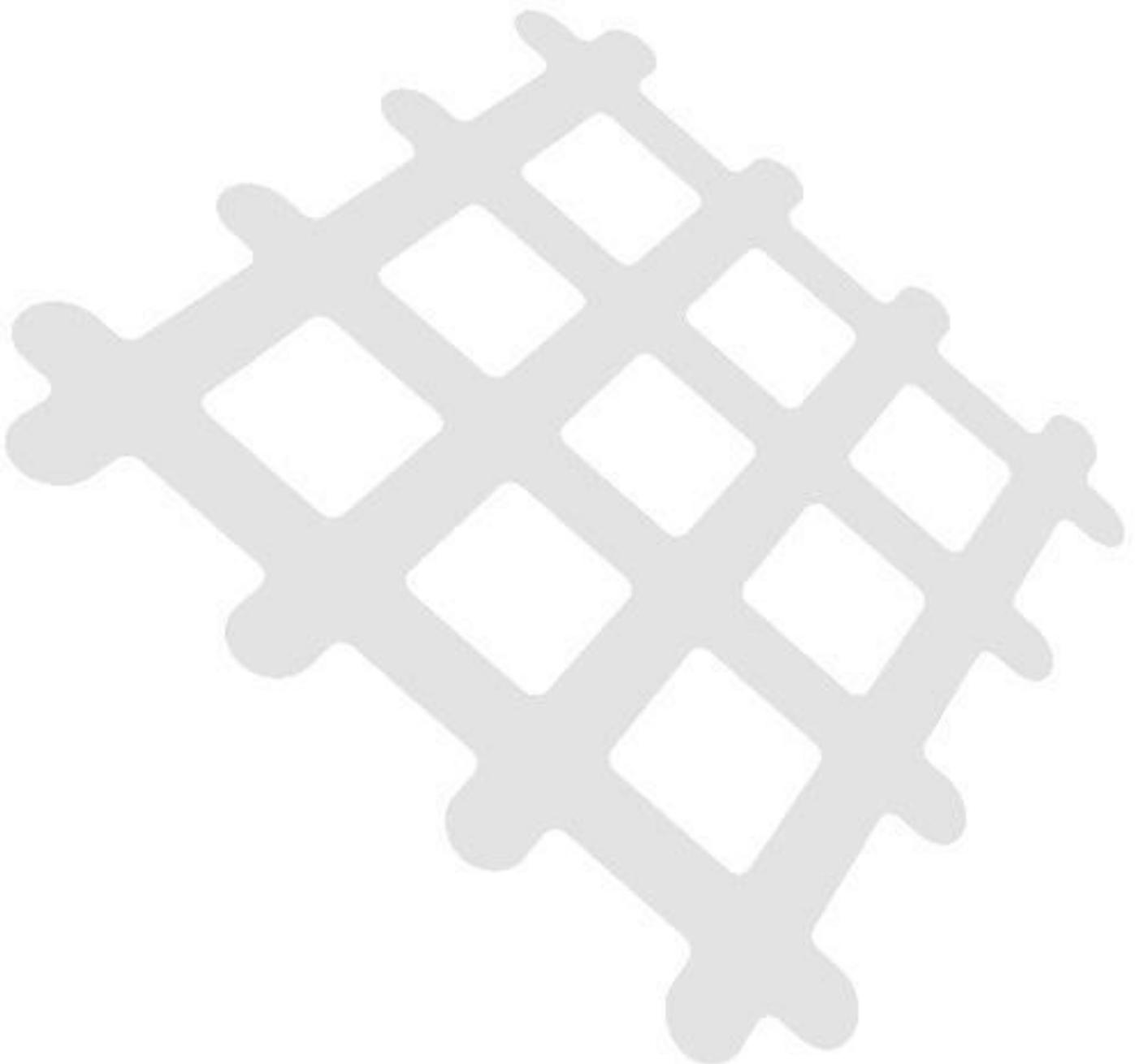
- A copy of this Waste Management Plan;
- Methods and techniques for waste reduction and minimisation;
- Information regarding bin collection days and requirements;
- Resident responsibilities with regard to bin usage, storage, and collection; and
- Resident responsibilities with regard to litter and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

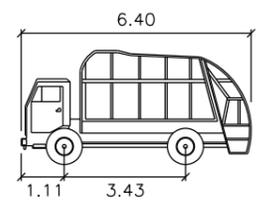
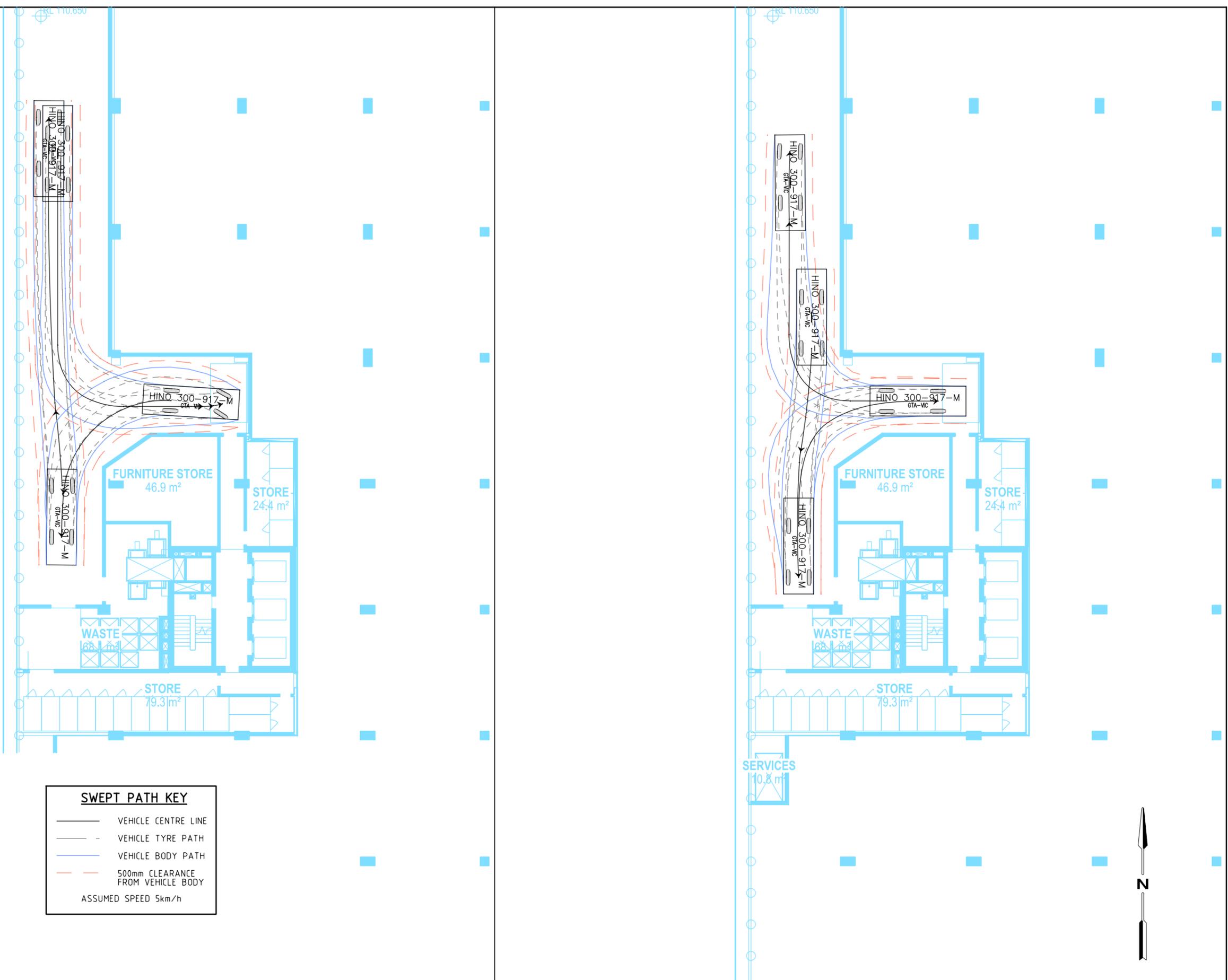
7 OCCUPATIONAL HEALTH & SAFETY RESPONSIBILITIES

The Owners Corporation/site operator shall ensure compliance to all relevant OH&S regulations and legislation, including the following:

- Worksafe Victoria Guidelines for Non-Hazardous Waste and Recyclable Materials

Appendix A Swept Path Analysis





HINO 300-917-M meters
 Width : 2.00
 Track : 1.66
 Lock to Lock Time : 6.0
 Steering Angle : 39.2

SWEPT PATH KEY	
	VEHICLE CENTRE LINE
	VEHICLE TYRE PATH
	VEHICLE BODY PATH
	500mm CLEARANCE FROM VEHICLE BODY
ASSUMED SPEED 5km/h	



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 Brisbane 07 3113 5000
 Canberra 02 6243 9400
 Adelaide 08 8334 3600
 Gold Coast 07 5510 4814
 Townsville 07 4722 2765
 Perth 08 6169 1000



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
H. STEVENSON

 APPROVED BY
D. GRAHAM

DESIGN CHECK
A. DELL'ISOLA

 DATE ISSUED
27 SEPTEMBER 2017

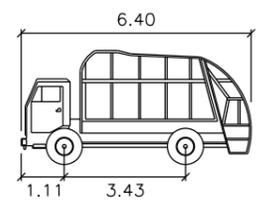
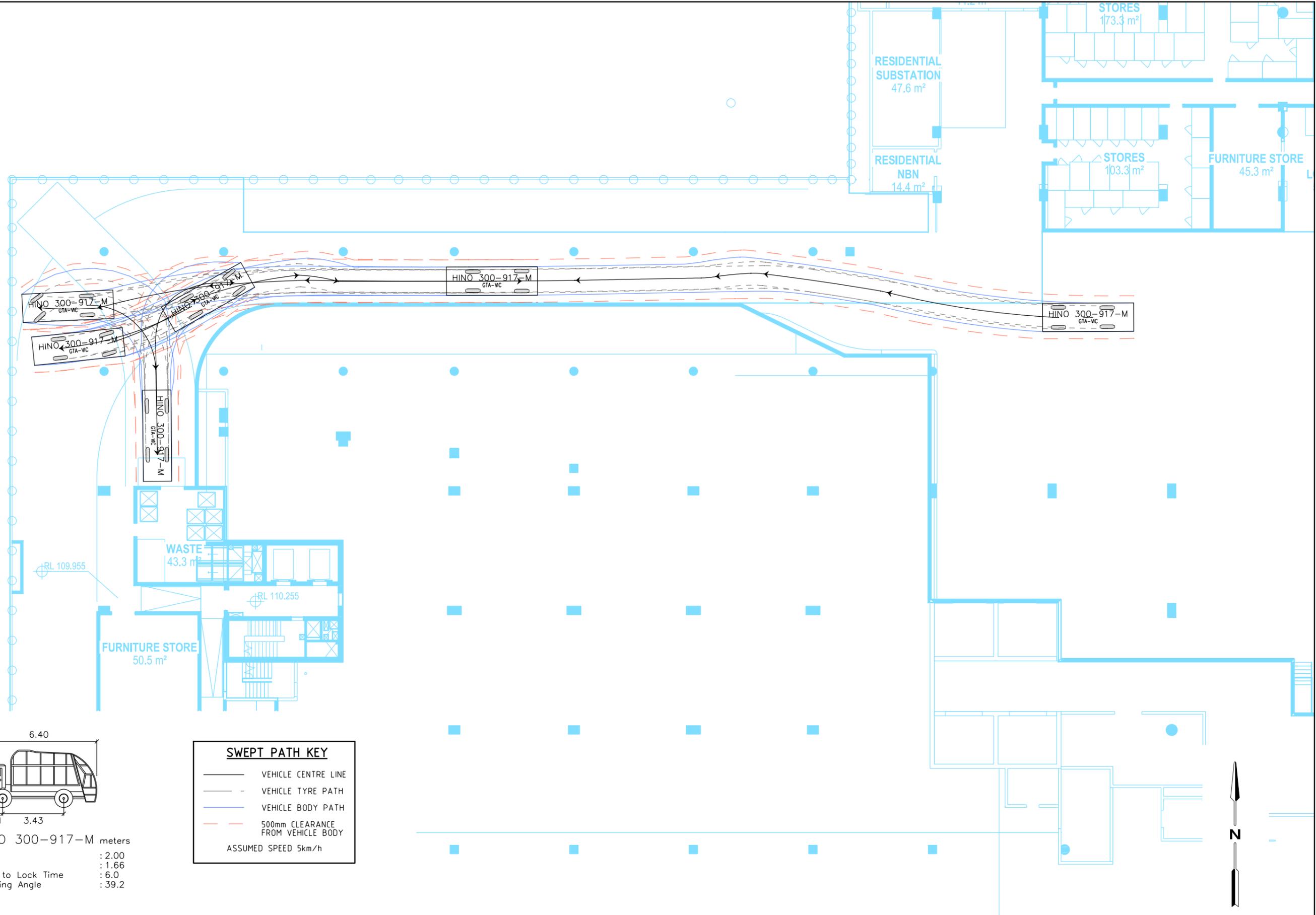
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235 SPRINGVALE ROAD
GLEN WAVERLEY

SWEPT PATH ASSESSMENT
 DRAWING NO. V130400-AT03-02

TITLE BOUNDARY 277° 32' 44"



HINO 300-917-M meters
 Width : 2.00
 Track : 1.66
 Lock to Lock Time : 6.0
 Steering Angle : 39.2

SWEPT PATH KEY	
	VEHICLE CENTRE LINE
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	500mm CLEARANCE FROM VEHICLE BODY
ASSUMED SPEED 5km/h	

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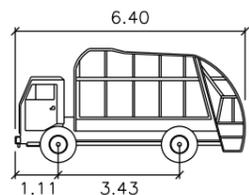
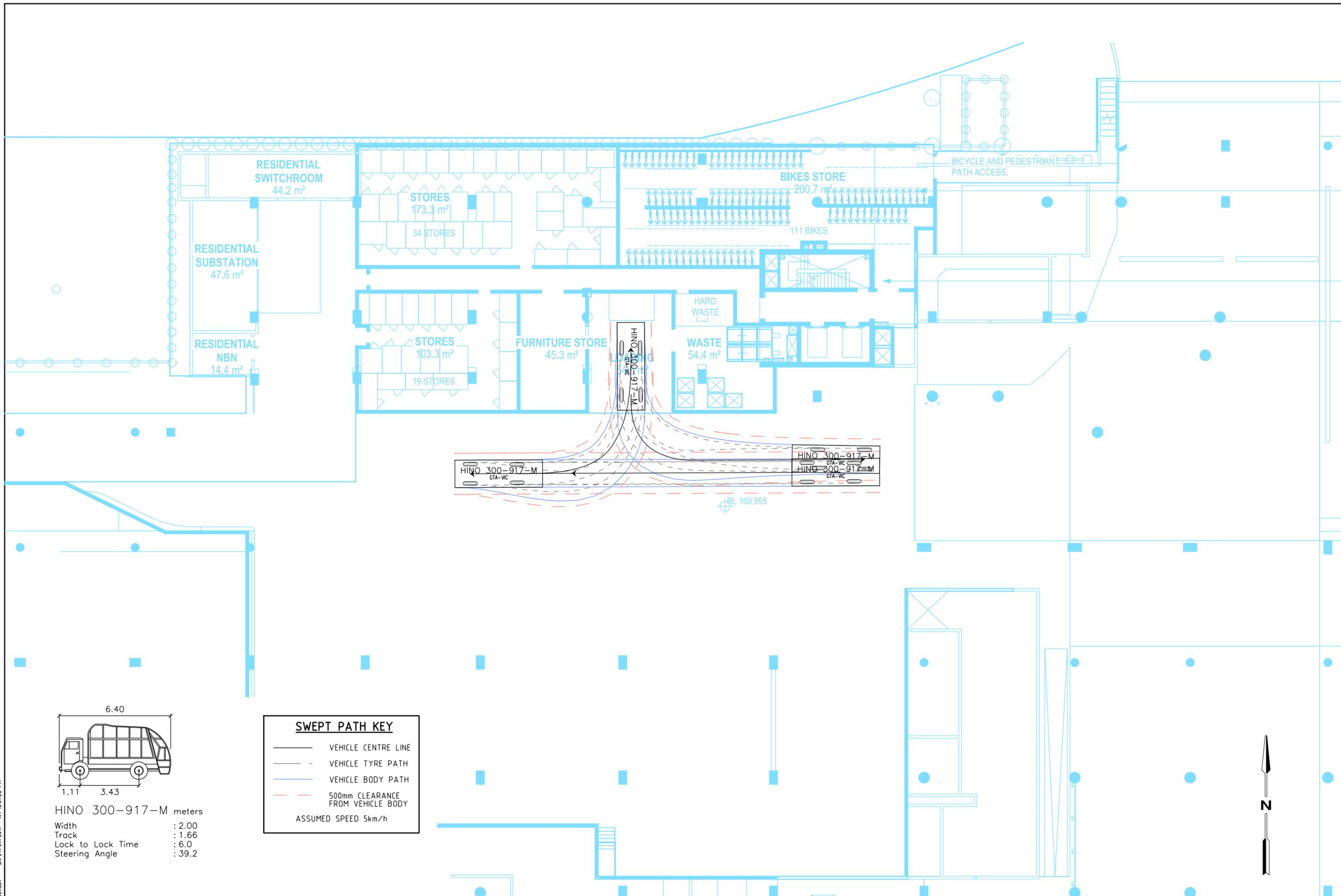
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235 SPRINGVALE ROAD
 GLEN WAVERLEY

SWEPT PATH ASSESSMENT
 DRAWING NO. V130400-AT03-03



HINO 300-917-M meters
 Width : 2.00
 Track : 1.66
 Lock to Lock Time : 6.0
 Steering Angle : 39.2

SWEEP PATH KEY	
	VEHICLE CENTRE LINE
	VEHICLE TYRE PATH
	VEHICLE BODY PATH
	500mm CLEARANCE FROM VEHICLE BODY
ASSUMED SPEED 5km/h	

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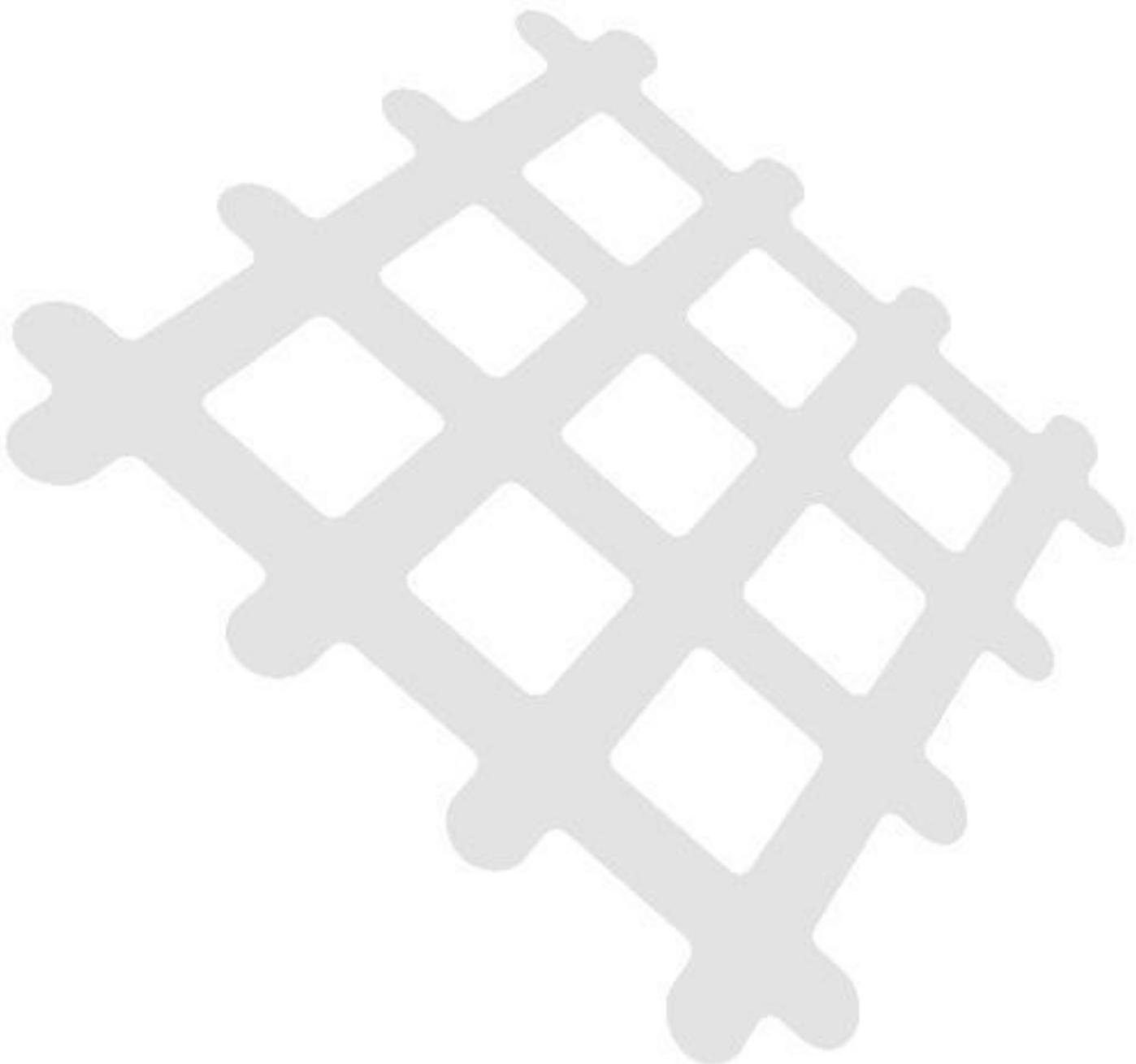
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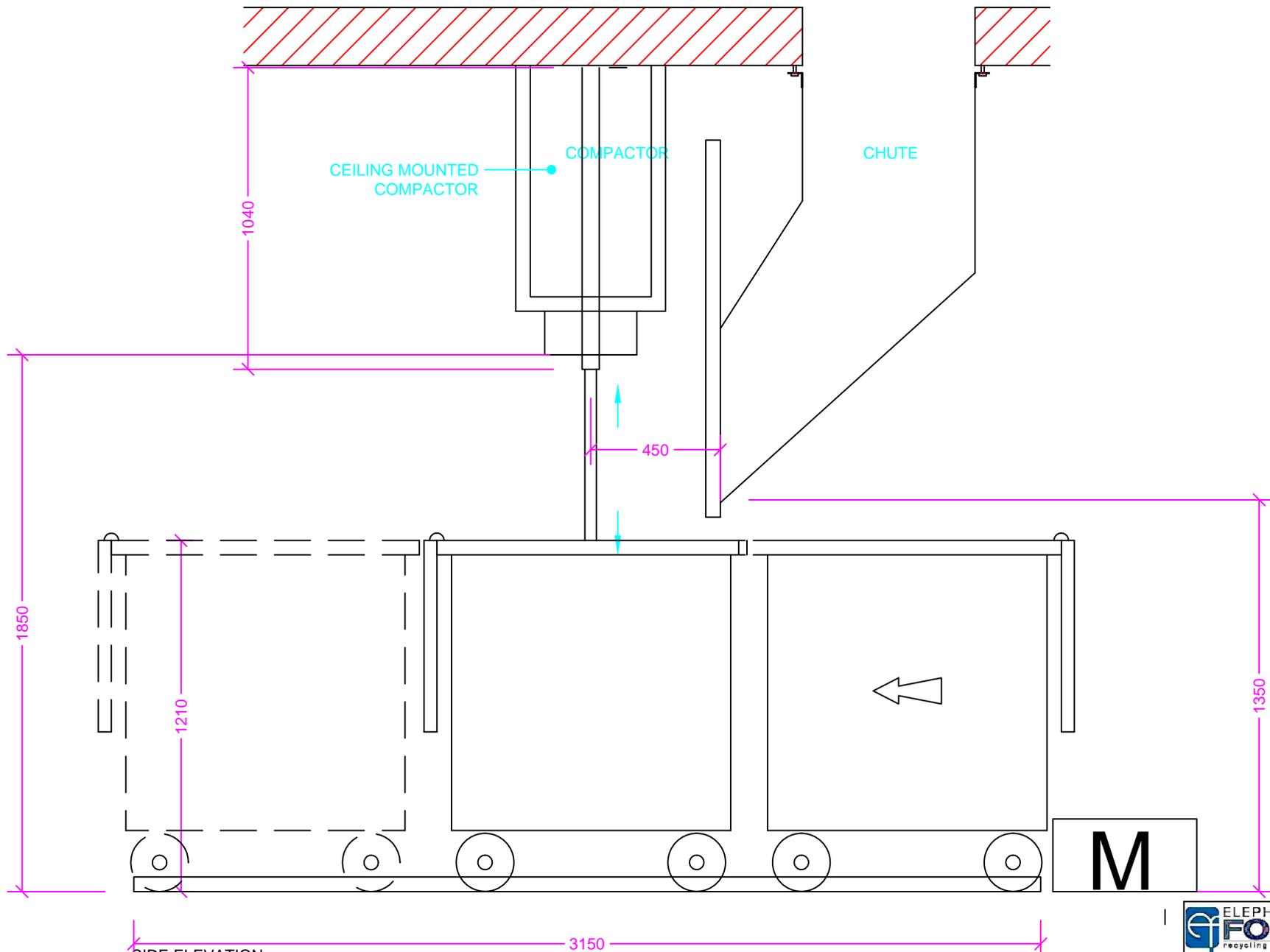
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235 SPRINGVALE ROAD
 GLEN WAVERLEY

SWEEP PATH ASSESSMENT
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Appendix B *Linear Track & Compactor Specification Sheet*



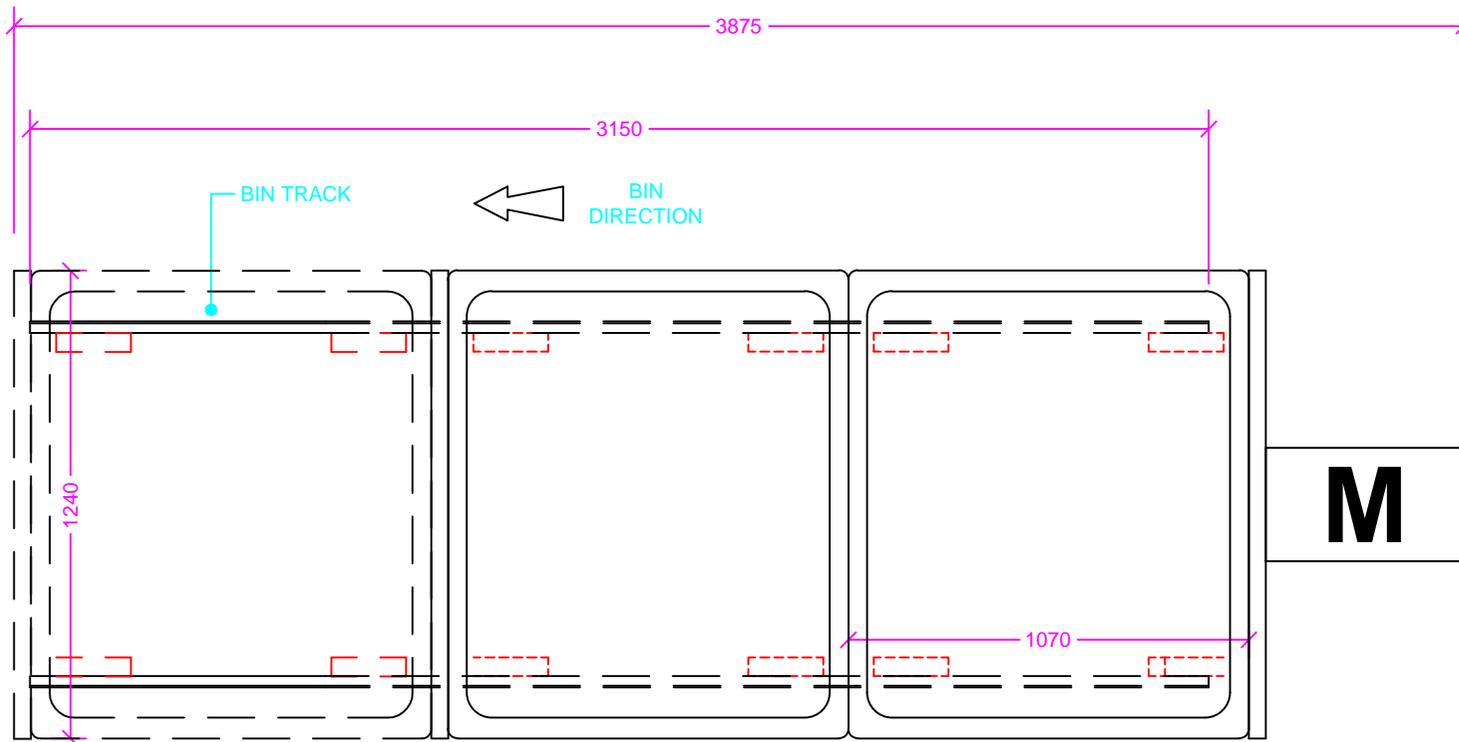


SIDE ELEVATION
scale 1:20

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<small>CAUTION The stated scale of this plan may have been altered by copying or other means. Accordingly the scale should be verified prior to using the plan to derive measurements.</small>		DATE: 21.10.13	TITLE: 2 BIN LINEAR TRACK & COMPACTOR w/- 1100L BINS
		SCALE AS SHOWN	
		DRAWN: CK	DRAWING No:
		A4	DM009-2BIN1100LINCOM
			REV -

REV	DATE	REVISION DESCRIPTION	BY
-	---	ISSUED FOR COMMENT	-



LAYOUT PLAN
scale 1:20



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PROJECT: -

DATE: 21.10.13 TITLE: 2 BIN LINEAR TRACK
SCALE AS SHOWN w/- 1100L BINS

DRAWN: CK DRAWING No: REV
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