Traffix Group

Traffic Engineering Assessment

Proposed Amendment to Planning Permit No. TPA 45451

149 Hansworth Street, Mulgrave

Prepared for
Hansworth Development Pty Ltd

October 2021

G27971R-01A

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Issue No.	Type	Date	Prepared By	Approved By
A	Final	14/10/2021	F. Banh	M. Woollard

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1. Introduction

Traffix Group has been engaged by Hansworth Development Pty Ltd to undertake a Traffic Engineering Assessment for a proposed amendment to Planning Permit No. TPA 45451 for Stage 3 of the proposed residential development at 149 Hansworth Street, Mulgrave.

2. Proposal

The proposal is for Stage 3 of a residential development on the site as set out in the following table and includes a comparison to the approved scheme.

A copy of the development plans prepared by Cera Stribley Architects (dated September, 2021) are attached at Appendix A.

Table 1: Development Summary

Characteristics	Description		
AMENDED DEVELOPMENT SCHEME (Plans dated September, 2021)			
Uses	**Size/No.**	**Car Parking**	**Notes**
Dwellings:			Parking rates:
One-bedroom Apt.	27	27	1/dwelling
Two-bedroom Apt.	86	86	1/dwelling
Three-bedroom Apt.	6	12	2/dwelling
Four-bedroom Apt.	4	8	2/dwelling
Visitor	123 (apt.)	24	0.2/dwelling
Car Parking Provision		157 car spaces (inc. 42 within car stackers)	61 spaces within lower ground 56 spaces within upper ground 40 spaces within level 1
Bicycle Parking Provision		38 bicycle spaces	12 in upper ground 26 in level 1

Characteristics	Description		
APPROVED DEVELOPMENT SCHEME (Plans dated stamped April, 2019)			
Uses	**Size/No.**	**Car Parking**	**Notes**
<u>Dwellings:</u> One-bedroom Apt. Two-bedroom Apt. Three-bedroom Apt. Visitor	 35 57 1 93 (apt.)	 35 57 2 18	<u>Parking rates:</u> 1/dwelling 1/dwelling 2/dwelling 0.2/dwelling
Car Parking Provision		119 car spaces (inc. 7 surplus resident spaces)	43 spaces within lower ground 33 spaces within upper ground 43 spaces within level 1
Bicycle Parking Provision		96 bicycle spaces	Located within lower ground and level 1
Other	**Notes**		
Vehicle Access	Continuation of Hansworth Street to internal private road for two-way access to the apartment building and is provided via a 6.7m wide internal road.		
Changes to on-street parking	None – No on-street car parking available		
Loading Provision	Loading proposed to be Informally within the open at-grade carpark		
Waste Collection	Within lower and upper ground using Hino mini-waste truck		
Other Notes:	We understand that a Planning Permit (Permit No. TPA 45451) has been issued for the site's townhouse component.		

3. Existing Conditions

3.1. Subject Site

The subject site is 149 Hansworth Street, Mulgrave. The table below summarises the key characteristics of the subject site.

Table 2: Subject Site Description

Characteristic	Description
Address	149 Hansworth Street, Mulgrave
Area	4,475m^2
Frontages	143.5m to Monash Freeway 21.5m to Hansworth Street
Zoning	General Residential Zone – GRZ2
Current use of site	Vacant lot
Car parking and loading provision	None
Vehicle access	Double width access point at the site's eastern boundary
On-street parking along site frontage	None

A locality plan, aerial photograph and land use zoning map is provided at Figure 1 to Figure 3, respectively.

Significant nearby land uses include:

- **Waverley Gardens Shopping Centre** located 100m south of the site.
- **Monash Freeway entry** located 1km southeast.

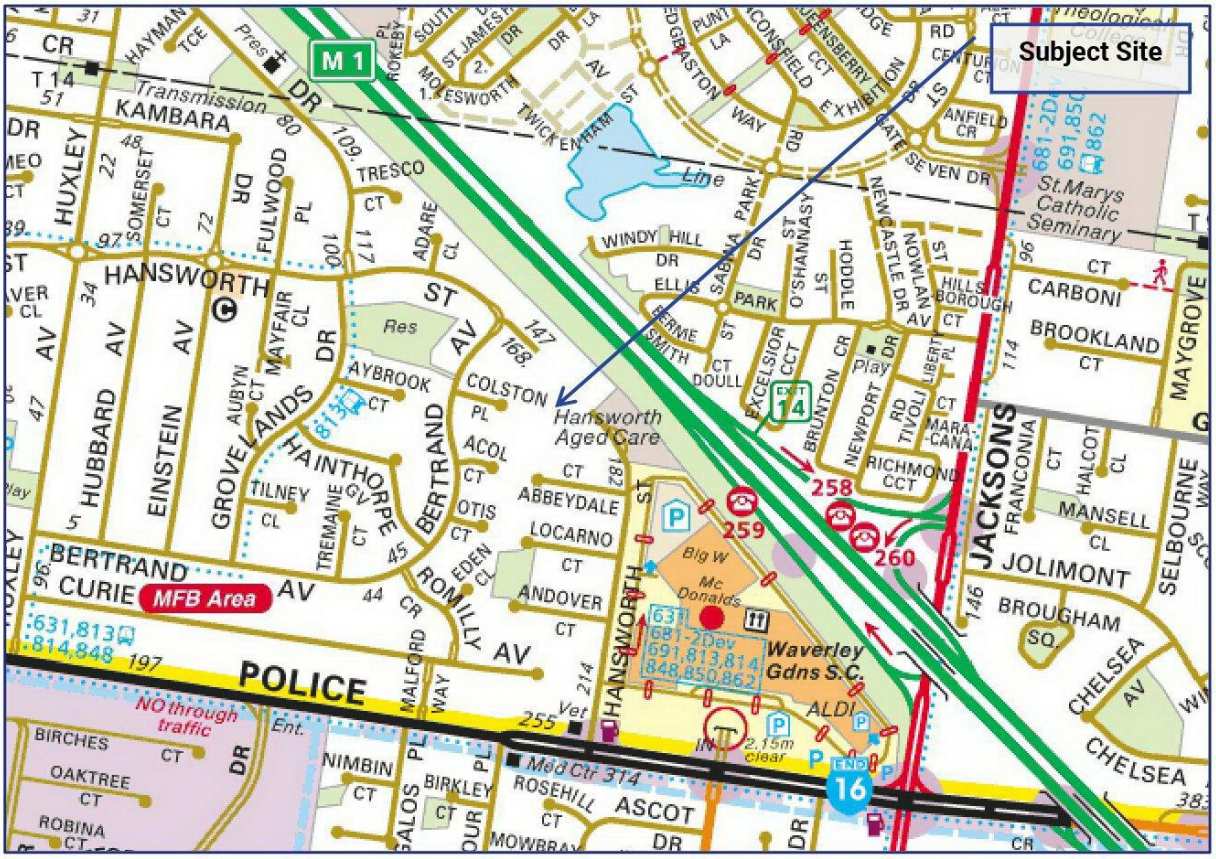

Figure 1: Locality Plan (Source: Melway Online)

Figure 2: Aerial Photograph (Source: Nearmap)

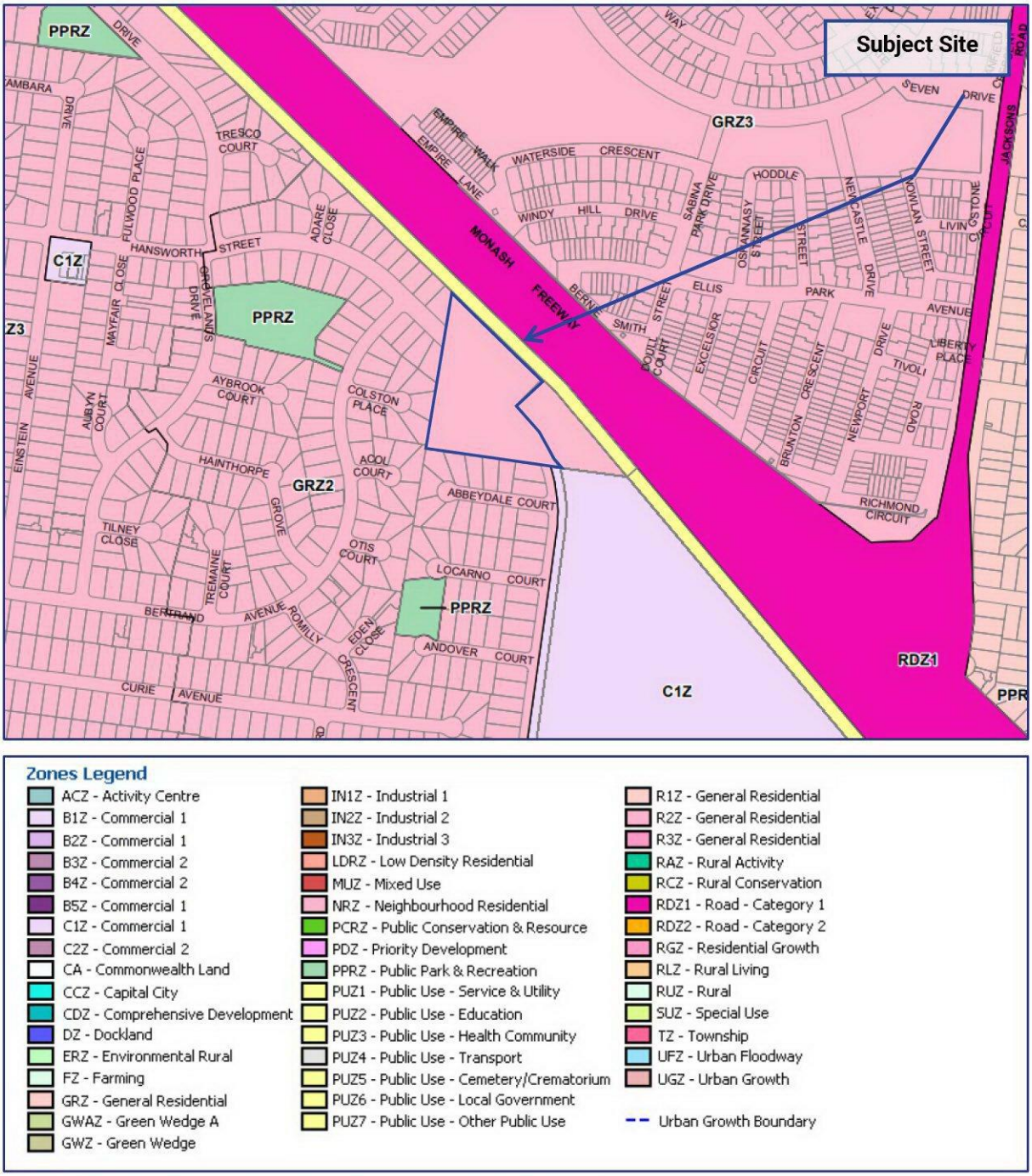

Figure 3: Land Use Zoning Map (Source: Planning Schemes Online)

3.2. Transport Network

3.2.1. Road Network

The subject site directly abuts Hansworth Street at the site's eastern boundary.

Hansworth Street is a Council local access road aligned in a north-south direction between Police Road in the south and terminates in the north at the site's southern frontage.

In the vicinity of the site, Hansworth Street provides a carriageway width of approximately 12.5m wide accommodating one traffic lane in each direction and indented kerbside parking on both sides of the road. Footpaths are located on both sides of Hansworth Street.

The default urban speed limit of 50km/h applies to Hansworth Street.

3.2.2. Public Transport

The site is well served by public transport services, with bus services available in the nearby area. Waverley Gardens Shopping Centre has a bus terminal servicing 9 bus routes located approximately 200m south of the site.

The diagram at Figure 4 illustrates the location of the nearest public transport service. A summary of services is provided at Table 3.

Table 3: Summary of Public Transport Services

Service	Between	Via
Bus Route 631	Waverley Gardens SC & Southland SC	Clayton & Monash University
Bus Route 681 (Note 1)	Knox City SC	Rowville
Bus Route 682 (Note 2)	Knox City SC	Rowville
Bus Route 691	Waverley Gardens SC & Boronia	Ferntree Gully
Bus Route 813	Waverley Gardens SC & Dandenong	Springvale
Bus Route 814	Dandenong & Springvale South	Waverley Gardens SC
Bus Route 848	Dandenong & Brandon Park SC	Waverley Gardens SC
Bus Route 850	Dandenong & Glen Waverley	Mulgrave & Brandon Park
Bus Route 862	Dandenong & Chadstone	North Dandenong & Oakleigh

Note 1: One trip operates to Waverley Gardens SC in the morning.
Note 2: One trip operates to Waverley Gardens SC in the afternoon.

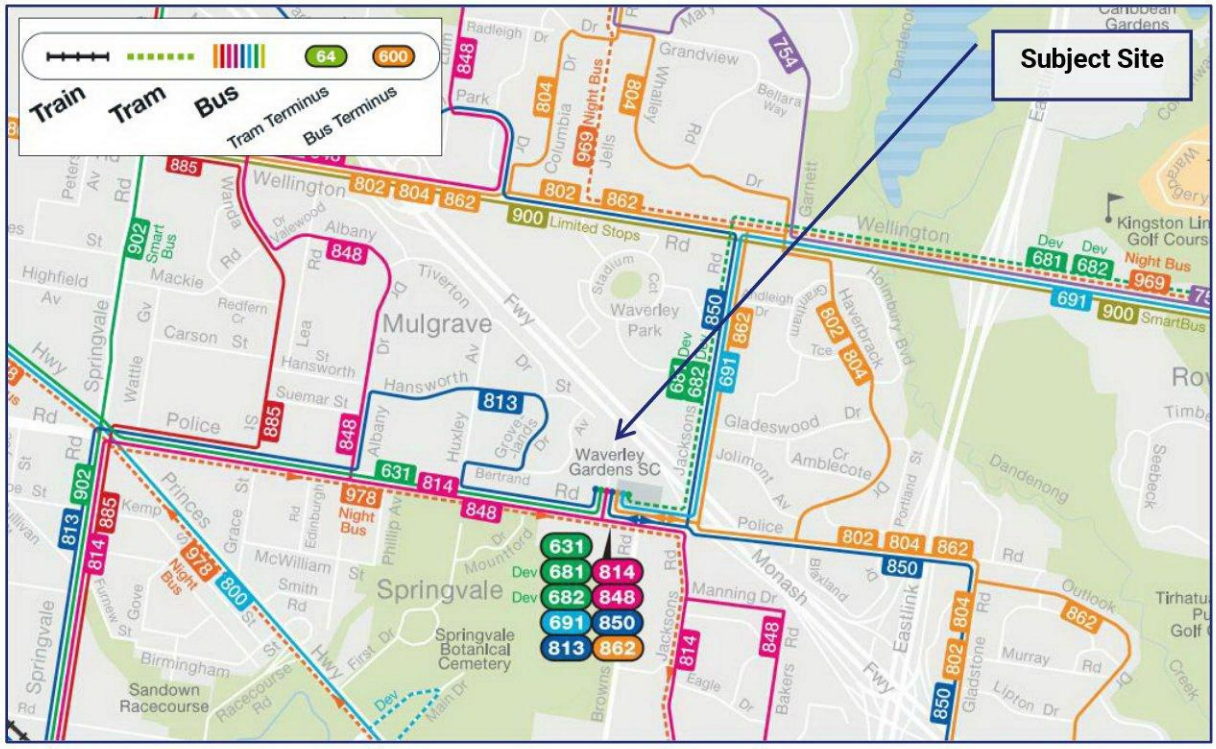

Figure 4: Public Transport Map (Source: PTV)

4. Traffic Engineering Assessment

4.1. Statutory Car Parking Assessment

The proposed development falls under the land-use category of 'dwelling' under Clause 73.03 of the Planning Scheme. The Planning Scheme sets out the parking requirements for new developments under Clause 52.06. The purpose of Clause 52.06 is:

- *To ensure that car parking is provided in accordance with the Municipal Planning Strategy and the Planning Policy Framework.*
- *To ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality.*
- *To support sustainable transport alternatives to the motor car.*
- *To promote the efficient use of car parking spaces through the consolidation of car parking facilities.*
- *To ensure that car parking does not adversely affect the amenity of the locality.*
- *To ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use.*

The car parking requirement for the development is set out under Clause 52.06 at the car parking table at Clause 52.06-5 of the Planning Scheme.

The site is not located within the Principal Public Transport Network area and as per Clause 52.06-5, the Column A parking requirements apply.

The statutory car parking assessment is set out in the table below.

Table 4: Statutory Car Parking Assessment – Clause 52.06-5

Use	Size / No.	Statutory Parking Rate (Column A)	Parking Requirement(1)	Parking Provision	Shortfall / Surplus
One-bed dwelling	27	1 space per one/two-bedroom dwelling	27	27	0
Two-bed dwelling	86		86	86	0
Three-bed dwelling	6	2 spaces per three or more bedroom dwelling	12	12	0
Four-bed dwelling	4		8	8	0
Visitors	123 (apt.)	1 to every 5 dwellings	24	24	0
TOTAL			**157**	**157**	**0**

Notes:

1. Clause 52.06-5 specifies that where a car parking calculation results in a requirement that is not a whole number, then number of spaces should be rounded down to the nearest whole number.

The provision of 157 car spaces meets the statutory minimum requirement under Clause 52.06-5. This is consistent with the approved scheme.

Accordingly, a car parking reduction is not required.

4.2. Bicycle Parking Provision

Clause 52.34 of the Planning Scheme specifies bicycle parking requirements for new developments. The purpose of Clause 52.34 is to:

- *To encourage cycling as a mode of transport.*
- *To provide secure, accessible and convenient bicycle parking spaces and associated shower and change facilities.*

The development provides bicycle parking as follows:

- 26 secure bicycle spaces (13 horizontal rails) within the apartment building for residents, and
- 12 open bicycle rails at upper ground level for visitor shared use.

The statutory bicycle parking requirement of the development under Clause 52.34 is set out in the table below.

Table 5: Statutory Bicycle Parking Assessment - Clause 52.34

Use	Size/No.	Statutory Bicycle Parking Requirement		No. Bicycle spaces required
		Residents	Visitors	
Dwelling	123	1 space to each 5 dwellings	1 space to each 10 dwellings	25 resident 12 visitor
TOTAL				**37 spaces**

Based on the above, the development satisfies the bicycle parking provision requirements of Clause 52.34.

The table below reviews the design of the bicycle parking provided.

Table 6: Design of Bicycle Parking

Requirement	Assessment	Design Response
End of Trip Facilities - Table 2 & 3 of Clause 52.34-5		
If 5 or more employee bicycle spaces are required, 1 one shower for the first 5 employee bicycle spaces, plus 1 to each 10 employee bicycle spaces thereafter.	NA	No staff bicycle parking is required and as such no end of trip facilities are required

Requirement	Assessment	Design Response
1 change room or direct access to a communal change room to each shower. The change room may be a combined shower and change room.	NA	
Design of Bicycle Parking		
Does the design comply with the design requirements of Clause 52.34-6?	✓	All bicycle spaces are designed in accordance with the requirements of the Planning Scheme and AS2890.3-2015
Does the design comply with the requirements of AS2890.3-2015?	✓	

Based on the above, we are satisfied that the provision of bicycle parking accords with the requirements of Clause 52.34.

4.3. Review of Carpark Layout and Vehicle Access Arrangements

Traffix Group has provided design advice to the project architect to achieve a satisfactory carpark layout. The proposed parking layout has been assessed under the following guidelines:

- Clause 52.06-9 of the Planning Scheme (Design Standards for car parking), and
- AS2890.1-2004 – Part 1: Off-Street Car Parking, where relevant.

A detailed assessment of the carpark layout and vehicle access arrangements against the relevant design standards of the Planning Scheme and Australian Standards is provided at Appendix B.

A stop/go signalling system is proposed to be provided for access into the lower ground to manage vehicle conflicts as passing cannot readily occur due to the curved nature of the ramp. In addition, convex mirrors at the top and bottom of the ramp are included to ensure vehicle conflict does not occur.

Based on the above, we are satisfied that the design and layout of the carpark and vehicle accessways complies with the objectives of Clause 52.06 and the Australian Standards, where relevant.

4.3.1. Car Stackers

A detailed assessment of the proposed car stackers is provided in the following table.

Table 7: Assessment of Car Stacker Design

System Characteristic	Specifications	Response
Stacker System	Klaus Trendvario 6100	Specifications available at https://www.multiparking.com.au/trendvario-6100/
Type of system	2 level independent stacker (with pit)	1 system is provided as 2 level dependant stacker (with pit)
Number of spaces	42 spaces	2 x 10 units wide (19 spaces each) 1 x 2 units wide (4 spaces)
Usable Platform Width	2.5m wide	Width satisfies AS2890.1-2004
Minimum Access Aisle Width Behind Stacker	6.4m	Width satisfies AS2890.1-2004
Platform Length	5.7m	Accommodates B99 design car
Pit Depth	2.05m	
Headroom Clearance	2.85m	100% of car spaces accommodate 1.8m headroom clearance, satisfying Design Standard 4 of Clause 52.06-9
Car Height Entry Level	>2.0m	
Car Height Lower Level	1.8m	

4.3.2. Other Considerations – Clause 56.06 Assessment

Clause 52.06-10 also specifies that before deciding on an application, the Responsible Authority must consider:

> *The relevant standards of Clauses 56.06-2, 56.06-4, 56.06-5, 56.06-7 and 56.06-8 for residential developments with accessways longer than 60 metres or serving 16 or more dwellings.*

As the development has internal roads and accessways longer than 60m and serves more than 16 dwellings, the relevant standards of Clause 56 are also required.

A response to each of these requirements is set out as follows.

Clause 56.06-2 – Walking and Cycling Network Objectives and Clause 56.06-5 – Walking and Cycling Network Detail Objectives

The internal road providing access to the site will function as low speed 'shared zone' designed to accommodate shared bicycle, pedestrian and vehicle movements within the site.

Separate pedestrian paths are provided throughout the site for access to the townhouses and apartment building.

Clause 56.06-4 – Neighbourhood and Street Network Objective and Clause 56.06-7 – Neighbourhood Street Network Detail Objective

The internal road network is intended to be private roads.

The proposed road widths exceed 5.5m wide providing for comfortable two-way traffic movements and is consistent with the requirements of Clause 56.06-8 for an access lane and the requirements of AS2890.1-2004 for a two-way accessway.

Clause 56.06-8 – Lot Access Objective

Vehicle access to each resident space and visitor space has been reviewed and is satisfactory.

4.4. Loading and Waste Collection Arrangements

4.4.1. Loading

Clause 65.01 of the Planning Scheme states that the Responsible Authority must consider a number of matters as appropriate including:

- *The adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts.*

The dwellings may require loading from time-to-time associated with removal trucks or vans. We are satisfied that the frequency of these movements does not warrant the inclusion of a dedicated on-site loading bay.

All loading associated with the dwellings will need to be accommodated on-street within the accessways. We are satisfied that this is appropriate for a use such as this and the frequency of loading will not have a detrimental impact on the operation of the site.

4.4.2. Waste Collection

Separate common waste bin areas are provided within the lower and upper ground levels.

Waste collection is proposed to be undertaken via a private contractor using the mini rear loading waste truck (typically 6.4m long x 2.08m high waste truck vehicle).

Swept path diagrams demonstrating the waste collection vehicle navigating the site is attached at Appendix C.

Accordingly, we are satisfied that the waste collection arrangements are acceptable.

4.5. Traffic Impact Assessment

The *RTA Guide to Traffic Generating Developments (2002)* (RTA Guide) sets out traffic generation rates for a range of land uses. This guide is referred to in the AustRoads Guide which is used by VicRoads and is generally regarded as the standard for metropolitan development characteristics.

The RTA Guide sets out the following relevant traffic generation rates for medium density residential development:

Smaller Units (one and two bedrooms):

- Daily vehicle trips = 4 – 5 per dwelling per day
- Weekday peak hour vehicle trips = 0.4 – 0.5 per dwelling per day

Larger Units (three or more bedrooms)

- Daily vehicle trips = 5 – 6.5 per dwelling per day
- Weekday peak hour vehicle trips = 0.5 – 0.65 per dwelling per day

For the purpose of undertaking a conservative analysis, we have adopted the upper end of the range for all of the proposed two-bedroom and three-bedroom dwellings (5 daily vehicle trips & 6.5 daily vehicle trips per dwelling per day, respectively).

Accordingly, a conservative assessment of the 123 dwellings is anticipated to generate in the order of 630 vehicle trip ends per day, including 63 vehicle trip ends during each of the road network peak hours.

This corresponds to one vehicle either entering or exiting the site every 57 seconds on average, during the peak hours (and less at other times).

The traffic impacts associated with the approved development with 93 apartments equate to a daily traffic generation of 467 vehicle trip ends per day including 47 vehicle trip ends during each of the road network peak hours.

We are satisfied that the additional 16 vehicle trip ends during the commuter peak hours and 163 over the course of the day can be accommodated within the nearby road network, is at level that is consistent with the current approval, that the proposed access arrangements are satisfactory and that there will be no detrimental impacts on traffic conditions in the surrounding area as a result of the development.

5. Conclusions

Having undertaken a detailed traffic engineering assessment of the proposed residential development at 149 Hansworth Street, Mulgrave, we are of the opinion that:

a) the proposed development has a statutory car parking requirement of 157 car spaces under Clause 52.06-5, which is satisfied by the provision of 157 car spaces,

b) the proposed parking layout and vehicle access arrangements accord with the requirements of the Planning Scheme, Australian Standards (where relevant) and current practice,

c) bicycle parking is provided in accordance with Clause 52.34 of the Planning Scheme and accords with the design requirements of AS2890.3-2015,

d) a dedicated loading bay is not warranted and can be informally accommodated within the open at-grade carpark,

e) waste collection can be undertaken via a private contractor on the site,

f) the increase in level of traffic generated by the proposal can be accommodated without any adverse impacts to the operation of the local road network, and

g) there are no traffic engineering reasons why an amended planning permit for the proposed residential development at 149 Hansworth Street, Mulgrave should be refused, subject to appropriate conditions.

Appendix A

Development Plans

D21-352524

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NOTES

Do not scale. Contractor must verify all dimensions on site before commencing any work or preparing shop drawings which must be approved by the architect before manufacture. Any extra entailed work shown on this drawing must be claimed and approved before proceeding.

REV	DATE	REVISION	BY	CHK
A	22.09.2021	TOWN PLANNING	DC	DC

REV	DATE	REVISION	BY	CHK

PROJECT

HANSWORTH

149 HANSWORTH STREET, MULGRAVE 3170

MIXED USED DEVELOPMENT

DRAWING STATUS

TOWN PLANNING

JOB N°	20090
REVISION N°	A
DATE	22.09.2021
SCALE	1 : 250 @ A1
DRAWN BY	DC
CHECKED BY	DC

DRAWING TITLE

PROPOSED LOWER GROUND FLOOR PLAN

TP.1001

D21-352524

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PROJECT

HANSWORTH

149 HANSWORTH STREET, MULGRAVE 3170

MIXED USED DEVELOPMENT

DRAWING STATUS

TOWN PLANNING

JOB N°	20090
REVISION N°	A
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DRAWING TITLE

PROPOSED UPPER GROUND FLOOR PLAN

TP.1002

D21-352524

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PROJECT

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149 HANSWORTH STREET, MULGRAVE 3170

MIXED USED DEVELOPMENT

DRAWING STATUS

TOWN PLANNING

JOB N°	20090
REVISION N°	A
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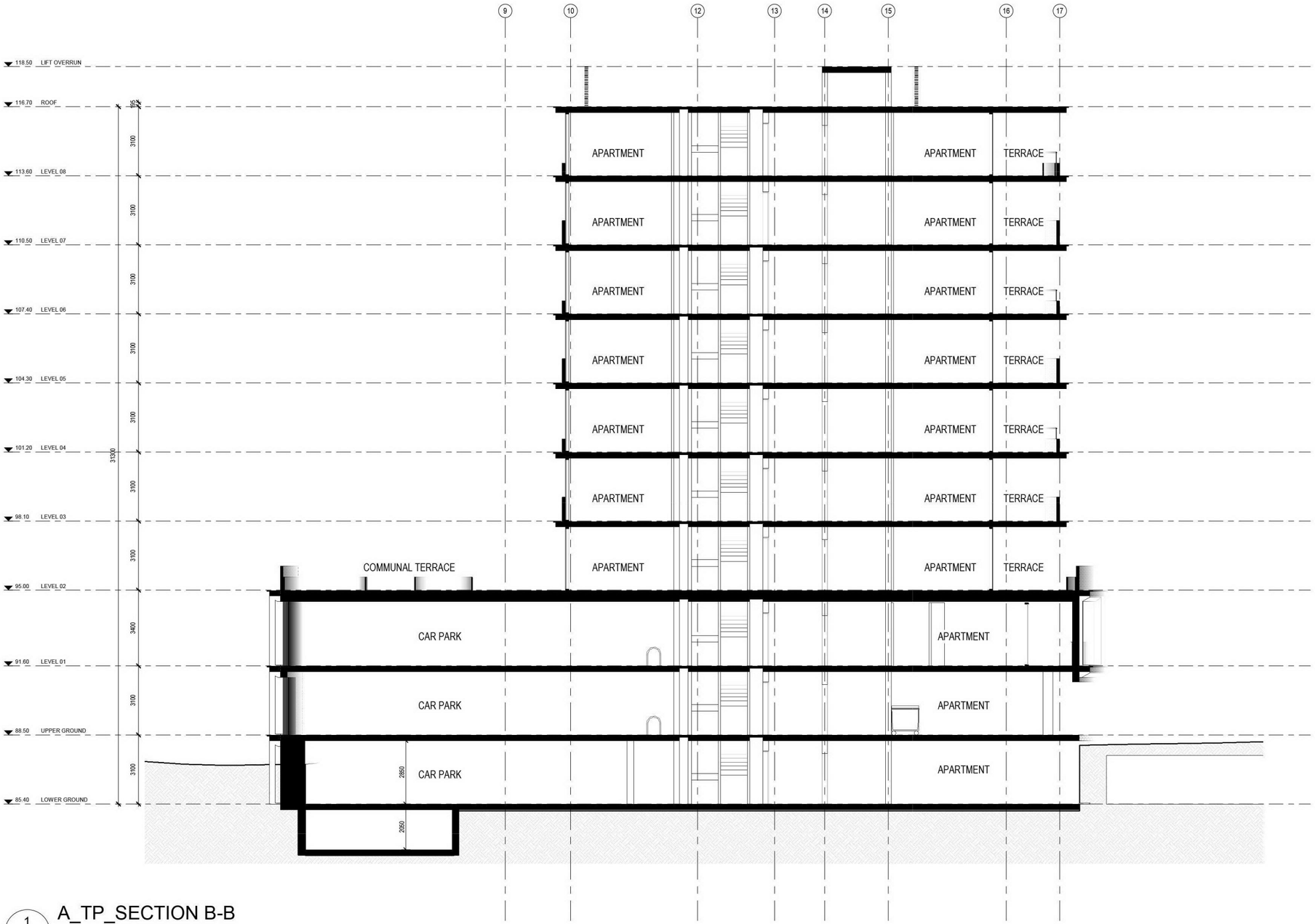
PROPOSED LEVEL 01 FLOOR PLAN

TP.1003



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PROJECT

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149 HANSWORTH STREET, MULGRAVE 3170

MIXED USED DEVELOPMENT

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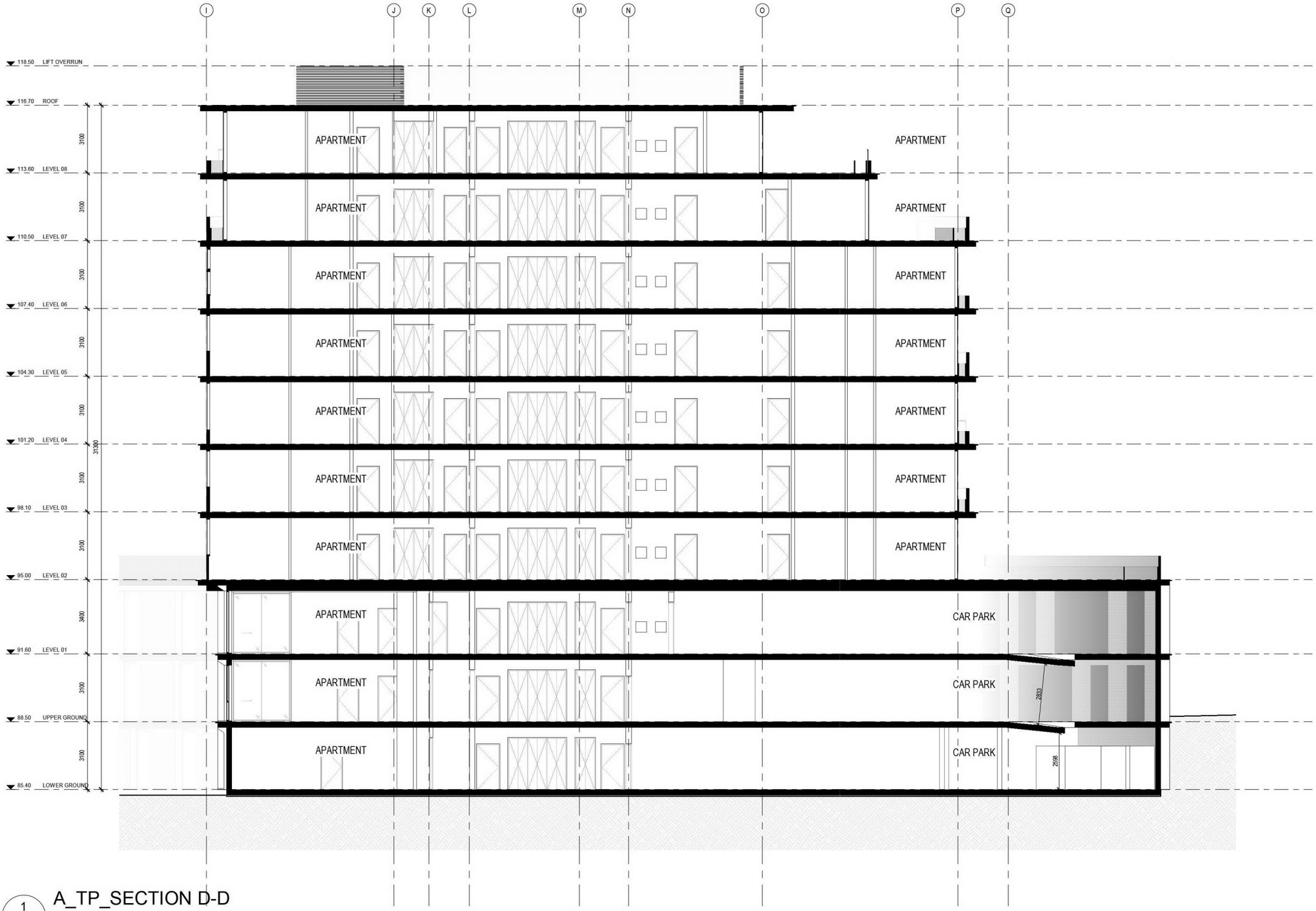

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PROJECT

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MIXED USED DEVELOPMENT

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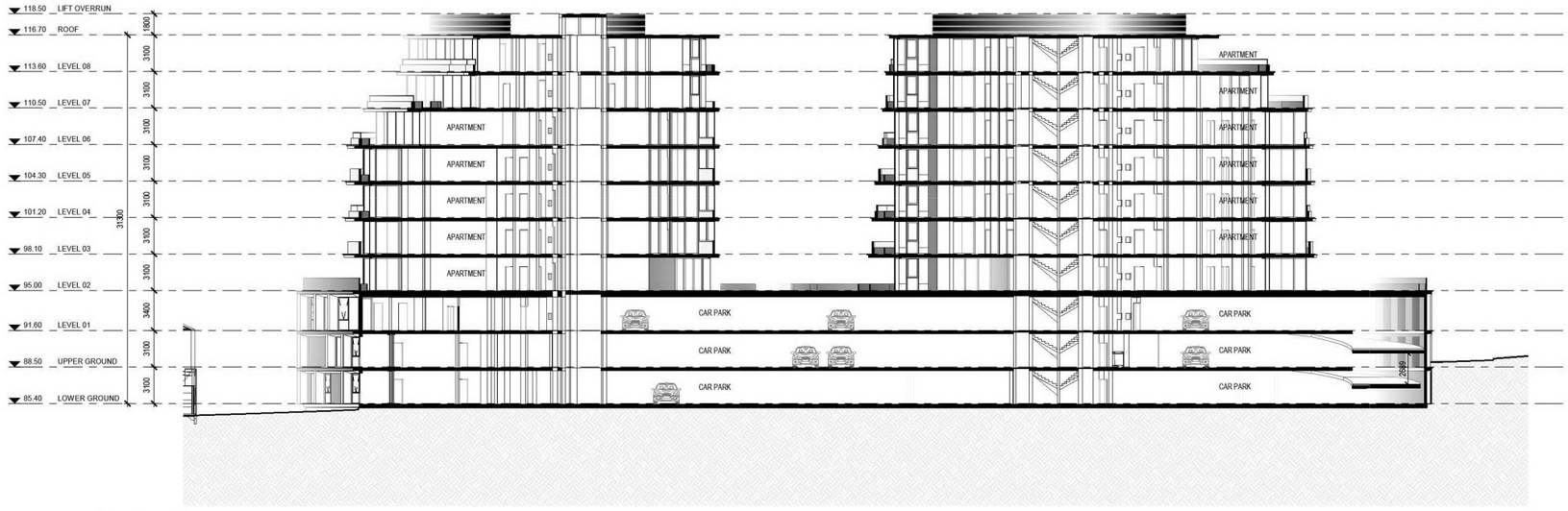

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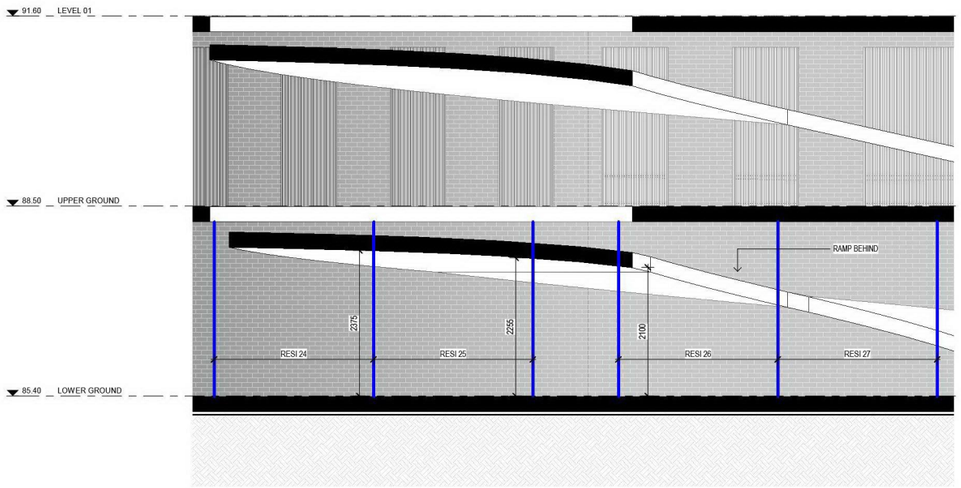

2 A_TP_SECTION - LG CAR SPACES

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PROJECT
HANSWORTH
149 HANSWORTH STREET, MULGRAVE 3170
MIXED USED DEVELOPMENT

DRAWING STATUS
TOWN PLANNING

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REVISION N°	A
DATE	22.09.2021
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TP.3004

Appendix B

Carpark Layout Review

Table 8: Carpark Layout and Access Assessment

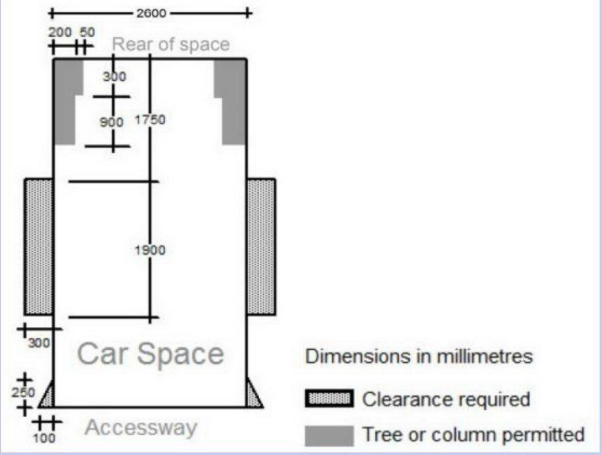
Requirement	Assessment	Design Response
Clause 52.06-9 Design Standard 1 – Accessways		
Must be at least 3m wide	✓	Accessways are greater than 3m in width
Have an internal radius of at least 4m at changes of direction or intersection or be at least 4.2m wide.	✓	B99 design car can navigate all bends. Objective achieved.
Allow vehicles parked in the last space of a dead-end accessway in public car parks to exit in a forwards direction with one manoeuvre.	N/A	Private parking only
Provide at least 2.1m headroom beneath overhead obstructions, calculated for a vehicle with a wheel base of 2.8m.	✓	Complies.
If the accessway serves four or more car spaces or connects to a road in a Road Zone, the accessway must be designed so that cars can exit the site in a forward direction.	✓	Complies.
Provide a passing area at the entrance at least 6.1m wide and 7m long if the accessway serves ten or more car parking spaces and is either more than 50m long or connects to a road in a Road Zone.	✓	Passing area provided.
Have a corner splay or area at least 50% clear of visual obstructions extending at least 2m along the frontage road from the edge of an exit lane and 2.5m along the exit lane from the frontage, to provide a clear view of pedestrians on the footpath of the frontage road. The area clear of visual obstructions may include an adjacent entry or exit lane where more than one lane is provided, or adjacent landscaped areas, provided the landscaping in those areas is less than 900mm in height.	✓	Splays provided.
If an accessway to four or more car parking spaces is from land in a Road Zone, the access to the car spaces must be at least 6m from the road carriageway.	✓	Complies.
If entry to the car space is from a road, the width of the accessway may include the road.	✓	Not applicable

Requirement	Assessment	Design Response
Clause 52.06-9 Design Standard 2 – Car Parking Spaces		
Car parking spaces and accessways must have the minimum dimensions as outlined in Table 2 under Clause 52.06-9.	✓	All car spaces are 2.6m wide x 4.9m with a 6.4m wide access aisle. Access to and from the critical car spaces within the basement carpark have been checked for access by the B85 design car (specified at Appendix B of AS2890.1-2004).
A wall, fence, column, tree, tree guard or any other structure that abuts a car space must not encroach into the area marked 'clearance required' on Diagram 1, other than: • A column, tree or tree guard, which may project into a space if it is within the area marked 'tree or column permitted' on Diagram 1. • A structure, which may project into the space if it is at least 2.1 metres above the space.	✓	Complies.
Car spaces in garages/carports must be at least 6m long and 3.5m wide for a single space and 5.5m wide for a double space measured inside the garage/carport.	N/A	No garages proposed.

Angle of car spaces to accessway	Accessway width	Car park width	Car park length
Parallel	3.6 m	2.3 m	6.7 m
45°	3.5 m	2.6 m	4.9 m
60°	4.9 m	2.6 m	4.9 m
90°	6.4 m	2.6 m	4.9 m
	5.8 m	2.8 m	4.9 m
	5.2 m	3.0 m	4.9 m
	4.8 m	3.2 m	4.9 m

Note to Table 2: Some dimensions in Table 2 vary from those shown in the Australian Standard AS2890.1-2004 (off street). The dimensions shown in Table 2 allocate more space to aisle widths and less to marked spaces to provide improved operation and access. The dimensions in Table 2 are to be used in preference to the Australian Standard AS2890.1-2004 (off street) except for disabled spaces which must achieve Australian Standard AS2890.6-2009 (disabled).

Diagram 1 Clearance to car parking spaces



<table>
<tr><th>Requirement</th><th>Assessment</th><th>Design Response</th></tr>
<tr><td>Where parking spaces are provided in tandem, an additional 0.5m in length must be provided between each space.</td><td>N/A</td><td>No tandem car spaces.</td></tr>
<tr><td>Where two or more car parking spaces are provided for a dwelling, at least one space must be under cover.</td><td>✓</td><td>All resident spaces are under cover.</td></tr>
<tr><td>Disabled car parking spaces must be designed in accordance with AS2890.6-2009 and the Building Code of Australia. Disabled car parking spaces may encroach into an accessway width specified in Table 2 by 0.5m.
A minimum headroom of 2.5m is to be provided above the disabled car space in accordance with AS2890.6-2009.</td><td>N/A</td><td>No disabled spaces.</td></tr>
<tr><td colspan="3">Clause 52.06-9 Design Standard 3 - Gradients</td></tr>
<tr><td>Accessway grades must not be steeper than 1:10 (10 per cent) within 5 metres of the frontage to ensure safety for pedestrians and vehicles. The design must have regard to the wheelbase of the vehicle being designed for; pedestrian and vehicular traffic volumes; the nature of the car park; and the slope and configuration of the vehicle crossover at the site frontage.
This does not apply to accessways serving three dwellings or less.</td><td>✓</td><td>Complies.</td></tr>
<tr><td>Ramps (except within 5 metres of the frontage) must have the maximum grades as outlined in Table 3 and be designed for vehicles travelling in a forward direction.
<table>
<tr><th>Type of car park</th><th>Length of ramp</th><th>Maximum grade</th></tr>
<tr><td rowspan="2">Public car parks</td><td>20 metres or less</td><td>1:5 (20%)</td></tr>
<tr><td>longer than 20 metres</td><td>1:6 (16.7%)</td></tr>
<tr><td rowspan="2">Private or residential car parks</td><td>20 metres or less</td><td>1:4 (25%)</td></tr>
<tr><td>longer than 20 metres</td><td>1:5 (20%)</td></tr>
</table></td><td>✓</td><td>Complies.</td></tr>
<tr><td>Where the difference in grade between two sections of ramp or floor is greater that 1:8 (12.5 per cent) for a summit grade change, or greater than 1:6.7 (15 per cent) for a sag grade change, the ramp must include a transition section of at least 2 metres to prevent vehicles scraping or bottoming.</td><td>✓</td><td>Complies.</td></tr>
<tr><td>Plans must include an assessment of grade changes of greater than 1:5.6 (18 per cent) or less than 3 metres apart for clearances, to the satisfaction of the responsible authority</td><td>✓</td><td>Complies.</td></tr>
</table>

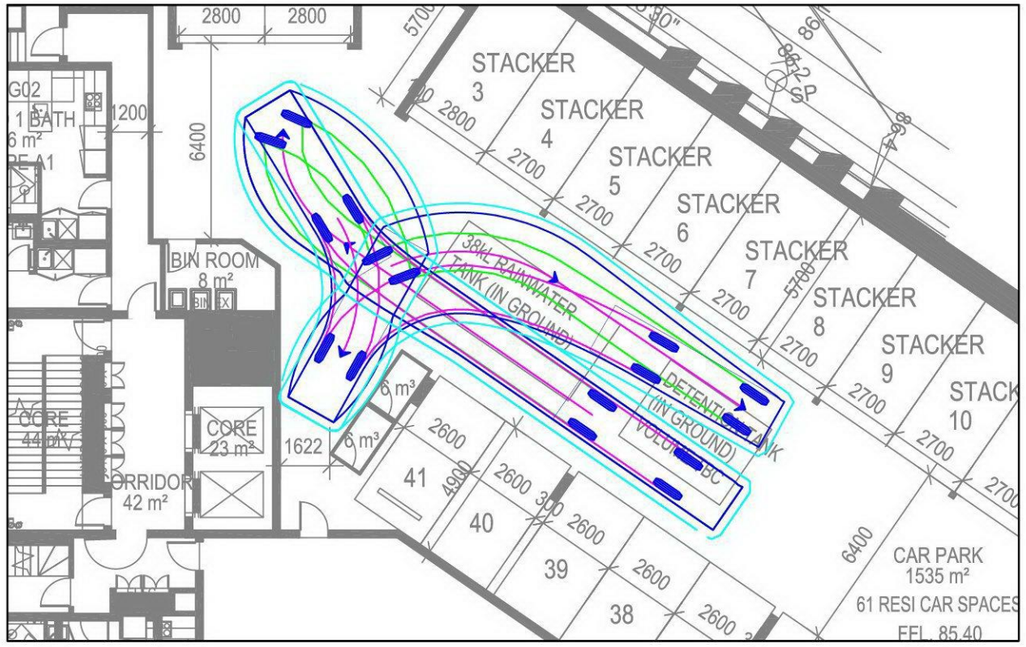
Requirement	Assessment	Design Response
Clause 52.06-9 Design Standard 4 – Mechanical Parking		
At least 25 per cent of the mechanical car parking spaces can accommodate a vehicle height of at least 1.8 metres.	✓	100% of stacker spaces provide 1.8m height.
Car parking spaces that require the operation of the system are not allocated to visitors unless used in a valet parking situation.	✓	All parking allocated to permanent residents.
The design and operation is to the satisfaction of the responsible authority.	✓	Details of the stacker operation are provided in Table 7.

Appendix C

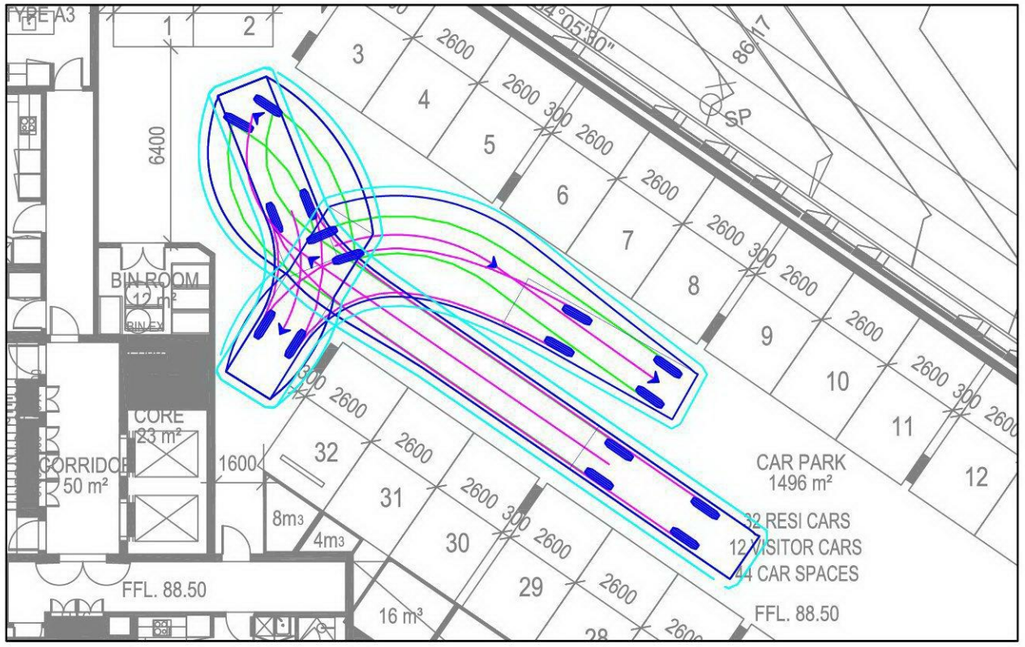
Swept Path Diagrams

D21-352524

WASTE TRUCK - UPPER GROUND BIN AREA



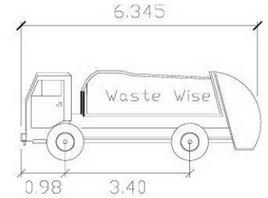
WASTE TRUCK - LOWER GROUND BIN AREA ACCESS



VEHICLE PROFILE

VEHICLE USED IN SIMULATION

(VEHICLE SPEED - 5KM/H)



Waste Wise Mini (Hino 300)

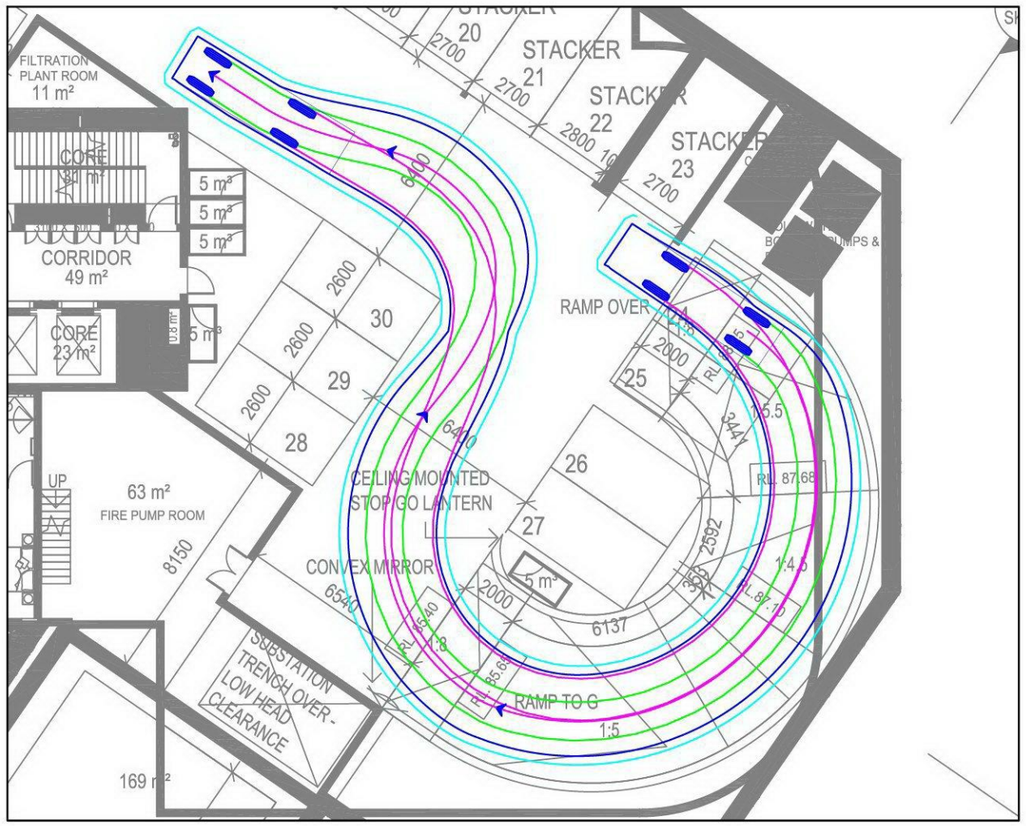
Width	: 1.7m
Front Track	: 1.4m
Rear Track	: 1.44m
Kerb to Kerb Radius	: 12.4m

LEGEND

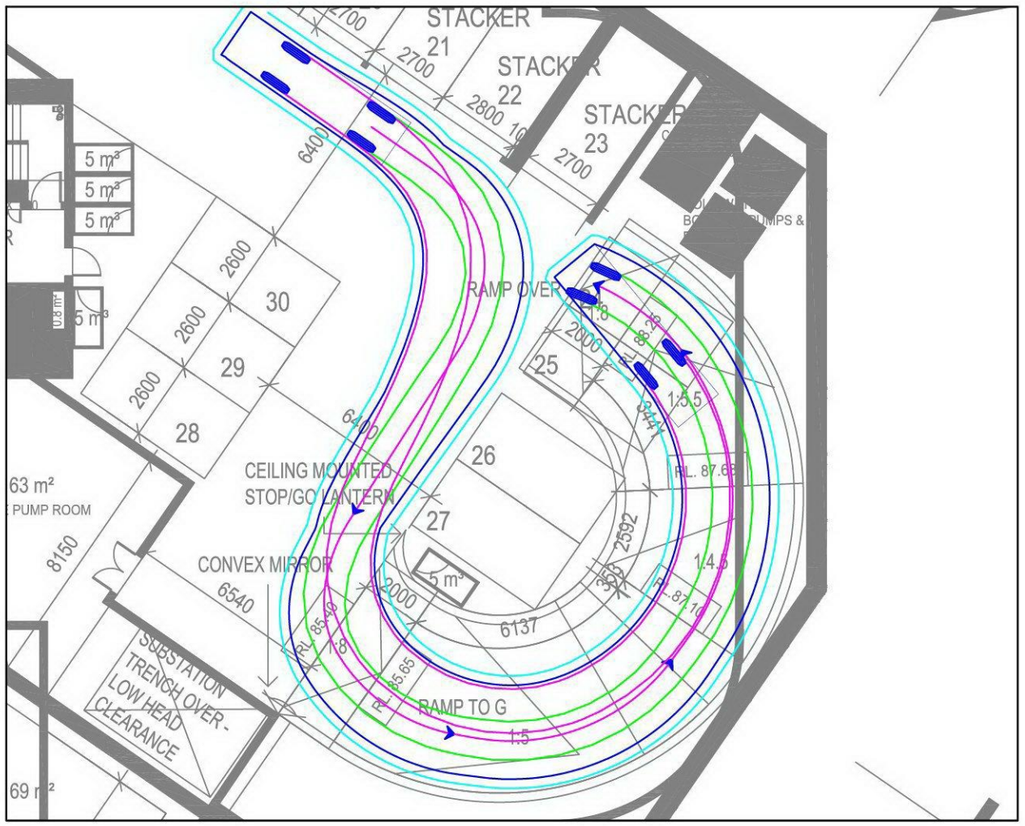
REAR WHEELS — VEHICLE BODY

FRONT WHEELS — BODY CLEARANCE

WASTE TRUCK - LOWER GROUND INGRESS



WASTE TRUCK - LOWER GROUND EGRESS



REV	DATE	NOTES	DESIGNED BY	CHECKED BY
A	13/10/2021	Apartment Amendment	F. BANH	M. WOOLLARD

149 HANSWORTH STREET, MULGRAVE

PROPOSED RESIDENTIAL DEVELOPMENT

GENERAL NOTES:
BASE INFORMATION FROM: SK-1001 and SK-1002.dwg
PREPARED BY Cera Stribley - received - 12-10-2021

FILE NAME: G27971-02

SHEET NO.: 01

SCALE: 1:200 (A3)

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