Amber

Traffic & Transportation Direction

Seniors Living Development

26-28 Stevenage Road and 53 Welwyn Road, Canley Heights

Traffic Impact Assessment

February 2025

Reference: 838 rep final

Seniors Living Development

26-28 Stevenage Road and 53 Welwyn Road, Canley Heights

Traffic Impact Assessment

Prepared for: Become Architecture

Status: Final report

Date: 28 February 2025

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Revision	Date	Description	Author	Reviewed	Approved
A	11/09/2024	Draft 01	K. Ballantyne	M. Willson	M. Willson
A	31/10/2024	Final 01	K. Ballantyne	M. Willson	M. Willson
B	27/02/2025	Final 02	K. Ballantyne	M. Willson	M. Willson
B	28/02/2025	Final 02	K. Ballantyne	M. Willson	M. Willson

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1. Introduction

Amber Organisation has been engaged by Become Architecture on behalf of the NSW Land and Housing Corporation (LAHC) to advise on the traffic and parking matters of the proposed seniors living development at 26-28 Stevenage Road and 53 Welwyn Road, Canley Heights.

The development proposes 13 independent living units (ILUs), including seven one-bedroom and six two-bedroom units. There are six car spaces proposed within a shared car park located at the rear of the site. Vehicle access is proposed via a two-way crossover to Welwyn Road at the western boundary of the site with a passing area provided at the entrance to the site.

This report has been prepared to address the traffic and parking impacts of the proposed development. It is based on surveys and observations and our experience of similar developments elsewhere.

2. Existing Transport Environment

2.1 Site Location

The subject site is located on the southwest corner of the intersection of Welwyn Road and Stevenage Road in Canley Heights. Figure 1 shows the location of the site in relation to the surrounding transport network.

Figure 1: Site Location

Source: OpenStreetMap

The site and the surrounding land uses are predominantly zoned Low Density Residential (R2) or Medium Density Residential (R3), with some areas of Public Recreation (RE1) to the south. Key features of the surrounding area include:

- Canley Vale Road commercial strip, located approximately 700m walking distance northeast of the site.
- Canley Heights Public School, located approximately 750m walking distance east of the site.

The site is currently occupied by three residential dwellings, two of which have vehicle access to Welwyn Road and one with vehicle access to Stevenage Road.

An aerial photograph of the site in relation to the local road network is shown in Figure 2.

Figure 2: Aerial Photograph of Site and Surrounds

Source: Nearmap

2.2 Road Network

Welwyn Road is a local road that runs in a general northeast-southwest direction between Stevenage Road and Avoca Road. The carriageway width is approximately 7.3m which provides two-way vehicle movement and parking on both sides of the road. There is a footpath on the north/west side of the road, and a posted speed limit of 50km/h applies.

Stevenage Road is a local road that runs between Canley Vale Road and Welwyn Road. The carriageway width is approximately 7.0m which provides two-way vehicle movement and parking on both sides of the road. There is a footpath on the east/south side of the road, and the default speed limit of 50km/h applies.

Canley Vale Road is classified as a regional road that runs in a general east-west alignment between Railway Parade in the east and Smithfield Road in the west. The carriageway width is approximately 12.0m which provides a single lane of vehicle traffic in each direction and parking on both sides of the road. There are footpaths on both sides of the road, and a posted speed limit of 60km/h applies.

Avoca Road is classified as a regional road that runs in a general north-south alignment between St Johns Road in the south and Humphries Road in the north. The carriageway width is approximately 12.2m which provides a single lane of vehicle traffic in each direction and parking on both sides of the road. There are footpaths on both sides of the road, and a posted speed limit of 50km/h applies.

The intersections of local roads in the area are priority controlled T-intersections, including the intersection of **Welwyn Road/Avoca Road** and **Stevenage Road/Canley Vale Road.**

2.3 Public Transport

The site has access to public transport services via bus routes that operate on Canley Vale Road and St Johns Road. The nearest bus stops are located on Canley Vale Road approximately 200m north of the site and St Johns Road approximately 400m south of the site. The bus services operating in the area are detailed in Table 1.

Table 1: Bus Routes Operating to/from Stops Nearest to Site

Route No.	Service	Approximate Frequency			Nearest Stop
		Monday-Friday	Saturday	Sunday	
805	Liverpool to Cabramatta via Bonnyrigg Heights	Every 20-30 mins (5am to 11pm)	Every 30 mins (6:30am to 9pm)	Every 60 mins (7:30am to 9:30pm)	St Johns Road - approximately 400m walking distance south of the site
817	Cabramatta to Fairfield via Edensor Park	Every 15-30 mins (5am to 10:30pm)	Every 30 mins (6:30am to 10:30pm)	Every 30 mins (6:30am to 10pm)	Canley Vale Road - approximately 200m walking distance north of the site
819	Liverpool to Prairiewood via Orange Grove Rd (Loop Service)	Every 30 mins (6am to 7pm)	Every 60 mins (8:30am to 5pm)	Every 60 mins (9:30am to 5pm)	Canley Vale Road - approximately 200m walking distance north of the site

The public transport services provide residents and visitors of the site with an alternative to private vehicle use.

2.4 Crash Search

Amber has conducted a review of the TfNSW Centre for Road Safety Crash and Casualty Statistics database for all crashes along Welwyn Road and Stevenage Road, including their respective intersections with Avoca Road and Canley Vale Road. The following crashes between 2018 to 2022 were identified:

- A 'collision between two right turning' crash at the Avoca Road/Welwyn Road intersection (minor/other injury).

There are no discernible crash trends on the surrounding road network. As such, it is concluded that the road network is currently operating in a relatively safe manner.

3. The Proposal

The development proposes 13 ILUs, including seven one-bedroom and six two-bedroom units. There are six car spaces proposed within a shared car park located at the rear of the site. Vehicle access is proposed via a two-way crossover to Welwyn Road at the western boundary of the site with a passing area provided at the site access.

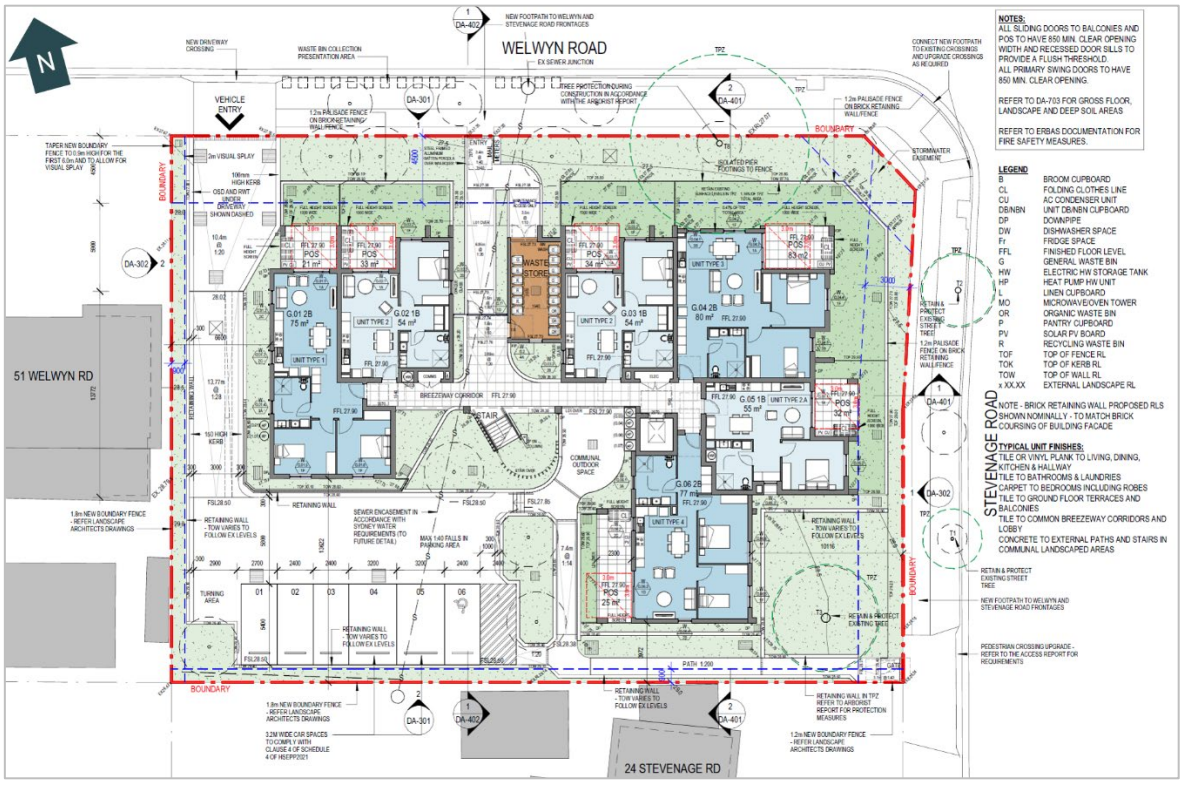
The main pedestrian access to the building is via Welwyn Road with a secondary pedestrian path to Stevenage Road.

Loading is proposed to occur on-street in the nearby area, including along the site frontage to Welwyn Road or Stevenage Road.

Waste collection is proposed to occur on-street along the site frontage to Welwyn Road via Council services.

The ground floor layout of the site is shown at Figure 3.

Figure 3: Ground Floor Layout



Source: Become

4. Car Parking Assessment

Chapter 12 of the Fairfield City Development Control Plan (DCP) outlines the car parking requirements for various uses. The DCP states that for a seniors housing use that car parking be in accordance with the State Environment Planning Policy (Housing) 2021 (SEPP).

Clause 108 of the SEPP (Housing) specifies the following in regard to car parking for ILUs:

> *'(j) for a development application made by, or made by a person jointly with, a social housing provider or Landcom—at least 1 parking space for every 5 dwellings,*
>
> *(k) if paragraph (j) does not apply—at least 0.5 parking spaces for each bedroom.'*

As the application is being made on behalf of the NSW LAHC, the car parking requirement for the ILUs is 1 space for every 5 dwellings. The proposal is for 13 dwellings, equating to a car parking requirement of three car spaces. There are six car spaces proposed on-site which exceeds the requirements of the SEPP (Housing). Accordingly, the proposed parking provision for the ILUs accords with the SEPP (Housing).

Schedule 4 of the SEPP (Housing) outlines various car parking design considerations for ILUs. Those which are applicable to the proposal are outlined as follows:

> *(2) If parking spaces associated with a class 1, 2 or 3 building under the Building Code of Australia are provided in a common area for use by occupants who are seniors or people with a disability, the following applies—*
>
> *(b) for a group of 2–7 parking spaces—*
>
> *(i) at least 1 of the parking spaces must comply with AS/NZS 2890.6, and*
>
> *(ii) 50% of the parking spaces must—*
>
> *(A) comply with AS/NZS 2890.6, or*
>
> *(B) be at least 3.2m wide and have a level surface with a maximum gradient of 1:40 in any direction,*
>
> *(6) If multiple parking spaces are accessible by a common access point, the access point must be secured by a power-operated garage door, vehicle gate, vehicle barrier or similar device.'*

The car park provides six car spaces within a common area for use by occupants who are seniors. Of the six spaces, one is designed in accordance with AS/NZS 2890.6 and two are 3.2m wide. The remaining three car spaces are designed as 'standard' car spaces.

A maximum grade of 1:40 is not exceeded in any direction across the car park which complies with the above requirements. It is noted that a gate has not been provided along the common accessway to the car park, which is not compliant with Schedule 4 of the SEPP (Housing). Homes NSW seek an exemption from this requirement as it is typical to not provide gates in these types of developments due to operational and maintenance issues.

Accordingly, the car parking provision and design requirements of the SEPP (Housing) have been generally satisfied by the proposal.

5. Car Park Design

5.1 Car Park and Vehicle Access Review

An assessment has been completed of the car park and vehicle access against the relevant requirements of the SEPP (Housing), Fairfield City DCP, AS/NZS 2890.1:2004, and AS/NZS 2890.6:2022. Consideration has also been given to the NSW Seniors Housing Design Guide 2023 where relevant. The key design aspects are:

- Car parking is provided in a common area accessed via a shared driveway as per the design principles of the Seniors Housing Design Guide.
- A separated pedestrian path is provided to access the main entry of the building via Welwyn Road as per the design principles of the Seniors Housing Design Guide and the DCP.
- The 'dead-end' aisle of the car park does not exceed six car spaces in accordance with the DCP and AS/NZS 2890.1:2004. A 1.0m aisle extension is provided to the end car space in accordance with AS/NZS 2890.1:2004.
- The car park is 'open' and there are no overhead structures along the accessway. Accordingly, the minimum headroom requirements of the DCP and AS/NZS 2890.6:2022 of 2.5m is achieved.
- The crossover is located in accordance with Figure 3.1 of AS/NZS 2890.1:2004.
- All vehicles can enter and exit in a forward direction in accordance with the DCP.
- A passing bay is provided at the property boundary measure 6.1m wide and 6m long before narrowing to single lane accessway that is 3.6m wide. Kerbs are provided on each side of the accessway and passing bay and are 300mm wide. These dimensions accord with AS/NZS 2890.1:2004.
- A turning area is provided within the car park measuring 3.2m wide x 2.5m long adjacent to car space 1 which allows a B99 vehicle to turnaround and exit the site in a forward direction in the event all car spaces are occupied.
- A visibility splay is provided on the west side of the crossover measuring 2.0m wide x 2.5m long generally in accordance with Figure 3.3 of AS/NZS 2890.1:2004. A visibility splay is not required on the east side of the crossover due to the width of the passing bay (i.e. visibility splay achieved within entry lane).

  It is noted that the western sight splay falls partially over the adjacent property at No. 51 Welwyn Road. This is considered acceptable as the new boundary fence is to taper in height to 900mm for the first 6m from the property boundary. Accordingly, exiting vehicles will have appropriate sightlines to pedestrians along the Welwyn Road frontage.
- The car spaces are provided with dimensions in accordance with the SEPP (Housing), AS/NZS 2890.1:2004, and AS/NZS 2890.6:2022. Specifically, the following dimensions have been adopted:
  - Three spaces that are 5.4m long x 2.4m wide.
  - Two spaces that are 5.4m long x 3.2m wide.
  - One accessible space that is 5.4m long x 2.4m wide with an adjacent shared area.
  - All car spaces are accessed by a 5.8m wide aisle.
- Car spaces adjacent to structures are provided with 300mm clearance as per Figure 5.2 of AS/NZS 2890.1:2004.

- The gradients along the accessway and within the car park accord with the requirements of the SEPP (Housing), AS/NZS 2890.1:2004, and AS/NZS 2890.6:2022. Specifically:
  - A maximum grade of 1:20 is not exceeded along the first 6m of the accessway.
  - A maximum grade of 1:40 is not exceeded in any direction within the car park.

Overall, the assessment shows that the car parking areas have been designed in a suitable manner and generally in accordance with the requirements of the SEPP (Housing), DCP, AS/NZS 2890.1:2004, and AS/NZS 2890.6:2022.

5.2 Swept Path Assessment

A swept path assessment has been completed using a B99 vehicles (99.8th percentile vehicle) and B85 vehicle (85th percentile vehicle) which demonstrates that two-way passing is achieved at the site access and within the car park. The swept path assessment is provided at Appendix A.

Swept paths have also been completed using a B85 vehicle to ensure vehicles are able to access each parking space. The assessment found that each space can be accessed (ingress and egress) in a satisfactory manner, with swept paths of all car spaces provided at Appendix A.

The swept path assessment concludes that satisfactory vehicle access is achieved to the car park in accordance with the DCP and AS/NZS 2890.1:2004.

6. Public Transport Access

6.1 Existing Access

The nearby public transport services are discussed in Section 2.3, which details that bus stops are located approximately 200m and 400m from the site on Canley Vale Road and St Johns Road, respectively. The routes and distances to these stops can be seen in Figure 4 below.

Figure 4: Routes to Nearest Bus Stops

Source: OpenStreetMap

To access the bus stops on Canley Vale Road, pedestrians can utilise the existing footpath on the east side of Stevenage Road. It is noted that to access the bus stop on the north side of Canley Vale Road, pedestrians would need to use the formal north-south crossing at Andrew Avenue. Accordingly, access to the bus stops on Canley Vale Road is within 400m walking distance and considered acceptable.

To access the bus stops on St Johns Road, pedestrians can utilise the existing footpaths on Stevenage Road, through Peterlee Park, and Basildon Road. We note that there is no convenient north-south pedestrian crossing on St Johns Road to access the bus stop on the south side of the road, with the nearest formal north-south pedestrian crossings approximately 400m further east and west at the signalised intersections. Accordingly, consideration could be given to a formal north-south pedestrian crossing to access the bus stop on the south side of St Johns Road.

6.2 SEPP Requirement

Under Division 4 of the SEPP (Housing), Clause 93 outlines access requirements to public transport facilities as follows:

> *(3) For the purposes of subsections (1) and (2), access is adequate if —*
>
> *(a) the facilities and services are, or the transport service is, located at a distance of not more than 400m from the site, and*
>
> *(b) the distance is accessible by means of a suitable access pathway, and*
>
> *(c) the gradient along the pathway complies with subsection (4)(c).*
>
> *(4) In subsection (3) —*
>
> *(a) a suitable access pathway is a path of travel by means of a sealed footpath or other similar and safe means that is suitable for access by means of an electric wheelchair, motorised cart or the like, and*
>
> *(b) the distance is to be measured by reference to the length of the pathway, and*
>
> *(c) the overall average gradient must be not more than 1:14 and the gradients along the pathway must be not more than—*
>
> *(i) 1:12 for a maximum length of 15m at a time, or*
>
> *(ii) 1:10 for a maximum length of 5m at a time, or*
>
> *(iii) 1:8 for a maximum length of 1.5m at a time.*

There are currently no footpaths along the site frontages. It is proposed to construct new footpaths along the site frontages to Welwyn Road and Stevenage Road with a minimum width of 1.2m. These footpaths are to be constructed to Council requirements.

The condition of the existing footpaths that connect the site to the bus stops on Canley Vale Road and St Johns Road should be audited by an Accessibility Consultant to determine if upgrades to the existing footpaths are required to comply with the above requirements. This includes a review of any new north-south pedestrian crossing on St Johns Road as discussed in the section above. Council are to be consulted regarding any upgrades required to the existing footpath network.

7. Loading and Waste Collection

Loading for the proposal will primarily be related to residents moving in or out associated with removalists, which occur infrequently. Other loading demands associated with deliveries, such as couriers, will also occur from time to time. These loading demands can occur on-street in the nearby area, including along the site frontages to Welwyn Road or Stevenage Road.

Waste collection is proposed to occur on-street along the site frontage to Welwyn Road via Council services, which is acceptable from a traffic engineering perspective.

8. Traffic Assessment

8.1 Traffic Generation

The number of trips expected to be generated by the proposal has been determined based on the TfNSW *Guide to Transport Impact Assessment (2024)* (the Guide). The document provides survey information for various land uses, including seniors living developments within NSW.

The Guide includes survey data for seniors housing developments inside and outside the Sydney metropolitan area. For the proposal, we have adopted the average data for the metropolitan surveys as these are most similar to the site location. The metropolitan data primarily consists of self-contained units, with some hostel (low-care) and aged care (high-care) accommodation.

The Guide details the following average traffic generation rates for seniors housing:

- Daily vehicle trips: 1.80 per unit
- Weekday average evening peak hour vehicle trips: 0.17 per unit.

The above rates have conservatively been doubled to reflect the operation of the proposal given the location and type of use (self-contained housing). This results in the following traffic generation rates:

- Daily vehicle trips: 3.60 per unit
- Weekday average evening peak hour vehicle trips: 0.34 per unit.

The Guide indicates that few trips are generated during the AM peak hour. Notwithstanding, the assessment has conservatively adopted the PM peak traffic generation rate for the AM peak hour for the ILUs.

The Guide also includes traffic generation rates for low-density residential dwellings in Sydney, which is applicable to the existing uses of the site (3 dwellings). Accordingly, the following traffic generation rates are applicable to the existing dwellings on the site:

- Daily vehicle trips: 8.12 per dwelling
- Weekday average morning peak hour vehicle trips: 0.68 per dwelling
- Weekday average evening peak hour vehicle trips: 0.77 per dwelling

8.2 Traffic Distribution

It is typical for traffic movements associated with residential activities to be predominantly outbound in the morning peak and inbound in the evening peak. We have adopted the following distribution of traffic during the peak hours for the existing and proposed uses:

- Morning Peak: 80% outbound and 20% inbound
- Evening Peak: 30% outbound and 70% inbound.

A summary of the existing and proposed traffic generation can be seen in Table 2. The table also includes the anticipated net change of traffic impacts associated with the proposal.

Table 2: Traffic Generation – Existing Use and Proposed Use

	Existing Use (3 dwellings)			Proposed Use (13 ILUs)			Net Change (+/-)		
	AM Peak (vph)	PM Peak (vph)	Daily (vpd)	AM Peak (vph)	PM Peak (vph)	Daily (vpd)	AM Peak (vph)	PM Peak (vph)	Daily (vpd)
Inbound	0	2	12	1	3	23	+1	+1	+11
Outbound	2	0	12	4	2	23	+2	+2	+11
Total	**2**	**2**	**24**	**5**	**5**	**46**	**+3**	**+3**	**+22**

8.3 Summary

As shown in the table above, the proposal is conservatively estimated to generate an increase of 22 vehicle trips per day and 3 vehicle trips per peak hour. This level of traffic is low and would be within the daily variation of the traffic volumes on the nearby road network. Accordingly, it is anticipated that traffic generated by the proposal can be comfortably accommodated by the surrounding road network and intersections.

9. Conclusions

Amber has reviewed the traffic and parking matters associated with the proposed seniors living development located at 26-28 Stevenage Road and 53 Welwyn Road in Canley Heights. The proposal is for 13 ILUs, including seven one-bedroom units and six two-bedroom units. There are six car spaces proposed within a shared car park located at the rear of the site. Vehicle access is proposed via a two-way crossover to Welwyn Road at the western boundary of the site with a passing area provided at the site access.

Based on the above assessment, it is concluded that:

- Car parking for the ILUs has been provided in accordance with the SEPP (Housing) and the parking demand of the proposal can be readily accommodated internally within the site.
- The car parking areas have been designed in a suitable manner and generally in accordance with the requirements of the SEPP (Housing), DCP, AS/NZS 2890.1:2004, and AS/NZS 2890.6:2022.
- The loading demands of the proposal can occur on-street in the nearby area, including along the site frontages to Welwyn Road or Stevenage Road.
- Waste collection is proposed to occur on-street along the site frontage to Welwyn Road via Council services.
- The 13 ILUs are conservatively estimated to generate an increase of 22 vehicle trips per day and 3 vehicle trips per peak hour. This level of traffic is low and can be comfortably accommodated by the surrounding road network and intersections.

Overall, it is concluded that the proposal meets the objectives of the SEPP (Housing) and DCP, and the car parking and traffic demands generated by the site can be readily accommodated on the surrounding road network and intersections.

If you have any questions, please feel free to contact the undersigned.

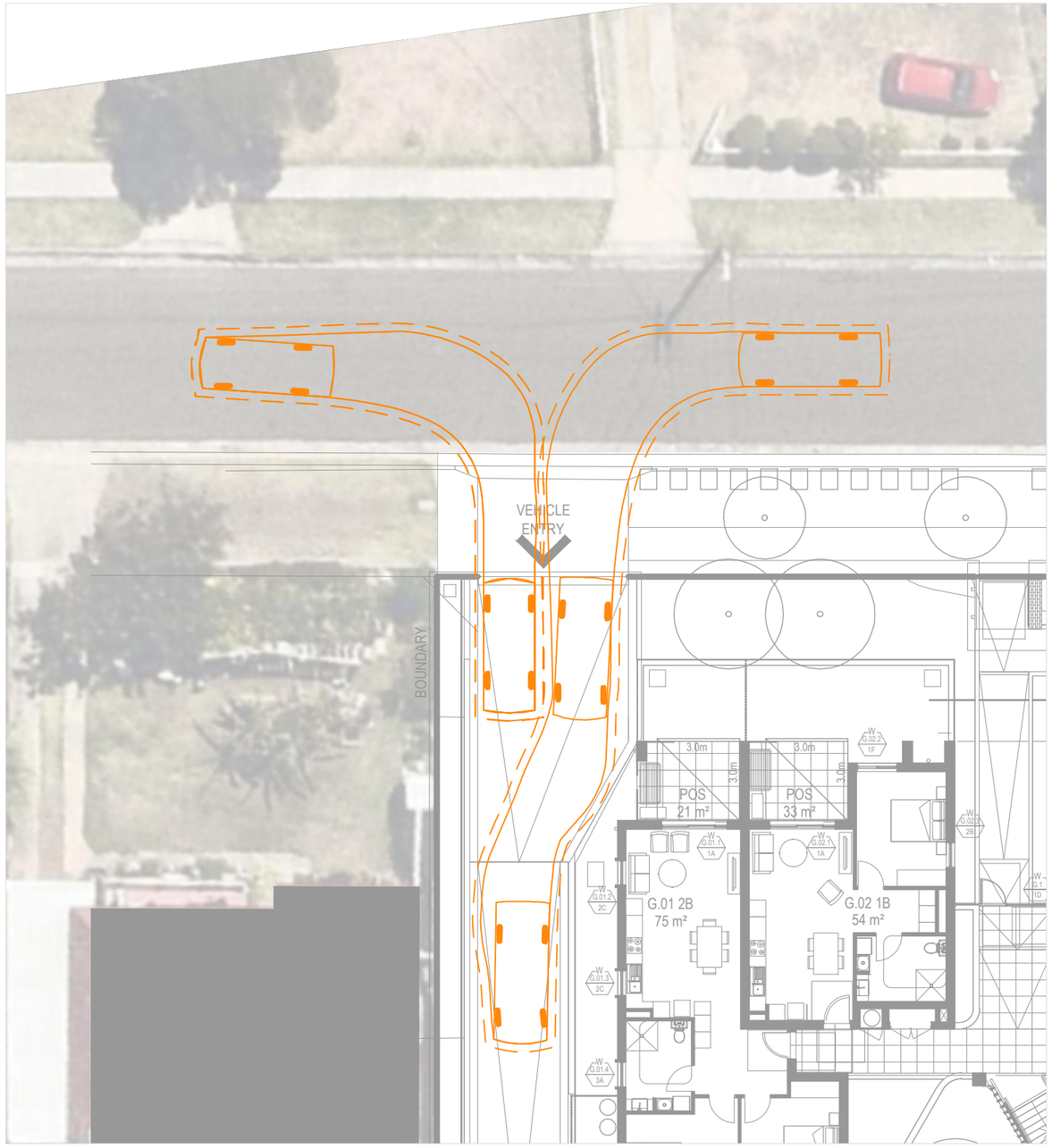
Yours sincerely
Amber Organisation

Michael Willson
BE (Hons), CPEng, RPEV, RPEQ
Director

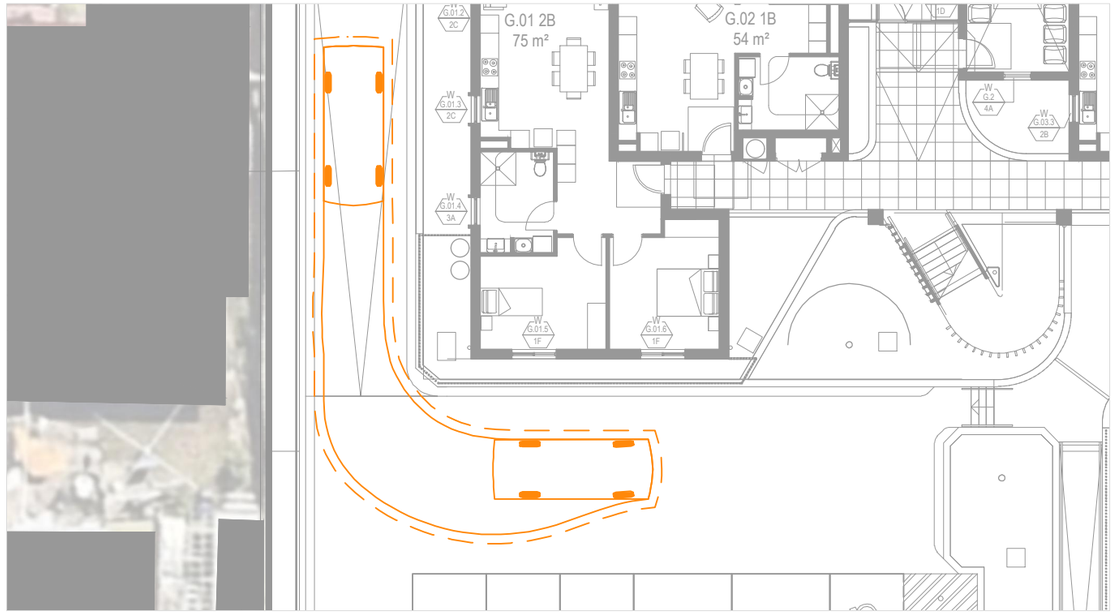
Kirk Ballantyne
BEng (Hons), MEng (Civil & Transport), RPEng
Associate

Appendix A

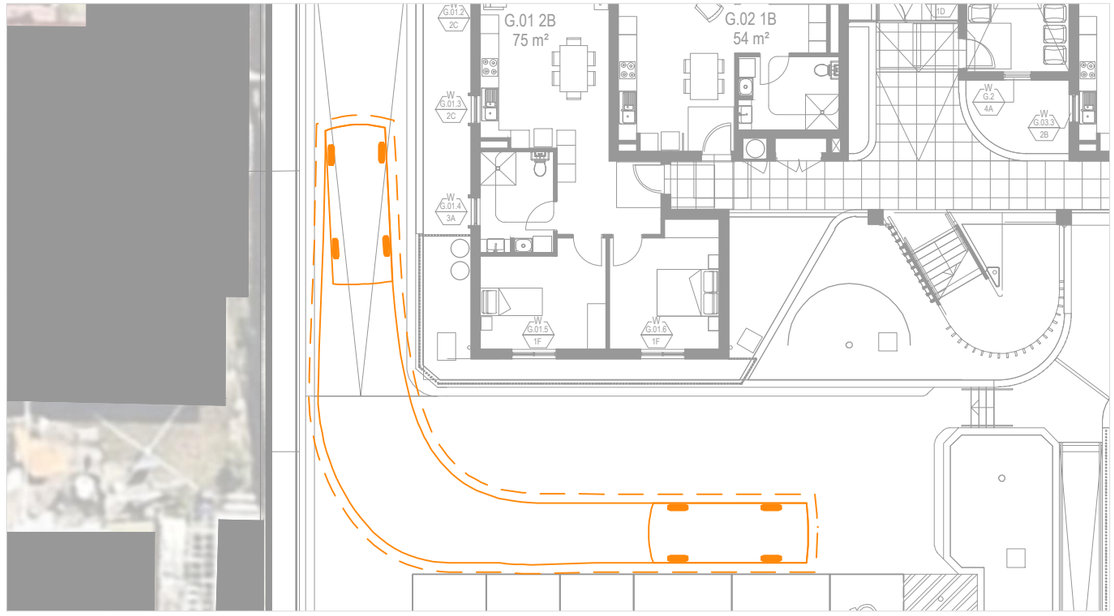
Swept Path Assessment



Two-way Passing



Entry Manoeuvre - B99 Vehicle



Exit Manoeuvre - B99 Vehicle

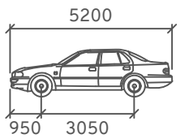
Vehicle Envelope

300mm Clearance

Reverse Manoeuvre

Min. Design Speed 5km/h

B99



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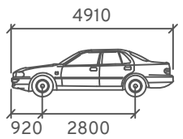
Track	: 1840
Height	: 2200
Lock to Lock	: 6.0s
Steering Angle	: 33.9

B85



	mm
Width	: 1870
Track	: 1770
Lock to Lock	: 6.0s
Steering Angle	: 34.1
Height	: 2100

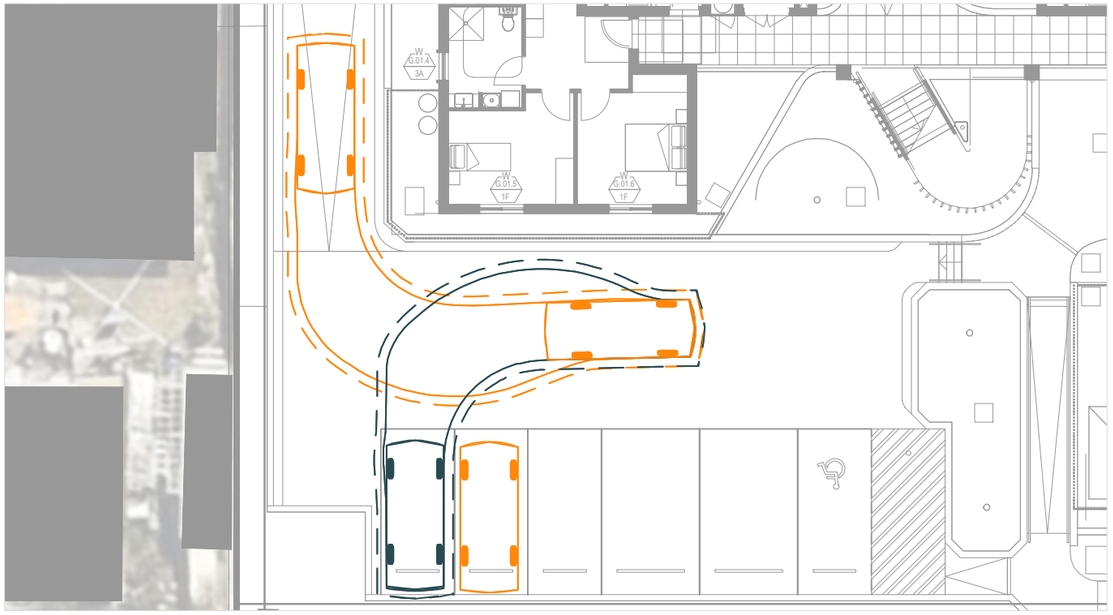
26-28 Stevenage Rd & 53 Welwyn Rd, Canley Heights

LAHC Seniors Housing Development

Swept Path Assessment

DRAWN: KB
DATE: 27/02/2025
DWG NO: 838 - S01D
SCALE at A3: 1:200

Amber 01



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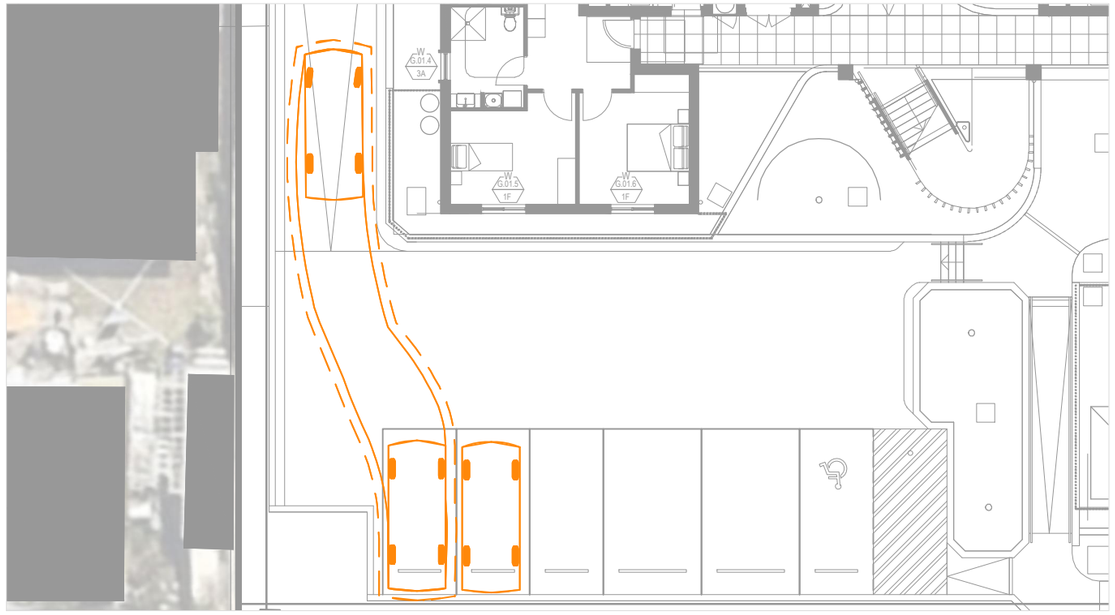

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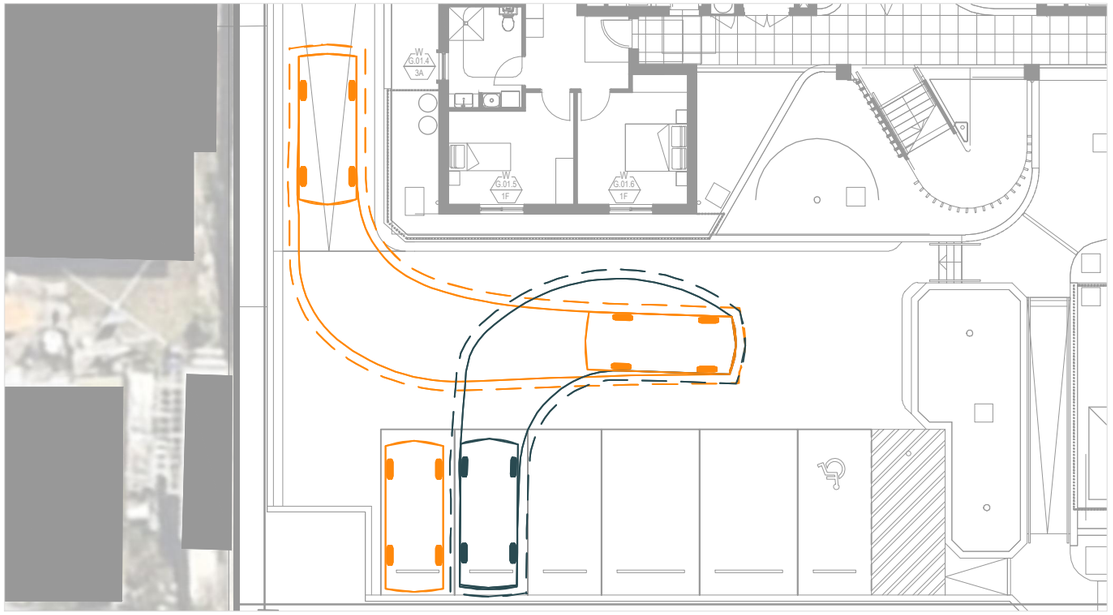

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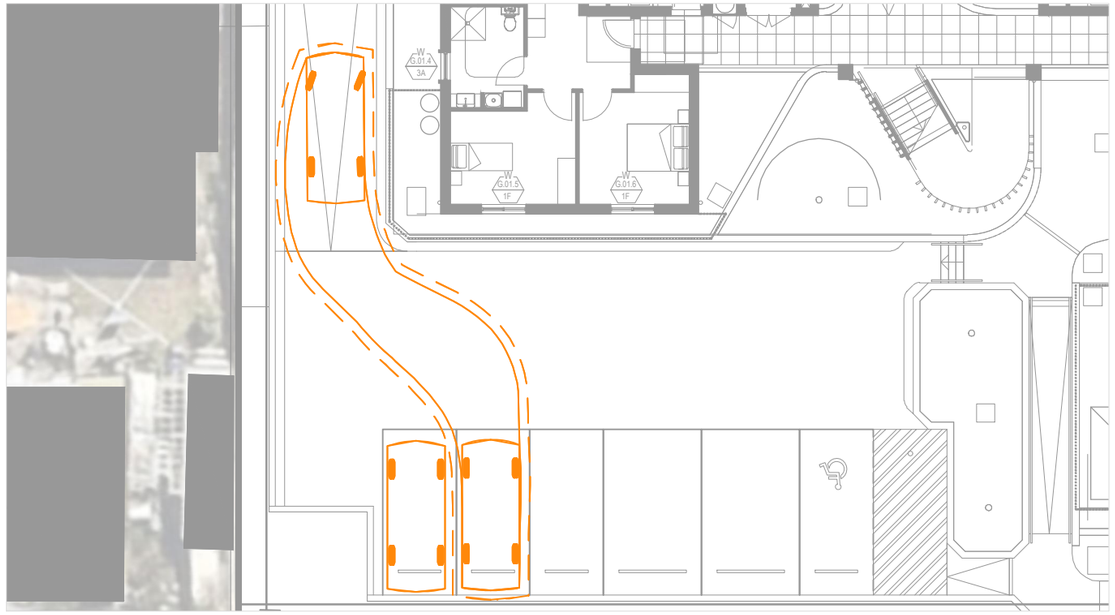


Exit Manoeuvre

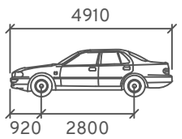
Vehicle Envelope

300mm Clearance

Reverse Manoeuvre

Min. Design Speed 5km/h

B85



	mm
Width	: 1870
Track	: 1770
Lock to Lock	: 6.0s
Steering Angle	: 34.1
Height	: 2100

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LAHC Seniors Housing Development

Swept Path Assessment

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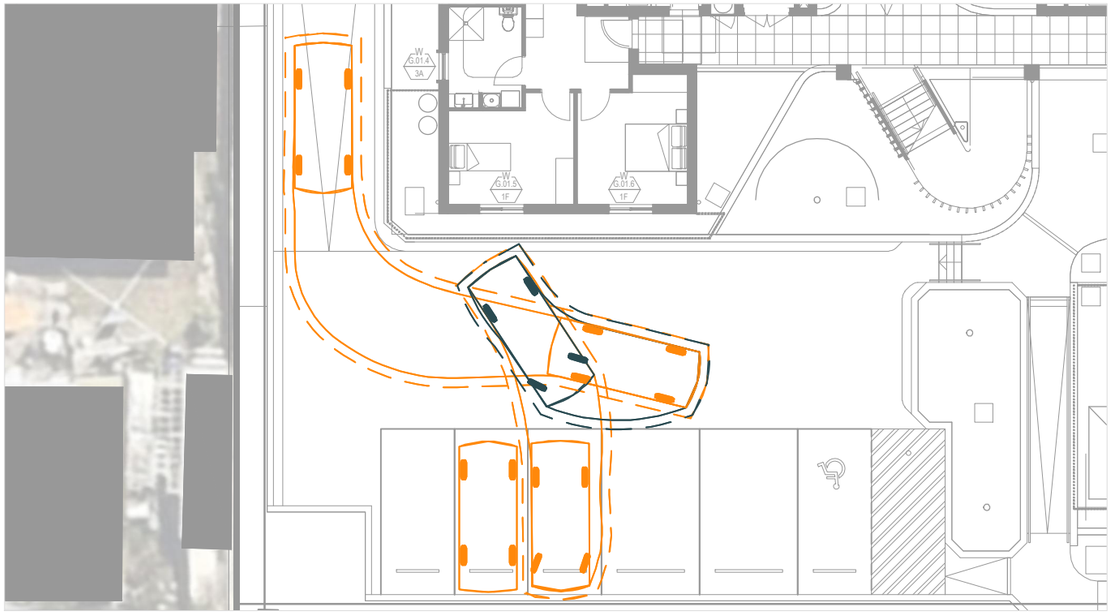
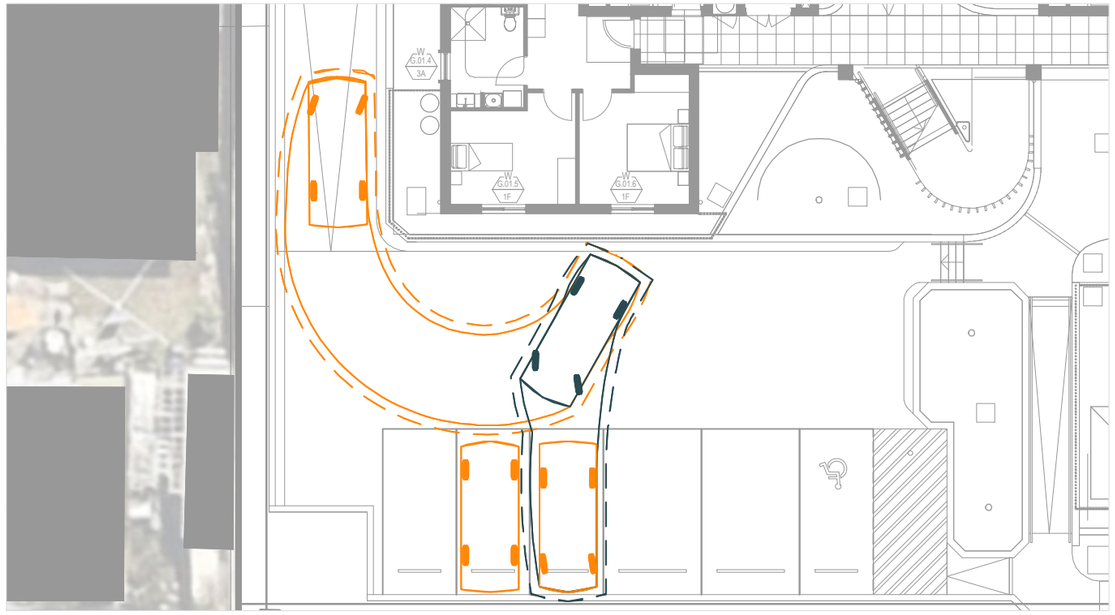
SCALE at A3: 1:200

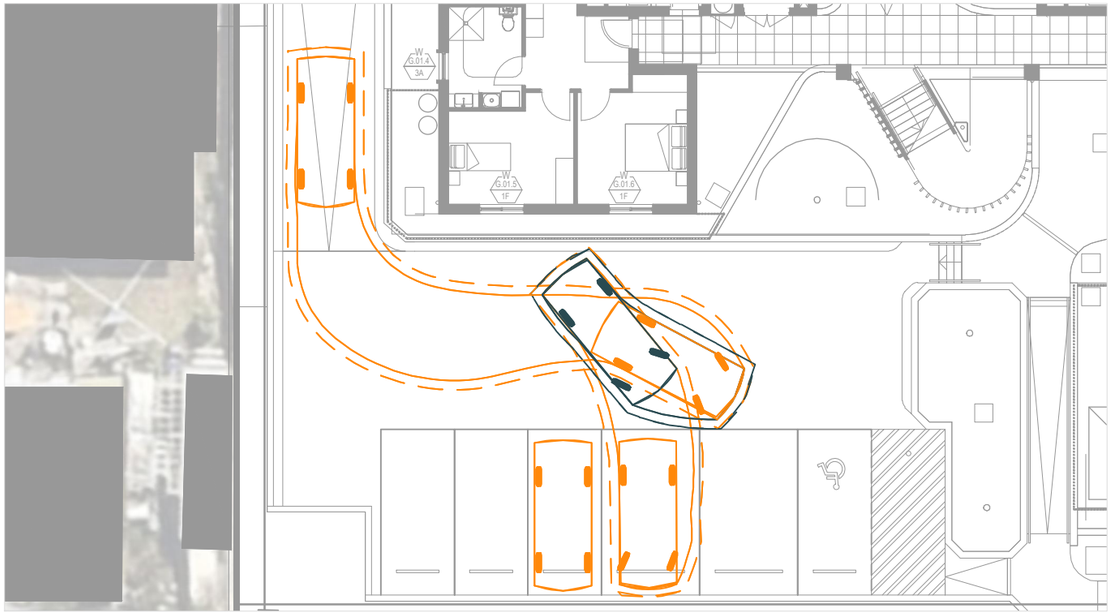
Amber 02



Entry Manoeuvre



Exit Manoeuvre



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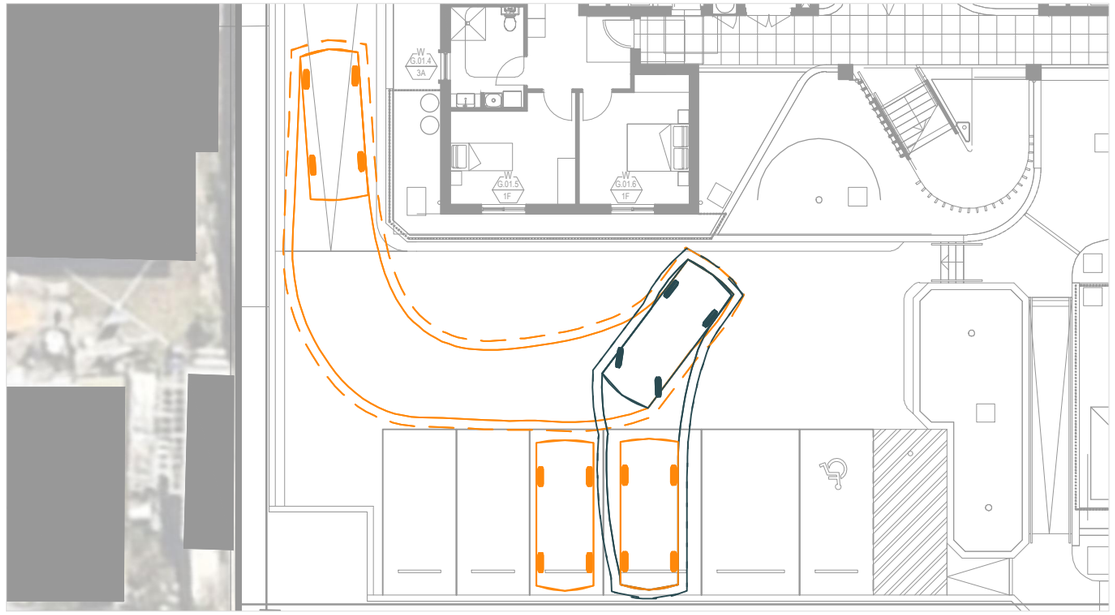

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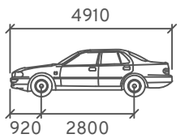
Min. Design Speed 5km/h

B85



	mm
Width	: 1870
Track	: 1770
Lock to Lock	: 6.0s
Steering Angle	: 34.1
Height	: 2100

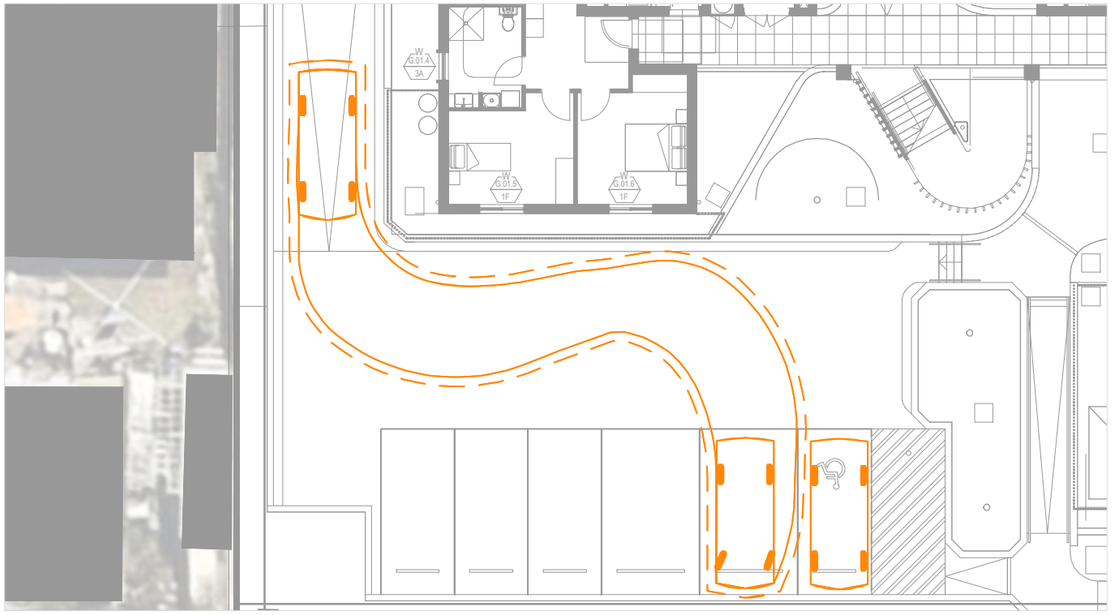
26-28 Stevenage Rd & 53 Welwyn Rd, Canley Heights

LAHC Seniors Housing Development

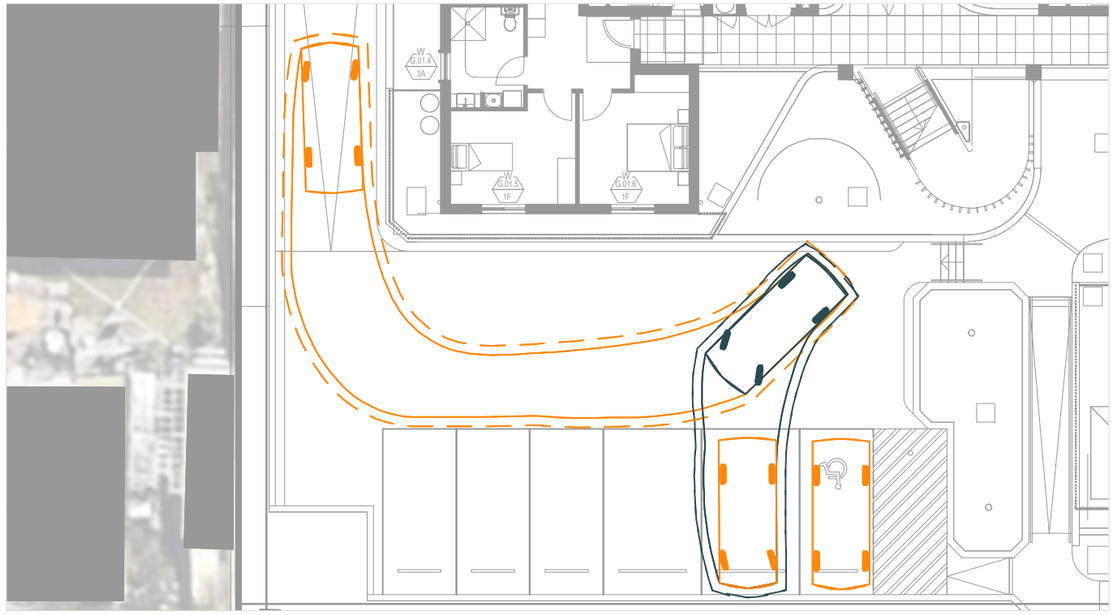
Swept Path Assessment

DRAWN: KB
DATE: 27/02/2025
DWG NO: 838 - S01D
SCALE at A3: 1:200

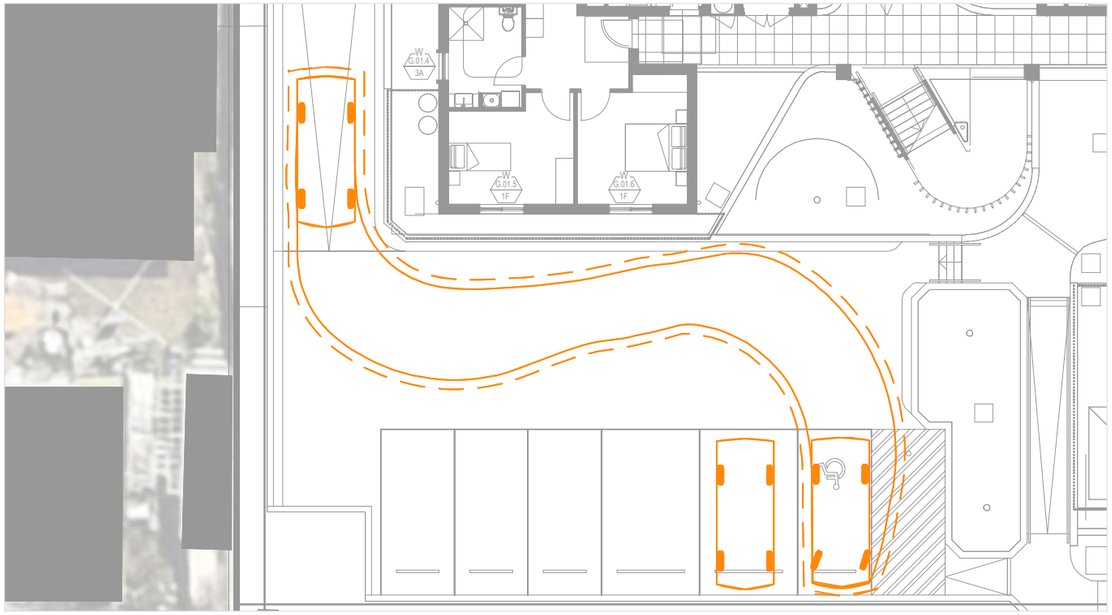
Amber 03



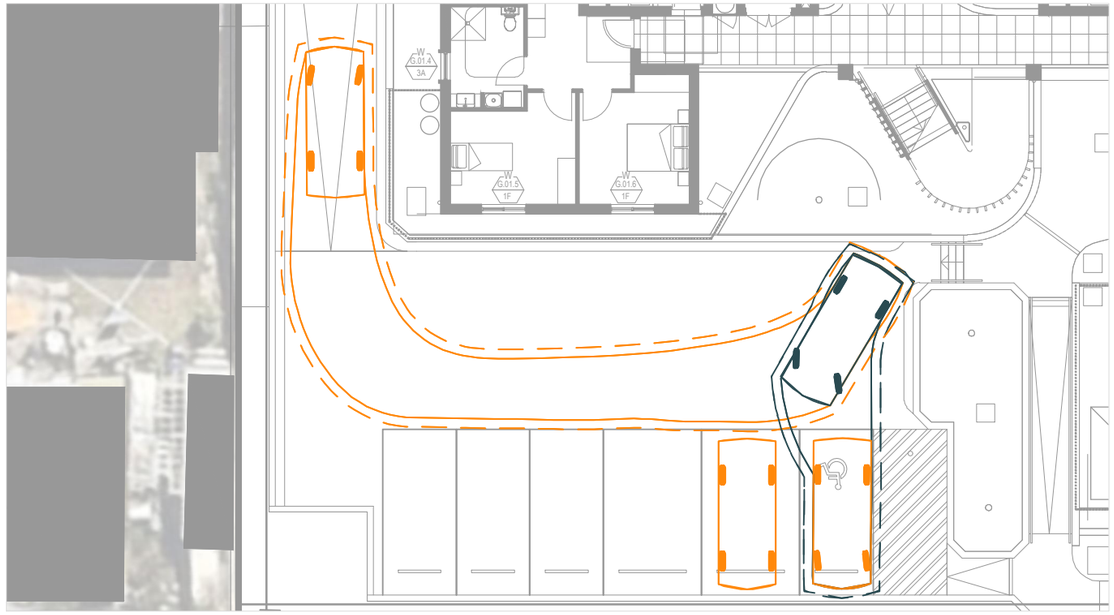
Entry Manoeuvre



Exit Manoeuvre



Entry Manoeuvre



Exit Manoeuvre

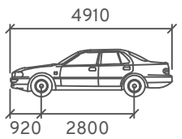
Vehicle Envelope

300mm Clearance

Reverse Manoeuvre

Min. Design Speed 5km/h

B85



	mm
Width	: 1870
Track	: 1770
Lock to Lock	: 6.0s
Steering Angle	: 34.1
Height	: 2100

26-28 Stevenage Rd & 53 Welwyn Rd, Canley Heights

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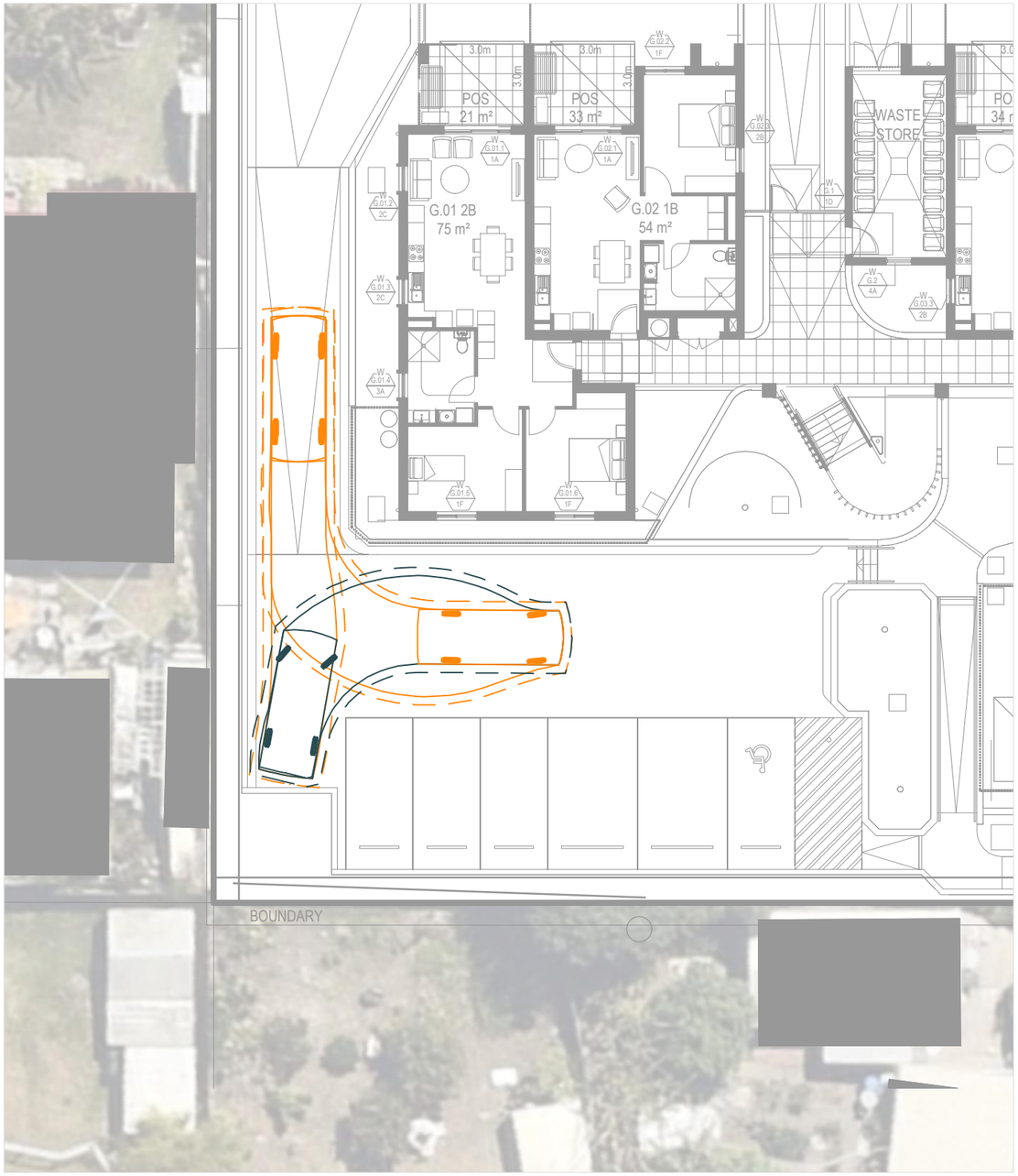
SCALE at A3: 1:200

Amber 04



Turning Area - B99 Vehicle

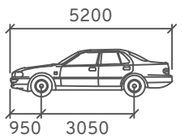
Vehicle Envelope

300mm Clearance

Reverse Manoevure

Min. Design Speed 5km/h

B99



	mm
Width	: 1940
Track	: 1840
Height	: 2200
Lock to Lock	: 6.0s
Steering Angle	: 33.9

26-28 Stevenage Rd & 53 Welwyn Rd, Canley Heights

LAHC Seniors Housing Development

Swept Path Assessment

DRAWN: KB
DATE: 27/02/2025
DWG NO: 838 - S01D
SCALE at A3: 1:200

Amber 05