17 February 2020

Building Innovation Group Ltd
401 Parnell Road
Parnell
AUCKLAND 1052
NEW ZEALAND

Attention: **vincem@buildinginnovation.group**

Dear Vince

401-403 Parnell Road, Parnell – Residential Apartment Transportation Impact Assessment

Introduction

This report provides an assessment of the proposed redevelopment at 401-403 Parnell Road in Parnell, Auckland to provide five residential apartments and a commercial outlet. Since there is already a currently approved resource consent for this site related to a similar scheme with a previous transport assessment completed by Envivo Ltd dated 24 March 2016 (Envivo Report), this assessment focuses primarily on the proposed revision of access arrangements against the relevant Auckland Unitary Plan Operative-in-Part – updated 10 January 2020 (**AUP**) transportation standards. Overall, whilst there are several matters of technical non-compliance related to its arterial road frontage and minimum separation from crossings serving adjacent sites, the infringements are considered to be less than minor and that the proposed development can be established such that the effects to the function, capacity and safety of the surrounding transport network can be accommodated and are acceptable.

Site Location

The site is located at 401-403 Parnell Road in Parnell, Auckland and zoned within the Residential – Mixed Housing Suburban Zone as classified in the AUP. Under the AUP the Business – Town Centre zone is described as:

> *"… applied to suburban centres through Auckland. The centres are typically located on main arterial roads, which provide good public transport access. The zone provides for a wide range of activities including commercial, leisure, residential, tourists, cultural, community and civic services, providing a focus for commercial activities and growth. Most centres are identified for growth and intensification. Expansion of these centres may be appropriate depending on strategic and local environmental considerations."*

It is proposed to remove the single dwelling at the site and redevelop it to accommodate five residential apartments and a commercial outlet. As such, the proposed scale of development is consistent with the intent of the AUP for the zone.

Road Network Environment

The AUP does not provide a detailed roading hierarchy for the city and only identifies arterial and nonarterial roads. Parnell Road is identified as an arterial road in the AUP and generally has a network connectivity function, that is primarily connecting major nodes within an area and serving adjacent key activities including providing traffic for access to abutting properties, within the local town centre area.

The Auckland Transport (**AT**) traffic count database was investigated for traffic count information in the vicinity of the site. No traffic counts were available for the particular section of Parnell Road outside the site frontage. Therefore, the traffic data from the nearby road section between Gibraltar Crescent and Scarborough Lane were considered appropriate and relevant to capture the existing traffic information for this project

assessment. The morning peak hour volume in July 2019 was recorded to be 1,508 vehicles per hour (**vph**) with an afternoon peak volume of 1,230vph. The expected daily traffic volumes are around 7,000-8,000 vehicles per day (**vpd**). These traffic volumes are at the lower end of what could be expected for an arterial road.

Parnell Road has a straight alignment at the location of the site with an overall carriageway width of around 14.8m catering for one lane of northbound traffic and two lanes of westbound traffic and on-street parking on western sides of the road between driveways, along with the provision of approximate 1.5m wide flush median. The road slopes downhill at a grade of around 1:25 (4%) from the Parnell Road / St. Stephens Avenue intersection which is approximately 40m to the south of the site driveway. The existing traffic signals at the intersection control vehicles as they travel through the intersection and act as a visual clue that they are entering a different environment.

Road Safety

A search was made of the New Zealand Transport Agency's (NZTA) Crash Analysis System (CAS) for all reported crashes on Parnell Road between St Georges Road and St Stevens Avenue. The crash search was undertaken for the full five-year period from 2015 to 2019 and all available crash records from 2020.

Four non-injury crashes have been reported within the defined search area and period. Three of them occurred at the immediate vicinity of the St Stevens Avenue/Parnell Road signalised intersection due to misjudgement and failing to notice. The other one happened at the St Georges Road and Parnell Road intersection because of failing to give way. There are no crashes related to movements in and out of the driveways in this area.

As such, the existing crash history within the vicinity of the site does not indicate any inherent safety issues within the road network.

Proposal

As noted earlier, the subject site is to be redeveloped to provide five residential apartments, each with its own parking spaces allocated to the units, as well as a commercial area of 33.4m^2 gross floor area (GFA). A single driveway is proposed for the site next to the neighbouring access to the south. The site plan is shown in **Figure 1**.

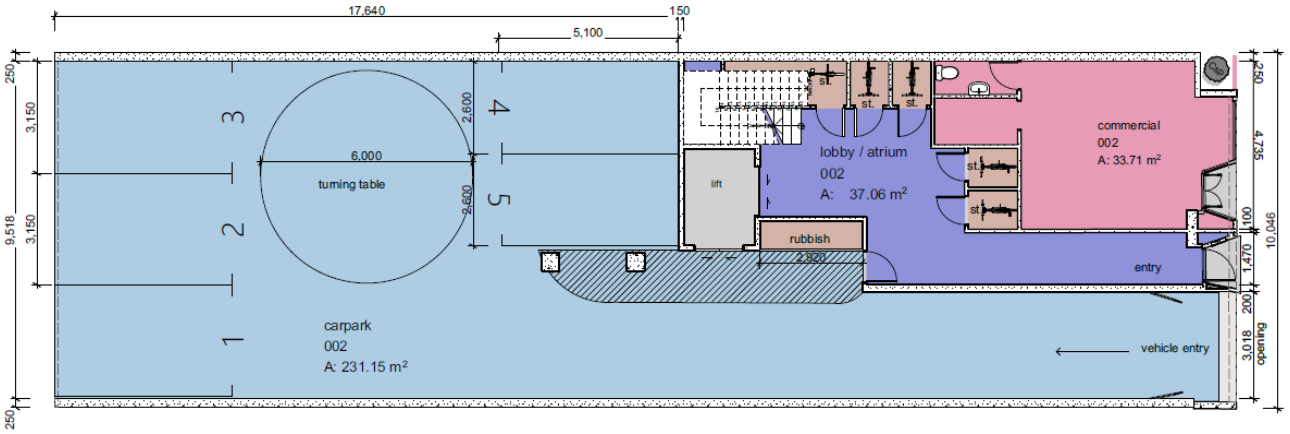


Figure 1: Proposed Ground Floor Layout

Access

The proposed driveway location is in the immediately adjacent location of the existing driveway for the neighbouring site. Separation distance to the neighbour's vehicle crossing to the south is virtually none, which presents a technical non-compliance with the AUP requirement of at least 2m separation from neighbour's vehicle crossings.
The subject site has a flat topography with the proposed access and parking area on the ground level (Level 1). Therefore, the gradients of the access throughout the entire length including parking area will be less than 5%, which complies with the gradient requirements of the AUP in terms of maximum grades for a residential access (1:5 or 20%) and manoeuvring gradients (1:8, 12.5%).

Whilst the main driveway will essentially be a single width driveway the vehicle crossing width at the boundary is proposed to be 3.1m with less than 2m separation distance from the adjacent crossing to the south. Although this represents a matter of non-compliance against the requirements of the AUP, several mitigating factors can be identified:

- A wider separation from the adjacent crossing has been investigated but the impacts on the street frontage required to maintain the zone characteristics would be inhibitive for the development;
- The overall width of the vehicle crossings would be similar to a situation where a vehicle crossing is combined with a neighbouring property;
- There is already an existing crossing in this location, so road users are accustomed to this current situation without surprises;
- The sight distance requirement of the NZTA's RTS6[1] guidelines has been demonstrated to be satisfactory in the Envivo Report and the current proposal will continue meeting these requirements;
- Vehicles entering or exiting the site to/from the rear properties will be travelling in a forward direction with proposed left-in-left-out restriction;
- The likelihood of vehicles encountering each other will be low;
- The effect on the existing loading zone is minimal with less than 1m reduction in length; and
- The proposed traffic control mechanism will ensure all road users' conflicts to be managed in safe and efficient manner with video and audio devices. The animated links below have demonstrated practical impressions from various perspectives as the vehicles, drivers and pedestrians.

Vehicle perspective - https://youtu.be/INuYJRgmL5I

Driver perspective - https://youtu.be/x-8AeXKUZk4

Pedestrian perspective - https://youtu.be/Zc0leVmrwT0

Vehicle tracking has been undertaken at the site access to confirm the acceptability of the arrangements and the tracking paths are provided in the attached **Figures 2** to **9**.

Overall, the infringement is unlikely to have a measurable effect on the surrounding road environment and the proposed access arrangements are considered appropriate.

Parking

Within the Business – Town Centre Zone, the AUP requires a minimum of one parking space to be provided for every 30m^2 GFA for retail activities, with no minimum and maximum parking rates for residential activities. In addition, since the proposed activities are located within the Historic Heritage Overlay area, AUP further states that the minimum parking requirements do not apply in this case. Therefore, there will be no parking requirements for the proposal and the proposed provision of five residential parking spaces is considered appropriate for the five apartments.

[1] RTS6 – Roads and Traffic Standards 6 – Guidelines for Visibility at Driveways, New Zealand Transport Agency

Parking spaces have been dimensioned in accordance with the AUP requirements for regular users. Two eastern parking spaces are 2.7m wide, 5.1m long and have a 7.6m manoeuvring area. The four western parking spaces have dimensions of 2.4m width and 5m length with 7.6m for manoeuvring. The previously adopted turning table in the Envivo Report will also be included to assist efficient movements.

Traffic Generation

The expected traffic generation of the activities at the site has been estimated using the New Zealand Transport Agency Research Report 453 (NZTA 453) to be in line with the previous reference in the Envivo Report.

The NZTA 453 provides peak hour traffic generation rates for a residential dwelling in the inner suburban area. For the proposed apartments the trip generation rates are 9.5vpd/dwelling and 1.1vph/dwelling in the peak hours. Using these rates, it is expected that around 47vpd and around 6vph would be generated during the peak hours.

Further, since there will be no parking provision for the retail activity, no vehicle trips will be generated in this regard. Therefore, the expected traffic generation due to the proposal are low from a traffic engineering perspective, which are less than 1% of the existing traffic flow and are well within the capacity of Parnell Road as an arterial road.

Statutory Assessment

An assessment of the proposal against the key relevant transport-related standards of the AUP has been undertaken. This is detailed in the following table.

Table 1: Assessment Against Relevant Standards in the AUP

Standard		Compliance
E.27.6.2(1) The number of parking spaces: (a) must not exceed the maximum rates specified; (b) must meet the minimum rates specified; or (c) must meet the minimum rates and not exceed the maximum rates specified which apply to the zone or location specified in Table E27.6.2.1, Table E27.6.2.2, Table E27.6.2.3 and Table E27.6.2.4.	(T30) Business – Tow Centre Zone, dwellings – two or more bedrooms: No minimum or maximum rate. (T20) 1 per 30m² GFA minimum with no maximum rate. E27.6.2. (4A) (a) where the activity is located within the D17 Historic Heritage Overlay, minimum parking requirements do not apply.	**Complies**. Five car parking spaces are proposed for residential activities only.
E.27.6.2(6) Bicycle parking: (a) the activities specified in Table E27.6.2.5 must provide the minimum number of bicycle parking spaces specified; and (b) the following bicycle parking requirements apply to new buildings and developments.	(T81) Residential – Developments of 20 or more dwellings. Visitor minimum rate 1 per 20 dwellings. Secure minimum rate 1 per dwellings without a dedicated garage. (T89) Retail - No visitor minimum rate up to 350m² and secure minimum rate 1 per 300m² GFA	N/A. Less than 20 dwellings and 300m² GFA retail are proposed. It has been demonstrated that one secure bicycle space per dwelling can be accommodated in the allocated storage area.
E.27.6.2(8) Number of loading spaces: (a) all activities must provide loading spaces as specified in Table E27.6.2.7	(T108) Retail activities up to 300m². No loading required.	N/A. Less than 300m² GFA.
E.27.6.3(1) Every parking space must: (a) comply with the minimum dimensions given in Table E27.6.3.1.1 and Figure E27.6.3.1.1	90 degrees (regular users): 2.4m wide and 5m deep from the wall with a manoeuvring space of 7.1m. 2.7m wide and 5m deep from the wall with a manoeuvring space of 5.9m	**Complies**.
E27.6.3.3 (1) Every parking space must have driveways and aisles for entry and exit of		**Complies**. See tracking figures attached.

Standard		Compliance
vehicles to and from the road, and for vehicle manoeuvring within the site. Access and manoeuvring areas must accommodate the 85 percentile car tracking curves in Figure E27.6.3.3.1		Discussed in the "access" section.
E.27.6.3.4 (1) Sufficient space must be provided on the site so vehicles do not need to reverse off the site or onto or off the road from any site where any of the following apply:	(a) four or more parking spaces are served by a single access; (b) there is more than 30m between the parking space and the road boundary of the site; or (c) access would be from an arterial road or otherwise within a Vehicle Access Restriction covered in Standard E27.6.4.1.	**Complies.** All vehicles can access on and off the road in a forward direction with the aid of the proposed turning table.
E27.6.3.5(1) To ensure vehicles can pass safely under overhead structures to access any parking and loading spaces, the minimum clearance between the formed surface and the structure must be:	(a) 2.1m where access and/or parking for cars is provided for residential activities;	**Complies**. All parking spaces and vehicle accesses meet the height requirements.
E27.6.3.6(3) The gradient for the surface of any parking space must not exceed:	(b) 1 in 20 (five per cent) in any direction for other spaces.	**Complies.** All parking spaces are flat.
E27.6.3.6(4) The gradient for the manoeuvring area must not exceed 1 in 8.		**Complies.**
E27.6.4.1(3) Vehicle Access Restrictions apply and vehicle crossings must not be constructed or used to provide vehicle access across that part of a site boundary which:	(a) is located within 10m of any intersection as measured from the property boundary, illustrated in Figure E27.6.4.1.1; (b) is subject to the following types of Vehicle Access Restriction as identified on the planning maps in the zones listed in Table E27.6.4.1.1; (c) has frontage to an arterial road as identified on the planning maps; or (d) is located closer than 30m from a railway level crossing limit line.	**Does not Comply**. Parnell Road is an arterial road. Discussed in the "access" section.
E27.6.4.2(1) The maximum number of vehicle crossings permitted for any site and separation distance between crossings is specified in Table E27.6.4.2.1.	(T144) Maximum 1 crossing per 50m of frontage or part thereof. Minimum separation from crossings serving adjacent sites: 2m where two crossings on adjacent sites can be combined and where the combined crossings do not exceed a total width of 6m at the property boundary, no minimum separation distance will apply. Minimum separation between crossings serving same site: 6m.	**Partially Complies**. One crossing is proposed for the site but will be less than 2m from the adjacent properties' vehicle crossings or more than 6m of the total width as a combined crossing with the neighbouring site. Discussed in the "access" section.
E27.6.4.2(2) The width of a vehicle crossing(s) must meet the minimum width and not exceed the maximum width as specified in Table E27.6.4.3.2.	(T152) Centres zone serves nine or less parking spaces: minimum 3.0m and maximum 3.5m width of crossing at the site boundary	**Complies**. Vehicle crossing is proposed to be 3m wide for 6 parking spaces.
E27.6.4.2(3) With the exception of vehicle crossings on unsealed roads, all vehicle crossings must be designed and constructed to maintain the level, colour, and materials of the footpath to clearly identify to vehicles that pedestrians have priority.		Will comply.

Standard		Compliance
E27.6.4.3(1) Every on-site parking and loading space must have vehicle access from a road, with the vehicle access complying with the following standards for width: (a) passing bays are provided in accordance with Table E27.6.4.3.1; and (b) meeting the minimum formed access width specified in Table E27.6.4.3.2.	(T152) Centres zone serves nine or less parking spaces: minimum formed access width 3.0m provided it is contained within a corridor clear of buildings or parts of a building with a minimum width of 3.5m	**Complies**. Formed access width proposed is 3m with at least 3.5m wide clear corridor.
E27.6.4.4(1) Gradient of vehicle access must not be steeper than specified in Table E27.6.4.4.1.	(T157) Vehicle access serving any other residential activities (including rear sites) 1 in 5 (20%)	**Complies**.
E27.6.4.4(2) To avoid the underside of the car striking the ground, as illustrated in Figure E27.6.4.4.2, access with a change in gradient exceeding 1 in 8 (greater than 12.5 per cent change) at the summit or a 1 in 6.7 (15 per cent change) at a sag must include transition sections to achieve adequate ground clearance, refer to Figure E27.6.4.4.3. Typically, a transition section requires a minimum length of 2m.		**Complies**.
E27.6.4.4(3) All vehicle access must be designed so that where the access adjoins the road there is sufficient space onsite for a platform so that vehicles can stop safely and check for pedestrians and other vehicles prior to exiting. This is illustrated in Figure E27.6.4.4.4. The platform must have a maximum gradient no steeper than 1 in 20 (5 per cent) and a minimum length of 4m for residential activities and 6m for all other activities.		**Complies**.

The proposed redevelopment complies most of the permitted transport-related activity standards of the AUP. Where there is an area of non-compliance in respect of minimum separation from adjacent crossing, the infringement is not considered significant for the reasons stated in the "Access" section of this report and the following paragraphs.

The proposed development complies with the majority of the permitted transport-related activity standards of the AUP. Under table E27.8.1 (9), the vehicle crossing proposed is a restricted discretionary activity with respect to the infringement of the minimum separation distance to neighbouring driveways.

The infringement has been assessed against the relevant criteria in E27.8.2(8) in **Table 1** below.

Table 1: Assessment of Standard E27.8.2(8)

Criteria	Comments
Any activity or development which infringes the standards for design of parking and loading areas or access under Standard E27.6.3, E27.6.4.2, E27.6.4.3 and E26.6.4.4: (a) effects on the safe and efficient operation of the adjacent transport network having regard to: i) the effect of the modification on visibility and safe sight distances;	The proposed vehicle crossing has a 0.2m separation to the southern neighbouring vehicle crossing. In essence, it can be regarded as a combined crossing with the total width of 6.5m. The vehicle crossing infringes the maximum total width requirement by 500mm, and it is considered that the effects of this infringement will be less than minor. As discussed in "Access" section, the vehicle crossing has sufficient visibility to both the north and south of the site. Drivers entering and exiting

Criteria	Comments
ii) existing and future traffic conditions including speed, volume, type, current accident rate and the need for safe manoeuvring; iii) existing pedestrian numbers, and estimated future pedestrian numbers having regard to the level of development provided for in this Plan; or iv) existing community or public infrastructure located in the adjoining road, such as bus stops, bus lanes, footpaths and cycleways.	the driveway will clearly be able to see approaching pedestrians with the aid of both visual and audio devices. Therefore, they will understand to give up and minimise the safety risk to pedestrians. As discussed in "Traffic Generation" section, the additional trip generation as a result of the development is expected to be low. Vehicles have sufficient space and the assistant turning table to manoeuvre within the site such that vehicles can drive out of the vehicle crossing in a forward direction. Pedestrian amenity is unlikely to be negatively impacted by the proposed vehicle crossing due to the calculated low traffic volumes. No crashes related to driveway operations on the same location have been reported within the vicinity of the site, and the proposal is not considered to affect this positive safety record.
b) effects on pedestrian amenity or the amenity of the streetscape, having regard to: i) the effect of additional crossings or crossings which exceed the maximum width; or ii) effects on pedestrian amenity and the continuity of activities and pedestrian movement at street level in the Business – City Centre Zone, Business – Metropolitan Centre Zone, Business – Town Centre Zone and Business – Local Centre Zone.	The amenity of pedestrian and streetscape will not be affected as the proposal will maintain the existing interaction with the street frontage with only one crossing proposed for the site. Although the total width exceeds the maximum of 6m, the minimal increase of 500m is considered to only have less than minor effects.
c) the practicality and adequacy of parking, loading and access arrangements having regard to: i) site limitations, configuration of buildings and activities, user requirements and operational requirements; ii) the ability of the access to accommodate the nature and volume of traffic and vehicle types expected to use the access. This may include considering whether a wider vehicle crossing is required to: • comply with the tracking curve applicable to the largest vehicle anticipated to use the site regularly;	Due to the location and size of the neighbouring driveway, it is difficult to provide the minimum 2m separation whilst achieving an optimal layout from a holistic building design and historic characteristic perspective. Nevertheless, the proposed access location still provides satisfactory operational requirements without compromising safety consideration for all road users. The proposed access complies with the required width under the AUP. Vehicle tracking has been undertaken to ensure that an 85th percentile vehicle can safely manoeuvre in and out of the driveway.

Criteria	Comments
• accommodate the traffic volumes anticipated to use the crossing, especially where it is desirable to separate left and right turn exit lanes; • the desirability of separating truck movements accessing a site from customer vehicle movements; o the extent to which reduced manoeuvring and parking space dimensions can be accommodated because the parking will be used by regular users familiar with the layout, rather than by casual users; iii) any use of mechanical parking installation such as car stackers or turntables does not result in queuing beyond the site boundary; or iv) any stacked parking is allocated and managed in such a way that it does not compromise the operation and use of the parking area.	The proposal has adopted the previously approved turning table usage to assist in the efficient manoeuvres. The scale of the development will generate low vehicular traffic flows and there will be rare occasions where more than two vehicles arriving at the same time. Further, it is demonstrated in the tracking figures that sufficient space is available for an outbound vehicle to wait for inbound vehicle that has the priority movement to ensure no queuing on beyond the site boundary. No stacked parking is proposed on-site.

As discussed in the table above, the infringement is considered minimal when assessed against the relevant assessment criteria. As such, the proposed separation of neighbouring vehicle crossings is acceptable from a transportation perspective.

Summary and Conclusions

The proposal is to redevelop the site at 401-403 Parnell Road to provide five new residential apartments and a commercial outlet.

One vehicle access will be provided off Parnell Road. The access arrangements comply with most of the requirements of the permitted activity standards of the AUP except that the separation to the adjacent vehicle crossing at the site boundary and the manoeuvring space are less than the minimum distances. However, there are mitigating circumstances and the proposed arrangement is considered appropriate to serve the development. A car tracking curve assessment at the access has been undertaken using the AUP 85th percentile car to confirm the adequacy of the arrangements.

A total of five residential parking spaces are proposed for the site. This provision meets the minimum requirements of the AUP. Parking space dimensions satisfy the requirements of the AUP for regular users.

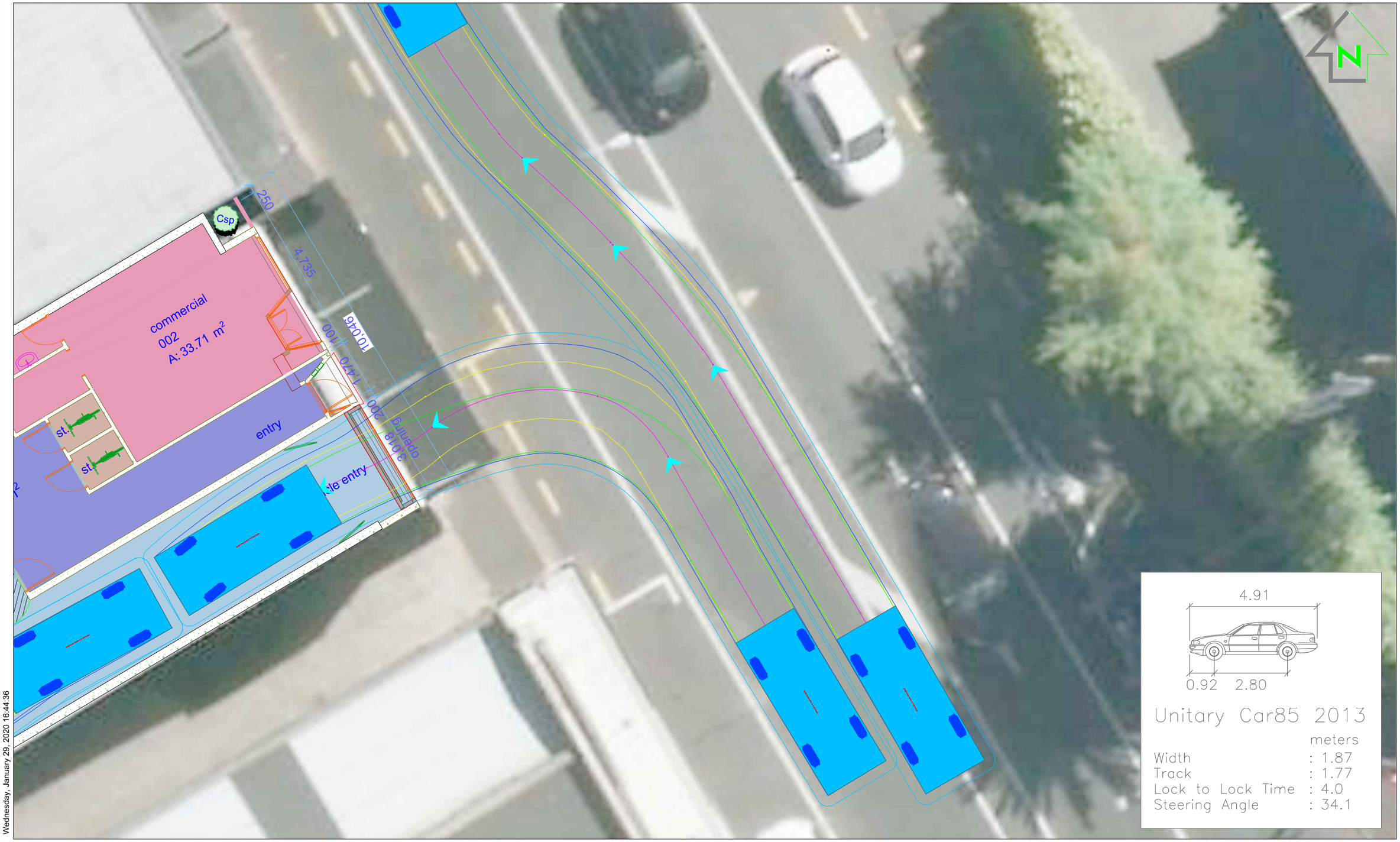
No loading space is required for a development of this size.
The additional traffic expected to be generated by the development is low from a traffic engineering perspective and can be readily accommodated on the adjacent road network without noticeable effects on the capacity and safety of the surrounding roads.

Based on the assessment which has been undertaken, it is concluded that there are no transport engineering or planning reasons to preclude approval of the development as intended.

Yours sincerely

Martin Huang
Principal Transportation Engineer
Stantec New Zealand

Daryl Hughes
Auckland Transportation Leader
Stantec New Zealand



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401-403 PARNELL ROAD, PARNELL

VEHICLE TRACKING (UNITARY PLAN 85 PERCENTILE CAR)

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401-403 PARNELL ROAD, PARNELL

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401-403 PARNELL ROAD, PARNELL

VEHICLE TRACKING (UNITARY PLAN 85 PERCENTILE CAR)

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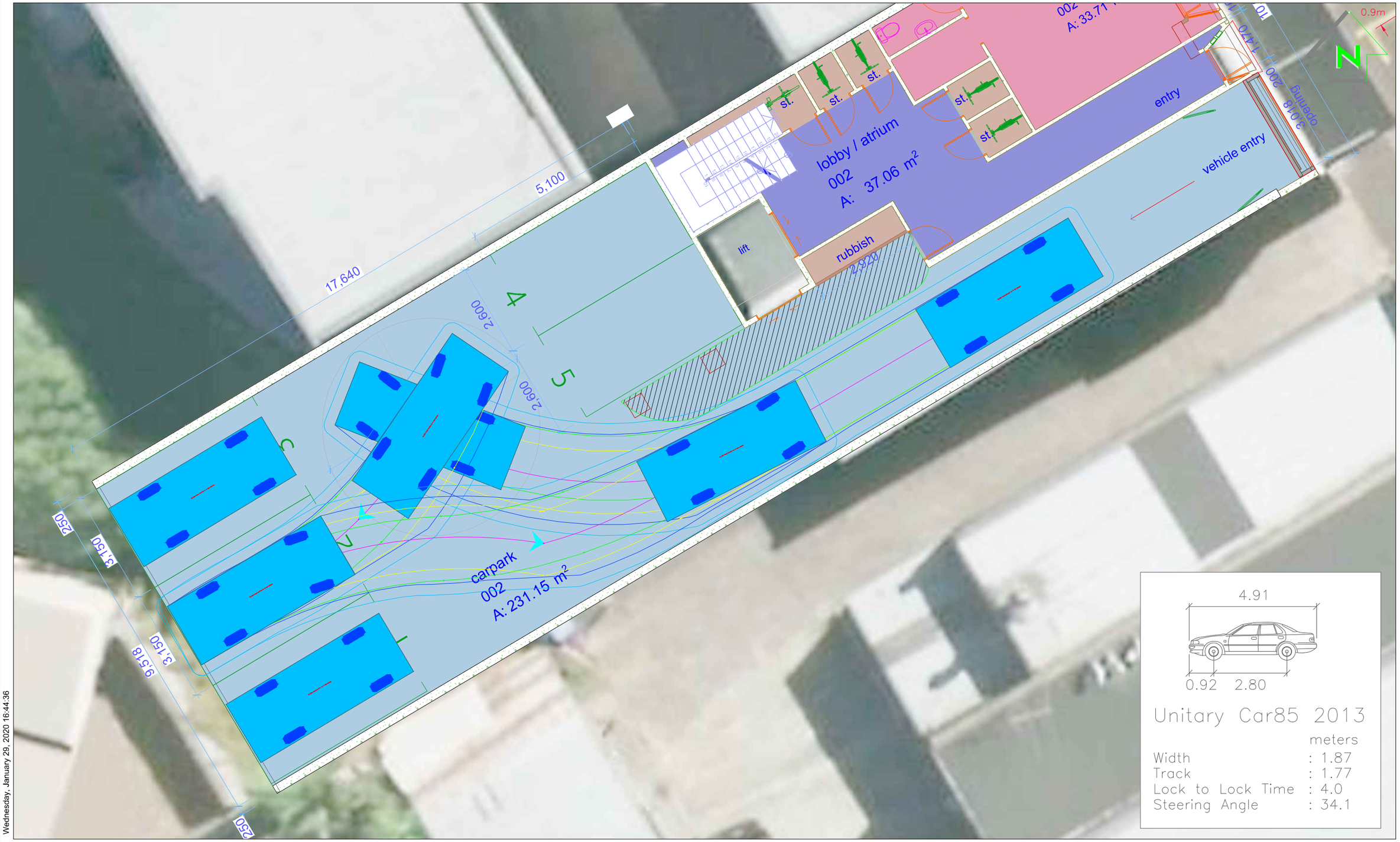

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401-403 PARNELL ROAD, PARNELL

VEHICLE TRACKING (UNITARY PLAN 85 PERCENTILE CAR)

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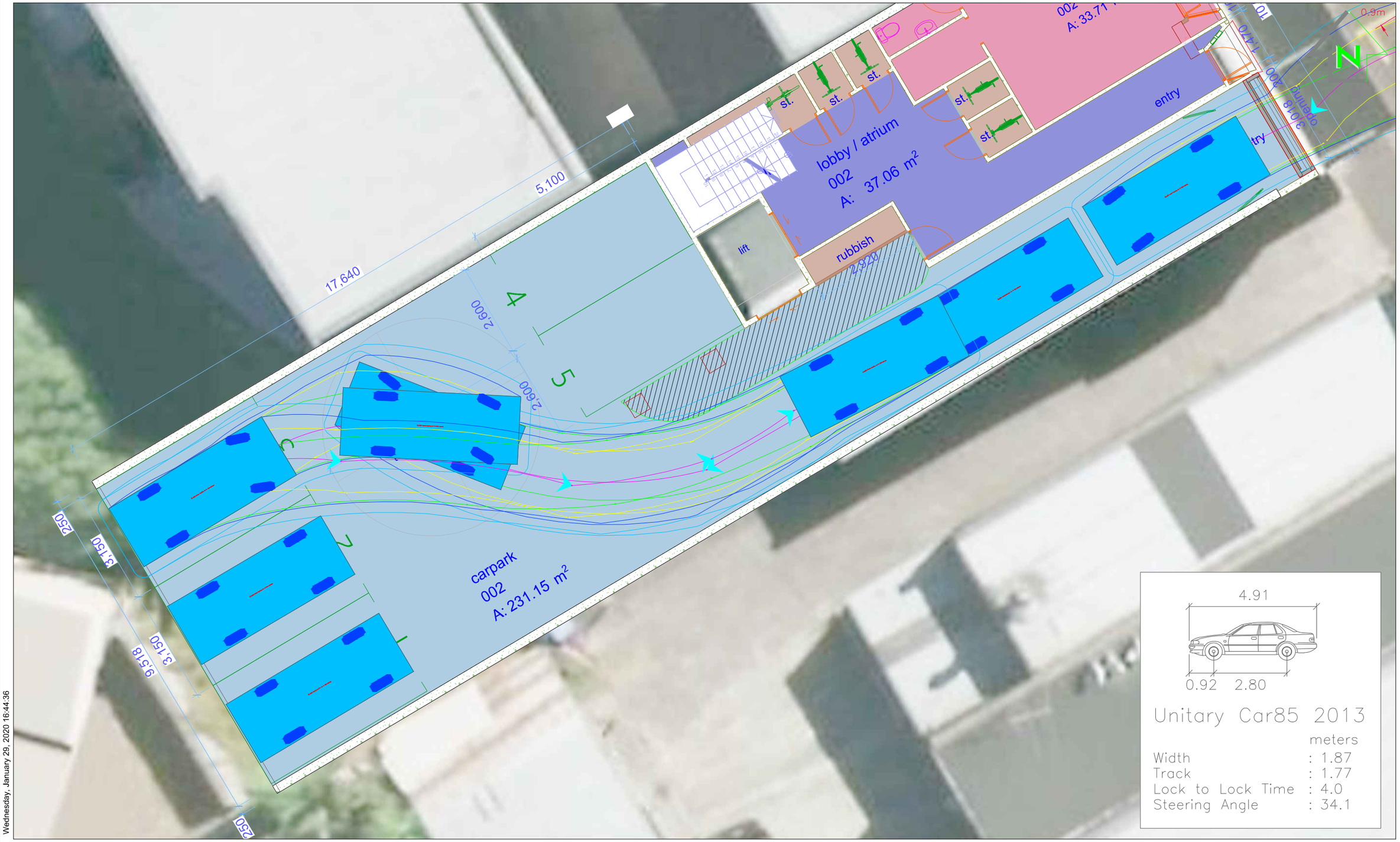

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401-403 PARNELL ROAD, PARNELL

VEHICLE TRACKING (UNITARY PLAN 85 PERCENTILE CAR)

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401-403 PARNELL ROAD, PARNELL

VEHICLE TRACKING (UNITARY PLAN 85 PERCENTILE CAR)

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401-403 PARNELL ROAD, PARNELL

VEHICLE TRACKING (UNITARY PLAN 85 PERCENTILE CAR)

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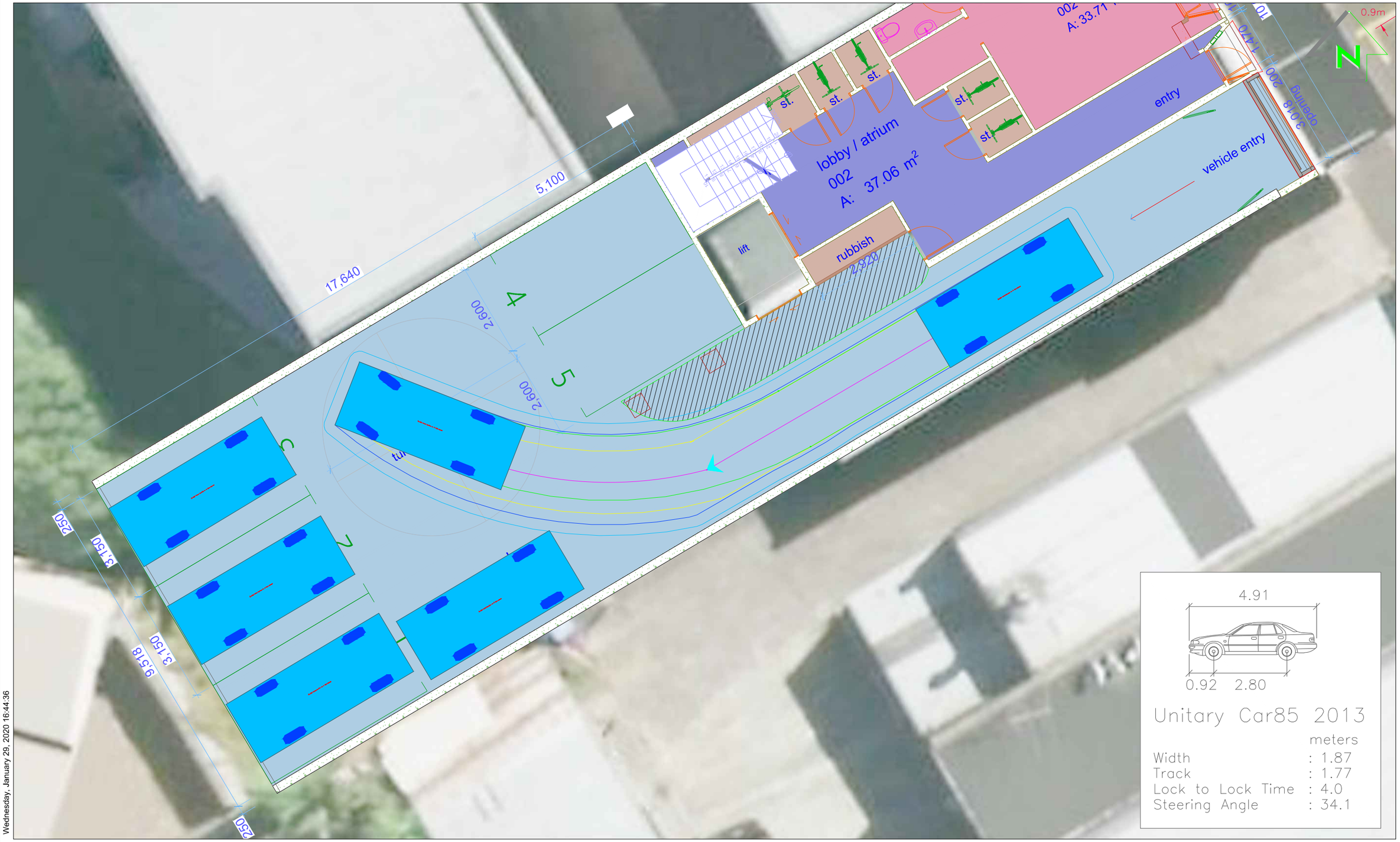

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401-403 PARNELL ROAD, PARNELL

VEHICLE TRACKING (UNITARY PLAN 85 PERCENTILE CAR)

DRAWN: TLJ	---	---
DATE: 29.01.20	STATUS: RC	
SCALE: 1:100 @ A3		
DWG NO:310203832A2A		

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