Approval no: DEV2022/1300

Date:

18 September 2023



GPO Box 1747 Brisbane QLD 4001 t 07 3166 9216 m 0417 607 242 www.qtraffic.com.au

Our Ref: 1746_HAL05

11 October 2022

Department of State Development, Infrastructure, Local Government & Planning C/- HAL Architects 3/709 Main Street Kangaroo Point QLD 4165

For the Attention of Jesse Govender

Reference: DEV2022/1300 Property Address: 57 Banana Street, Redland Bay Subject: Response to Further Issues – Traffic Matters

Dear Jesse

We refer to the development application on the site at 57 Banana Street, Redland Bay This letter has been prepared in response to the Further Issues Request dated 4 August 2022 issued in respect of the application.

1. Traffic

- a) Demonstrate sight line requirements can be met or provide corner lot truncations in accordance with Redland City Plan requirements.
- b) Demonstrate the headroom clearances in the basement are compliant with Australian standards. Provide cross-sections and dimensions on the plans/cross-sections to demonstrate this.
- c) Demonstrate the gradient change, clearance requirements and transition lengths in the access ramp are compliant with relevant Australian Standards for the different type of vehicles that will use the ramp.
- d) Clarify if the basement level will accommodate service vehicles and which types. Demonstrate the vertical clearance, gradient transitions and turn paths are compliant for the types of service vehicles that will traffic the basement level.
- e) Provide dimensions on plans to demonstrate that parking bays have the required clearances from walls.
- f) Clarify if a boom gate will be used at the entrance traffic lights.
- g) Clarify how the refuse truck and other vehicles will be differentiated by the traffic light sensors.
- h) Demonstrate how the vehicles from the parking bays on the ground floor will exit when a vehicle is stationed at the entrance during a red light phase or confirm if these vehicles will be restricted from exiting the carpark. Turn paths should be provided to show exit movements.
- i) Demonstrate how vehicles exiting the ground level carpark will exit safely. It is noted if the ground floor vehicles are exiting from the stop bay lane this will form a head-on conflict with vehicles entering /exiting or if exiting movements of ramp users are not restricted, possibility of two vehicles turning in the same direction simultaneously. Alternatively, if the ground floor vehicles are exiting from the ramp exit, there will be a conflict with the vehicles exiting using the ramp exit from the basement carparks.



- *j)* Provide details of the mechanisms in place to counter for power failure or a technical failure of the traffic light system. Mechanisms should be in place to allow minimal impacts to Outridge Street.
- k) Provide details on how drivers (including those using car parks numbered 9 13) can see the traffic lights without having to overlook their shoulder. Consideration should also be made on when there is restricted visibility when a larger vehicle (vans etc.) block the views of drivers when parked.
- Provide details of the queuing storage provided at the entrance to demonstrate compliance with Australian standards. Currently only one car space is provided. Storage provided should ensure minimal impacts to Outridge Street.
- m) Indicate on plans the location and number of resident and visitor bicycle parks.

Response:

In response to item 1(a), it should be noted that the verge is very wide on Outridge Street measuring approximately 6.7m. This wide verge opens up the sightlines at the future intersection. This is best illustrated when a 3-chord truncation is superimposed over a 3.75m wide verge alignment. As shown in **Figure 1** below, this notional truncation (in blue) sits within the verge and as a consequence, further land dedication is not reasonably required.

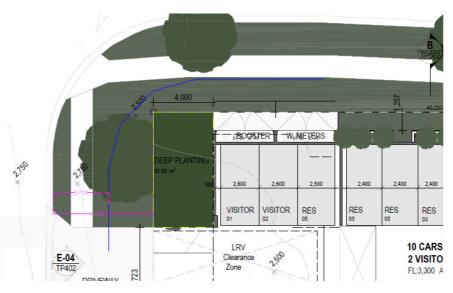
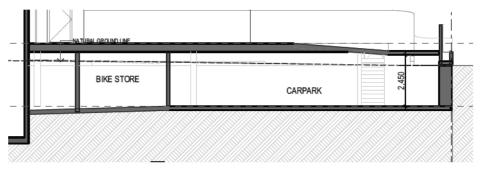
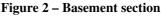


Figure 1 – Notional 3 Chord Truncation if Verge was 3.75m wide

In response to item 1 (b), please refer to sections a, b and c of the amended plans in **Attachment 1**. The floor to ceiling height is the order of 2.45m which exceeds the 2.2m required under AS2890.1. Notwithstanding this, a height clearance of 2.2m, clear of all services can reasonably be conditioned as part of the approval.





In response to item 1 (c & d), the basement ramp is restricted to passenger vehicles only. Clause 2.5.3 (b)(ii) of AS2890.1 permits straight ramps <20m in length to have a maximum grade of 1:4. The plans show a maximum grade of 1:5 which complies. With respect to the transitions, they are at a grade of 1:8 and are 2.5m in length which complies with clauses 2.5.3 (d) and (e).

In response to item 1(e), please refer to the amended plans which show a minimum of 300mm clearance between parking spaces and adjacent walls.

In response to item 1(f) a boom gate is not proposed and is not required at the entry signal. The traffic control system has a stop line and traffic signal which informs entering vehicles of where to stop. This is standard practice for the management of two-way one-lane ramps within small residential car parks. Refer to the traffic management signal plan included as **Attachment 2**.

In response to item 1(g), the vehicle sensor located on the ground floor (i.e at the entry of the site) will not distinguish between a passenger car and a refuse truck. Therefore when a refuse truck is on-site, it will be detected by the sensor which in turn will trigger a red signal in the basement. This will inform residents in the basement that they cannot not exit the site and they must wait for a green signal. This is a feature, not a bug in the design of the system as it minimises the potential for conflict between a car existing the basement and a refuse vehicle stopped in the driveway. A refuse truck would be on-site once a week for a duration of 2 minutes and as a consequence, this delay is insignificant.

In response to item 1(h), the plan has been amended such that vehicles on the ground floor can exit the site passing a vehicle that is waiting at the stop line.

In response to item 1(i), the plan has been amended such that the driveway aligns with the ground level carpark. This removes the possibility of any head-on as described by the State. The ramp to the basement is then offset to the aisle. The chance of a vehicle exiting from the basement at the same time a vehicle is exiting from the ground level carpark is very low. Notwithstanding this, the speeds are very low and a give way sign has been shown at the top of the ramp to ensure vehicles exiting from the basement give way vehicles exiting from the ground level.

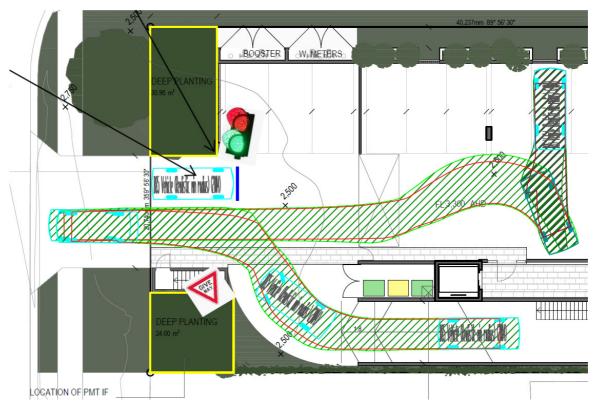


Figure 3- Exiting Vehicles Swept Path

In response to item 1(j), much like an alarm system, a battery backup is connected to the traffic management system to ensure it functions during a power outage.

In response to item (k), we have installed this system in a number of basements where we have signs within the car parking spaces. Photos of a similar system in operation are included as **Attachment 3**. The red signal aspects illuminate the basement such that it obvious to motorists that the light has been triggered, irrespective of whether the driver has a clear line of sight of the signal.

In response to item (1), whilst one (1) vehicle queue storage is provided between the stop line and the property boundary, it should be noted that as soon as a vehicle is detected at the stop bar the light will turn red within the basement and after a delay of approximately 30-45 seconds (to allow a vehicle to exit from the basement), the entering vehicle will be shown a green signal. Therefore, the maximum delay is 30-45 seconds for entering vehicles. With only 17 dwellings proposed, the site would generate in the order of 10-12 vehicle trips coincident with the peak period. This is equivalent to one entering vehicle every 5-6 minutes and significantly fewer trips outside of peak times. Therefore, the chance that more than one vehicle was queuing to enter is very low. Furthermore, the access to the site is located on the lowest order residential street. Therefore, in the remote chance a second vehicle was waiting to enter the site, this would have a negligible impact on the safety and efficiency of the external road system.

In response to item 1(m), the bicycle parking s shown on the amended plan with 17 residential spaces and 3 visitor spaces shown.

Conclusion and Recommendations

We trust the above information satisfactorily responds to the traffic items in the Further Issues request dated 4^{th} August 2022

In my capacity as a Registered Professional Engineer of Queensland, I am satisfied that the proposed development will operate acceptably from a traffic / parking perspective, without any unacceptable impact upon the adjacent road network.

On the basis of the above, it is recommended that the development application be approved from a traffic engineering perspective.

Should you have any queries regarding the above, please do not hesitate to contact the undersigned.

Regards

Richard Quinn BECivil, MIEAust, RPEQ (08565) Director – Q Traffic

ATTACHMENT 1

Amended Plan

TOWN PLANNING DRAWINGS

Proposed Residences - 'Bella Baia'

57 Banana Street, Redland Bay, QLD, 4165

KEY PROPOSAL STATISTICS - MULTIPLE DWELLING			
Site Area	834.52		
Frontage:	20.74m + 40.237m + 20.74m		
Number of Storeys:	7		
Maximum Building Height :	28.3m Above NGL		
No. of Dwellings :	17		
Site Cover	600.53 m ²	(75%)	
Communal Open Space	127.44 m ²	(12%)	
Private Open Space	660.59 m ²	(81%)	
Private Open Space	138.82 m ²		
Landscaping (incl Deep planting)	114.88 m ²	(15.6%)	
Car Spaces - Resident	29		
Car Spaces - Visitor	2		
Total Car Spaces Proposed	31		





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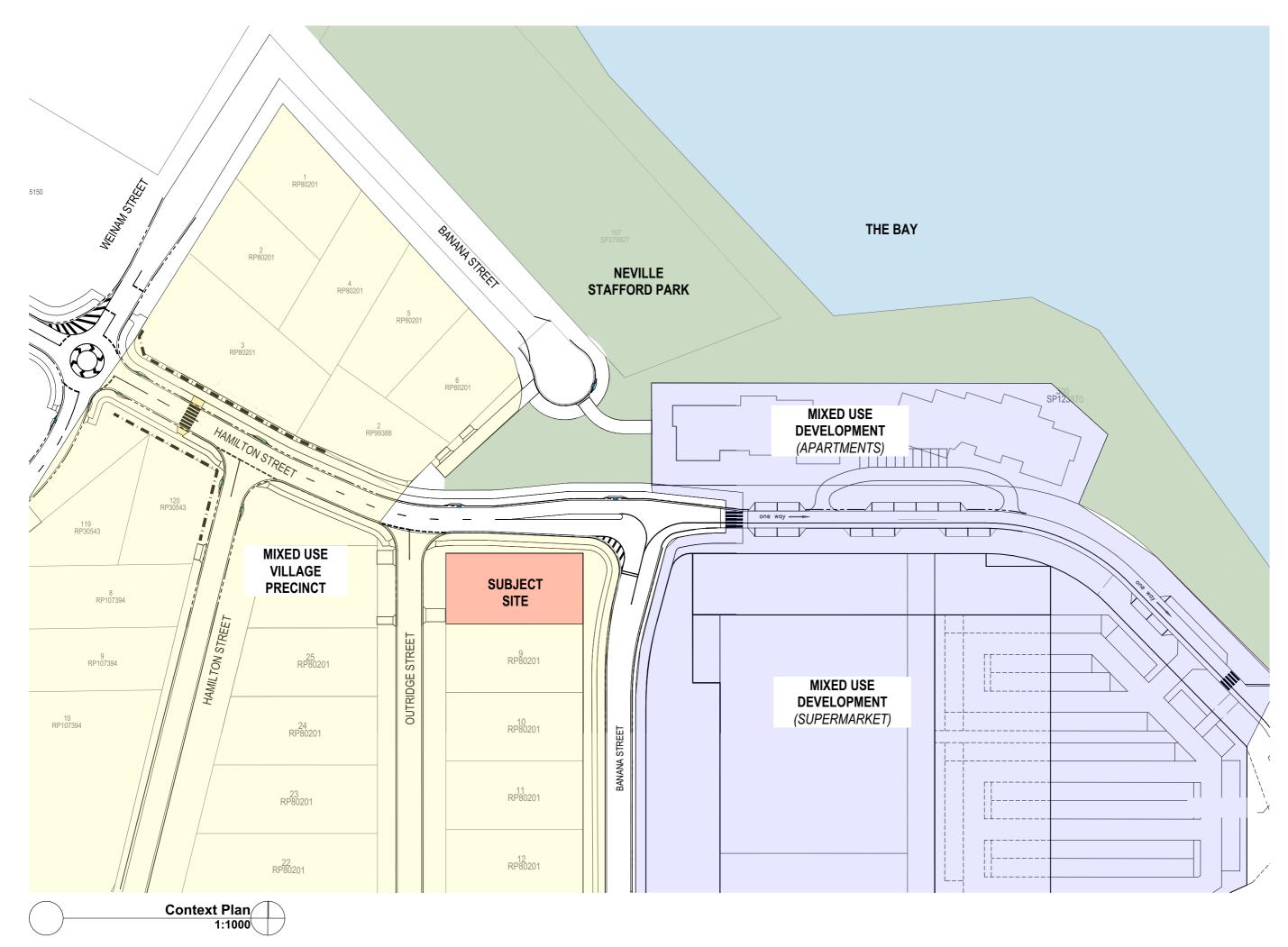
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57 Banana Street, Redland Bay, QLD 4165

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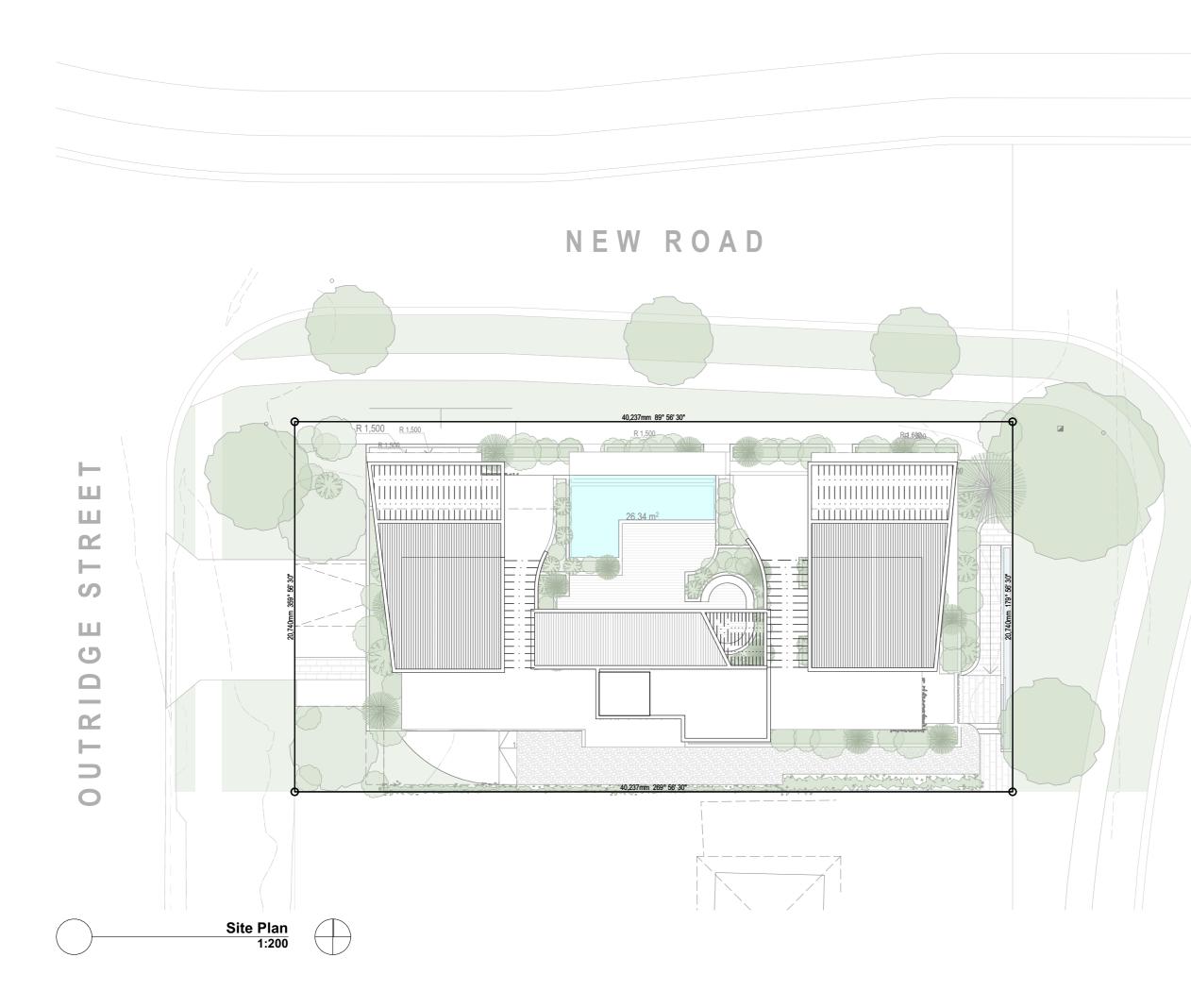
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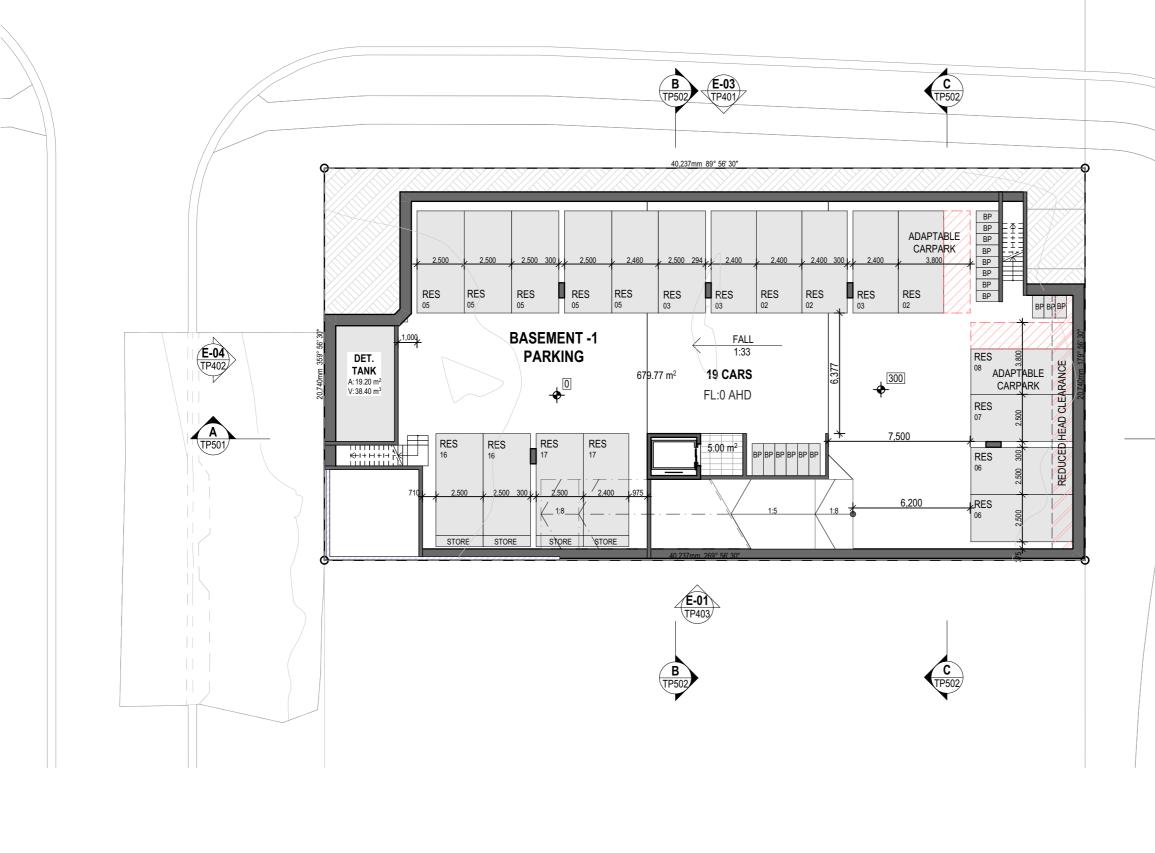
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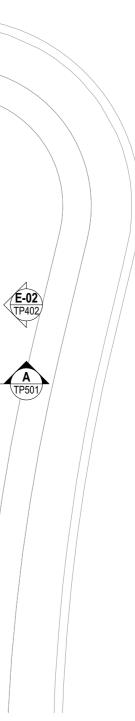
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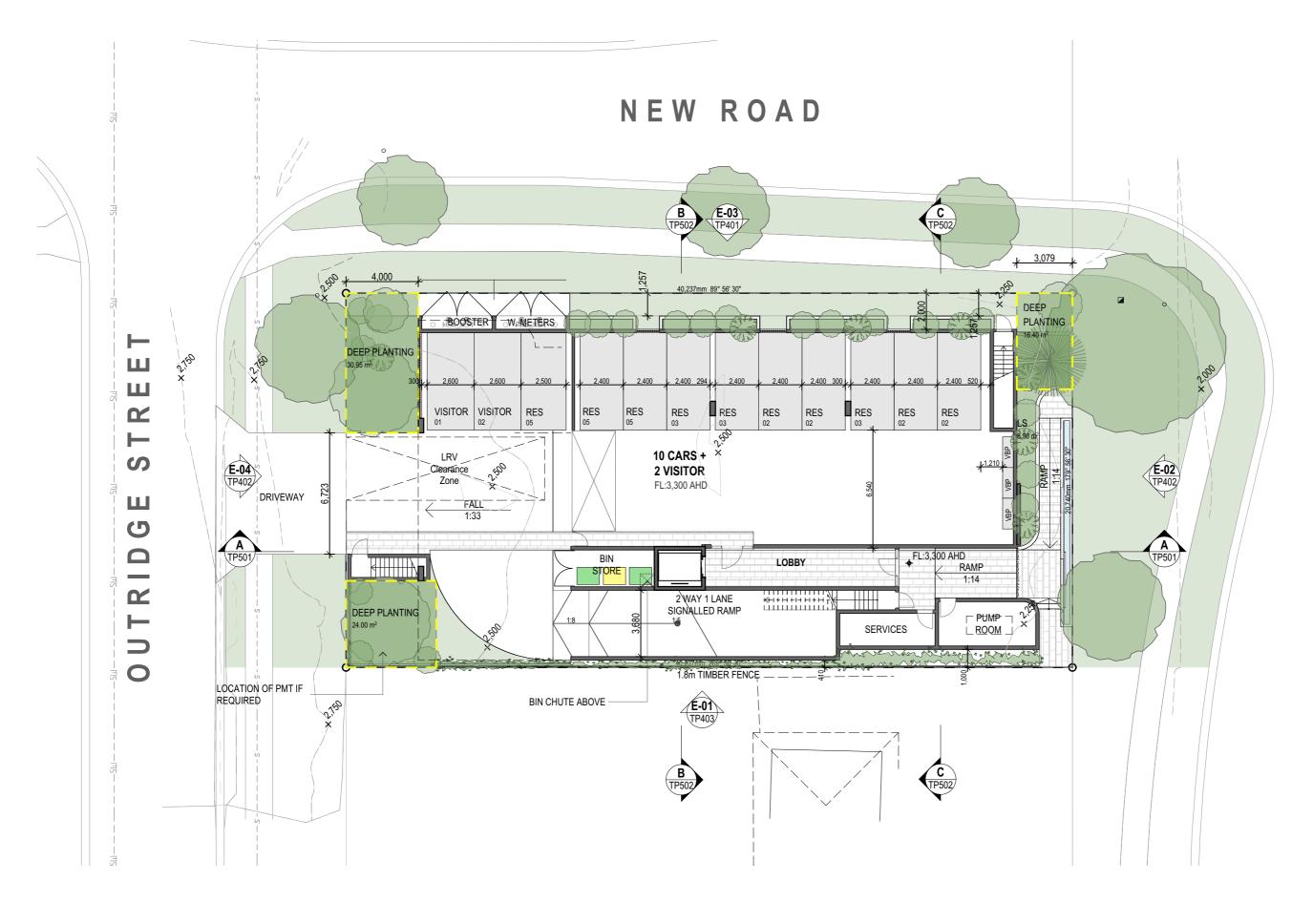


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Ground Floor Plan 1:200

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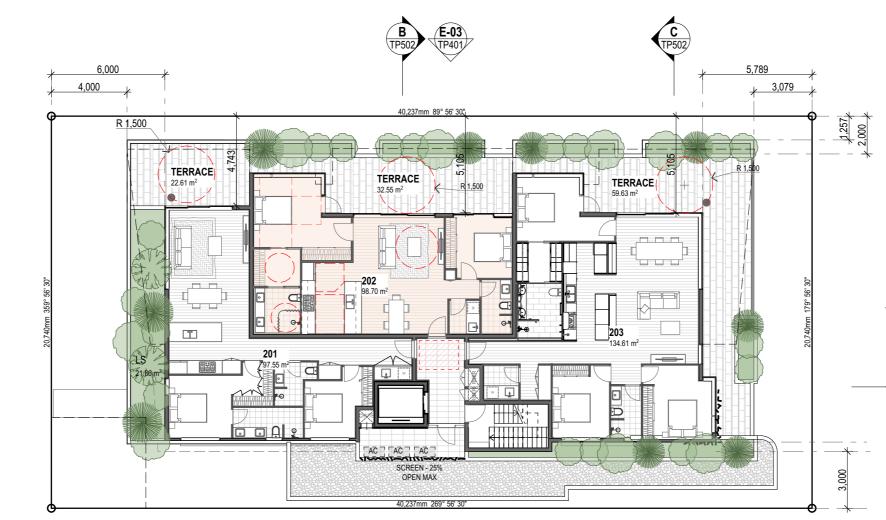
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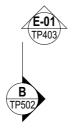
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Level 2 Floor Plan 1:200

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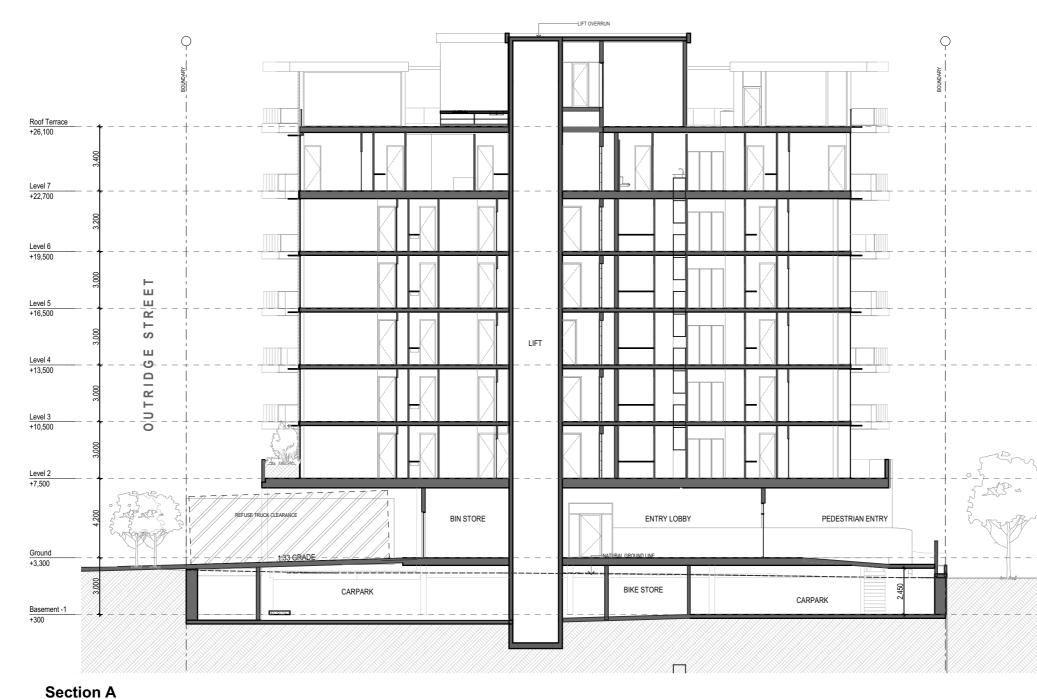




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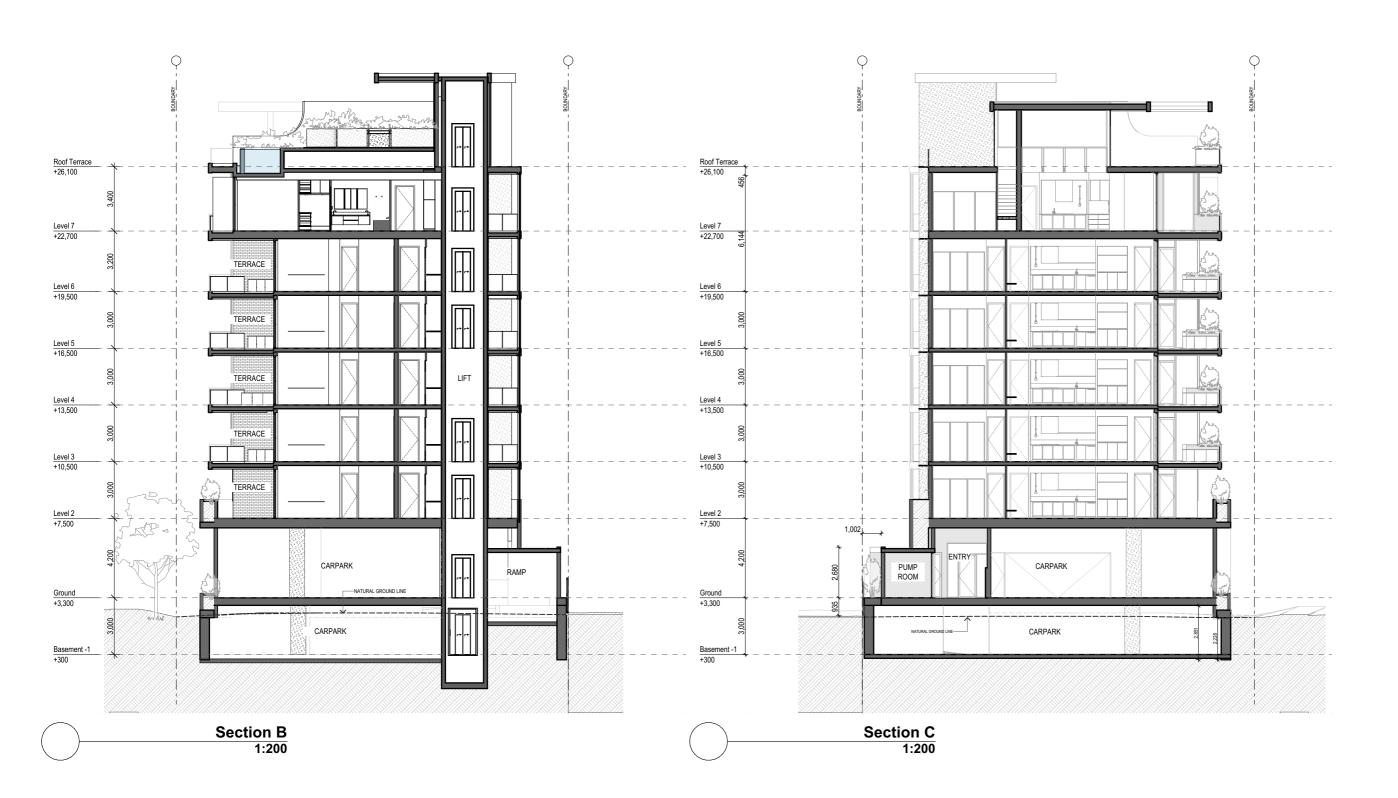
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NOTE: Boundary, contours, levels, and site services information is shown indicatively only, based on eBimap. It is subject to confirmation by a licensed Surveyor in the form of an Identification Survey

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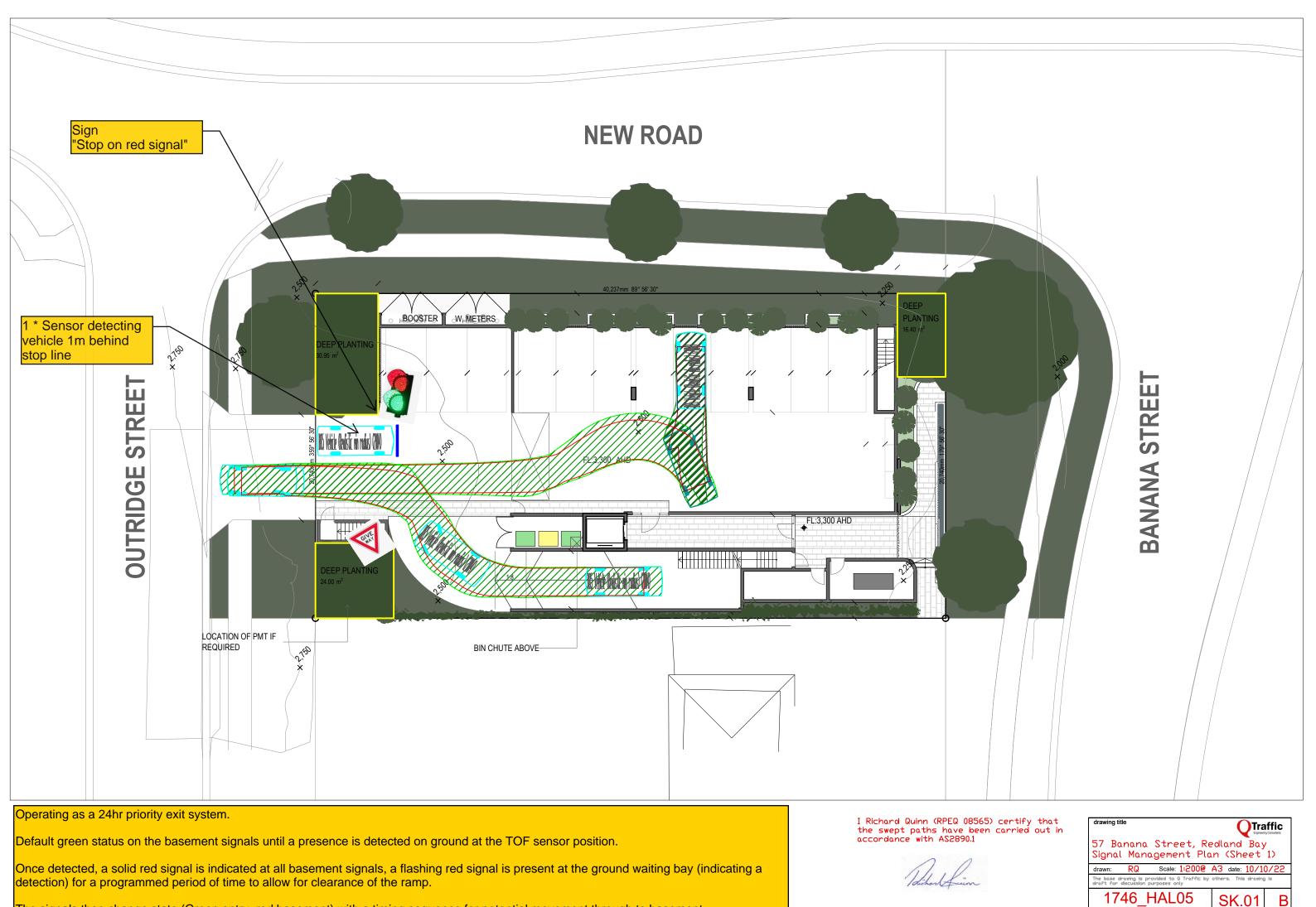
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ATTACHMENT 2

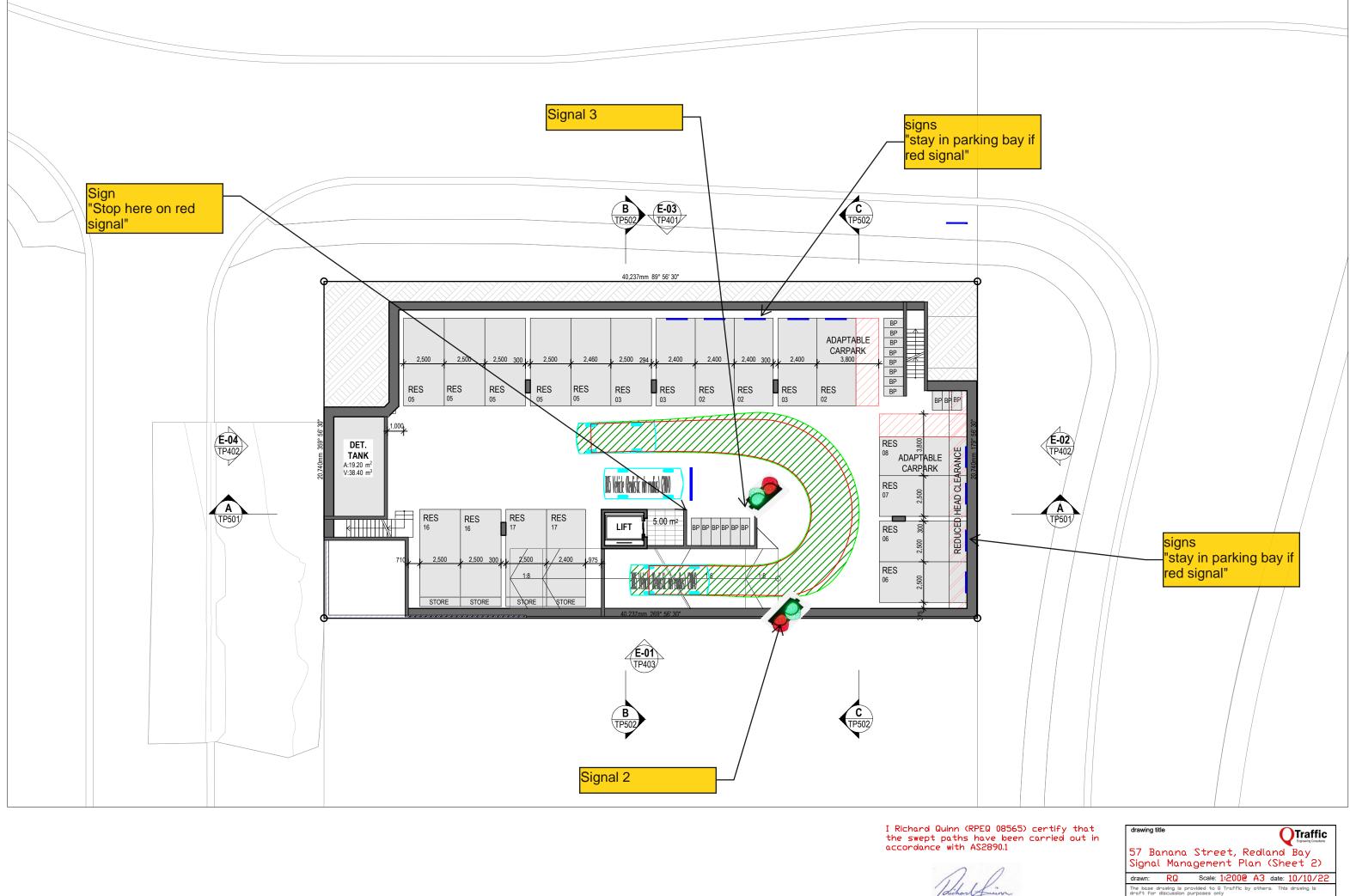
Signal Management



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The signals then change state (Green entry, red basement) with a timing sequence for potential movement through to basement.





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ATTACHMENT 3

Example Signal Management

