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Transport Engineering Report

'Ebb and Flow'

Residential Multi-Unit Dwelling Towers

20 Pidgeon Close, West End

Cornerstone Properties



Revision Record

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1. Introduction

1.1. Purpose

Colliers International Engineering & Design (TTMC) Pty Ltd ('Colliers' or 'CED') has been engaged by Cornerstone Properties to prepare a Transport Engineering Report (TER) for a proposed high-density residential development to be located at 20 Pidgeon Close, West End, to be known commercially as '*Ebb and Flow*'.

It is understood this report will accompany a Development Application (DA) to be lodged with Brisbane City Council ('Council').

1.2. Scope

The scope of the transport aspects investigated includes:

- Reviewing the prevailing traffic and transport conditions surrounding the site.
- Confirming the parking supply required to cater for development demands.
- Assessing the parking layout to provide efficient and safe internal circulation and manoeuvring.
- Assessing the access configuration, to provide efficient and safe manoeuvring between the subject site and the public road network for cars, service vehicles, cyclists and pedestrians.
- Identifying the service vehicle needs for the subject site and assessing the internal layout, to provide efficiency and safety for on-site service vehicle operations.
- High level assessment / commentary of the proposed development's likely traffic impacts on the surrounding road network.

The development plans have been assessed against the following guidelines and planning documents:

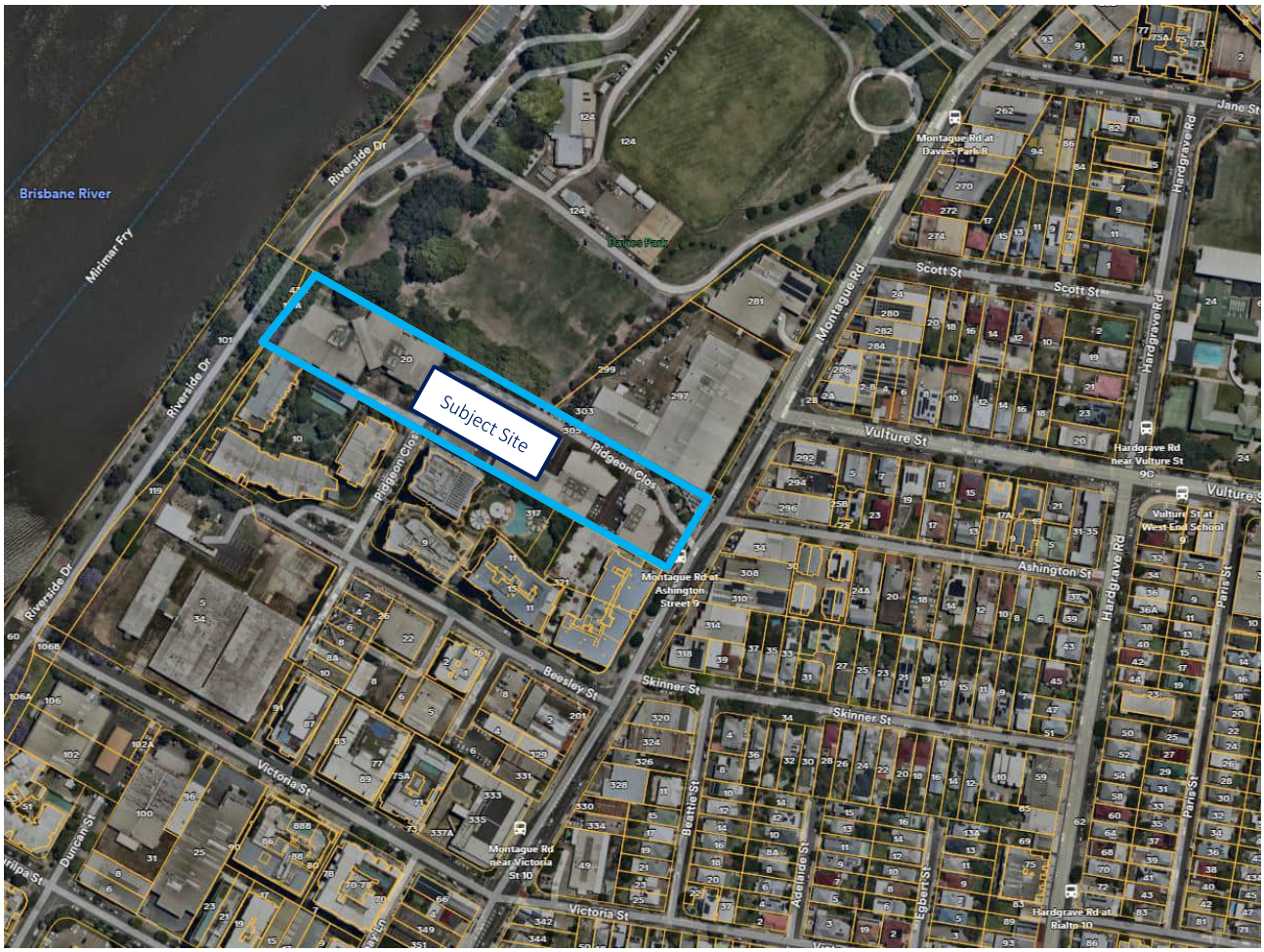
- Brisbane City Plan 2014, specifically the Transport, Access, Parking and Servicing (TAPS) Code and Planning Scheme Policy (PSP).
- Australian Standards for Parking Facilities (where required), specifically:
  - Part 1: Off-street car parking (AS2890.1:2004).
  - Part 2: Off-street commercial vehicle facilities (AS2890.2:2018).
  - Part 3: Bicycle parking (AS2890.3:2015).
  - Part 6: Off-street parking for people with disabilities (AS2890.6:2009).

2. Site Location

The subject site is located at 20 Pidgeon Close, West End, as shown in Figure 2.1.

The property description is Lot 2 on SP114795.

The subject site has road frontage to both Pidgeon Close and Montague Road.



Source: Nearmap

Figure 2.1: Site Location

The subject site currently contains a mix of commercial and light industrial land uses/tenancies.

A typical cross-section for the subject site's Montague Road frontage is provided in Figure 2.2 overleaf.



Source: Google StreetView

Figure 2.2: Montague Road Carriageway Cross-Section (looking north, subject site on left beyond first driveway)

3. Site Travel Environment

3.1. Public Transport Facilities and Services

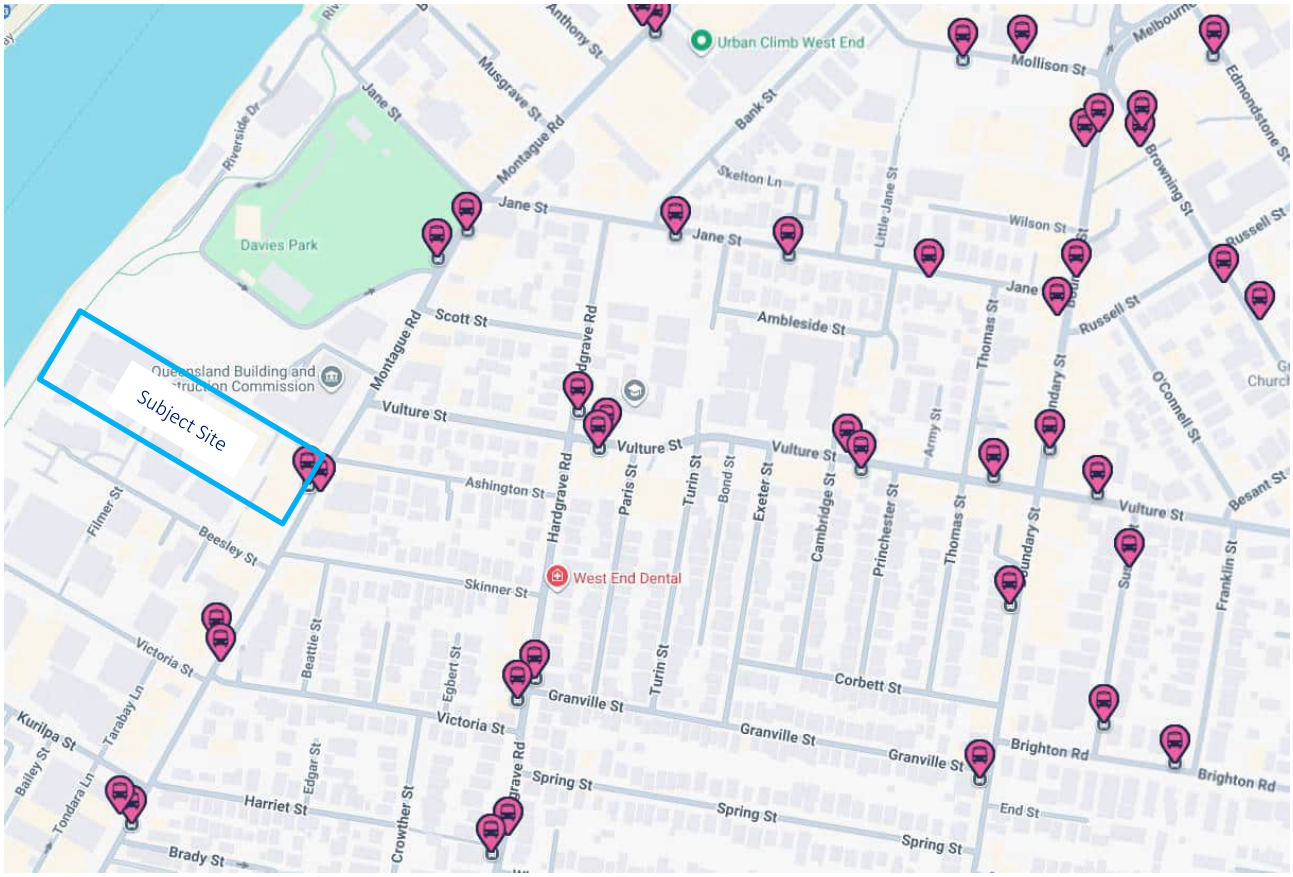
3.1.1. Train Services

The subject site is not located in particularly close proximity to rail infrastructure, with the South Brisbane railway station approximately 2km walking distance to the north-east (25 minutes).

The station is serviced by the Beenleigh, Cleveland and Gold Coast lines and Brisbane Airport, Doomben, Ferny Grove and Shorncliffe destinations. Trains travel in each direction at a frequency of under than five (5) minutes all day, with individual lines operating at a peak frequency of two (2) services every 15 minutes and off-peak frequency of one (1) service every 15 minutes.

3.1.2. Bus Services

There are two (2) bus services which operate along Montague Road, across the frontage of the subject site. Figure 3.1 identifies Translink bus stops in the immediate vicinity of the subject site, located along Montague Road, Vulture Street, Jane Street and Hardgrave Road.



Source: Translink

Figure 3.1: Translink Bus Stops in the Vicinity of the Subject Site

Table 3.1 outlines the routes that service these nearby Montague Road stops, detailing their respective weekday and weekend headways (peak and off-peak) as well as operating hours.

Table 3.1: Bus Routes and Operating Hours/Frequency Near the Subject Site

Route	Description	Weekday	Saturday	Sunday + Public Holidays
60 (Blue City Glider)	West End ferry terminal to Teneriffe ferry terminal	5:30am to 11:30pm Peaks ~ 5 min Off-peak ~ 10-15 min	12:00am to 12:00am All-day ~ 10-15 min	12:00am to 12:00am All-day ~ 10-15 min
192	Yeerongpilly to City	5:30am to 8:00pm Peaks ~ 20 min Off-peak ~ 30 min	N/A	N/A

In addition to these services, there are a significant number of other services (approximately 25) available via the Cultural Centre bus station and South East Busway. While these are at least a 2km walking distance from the site, these can be accessed via the 60 and 192 services.

As per the above map, there is an existing bus stop located on the subject site's Montague Road frontage. The closest Blue City Glider stop is located just north of Victoria Street.

3.1.3. Ferry Services

While the subject site is located in close proximity to the Brisbane River, there are no ferry terminals in the immediate surrounding area. The West End ferry terminal is located approximately 1.5km walking distance to the south (20 minutes).

3.1.4. Summary

The subject site is generally well serviced by public transport options, particularly bus services, which is typical for development within inner-city Brisbane.

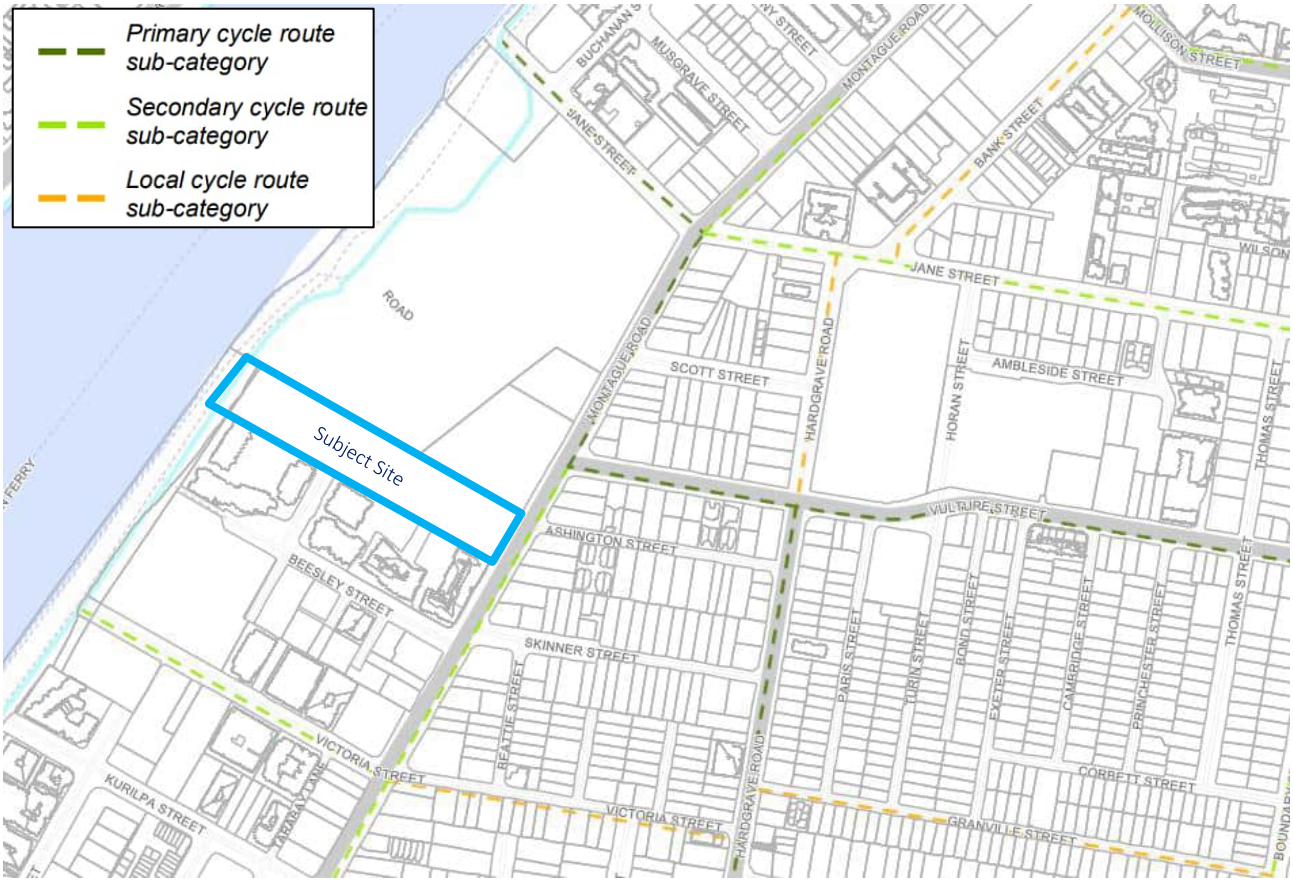
The subject site's location has been assessed using the "Transit Score" location performance tool. This tool assesses the relative "usefulness" of nearby routes, based on the distance to the nearest stop on the route, the frequency of the route and type of route. It provides a numerical score between 1 and 100, with 1 being heavily car dependent.

The site achieves a score of 71 out of 100, which is described as "*Excellent Transit*", whereby "transit is convenient for most trips".

3.2. Active Transport Facilities

3.2.1. Bicycles

Figure 3.2 overleaf illustrates the surrounding cycle routes, as defined by Council's Bicycle Network Overlay.



Source: Council's Interactive Mapping – Bicycle Network Overlay

Figure 3.2: Bicycle Network Overlay in the Vicinity of the Subject Site

This overlay identifies that most roads in the surrounding local network are classified, with a mix of 'primary cycle routes', 'secondary cycle routes' and 'local cycle routes'.

Cycling accessibility for the subject site is generally satisfactory, with both on- and off-road cycling infrastructure / facilities surrounding the subject site.

3.2.2. Pedestrians

Pedestrian footpaths are currently provided within both verges of all roads in the vicinity of the subject site. Connections are provided to public transport infrastructure / facilities and signalised crossings are provided at adjacent intersections (including the signalised Montague Road / Vulture Street intersection along the subject site frontage), to facilitate movement across major roads and access to the broader network.

Existing walkability surrounding the subject site is reasonably good, with connections also provided to surrounding public transport facilities.

The subject site's location has been assessed using the "Walk Score" location performance tool. This tool considers the number of facilities and amenities in close proximity and provides a numerical score between 1 and 100, with 1 being heavily car-dependent and 100 reflecting a location that is easily accessible to abundant facilities by foot.

The site achieves a score of 93 out of 100, which is described as a "*Walker's Paradise*", whereby "daily errands do not require a car".

3.3. Road Network

3.3.1. Road Hierarchy

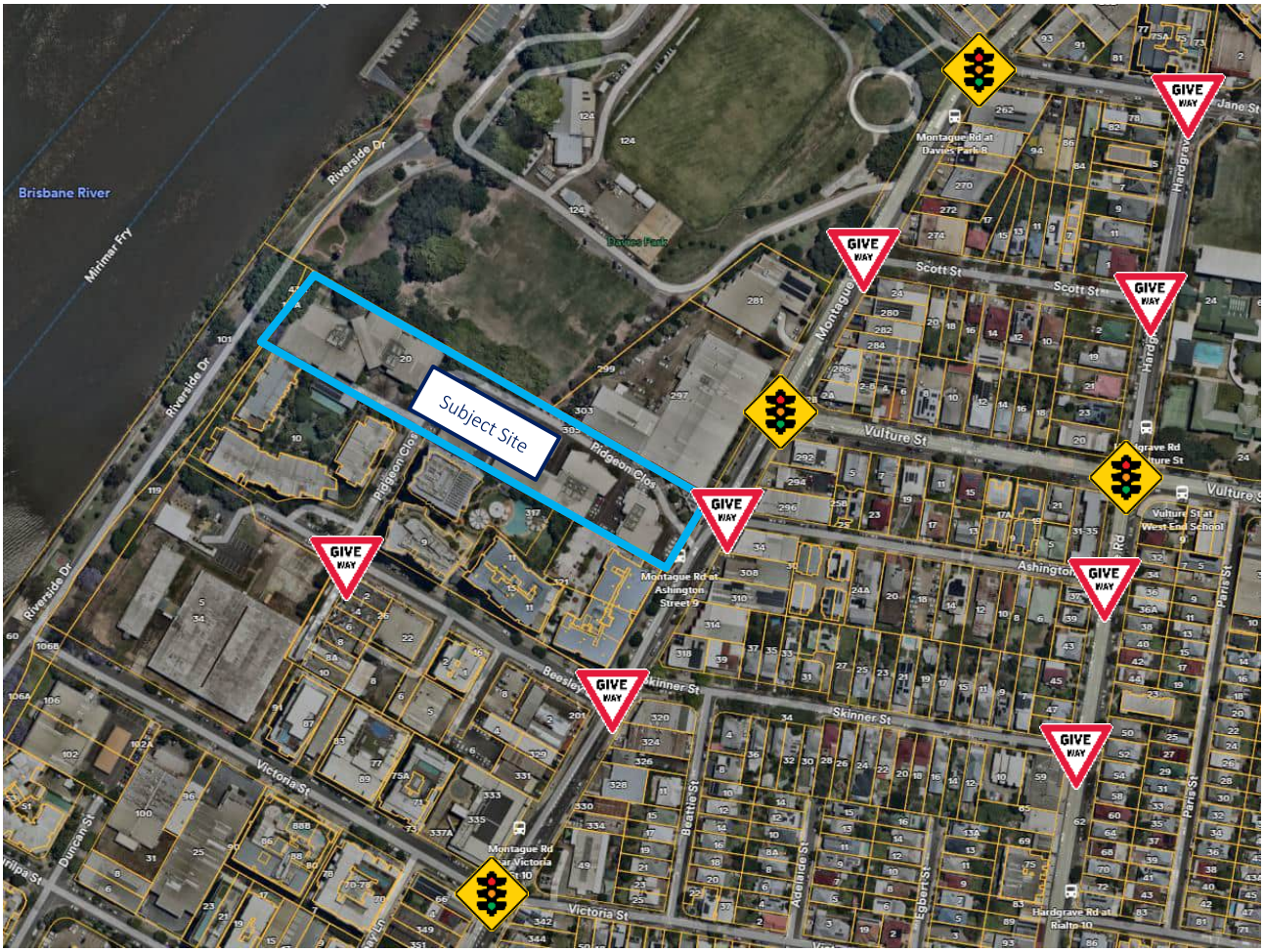
The characteristics of the existing road network, surrounding the subject site, are summarised in Table 3.2. It is noted that all roads within the vicinity of the subject site are under Council jurisdiction.

Table 3.2: Characteristics of the Surrounding Road Network

Road	Speed Limit	Road Configuration			Classification
		Reserve Width	Carriageway Width	Lane Configuration	
Montague Road	50km/h	20.0m	12.0m	Two-way, two-lane, undivided	District Access
Vulture Street	50km/h	20.0m	12.0m	Two-way, two-lane, undivided	District Access
Jane Street	50km/h[1]	20.0m	12.0m	Two-way, two-lane, undivided	Neighbourhood Access
Beesley Street	50km/h[1]	20.0m	10.0m	Two-way, two-lane, undivided	Local Access
Pidgeon Close	50km/h[1]	16.0m	7.0m	Two-way, two-lane, undivided	Local Access

[1] Default speed limit on unsigned roads in built-up areas in Queensland.

A summary of the various intersection treatments along Montague Road and Hardgrave Road, surrounding the subject site, is shown in Figure 3.3.



Source: Nearmap

Figure 3.3: Existing Intersection Treatments

3.4. Kerbside Parking Environment

In addition to the car parking supply provided on-site, there is a limited supply of kerbside parking within the surrounding road network, which is located within the Brisbane Central Traffic Area. As such on-street parking restrictions within this area are active between 7:00am and 6:00pm Monday to Friday, as well as 7:00am and 12:00pm on Saturday, with a 2-hour parking limit.

3.5. Transport Planning

Council's Local Government Infrastructure Plan (LGIP) has been reviewed, and lists the following particularly relevant project in the vicinity of the subject site:

- WES-RC-020: Montague Road (Grey Street to Vulture Street) – road corridor project (2026-2031).

Council's long-term planning is to widen Montague Road, between Merivale Street in the north to Ferry Road in the south.

Council has progressively been obtaining increases in the road reserve width along Montague Road as development has occurred along the corridor.

The road widening is to facilitate duplication of the Montague Road carriageway to a four-lane, two-way carriageway with auxiliary turn lane, on-street cycle lanes and a 5.0m wide verge.

The extent of planned road widening along the Montague Road site frontage, based on Council's Road Planning Note (RPN), is approximately 6.0m. The dimensions of the required property set back to allow for the widening along Montague Road was provided by Council.

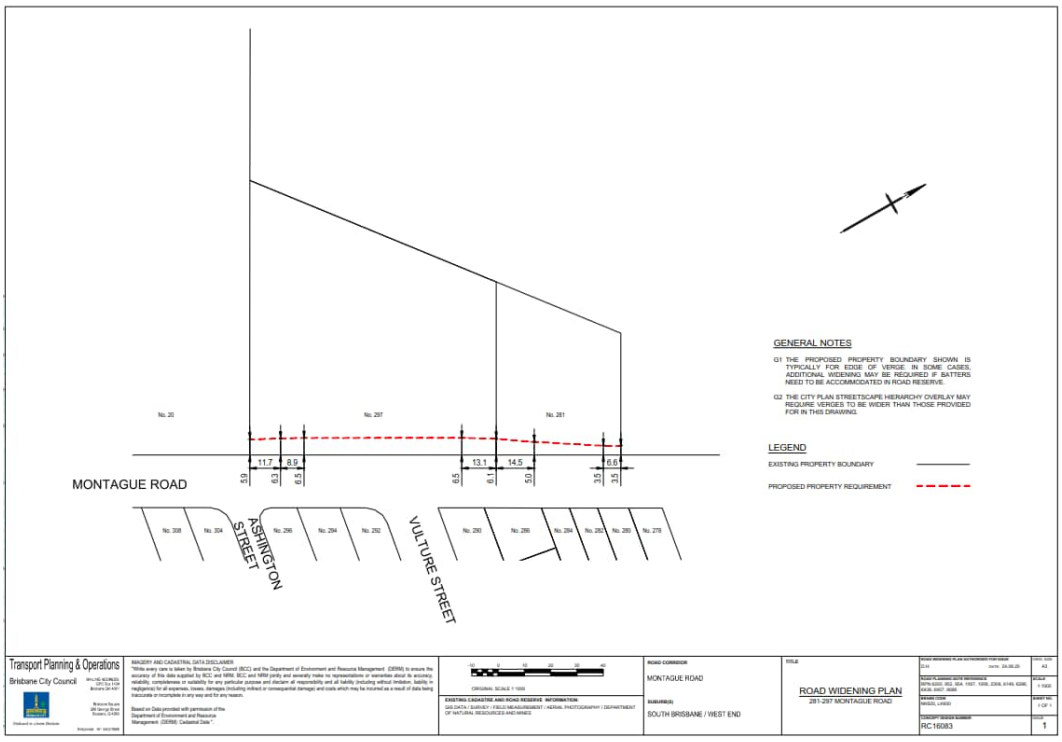


Figure 3.4: Montague Road Widening Plan

In 2024, Brisbane City Council released a draft version of the Montague Road Transport Study. As noted in its foreword, the purpose of the study is to identify "*strategic priorities and potential future options for how we can improve travel for all transport modes and support the needs of people who live, work, and travel along the Montague Road corridor and surrounding network.*"

The figure below identifies numerous intersections which present opportunities for upgrade, including that of Montague Road and Vulture Street, which is in close proximity to the subject site, as shown below.

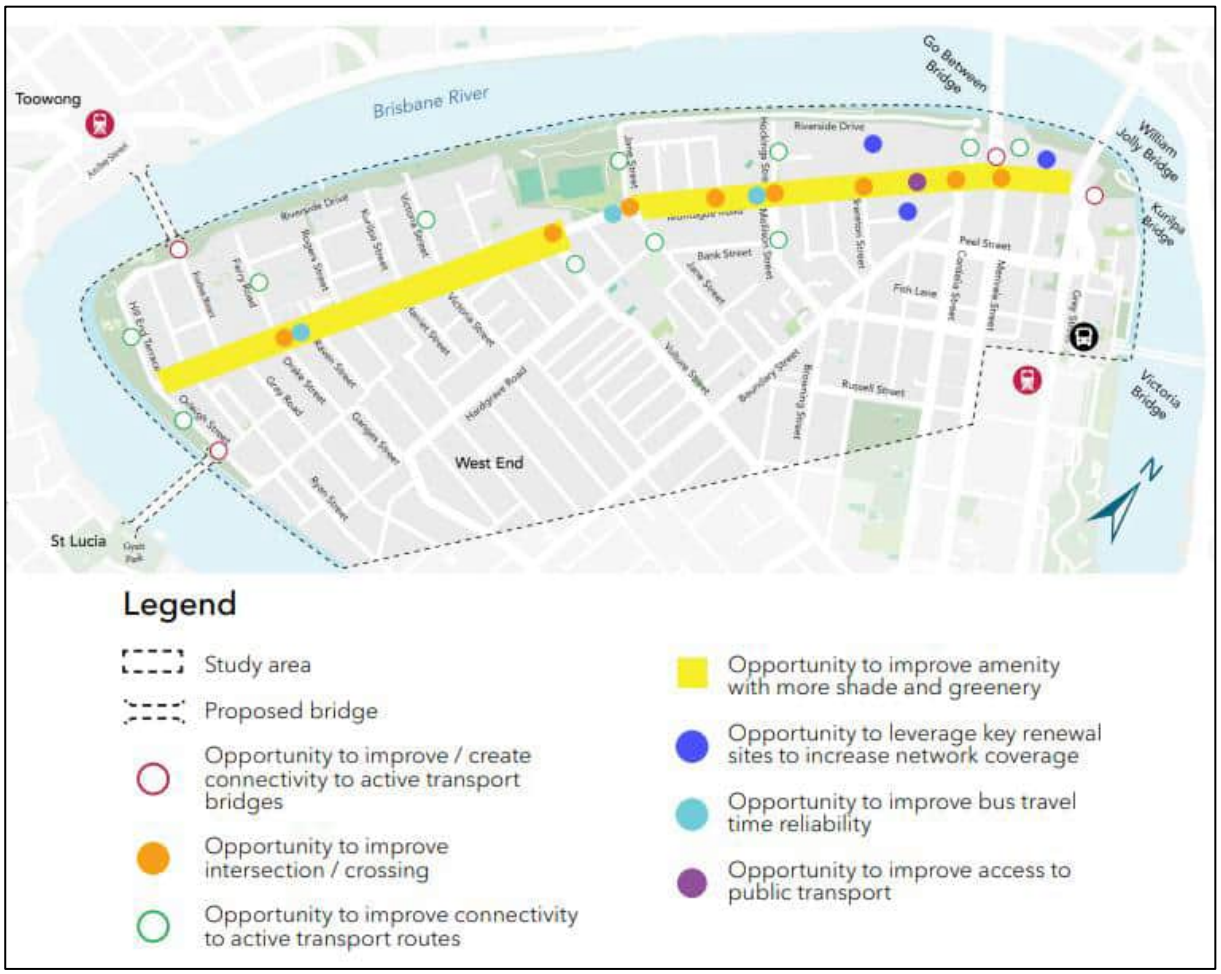


Figure 3.5: Montague Road Transport Study, Potential Future Works

The study includes a potential future Strategic Transport Network Plan (shown below) which identifies the broad location / alignment of the various components of such a network.



Figure 3.6: Montague Road Transport Study, Strategic Network Plan

The study indicates that the section of Montague Road between Vulture Street and Ferry Road (inclusive of the subject site frontage) is proposed to be upgraded from the existing two-lane configuration with on-street parking to a four-lane cross-section with dedicated bus lanes and a bicycle lane, as shown in the figure below.



Figure 3.7: Montague Road Transport Study, Montague Road Cross Section (Vulture Street to Ferry Road)

An indicative concept prepared by MR Cagney shows a potential layout of this intersection, inclusive of land dedication requirements from the properties to the immediate west of Montague Road.

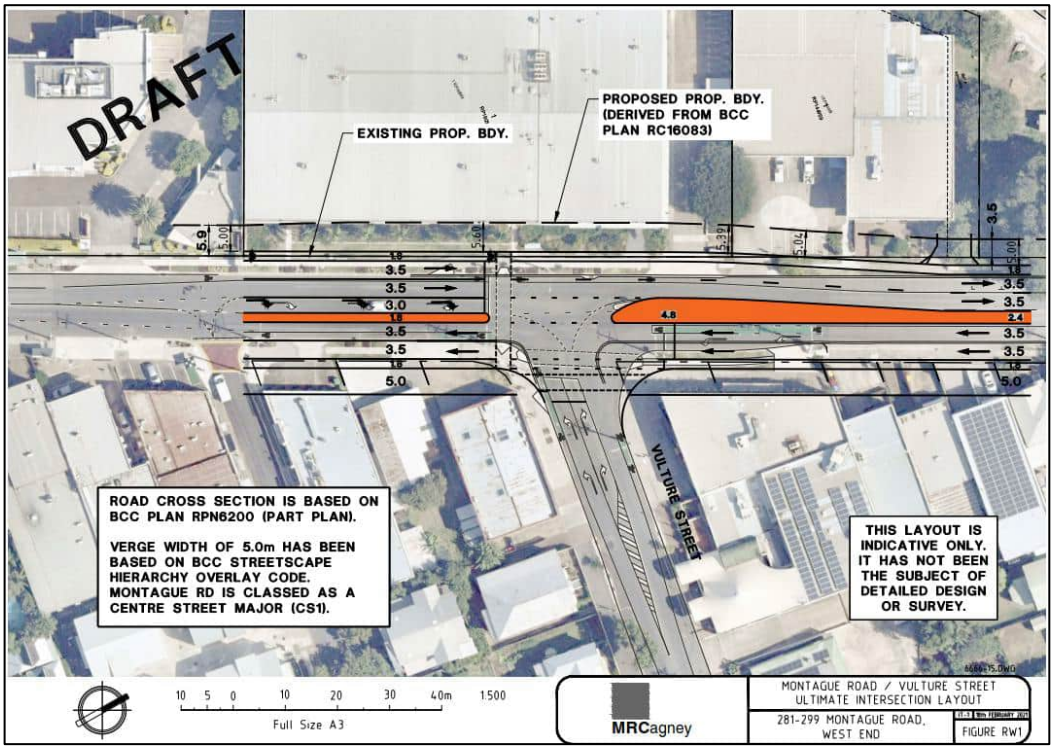


Figure 3.8: Montague Road / Vulture Street Intersection Concept

The proposed development has provided a road widening zone across the Montague Road frontage that is coherent with the requirements of WES-RC-020, he outcome approved at 297 Montague road and the alignment of the front of the boundary to 321 Montague Road.

4. Proposed Development

4.1. Development Profile

The proposed high-density residential development is comprised of three (3) towers (ranging from 16 to 25 levels).

Construction of the development may be staged, however details are not currently available.

A total of 430 units is proposed across the combined stages of development with a mix of units ranging from 1-bedroom up to 5-bedroom penthouses. A detailed breakdown of the unit yield is provided in Table 4.1.

In addition, there are several retail tenancies provided on the ground level, with a total GFA of 380m^2.

Architectural plans for the proposed development, prepared by Bureau Proberts, are included in **Appendix A**.

Table 4.1: Proposed Development Yield

Unit Configuration	Tower 1	Tower 2	Tower 3	Total Units	Total Bedrooms	Approx Unit Proportion
One Bedroom	-	-	35	35	35	8%
Two Bedroom	-	119	56	175	350	41%
Three Bedroom	-	123	56	179	537	42%
Four Bedroom	25	14	0	39	156	8%
Five Bedroom	2	2	0	4	20	1%
Total	**27**	**258**	**147**	**432**	**1098**	**100%**

4.2. Parking

The architectural plans for the proposed development include the following parking supplies across the combined stages of development:

- 790 residential tenant car parking spaces, located across seven (7) car parking areas, comprising:
  - two basement levels for Tower 1 (Stage 3).
  - three basement levels for Tower 2 (Stage 2).
  - two basement levels for Tower 3 (Stage 1).
- 22 visitor car parking spaces, including 1 x PWD space, distributed under each tower at ground level
- 482 bicycle spaces, split between residents (432) and visitors (50).

Further details regarding the proposed parking provisions are included in Section 5.

4.3. Vehicular Access

The proposed development includes the following access arrangements:

- Type B2 (7.0m) crossover at the southern edge of the site's Montague Road frontage. It is understood that applicant is seeking to maintain the existing all turns arrangement for cars operating at the current driveway on Montague Road, with some limitations imposed on large service vehicle movements.
- Type B2 (7.0m) crossover essentially forming the northward extension of Pidgeon Close, as per the existing arrangement, and catering for both entry and exit movements of both light and heavy vehicles.

4.4. Servicing

The development plans allow for access of vehicles up to the size of an 8.8m Medium Rigid Vehicle (MRV) for deliveries and a 10.3m rear-lift Refuse Collection Vehicle (RCV) for refuse collection.

A dedicated servicing area is provided on the ground level of each tower (two for tower 2), with two individual loading bays for rear-lift RCV / MRV, and an SRV. Consequently, across the whole development loading bay provision is for 4 x RCV / MRV bays and 4 x SRV bays.

It is proposed that large service vehicles (ie >7m long) be prohibited from entering via the Montague Road driveway, but otherwise there are to be no limitations on entry / exit movements.

Further details regarding the proposed servicing arrangements are included in Section 7.

5. Parking Arrangements

5.1. Parking Supply

5.1.1. Car Parking

The car parking supply requirements for the proposed development have been assessed against Table 13 of Council's TAPS PSP, based on the subject site's location within the City Core. Table 5.1 outlines the car parking requirements for the combined stages of the proposed development (including residential and retail parking) and the proposed provisions.

Table 5.1: Council's TAPS PSP Car Parking Requirements and Provisions

User	Car Parking Requirement	Extent	Maximum Permitted Parking		Proposed Parking Provision
Resident	Max. 0.5 spaces per 1 bedroom unit	35	17.5	547	790
	Max. 1 space per 2 bedroom unit	175	175		
	Max. 1.5 spaces per 3 bedroom unit	179	268.5		
	Max. 2.0 spaces per 4-5 bedroom unit	43	86		
Visitor	1 visitor space per 20 units	430	22	22	22
Retail	Max. 1 space per 200m^2 GFA	380m^2 GFA	2		0
Total					**812 spaces**

With the 2025 adoption of an expanded city core boundary (as defined by Council's Transport, Access, Parking and Servicing Planning Scheme Policy (TAPS PSP), the maximum permissible parking supply now applicable to the residential part of the development equates to a provision of 569 car spaces, with 547 spaces allocated to residents and 22 spaces allocated to visitors. As seen in Table 5.1, the development scheme proposes a total of 812 car parking spaces, including one (1) PWD space, for a total provision rate of 1.89 spaces per unit. Notably, the proposed development scheme includes parking supply at a rate higher than the parking requirements specified in the recent amendments to Council's *City Plan 2014*:

- A resident car parking supply of 790 spaces is proposed, which exceeds Council's maximum requirement. Further discussion regarding the suitability of this rate of provision is included in the following section.
- A visitor car parking supply of 22 spaces is proposed, which satisfies Council's minimum requirement.
- No parking has been allocated for the very small retail component of retail space, as permitted by the planning scheme.

The proposed parking supply rate for residents is considered acceptable for the reasons outlined in Section 5.1.2.

5.1.2. Resident Parking Supply

Provision of car parking above the maximum rate stated in Council's TAPS PSP, particularly for inner-city residential development, does not directly translate into an equivalent increase in weekday peak hour traffic generation because the provision of a car space for inner city residents does not correlate directly with a resident utilising a car during the weekday road peak hour periods.

POTENTIAL MAXIMUM ADDITIONAL TRAFFIC

Given the very low baseline for residential traffic generation (see Section 8) in an inner city location such as this, even if there was a direct linear correlation between traffic generation and the proposed additional car parking, it would result in very few additional trips (in the order of 36vph).

It is important to note, however, that an increase in parking supply, reflective of higher vehicle ownership, does not necessarily translate into a proportional increase in traffic generation. In highly accessible inner-city locations such as West End, vehicle ownership and vehicle use are increasingly decoupled. Residents may choose to own a vehicle for occasional, weekend, recreational or regional travel purposes while continuing to rely on public transport, walking and cycling for a significant proportion of daily trips.

Consequently, Colliers believe any additional traffic associated with proposed additional car parking (without additional dwellings / population) would be less than that suggested by a direct linear correlation. It is not considered unreasable to assume a 33% reduction, resulting in the increase in traffic being limited to just 24vph, or 1 extra car every 150 seconds

COUNCIL POLICY & MARKET EXPECTATION

The recent change to 'City Core' boundary within the City Plan was understood to be a targeted policy initiative from BCC aimed at 'improving housing affordability'. Being that a reduced requirement for on-site parking could reduce construction costs, both making new multiple unit dwelling (MUD) developments more feasible to build (delivering more housing supply) and also reduced sale price of units owing to the lower costs to deliver.

Given the nature of the proposed development, and likely higher price point of units, the additional parking makes up a smaller proportion of unit construction/sale price and therefore this does not have a significant bearing on the project's overall feasibility.

There are also market driving factors influencing what buyers in this area would desire in the way of on-site parking for these larger unit types. As such, the development represents an evolution in travel and parking behaviour rather than causing a sudden mismatch between planning policy and buyer expectations.

It is also recognised that a secondary driver of the policy is to encourage a change in travel behaviour, with fewer people owning cars and thus choosing more sustainable transport modes.

However, based on the site specific travel environment, the provision of additional car parking is not considered unreasonable in this instance.

EXISTING TRAVEL ENVIRONMENT

The underlying Performance Outcome within the TAPS Code that dictates parking supply in the 'City Core'/'City Frame' area is Performance Outcome (PO) 12. The same PO12 applies to both the 'City Core' and 'City Frame' areas, which indicates that *"Development in the City core and City frame as identified in Figure a provides car parking spaces at rates to discourage private car use and encourage walking, cycling and the use of public transport."*

The very location of the site in an inner-city area with high levels of walkability to amenity (and complimentary land-uses), various public transport options and on-site bicycle parking provisions supports satisfaction of this PO.

To demonstrate this, the site's location has been assessed using the "*WalkScore*" location performance tool. This tool considers the number of facilities and amenities within close proximity and provides a numerical score of between 1 and 100, with 1 being heavily car dependent, and 100 reflecting a location that is easily accessible to abundant facilities by foot. Using the Montague Road frontage is the point of assessment, this development achieves a score of 92 out of 100, which is considered as "Walker's Paradise", whereby "daily errands do not require a car".

The site's location has also been assessed using the "*TransitScore*" location performance tool. This tool assesses the relative "usefulness" of nearby routes, as defined as the distance to the nearest stop on the route, the frequency of the route, and type of route. It provides a numerical score of between 1 and 100, with 1 being heavily car dependent. This development achieves a score of 70 out of 100, which is considered to be "Excellent Transit", whereby "transit is convenient for most trips".

EXISTING TRAVEL BEHAVIOUR

The high level of walkability and access to public transport in West End is clearly demonstrated when reviewing the "Method of Travel to Work" data from the 2016 and 2021 Australian Bureau of Statistics (ABS) Census. It should be noted that typically reference would only be made to the latest available (2021) census results, however given the impact of Covid lockdowns on travel behaviour in 2021, the 2016 census results were also considered. Whilst the significant increase in the 'work from home' response in 2021 compared to 2026 suggests Covid did affect travel behaviour, the relativities of travel modes between 2016 and 2021 are comparable, and both sets of data are considered useful.

As illustrated in Table 5.2 , when compared to the broader Brisbane Local Government Area (LGA), West End residents exhibit:

- significantly lower car dependency (≈33% lower)
- significantly higher public transport (primarily bus) patronage (≈45% higher)
- significantly higher active transport (both walk and cycle) participation (≈3 times as high)

These splits are not surprising given the high proportion of residents who work in the CBD and inner-city suburbs, which can be easily accessed on foot, by bicycle or by public transport.

Essentially, the existence of sustainable transport infrastructure/services, coupled with the close proximity of places of employment / education (the dominant reasons for travel during weekday road peak hour periods), provides residents with an abundance of travel choice.

Table 5.2: "Method of Travel to Work" – West End Compared to Wider Brisbane LGA (Source: ABS Census 2016 and 2021)

Mode	West End 2016		West End 2021		Brisbane LGA 2016		Brisbane LGA 2021	
Train	1.7%	23.3%	0.9%	12.2%	6.9%	15.8%	3.7%	8.5%
Bus	19.6%		10.5%		8.5%		4.6%	
Ferry	2.0%		0.8%		0.4%		0.2%	
Taxi / Ride-share	0.4%		0.6%		0.2%		0.4%	
Car, driver	36.8%	40.4%	31.7%	34.5%	55.6%	60.4%	48.1%	51.8%
Car, passenger	3.6%		2.8%		4.8%		3.7%	
Truck	0.2%		0.1%		0.5%		0.4%	
Motorcycle	1.5%		1.2%		1.0%		0.8%	
Bicycle	7.5%	18.7%	4.3%	12.2%	1.8%	5.9%	1.2%	4.4%
Walked only	11.2%		7.9%		4.1%		3.2%	
Other	2.0%		2.2%		1.3%		1.1%	
Worked at home	4.9%		27.1%		4.8%		21.4%	
Did not go to work	8.3%		9.6%		9.4%		10.9%	
Not stated	0.4%		0.3%		0.6%		0.3%	

Source: Australian Bureau of Statistics Census 2016 and 2021,

COMPARABLE DEVELOPMENT

The residential parking supply 790 spaces for 430 units (or 1090 bedrooms) equates to 1.83 spaces per unit or 0.72 spaces per bedroom.

This parking supply is comparable to that proposed (and accepted by BCC) at 17-27 Skyring Terrace, Newstead (BCC Ref: A006375195), which includes 453 spaces for 219 units (or an estimated 521 bedrooms), which equates to 2.07 spaces per unit or 0.87

The two developments are considered highly analogous, being large residential developments, located in urban renewal areas, on the river, approximately 2.5km from the GPO, on the very edge of the City Core boundary, and hence the comparison is considered particularly relevant.

SGTP

To complement the public transport services and the walking and cycling infrastructure within the vicinity of the subject site, passenger set down and collection areas are to be provided on the ground level (for each tower and via both crossovers), to enable residents easy access to rideshare services.

Further, a Sustainable Green Travel Plans (SGTP) could be prepared with the intent that the SGTP is adopted by the Body Corporate's 'Community Management Statements' when the development becomes operational. The SGTP would actively encourage residents of the inner-city development to continue to make sustainable transport choices, particularly during the weekday morning and evening road peak periods when the road network is operating in a congested state.

SUMMARY

Whilst the residential parking supply exceeds the maximums identified by BCC as the acceptable outcome, the provision is considered appropriate for the following reasons:

1. The minimal difference in traffic generation (and thus impact on the surrounding external road network), compared to supplying parking at the maximum rate stipulated in Council's policy.
2. Use of sustainable travel modes during weekday road peak hour periods would not be discouraged.
3. Recommendation that an SGTP be prepared and adopted by the Body Corporate's 'Community Management Statement', to actively encourage residents of the inner-city development to continue to make sustainable transport choices.
4. Complementary public transport services and the walking and cycling infrastructure that already exists within the vicinity of the subject site.
5. The passenger set down and collection areas are to be provided on the ground level of the development, to enable residents easy access to rideshare services.

5.1.3. PWD Parking

Council's TAPS PSP identifies the requirements for one (1) PWD space for every 50 'ordinary' spaces, with a minimum of one (1) space.

For the proposed development, the number of 'ordinary' parking spaces is considered to be 22, which is equal to the visitor car parking supply. Resident car parking is not included within this total, given the Building Code of Australia (BCA) does not nominate any PWD requirements for Class 2 (residential) buildings. Based on a total of 22 'ordinary' spaces, a minimum of one (1) PWD space is therefore required.

The proposed development includes an allowance for one (1) PWD space on ground level in stage 1, satisfying the requirements of Council's TAPS PSP and the BCA.

5.1.4. Bicycle Parking

The bicycle parking supply requirements for the proposed development have been determined in line with Table 21 of Council's TAPS PSP.

The proposed development includes a total of 482 bicycle spaces, and Table 5.3 outlines the bicycle parking requirements for the proposed development and the proposed provisions.

Table 5.3: Council's TAPS PSP Bicycle Parking Requirements and Provisions

User	Bicycle Parking Requirement	Extent	Requirement (spaces)	Proposed Provision (spaces)	Location & Configuration #
Tower-1					
Resident	1 space per unit	27 units	27	27	Gnd: 27 SV
Visitor	1 space per 4 units		6.75	5 (ie 1 per 6)	Gnd: 5 SV
Total			**33.75**	**32**	
Tower-2					
Resident	1 space per unit	258 units	258	258	L1: 68 DH, 26 SV B1: 32 DH, 7 SV B2: 32 DH, 7 SV B3: 58 DH, 13SH, 15 SV
Visitor	1 space per 4 units		64.5	29 (ie 1 per 9)	Gnd: 29 SH
Total			**322.5**	**28**	
Tower-3					
Resident	1 space per unit	147 units	147	147	Gnd: 60 DH, 11 SV B1: 16 DH B2: 60 DH
Visitor	1 space per 4 units		36.75	16 (ie 1 per 9)	Gnd: 16 SH
Total			**183.75**	**160**	
Total					
Resident	1 space per unit	432 units	432	432	326 DH, 13 SH, 93 SV
Visitor	1 space per 4 units		108	50 (ie 1 per 8.6)	50 SH
Total			**540**	**468**	

 # DH = bikes in double tier horizontal racks, SH = bikes in single horizontal racks, SV = bikes in single vertical racks

The resident parking supply complies with Council requirements, however the visitor supply represents an alternative performance solution.

Austroads suggests (in Appendix I AP-G88-17) an appropriate visitor parking supply of 1/16 habitable rooms (interpreted as bedrooms) for an apartment house, or one per 12 flats. Application of these rates results in a suggested supply of between 36 and 68. The proposed supply across all three towers is 50, which falls within this range and is therefore considered acceptable.

The lower positions on the double tier horizontal racks plus the single horizontal racks represent 176/432 = 41% of resident spaces, and 100% of the visitor spaces, comfortably satisfying the minimum 20% nominated by AS2890.3.

Access to the non-ground level parking areas is via combination of the vehicular ramps, and the passenger lifts. Typically, upward movement would be via the lifts (ie departures from the basements in towers 2 and 3) and arrivals to the podium parking in tower 2, whereas downward movements would use the ramps.

5.2. Parking Layout

The proposed development will provide all resident car parking within basement levels, with visitor parking conveniently located at ground level. Table 5.4 overleaf identifies the characteristics of the proposed parking layout, with respect to Council's TAPS PSP design provisions.

In addition to this assessment, car manoeuvring for typical basement and podium car park levels is illustrated within Appendix B.

Table 5.4: Council's TAPS PSP Parking Design Requirements and Provisions

Design Aspect	TAPS PSP Requirement	Proposed Provision	Compliance
Car Parking			
Space length:			
Resident space (Class 3)	5.4m (min)	5.4m	TAPS PSP compliant
Tandem space (Class 3)	10.8m (min)	10.8m	TAPS PSP compliant
Visitor space (Class 3)	5.4m (min)	5.4m	TAPS PSP compliant
Small car space	5.0m (min)	5.0m	TAPS PSP compliant
PWD space (Class 5)	5.4m (min)	5.4m	TAPS PSP compliant
Garage (single, double)	3.2m / 5.3m	≥ 3.2m / ≥ 5.5m	TAPS PSP compliant
Space width:			
Resident space (Class 3)	2.6m (min)	2.4m	See Performance Solution 1
Tandem space (Class 3)	2.6m (min)	2.4m	See Performance Solution 1
Visitor space (Class 3)	2.6m (min)	2.4m-2.6m	See Performance Solution 2
Small car space	2.3m (min)	2.4m	TAPS PSP compliant
PWD space (Class 5)	2.4m + 2.4m 'Shared Area'	2.4m + 2.4m 'Shared Area'	TAPS PSP compliant
Garage (single, double)	6.0m / 11.4m	6.0m / 12.7m	TAPS PSP compliant
Aisle width:			
Parking aisle	6.2m (min)	6.2m	TAPS PSP compliant
Circulation ramp (2-way)	6.2m (min) + clearance	6.4-7.6 wall to wall	See Performance Solution 3
Circulation ramp (1-way)	3.0m (min) + clearance	4.0m wall to wall	TAPS PSP compliant
Parking envelope clearance	as per Figure m of TAPS PSP	as per Figure 5.2 of AS2890.1:2004	See Performance Solution 4
Maximum gradient:			
PWD parking	1:40 (2.5%)	Essentially Flat	TAPS PSP compliant
Parking aisle	1:20 (5.0%)	1:20 (5.0%)	TAPS PSP compliant
Ramp	1:6 (16.7%)	1:5 (20.0%)	See Performance Solution 5
Maximum gradient transitions[1]	1:8 (12.5%) summit 1:6.67 (15.0%) sag	1:10 (10%) summit 1:10 (10%) sag	TAPS PSP compliant TAPS PSP compliant
Parking aisle extension	2.0m past last bay or 8.0m aisle width	1.0-1.2m past last bay	AS2890.1:2004 compliant, see Performance Solution 6
Minimum height clearance:			
General minimum	2.3m	≥2.3m	TAPS PSP compliant
Over PWD space	2.5m	≥2.5m	TAPS PSP compliant
Bicycle Parking			
Wall-mount rack length (horizontal / vertical)[2]	1.8m / 1.2m (min)	1.8m / 1.2m	AS2890.3:2015 compliant
Rack spacing[2]	0.5m (min)	0.4m - 0.5m	AS2890.3:2015 partially compliant see Performance Solution 7
Manoeuvring / access paths[2]	1.5m (min)	1.5m	AS2890.3:2015 compliant

[1] Council's TAPS PSP is silent regarding this matter. Per Section 1.2 of Council's TAPS PSP, revert to AS2890.1:2004.

[2] Council's TAPS PSP is silent regarding this matter. Per Section 1.2 of Council's TAPS PSP, revert to AS2890.3:2015.

The proposed development's parking layout is generally consistent with the provisions of Council's TAPS PSP.

Further details in relation to deemed compliance of required provisions, or justification for design aspects resolved with performance solutions, are provided below:

Performance Solution 1: Resident car parking is provided with 2.4m bay widths, which in conjunction with the proposed 6.2m wide parking aisles, would be equivalent to User Class 1, as defined by Australian Standards (AS) 2890.1:2004. Therefore, the proposed bay and aisle widths are considered acceptable, noting that this meets the typical requirements under AS2890.1:2004 for resident car parking.

Performance Solution 2: It is noted that some of the visitor car parking spaces do not meet Council's TAPS PSP, which identifies a 2.6m minimum width.

Visitor car parking is provided with a mix of 2.4m and 2.6m bay widths, with approximately half the visitor parking supply are provided with reduced 2.4m width.

This alternative width meets the relevant AS2890.1:2004 minimum requirement, and consequently, is considered acceptable for a proportion of the visitor spaces.

Performance Solution 3: The proposed tower-1 ramp widths are slightly reduced from the minimum requirements of Council's TAPS PSP, being 6.4m wall to wall. Given the very low traffic generation of this particular car park, the reduced width is considered acceptable, assuming the provision of convex mirrors at the top and bottom of ramps.

Performance Solution 4: The development plans make allowance for structure/walls within the allowable envelopes adjacent to car spaces, as per Figure 5.2 of AS2890.1:2004. This differs slightly from the provision of Figure m within Council's TAPS PSP.

Notably, there is only a 50mm difference in acceptable column locations closest to the parking aisle and allowance for additional columns to be located adjacent to bays towards the front/end of the parking spaces. However, this difference is not expected to have any adverse impacts on the ability for vehicles to manoeuvre into or out of car spaces or open doors, the two (2) key considerations guiding these design envelopes around car spaces.

The provisions of AS2890.1:2004 are based on extensive research of the particular needs for both front- and rear-door opening, irrespective of whether vehicles enter in a forward gear or reverse-in. As such, this is considered an acceptable design solution to adopt.

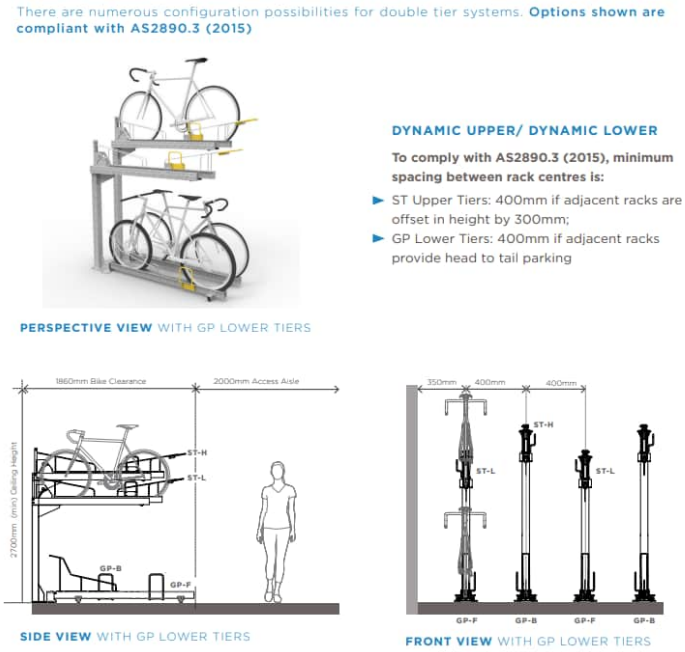
Performance Solution 5: Table 17 of Council's TAPS PSP requires that circulation ramps have a maximum grade of 1 in 6 (16.7%). However, Clause 2.5.3(b) within AS2890.1:2004 allows for varied maximum gradients in a private / residential car park setting. A maximum gradient of 1 in 5 (20.0%) is specified for ramps that cater for resident only parking.

All ramps within all three towers have a primary gradient of 1 in 5 (20.0%) and therefore comply with the maximum grade permitted by AS2890.1:2004.

Performance Solution 6: Council's TAPS PSP requires that terminated aisles either extend for at least 2.0m past the last car bay in an aisle, or the parking aisle is widened to a minimum of 8.0m, to provide sufficient manoeuvring area for the last bay. While the proposed aisle extension of 1.0m is reduced from Council's minimum requirement, it does match the minimum requirement of AS2890.1:2004 (Figure 2.3) and is therefore considered appropriate.

Performance Solution 7: Both the vertically mounted, and single horizontally mounted racks are spaced at 500mm, and are thus compliant with AS2890.3:2015.

The dual height horizontally mounted racks are a proprietary product from Cora BikeRack (models ST-L and ST-H, see below), and are designed specifically to operate with a 400mm spacing, and consequently are considered an appropriate alternative solution.



Parking Layout Summary: Overall, the proposed parking layout is generally designed in accordance with Council's TAPS PSP, noting the identified performance solutions above, which are deemed fit-for-purpose.

6. Access Arrangements

The proposed development includes the following access arrangements:

- Type B2 (7.0m) crossover at the southern edge of the site's Montague Road frontage. It is understood that applicant is seeking to maintain the existing all turns arrangement for cars operating at the current driveway on Montague Road, with some limitations imposed on large service vehicle movements.
- Type B2 (7.0m) crossover essentially forming the northward extension of Pidgeon Close, as per the existing arrangement, and catering for both entry and exit movements of both light and heavy vehicles.
- Pedestrian and cyclist access via both street frontages and also from Davies Park.

6.1. Montague Road Vehicular Access

The proposed vehicular crossover on Montague Road is similar too, though narrower than, the existing driveway serving the existing development. The proposed driveway is moved to the south of the frontage, and takes the form of a 7m wide Type B2 crossover.

It is understood that applicant is seeking to maintain the existing all turns arrangement for cars operating at the current driveway on Montague Road. Upon opening of the Pidgeon Close driveway, it is recommended that the Montague Road driveway limit large service vehicle movements to exit only, with appropriate signs facing Montague Road stating that entry is restricted to vehicles under 7m long.

Should Council support right turn movements at this driveway, and recognising the likelihood of increased right turn volumes, additional works may be required. These could include, at a minimum, conversion of the southbound parking lane between Ashington Street and Skinner Street into a general traffic lane, and also the implementation of a keep clear zone on Montague Road across the proposed driveway.

It is understood that ultimately, and conditional upon the proposed widening of Montague Road, the bus stop currently located on the site frontage will be relocated to the north, in front of adjacent site, and be located within the kerbside lane (ie not indented) just south of the Vulture Street intersection. Until such time, it may be necessary to temporarily relocate the bus stop to the south.

The access design provisions of the southern Montague Road access and respective parameters of Council's TAPS PSP are detailed in Table 6.1.

Table 6.1: Montague Road Access Arrangements

Design Aspect	TAPS PSP Requirement	Proposed Provision	Compliance
Width / crossover type to accommodate: • Cars[1,2] • Service Vehicles[1,3]	 Type C2 (12m) Type B2 (7.0m)	Type B2 (7.0m)	See Performance Solution 1 TAPS PSP compliant
Distance from: • Major intersection[1] • Adjacent driveway[1]	 30m (min) 15m (min)	 ≈70m (same side) 20m (opposite side) ≈15m	 TAPS PSP compliant TAPS PSP compliant
Sight distance[1]	90m (desirable) 70m (minimum)`	Clear sight to both Vulture Street and Beesley Street intersections (>70m)	TAPS PSP compliant
Driveway sight splays	2.0m wide x 2.0m deep (on each side)	2.0m wide x 2.0m deep (on each side)	TAPS PSP compliant
Minimum queuing provisions	13 cars (78m) in combination with other driveway	This driveway provides 8 cars / 48m (measured to car park ramp), with a total of 14 cars queue storage in combination with other driveway.	TAPS PSP compliant
Maximum driveway grade	1:20 (5.0%) maximum within first 6m	1:20 (5.0%) for first 6m	TAPS PSP compliant

[1] Based on Montague Road being classified as a 'major road', with a speed limit of 50km/h.

[2] Based on the access servicing low / medium turnover car parking spaces.

[3] Based on the access servicing design service vehicles up to the size of an RCV/MRV, & generating <100 service vehicle trips per day

The proposed southern Montague Road access arrangements are generally consistent with the provisions of Council's TAPS PSP. Further details in relation to deemed compliance of required provisions, or justification for design aspects resolved with performance solutions, are provided below:

Performance Solution 1

The BCC TAPS PSP uses car park capacity, and broad turnover bands (as well as frontage road classification) as inputs to determine the required crossover type for a proposed development.

However, being in an inner city location, car parking turnover / traffic generation will be low turnover, and Colliers consider that the methodology for determining an appropriate crossover type is not nuanced enough to apply to a large, but very low turnover car park.

The proposed development, has over 800 parking spaces, but is estimated to generate only approximately 100vph distributed over the two driveways ie with 50vph per driveway (see Section 8).

This generation (50vph) is comparable to that of a small 25 space retail carpark, for which BCC would only require a 7m wide type B1 crossover.

Consequently, while a Type C2 crossover is required by Council's TAPS PSP (cars only), a performance solution is proposed with the driveway incorporating a 7m wide Type B2 crossover.

As noted elsewhere in this report, it is proposed that large service vehicles (ie >7m long) be prohibited from entering via the Montague Road driveway, but otherwise there are to be no limitations on entry / exit movements.

Swept path analysis undertaken by Colliers (refer to **Appendix B**) indicates that the proposed modified Type B2 (7.0m) crossover is sufficient to accommodate the required service vehicle movements, including 10.24m rear-lift RCV and 8.8m MRV (exit only for both), SRVs and Vans / B99 cars.

Overall, the proposed crossover design is considered acceptable for the proposed development.

6.2. Pidgeon Close Vehicular Access

The proposed vehicular crossover on Pidgeon Close is largely consistent with the existing driveway serving the existing development. It takes the form of a 7m wide Type B2 crossover at the northern extent of, and forming an extension of, Pidgeon Close, and allows for entry and exit movements for both light and heavy (service) vehicles.

To assist with queue minimisation, **it is recommended** that a change in priority be implemented at this access, such that entering vehicles have priority, and those within the site are subject to give-way signage etc.

The access design provisions and respective parameters of Council's TAPS PSP are detailed in Table 6.2.

Table 6.2: Pidgeon Close Access Arrangements

Design Aspect	TAPS PSP Requirement	Proposed Provision	Compliance
Width / crossover type: • For Cars[1,2] • For Service Vehicles[1,3]	 Type C1 (9.5m) Type B2 (7.0m)	7m wide	See Performance Solution 1 TAPS PSP compliant
Distance from: • Minor intersection[1] • Adjacent driveway[1]	 10m (min) 3m (min)	 ≈70m ≈5m	 TAPS PSP compliant TAPS PSP compliant
Sight distance[1]	90m (desirable) 70m (minimum)	70+m clear sight to the south, towards the Beesley Street intersection	TAPS PSP compliant
Driveway sight splays	2.0m wide x 2.0m deep (on each side)	At least 2.0m wide x 2.0m deep (on each side)	TAPS PSP compliant
Minimum queuing provisions	13 cars (78m) in combination with other driveway	This driveway provides 6 cars / 36m (measured in both directions), with a total of 14 cars queue storage in combination with other driveway.	TAPS PSP compliant
Maximum driveway grade	1:20 (5.0%) maximum within first 6m	1:20 (5.0%) for first 6m	TAPS PSP compliant

[1] Based on Montague Road being classified as a 'minor road', with a speed limit of 50km/h, with <100vph.

[2] Based on the access servicing low / medium turnover car parking spaces.

[3] Based on the access servicing design service vehicles up to the size of an RCV/MRV.

The proposed Pidgeon Close access arrangements are generally consistent with the provisions of Council's TAPS PSP. Further details in relation to deemed compliance of required provisions, or justification for design aspects resolved with performance solutions, are provided below:

Performance Solution 1:

See commentary on the same issue for the Montague Road crossover design in Section 6.1

Overall, the proposed crossover design is considered acceptable for the proposed development.

6.3. Active Transport Access

Pedestrian and cycle access can be achieved from both road frontages and the Davies Park frontage, connecting to the lobbies for each of the three (3) towers as well as the ground level retail tenancies via footpath linkages.

7. Service Vehicle Arrangements

7.1. Council Requirements

Section 3 of Council's TAPS PSP identifies the following requirements in relation to design service vehicles and loading bays for the proposed residential and retail land uses. These requirements, along with the proposed provisions, are summarised in Table 7.1.

Table 7.1: Council's TAPS PSP Service Vehicle Requirements and Provisions

Land Use	Design Vehicle		Loading Bay Requirements
	Regular Access	Occasional Access	RCV
Multiple Dwelling	RCV	LRV	1[1]
Retail (200-500sqm GFA)	MRV	RCV	1 MRV + 1 VAN
Proposed Provisions	**RCV/MRV**	**RCV/MRV**	**2 RCV/MRV**

LRV = 10.7m Large Rigid Vehicle | MRV = 8.8m Medium Rigid Vehicle | RCV = Refuse Collection Vehicle

[1] Section 3.3 of Council's TAPS PSP indicates that a minimum of one (1) loading bay is required for the regular access vehicle, if no specific loading bay provisions are indicated in Tables 2, 3 or 4.

Council's TAPS PSP also details the following with respect to vehicle manoeuvring and on-site standing.

Occasional Access Service Vehicles

- The design service vehicle can perform a reverse movement, regardless of frontage road classification, for one (1) movement to/from the site.
- The vehicle can stand wholly contained within the site, clear of the verge.
- No formal loading bay provision is required.

Regular Access Service Vehicles

- This vehicle can enter and leave the site in a forward gear.
- This vehicle parks/stands in a dedicated on-site loading bay.
- A minimum of one (1) loading bay is required for the regular access vehicle for each land use.

7.2. Practical Demands

The proposed development is estimated to generate servicing demands as tabulated below.

Table 7.2: Estimated Practical Servicing Demands

Purpose	Description	Proposed Vehicle Size / Type	Assumed Frequency of Visitation	Avg Trucks Per Week	Avg Occupied Bay-Minutes Per week	Times of Typical Demand
Retail Refuse Collection	general refuse & recycling	Rear-lift RCV (≈10.3m long)	2 x weekly each (4 in total) (<15mins each)	4	60	Weekdays, 9am-5pm
Residential Refuse Collection	general refuse & recycling	Rear-lift RCV (≈10.3m long)	3 x weekly each (6 in total), by BCC (<1 hour each)	6	360	
Residential Furniture Trucks	bump-in / bump-out	MRV (9m)	432 x 2 = 864 trucks for full turnover, but based on an average occupancy of 2 years, an average of just over 1 truck per day (or 9 per week) (≈2 hours each)	9	1080	50% on Weekdays, 50% on weekends
Small resi deliveries	Amazon, supermarkets etc	SRVs / Vans	8 per weekday (<15 mins each)	40	600	Weekdays, 9am-5pm
Trades vehicles	Repairs etc	vans	5 per weekday (≈1 hour each)	25	1500	
Retail	Stock deliveries	Van-MRV	3 per weekday (<15 mins each)	15	225	
TOTAL				99	3825	

The broad temporal distribution of the ≈3825 bay minutes per week is as follows:

- Weekends (50% of furniture trucks) = 540mins
- Weekday evenings (25% of furniture trucks) = 270mins
- Weekday business hours (25% of furniture trucks) = 270mins
- Weekday business hours (RCVs)= 420mins
- Weekday business hours (retail / resi deliveries & trades) = 2325mins

Based on the above temporal distribution, on average, each of the 4 large bays is occupied for:

- just over 30 minutes during weekday business hours,
- just under 15 minutes during weekday evenings,
- just over 60 minutes on each weekend day

Similarly, based on the above temporal distribution, on average, each of the 4 SRV bays is occupied for just under 120 minutes during weekday business hours.

This level of demand provides significant spare capacity for short term peaks in demand and minimises any potential for the dock to be full and result in vehicle queuing.

With respect to the retail servicing demands, given they are so small by comparison to those of the primary residential use, sharing of the loading bays is considered appropriate, and unlikely to result in any significant conflict.

7.3. Proposed Loading Arrangements

7.3.1. Design Vehicles

The development proposal has adopted design service vehicles as follows:

- a Council 10.3m long rear-lift RCV
- an 8.8m long MRV for deliveries and furniture relocation

7.3.2. Loading Bay Provisions

A dedicated servicing area is provided on the ground level of each tower (two for tower-2), with two individual loading bays provided for a) a rear-lift RCV / MRV, and b) an SRV.

Consequently, across the whole development is 4 x RCV / MRV bays and 4 x SRV bays.

7.3.3. Management Measures

A number of desirable management measures have been identified, as follows:

- It is proposed that large service vehicles (ie >7m long) be prohibited from entering via the Montague Road driveway, but otherwise there are to be no limitations on entry / exit movements.
- Given a significant proportion of the service vehicle demand is for furniture trucks, it is recommended that a strict management protocol be implemented, whereby all visitations are booked in at least 2 days in advance, and are limited to a specific start time and duration. Additional restrictions will also be imposed on the large loading bays to ensure that deliveries are not permitted during regular refuse servicing times (once established).

7.3.4. Refuse Collection Provisions

Given the nature and scale of the development use, bulk bins serviced by a rear-lift RCV has been considered the optimal strategy for refuse collection. Permanent bin stores will be located on the Ground Level, adjacent to each of the loading areas

The rear-lift RCV – Council 10.24m design service vehicle – would enter the site in a forward gear (from Pidgeon Close) to access the corresponding loading area for each stage. Once refuse collection has been completed, the vehicle would depart the site by either Pidgeon Close of direct to Montague Road.

The refuse collection arrangements are detailed in a separate operational waste management plan.

7.4. Layout / Geometry of Proposed Servicing Facilities

In terms of service vehicle operations for the proposed development, all vehicles will be able to enter and exit the subject site in a forward gear. Swept path analysis for the rear-lift RCV, MRV and SRV design service vehicles to access the site and loading areas, before turning around and egressing, are demonstrated by Colliers Drawings within Appendix B.

Table 7.3 overleaf identifies the proposed service vehicle design provisions, with respect to Council's TAPS PSP requirements.

Table 7.3: Council's TAPS PSP Service Vehicle Design Requirements and Provisions

Design Aspect	TAPS PSP Requirement	Proposed Provision	Compliance
Loading bay length: • SRV bay • MRV bay • RCV bay	 • 7.0m (min) • 9.0m • 10.5m (min) + 1.5m (min) for operations = 12.0m total	 • ≥7.5m • ≥10.5m	 TAPS PSP compliant TAPS PSP compliant See Performance Solution 1
Loading bay width: • SRV bay • MRV bay • RCV bay	 • 3.0m (min) • 3.5m (min) • 3.5m (min)	 • ≥3.5m • ≥10.5m	 TAPS PSP compliant TAPS PSP compliant TAPS PSP compliant
Loading grades: • SRV standing • RCV / MRV standing	 • 1:20 (5.0% max) • 1:25 (4.0% max)	 • Flat • Flat	 TAPS PSP compliant TAPS PSP compliant
Height clearance: • SRV • MRV • RCV (rear-lift) / MRV	 • 3.5m (min) • 4.5m (min) • 3.6m (min)	 • >4.5m • >4.5m • >4.5m	 TAPS PSP compliant TAPS PSP compliant TAPS PSP compliant
Vehicle manoeuvring	Occasional access vehicles can complete reverse-in movement from road for one (1) movement. Regular access vehicles are required to turn around wholly on-site. Demonstrate access to all loading bays for the design vehicles, while maintaining minimum 0.3m manoeuvring clearance to all obstructions.	All service vehicles can enter and exit the site in a forward gear. All service vehicles can access the loading bay/area, while maintaining the minimum 0.3m manoeuvring clearance to all obstructions.	TAPS PSP compliant

Performance Solution 1

The lengths of the four larger service bays exceed the minimum specified by Council for an MRV sized furniture or delivery truck. They are somewhat shorter than desirable, however, for a 10.3m long rear-lift RCV.

Consequently, to allow for the 1.5m wide bulk bin to sit behind the truck for collection, the nose of the RCV will encroach into the adjacent traffic aisle by this same amount. The remaining 4.5m of aisle width will comfortably accommodate 1-way traffic flow, with the opposing traffic stream being temporarily delayed, whilst giving way. Given the straight alignment of the traffic aisle, visibility is excellent, and the presence and location of the RCVs will be clear to other drivers.

Furthermore, a maximum of just 3 collections per week will occur for each of the general waste and recycling streams. The maximum development traffic generation of 100vph occurring in the commuter peaks, and outside these times will be significantly lower. Refuse collections will ideally occur outside the commuter peak hours minimising potential conflicts with cars.

Given this issue only relates to RCVs and they only visit infrequently, the low development traffic generation, the ability to maintain generous 1-way flow around the encroaching truck and the good visibility, the proposed performance solution is considered acceptable in this instance.

The proposed servicing arrangements are therefore considered appropriate and generally consistent with the requirements of Council's TAPS PSP.

8. External Road Network Impact

The proposed development scheme includes a total of 432 units and retail area of 380m^2 GFA, with a total car parking supply for residential tenants of 790 spaces.

Typically, for high-density residential uses, a peak hour traffic generation rate of 0.19 vph per unit is adopted for both weekday AM and PM peak hour periods.

Given the lack of any retail car parking, the site is not anticipated to generate any significant retail traffic. These rates by other similar developments in the vicinity and have adopted for this proposal for consistency.

Regarding directional splits, in line with generally accepted traffic engineering practice, these are estimated to be:

- Weekday AM peak hour: 25% inbound / 75% outbound.
- Weekday PM peak hour: 65% inbound / 35% outbound.

Application of the above generation rates and directional splits would result in traffic demand estimates as shown in Table 8.1, for both the existing and proposed development.

The existing commercial / office uses on the site have in excess of 125 formal car parking spaces on site. Parking of this nature in this location would typically generate 0.6vph per space in the peak hours, with say 80% in the peak direction.

In this instance this equates to a total peak hour development traffic generation of 75vph. In the AM peak this comprises 60vph inbound, and 15vph outbound, and in the PM peak, it comprises 15vph inbound, and 60vph outbound.

Table 8.1: Estimated Development Peak Hour Traffic Generation for Proposed Development vs Existing Development

Land Use	Yield	Peak Hour Generation Rate	AM Peak Hour (vph)			PM Peak Hour (vph)		
			In	Out	Total	In	Out	Total
Proposed Multiple Dwelling	432 units	0.19 vph per unit	20	62	82	53	29	82
Existing Commercial / Retail	125 parking spaces	0.6vph per space	60	15	75	15	60	75
DIFFERANCE					7 more			7 more

The net change in 2-way traffic generation of the site is therefore estimated as just 7vph in each peak hour, and as such no additional impact assessment has been considered necessary.

However. based on the additional car parking provided (beyond the maximum permitted by the planning scheme), it has also been estimated (see Section 5.1.2) that there is the potential for an additional 24vph to be generated in the peak hours ie a total of 106vph. This is an increase of 31vph compared to the existing site generation.

In the context of the local traffic environment, an additional 1 vehicle every 2 minutes, distributed over multiple routes is considered highly unlikely to have any significant impact on traffic network operation, and consequently no further assessment is considered necessary.

9. Summary and Conclusion

Proposed Development

The proposal involves redevelopment of the site with three residential towers containing 432 apartments and approximately 380m² of ground-floor retail space. The development includes a mix of dwelling types, basement parking, bicycle facilities, loading areas and landscaped communal spaces. A road widening dedication is also proposed along the Montague Road frontage to accommodate Council's future corridor upgrades.

Parking Arrangements

The development provides 812 car parking spaces, comprising 790 resident spaces, 22 visitor spaces and 1 PWD space. Bicycle parking comprises 432 resident spaces and 50 visitor spaces. While resident parking exceeds Council's preferred maximum rate, the report concludes the provision is appropriate given the site's excellent accessibility to public transport, walking and cycling networks, and the relatively small additional traffic generated.

Access Arrangements

Vehicular access is provided via two driveways:

- A Montague Road access for passenger vehicles and site egress for larger vehicles.
- A Pidgeon Close access that accommodates all vehicle types and functions as the primary servicing entry.

Both driveways comply with relevant sight distance, vehicle manoeuvring and queue storage requirements. Separate pedestrian and cyclist access is provided from Montague Road, Pidgeon Close and the adjacent park frontage.

Service Vehicle Arrangements

Servicing is accommodated through dedicated loading facilities providing four MRV/RCV bays and four SRV bays. The design accommodates waste collection, delivery vehicles, furniture removalists and maintenance vehicles. All service vehicles can enter and leave the site in a forward direction, and the assessment found sufficient loading capacity with minimal risk of operational conflicts.

Road Impact Assessment

The development is expected to generate approximately 82vph (with potential for up to approximately 100vph) during both the AM and PM peak periods . Compared with the existing commercial use, this represents only a modest increase of around seven peak-hour vehicle trips. The report concludes that the surrounding road network can accommodate the additional traffic and that no significant adverse impacts are expected on nearby intersections or roads.

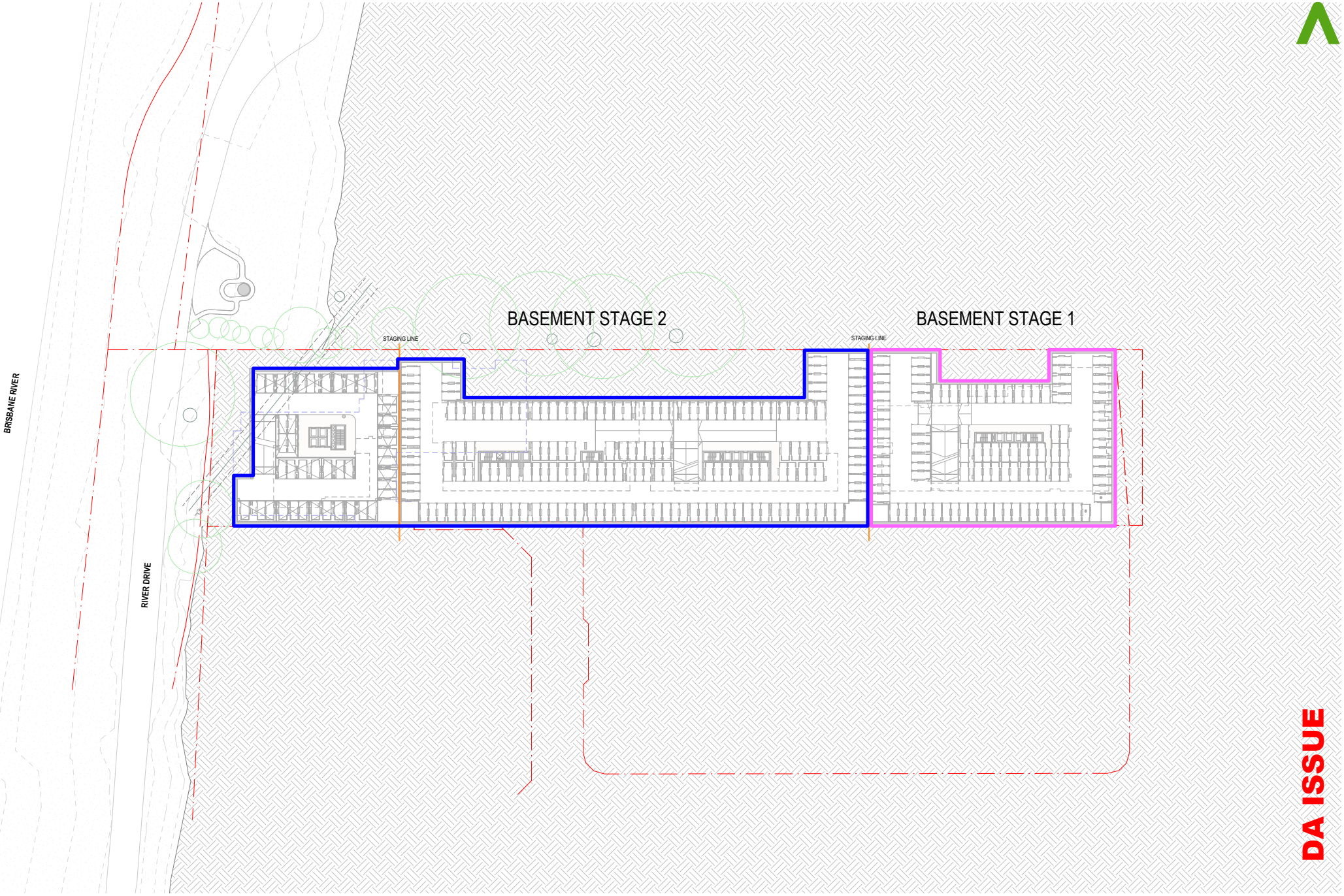
Pedestrian, Cycle and Public Transport

The site benefits from a highly accessible inner-city location in West End. Frequent bus services operate along Montague Road, including the Blue CityGlider, providing strong public transport connectivity. The surrounding area offers an extensive footpath network, nearby pedestrian crossings and access to Brisbane's cycle network. The report notes excellent public transport and walkability outcomes, supported by substantial on-site bicycle parking and active transport connections.

Conclusion

The report concludes that the proposed development can be accommodated with acceptable parking, access and servicing arrangements. Traffic impacts are expected to be minor, and the site's strong public transport, walking and cycling connections support the intensity of the proposed residential development. Consequently, Colliers consider it appropriate for Council to issue the relevant approvals with respect to the transport engineering aspects of the proposal.

Appendix A Development Plans



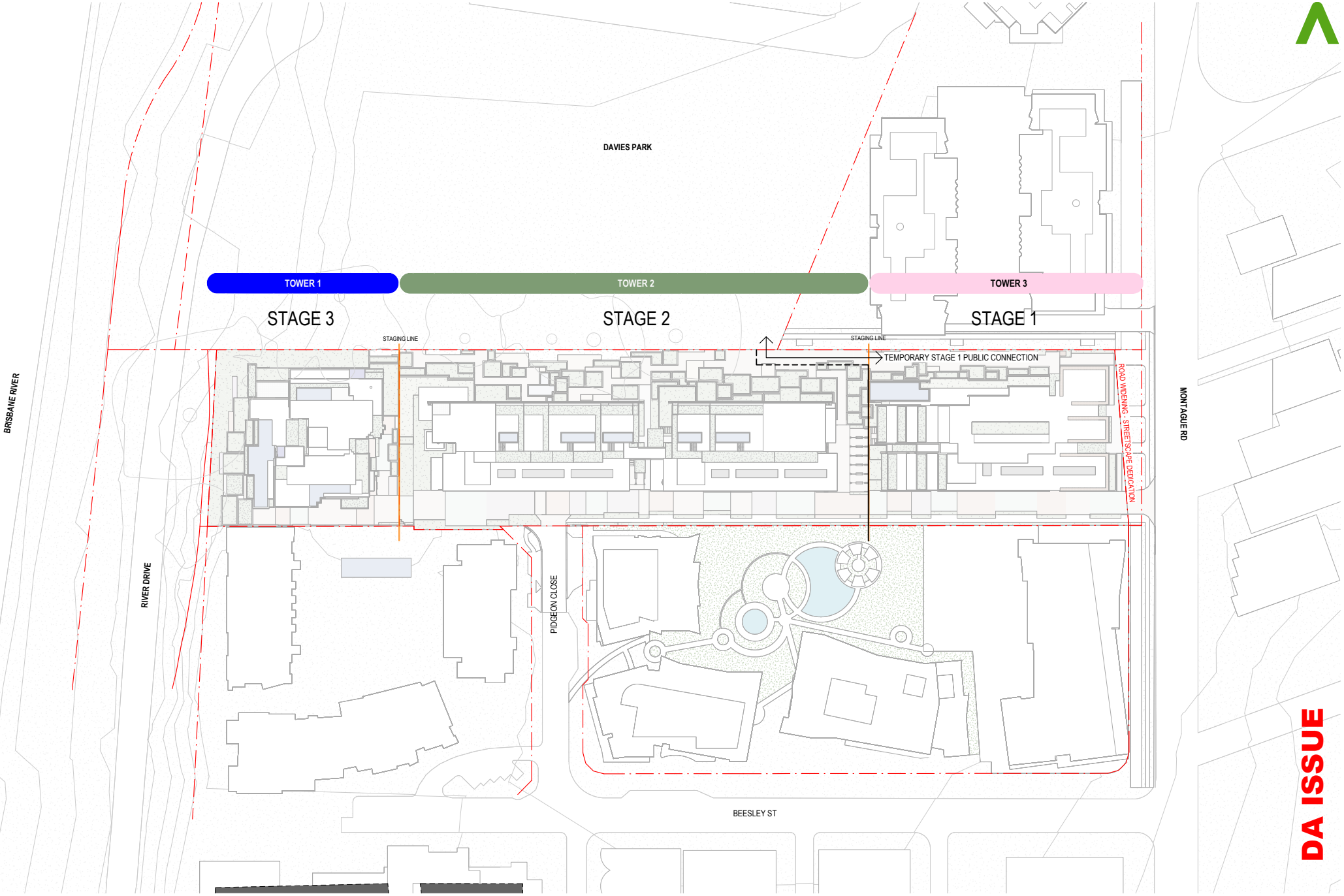
PROPOSED BASEMENT STAGING PLAN

bureau proberts

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CLIENT: CORNERSTONE
PROJECT: EBB & FLOW, DAVIES PARK WEST END
ADDRESS: 20 PIDGEON CLOSE WEST END, QLD 4101

SCALE: 1 : 500 [A1]
DATE: 2.11.26
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NORTH:
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PHASE: SD
DRAWING NUMBER: AR 1.300
REVISION: 1
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DA ISSUE

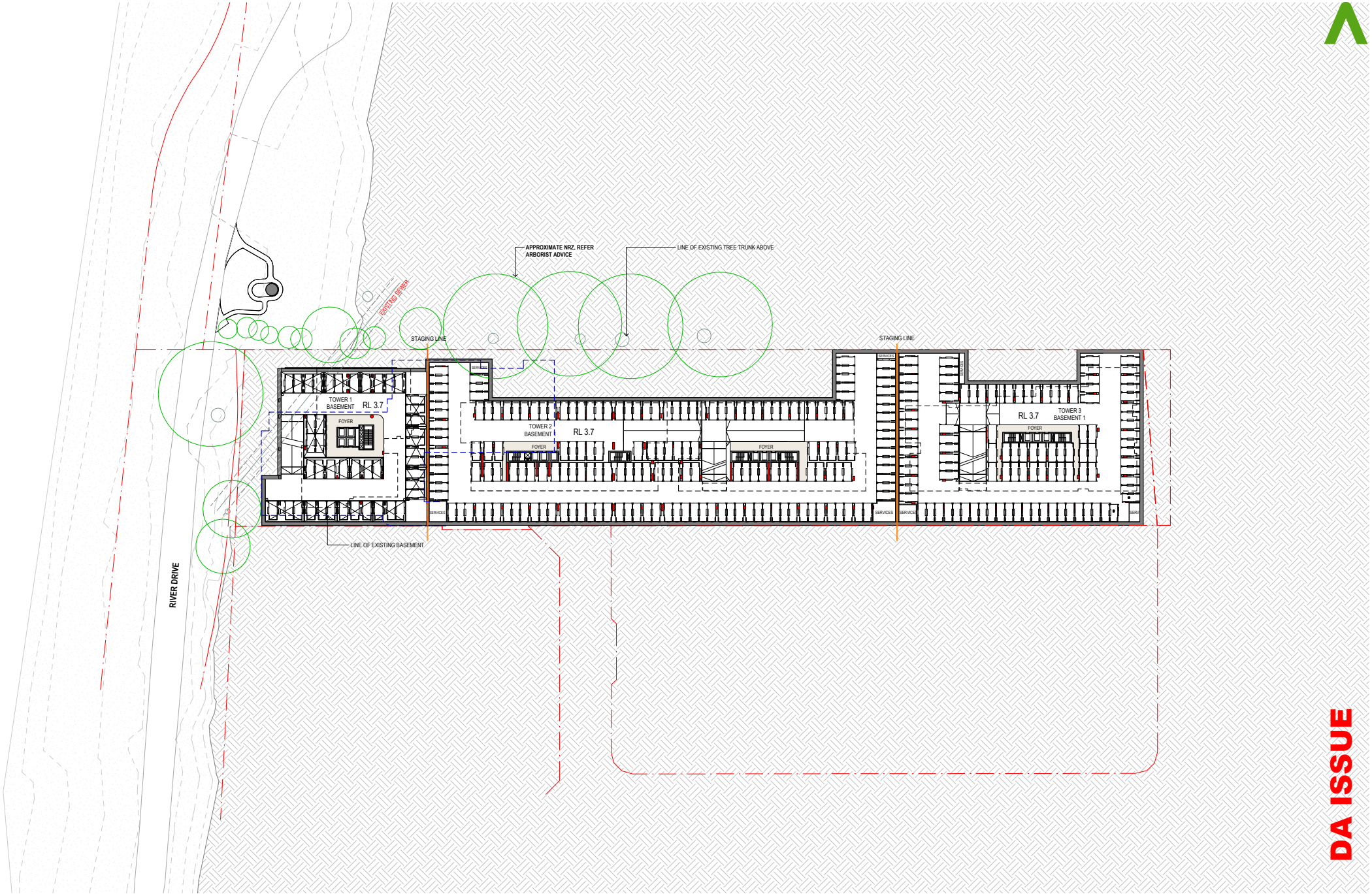
PROPOSED STAGING PLAN

bureau proberts

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3	PLANNER DRAFT ISSUE	8.10.26
2	DRAFT DA	11.09.26
1	CERTIFIER ISSUE	8.07.2026

CLIENT: CORNERSTONE
PROJECT: PIDGEON CLOSE
ADDRESS: 20 PIDGEON CLOSE WEST END, QLD 4101

SCALE: 1 : 500 [A1]
DATE: 22.10.26
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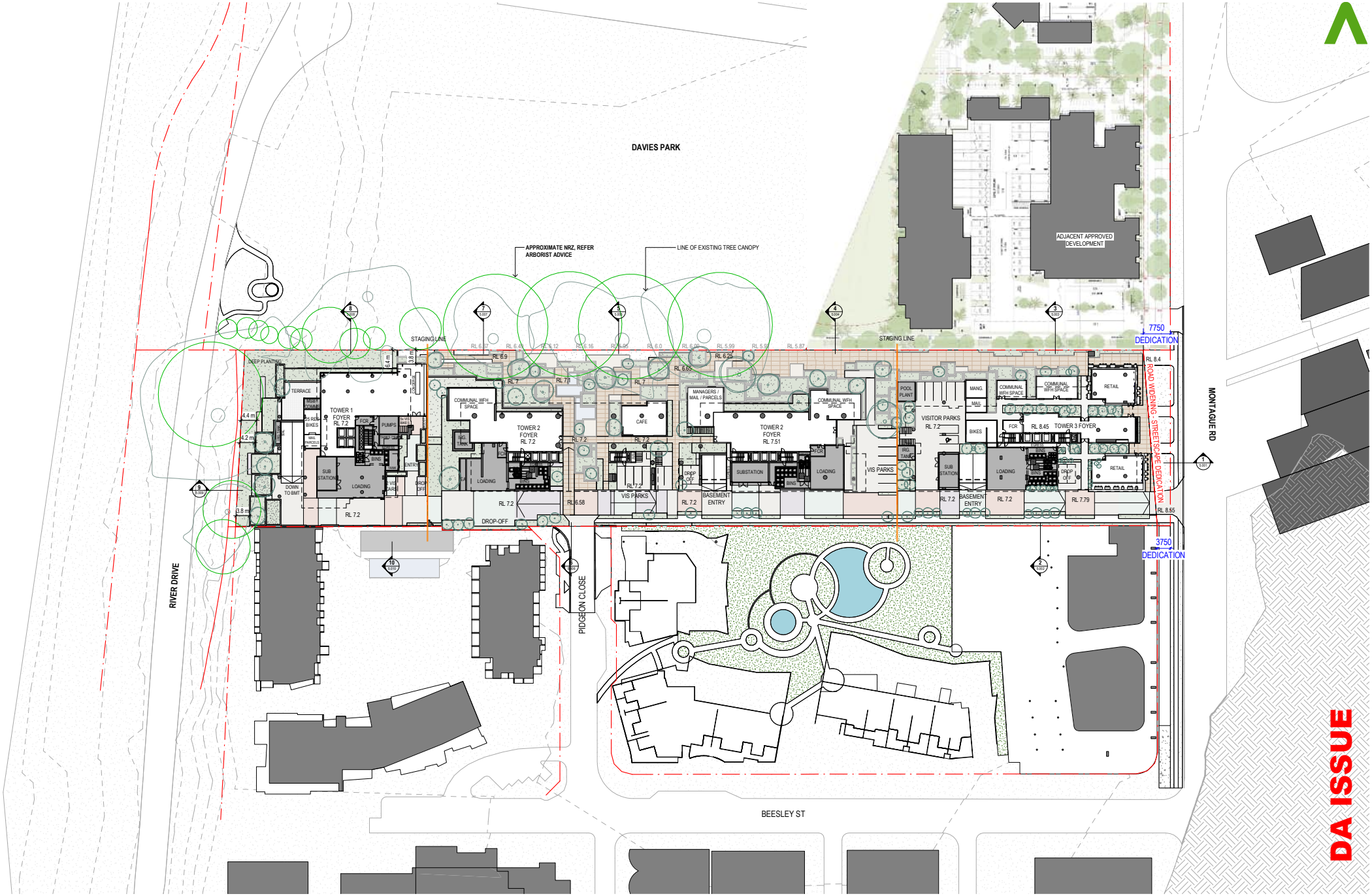
PROPOSED BASEMENT 1 PLAN

bureau proberts

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7	DRAFT DA	22.10.26
6	PLANNER DRAFT ISSUE	8.10.26
5	DRAFT DA	11.09.26
4	BASEMENT TREE OVERLAY	28.08.26
3	CERTIFIER ISSUE	8.07.2026
2	COORDINATION SET	5.06.2026
1	PRELIM COORDINATION SET	27.05.2026

CLIENT: CORNERSTONE
PROJECT: PIDGEON CLOSE
ADDRESS: 20 PIDGEON CLOSE WEST END, QLD 4101

SCALE: 1 : 500 [A1]
DATE: 22.10.26
DRAWN: CG
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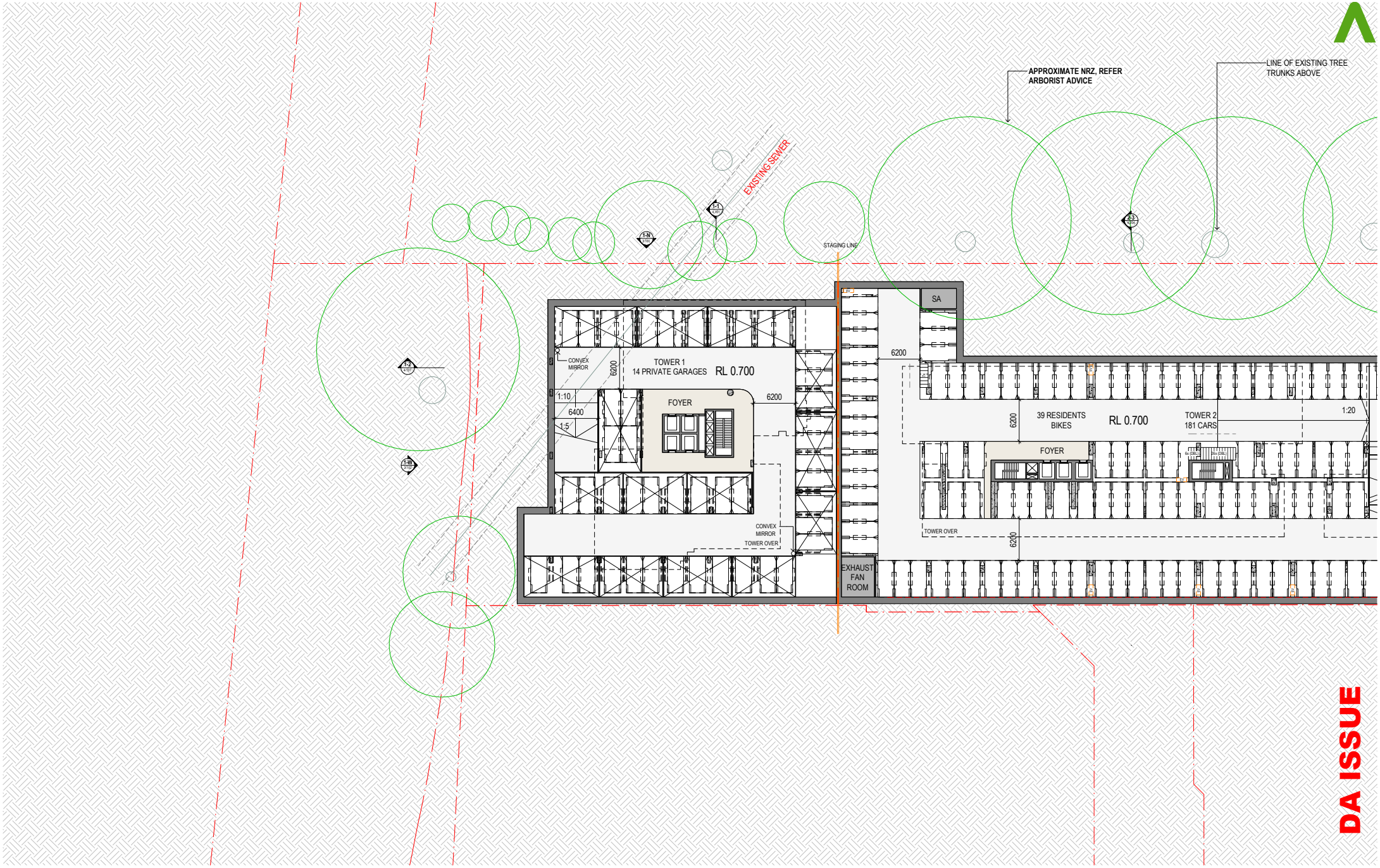
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8	PLANNER DRAFT ISSUE	8.10.26
7	DRAFT DA	11.09.26
6	GROUNDPLANE TO LANDSCAPE	3.08.26
5	GROUND TO LSCP	24.07.26
4	GROUND TO TRAFFIC	22.07.26
3	CERTIFIER ISSUE	8.07.2026

bureau proberts

CLIENT: CORNERSTONE
PROJECT: PIDGEON CLOSE
ADDRESS: 20 PIDGEON CLOSE WEST END, QLD 4101

SCALE: 1 : 500 [A1]
DATE: 22.10.26
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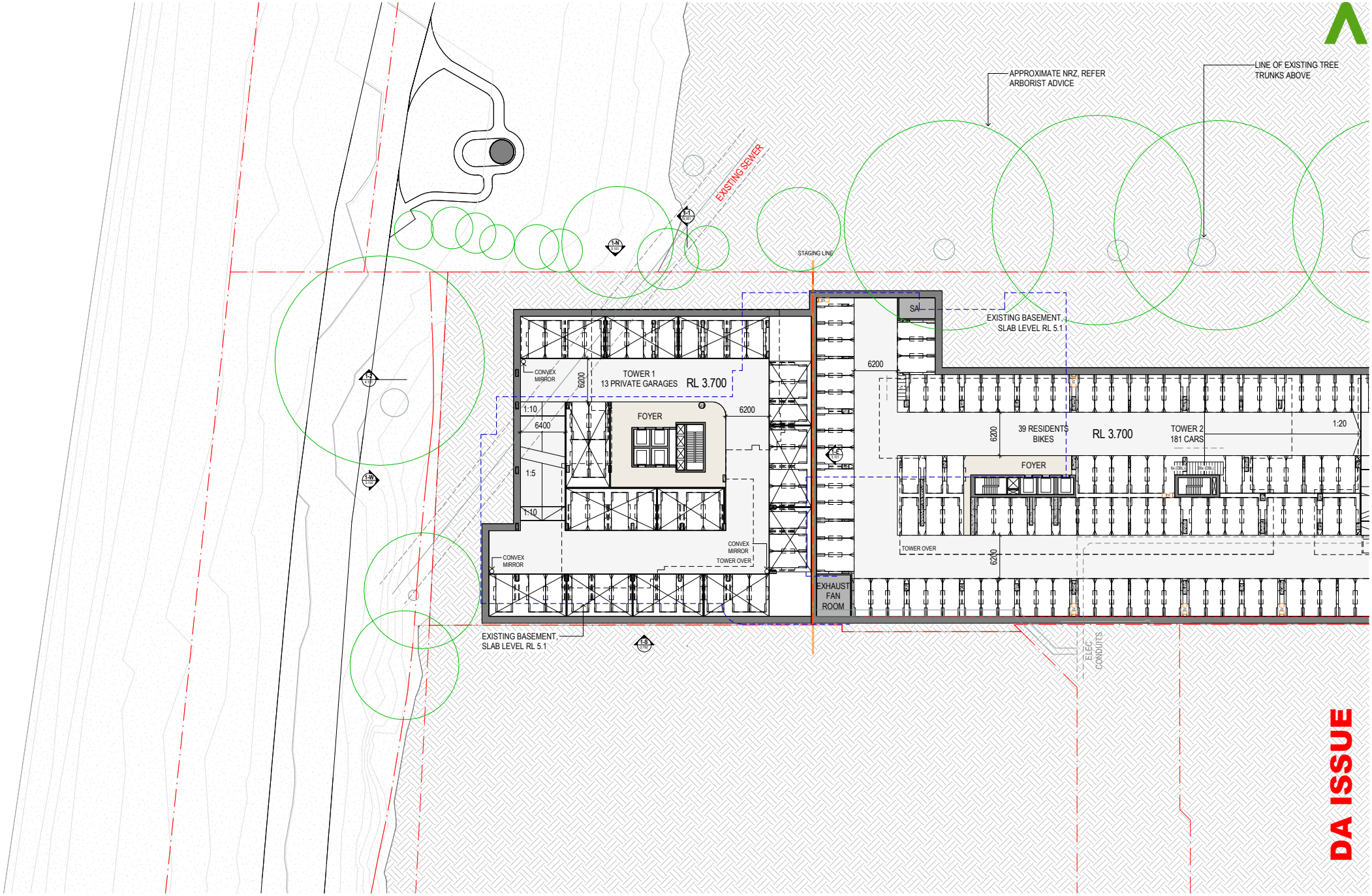
TOWER 1 - BASEMENT 2

bureau proberts

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PROJECT: PIDGEON CLOSE
ADDRESS: 20 PIDGEON CLOSE WEST END, QLD 4101

SCALE: 1 : 250 [A1]
DATE: 22.10.26
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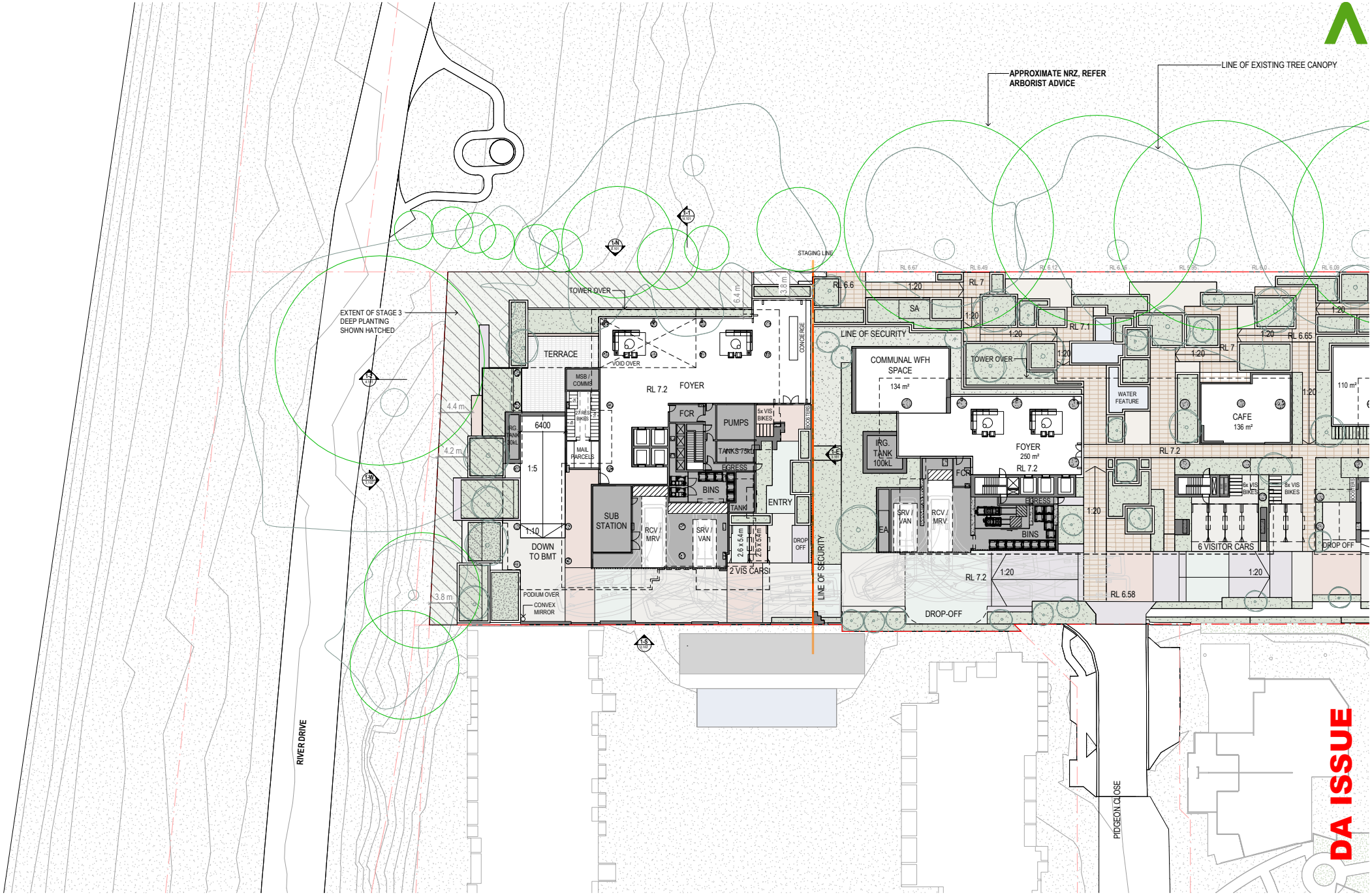
TOWER 1 - BASEMENT 1

bureau proberts

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9	DRAFT DA	11.09.26
8	BASEMENT TREE OVERLAY	28.08.26
7	CONSULTANT ISSUE	31.07.26
6	MECH-ELEC ISSUE	14.07.26
5	STRUCTURE ISSUE	14.07.26

CLIENT: CORNERSTONE
PROJECT: PIDGEON CLOSE
ADDRESS: 20 PIDGEON CLOSE WEST END, QLD 4101

SCALE: 1 : 250 [A1]
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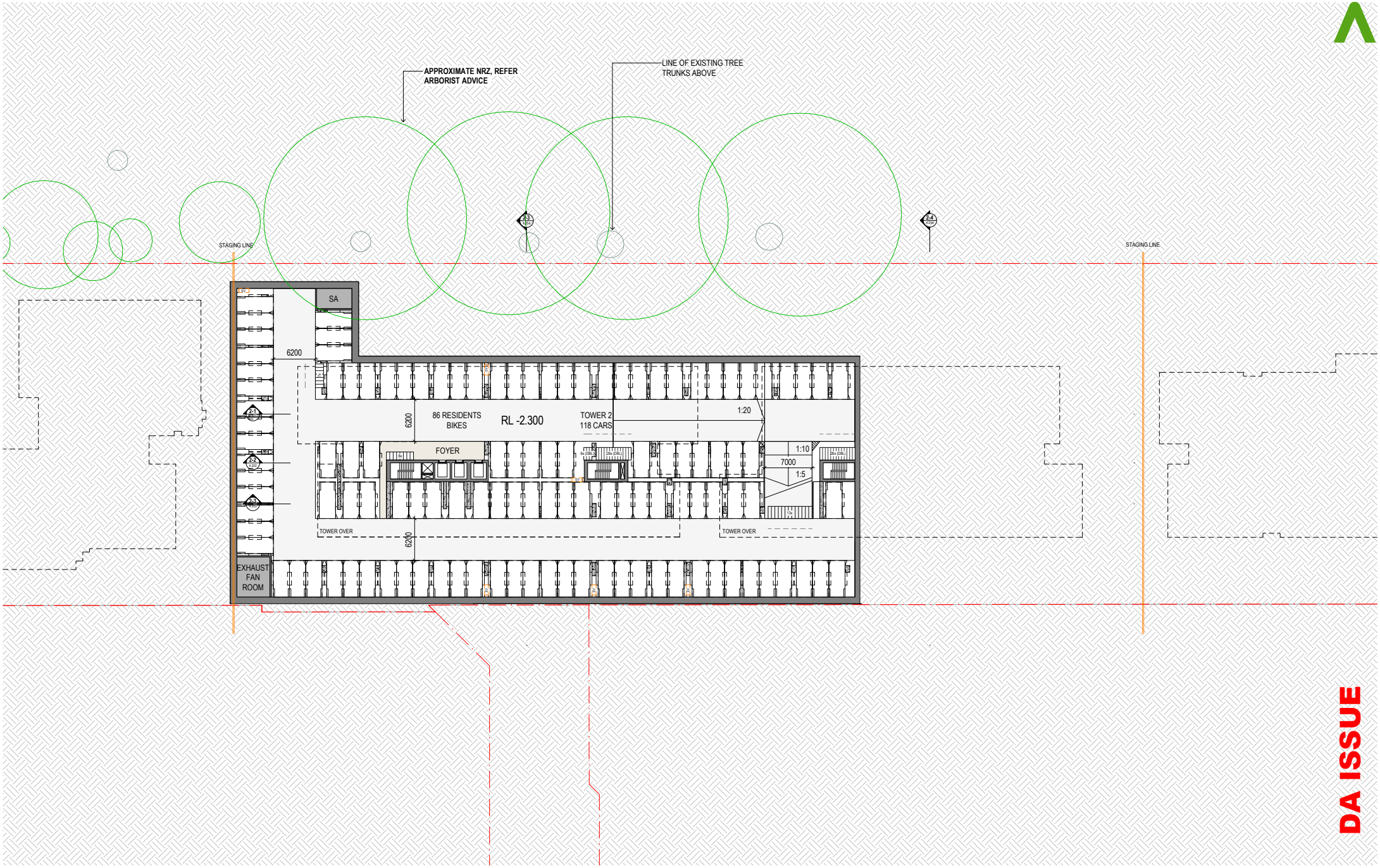
TOWER 1 - GROUND

bureau proberts

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8	DRAFT DA	11.09.26
7	CONSULTANT ISSUE	31.07.26
6	MECH-ELEC ISSUE	14.07.26
5	STRUCTURE ISSUE	14.07.26
4	STRUCTURE ISSUE	8.07.26

CLIENT: CORNERSTONE
PROJECT: PIDGEON CLOSE
ADDRESS: 20 PIDGEON CLOSE WEST END, QLD 4101

SCALE: 1 : 250 [A1]
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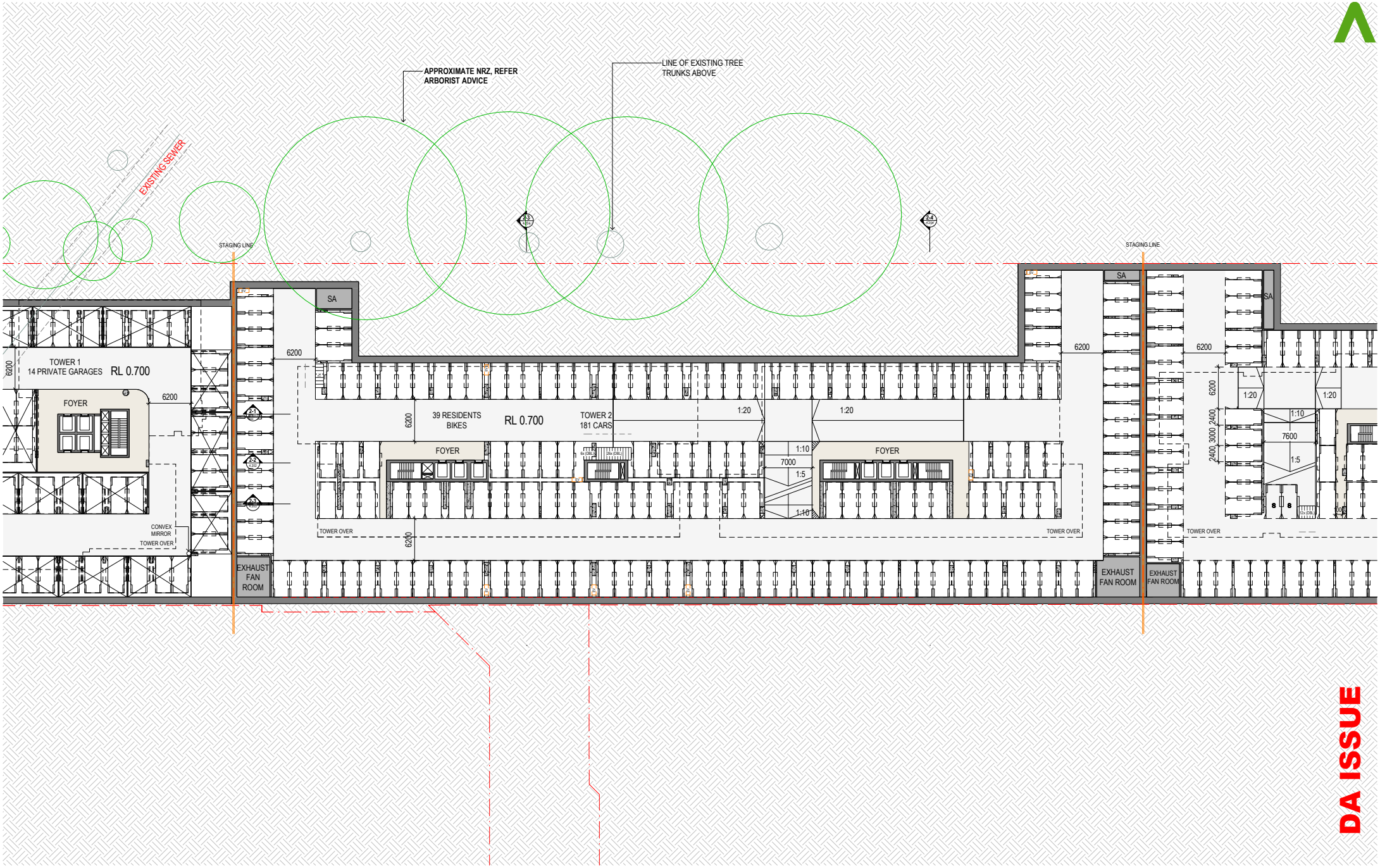
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bureau proberts

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7	CONSULTANT ISSUE	31.07.26
6	MECH-ELEC ISSUE	14.07.26
5	STRUCTURE ISSUE	14.07.26
4	STRUCTURE ISSUE	8.07.26

CLIENT: CORNERSTONE
PROJECT: PIDGEON CLOSE
ADDRESS: 20 PIDGEON CLOSE WEST END, QLD 4101

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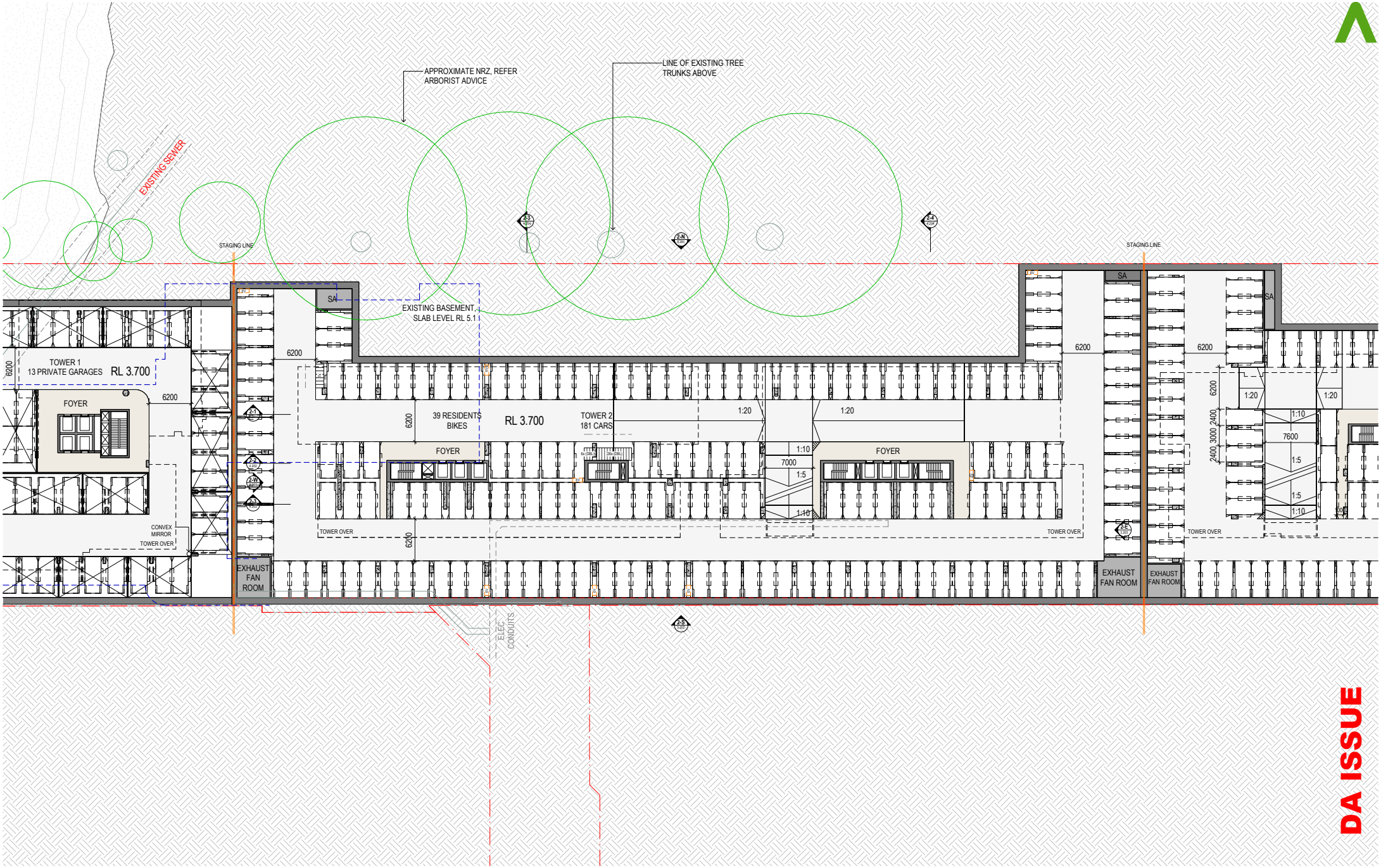
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6	MECH-ELEC ISSUE	14.07.26
5	STRUCTURE ISSUE	14.07.26
4	STRUCTURE ISSUE	8.07.26

CLIENT: CORNERSTONE
PROJECT: PIDGEON CLOSE
ADDRESS: 20 PIDGEON CLOSE WEST END, QLD 4101

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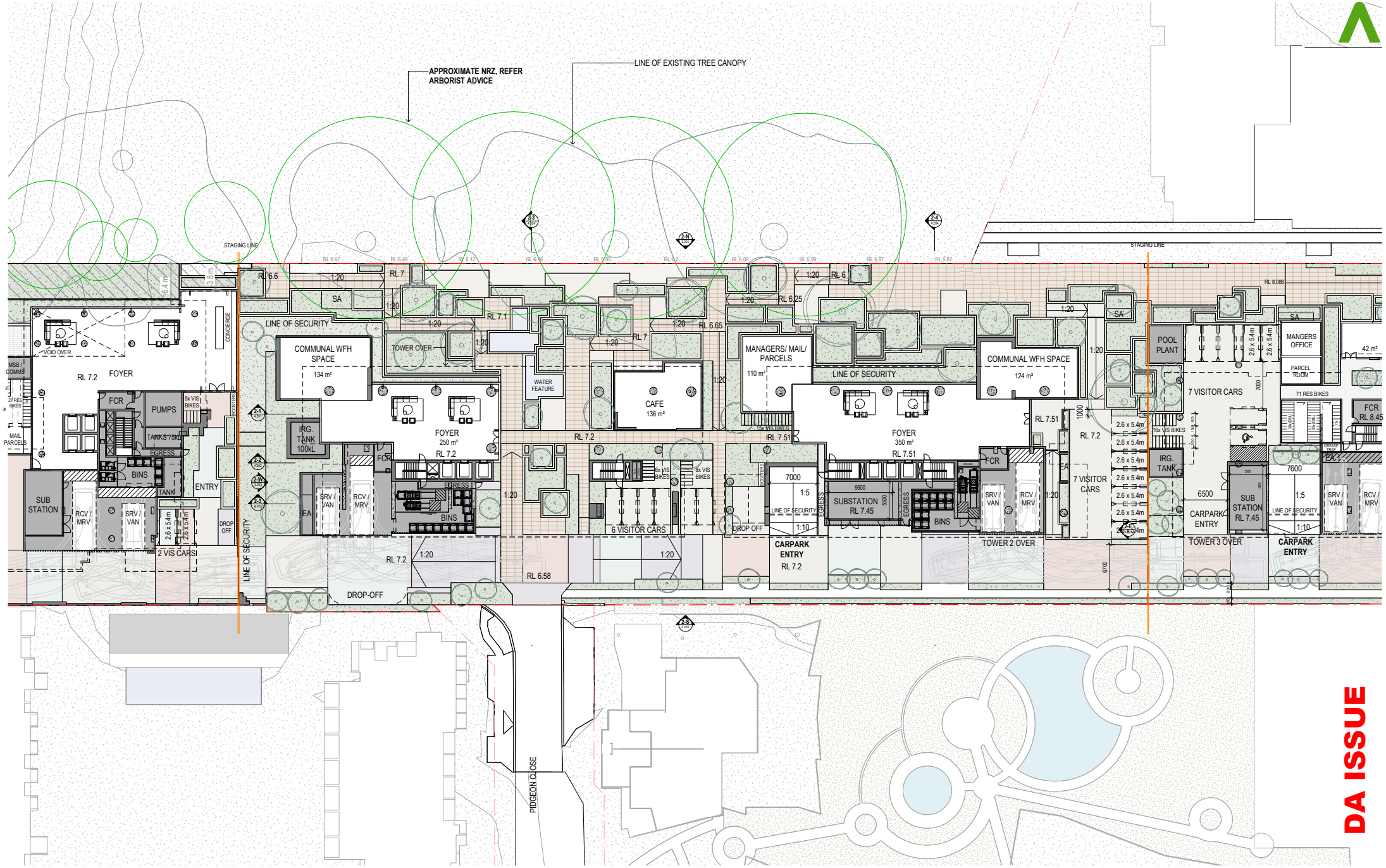
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6	MECH-ELEC ISSUE	14.07.26
5	STRUCTURE ISSUE	14.07.26
4	STRUCTURE ISSUE	8.07.26

CLIENT: CORNERSTONE
PROJECT: PIDGEON CLOSE
ADDRESS: 20 PIDGEON CLOSE WEST END, QLD 4101

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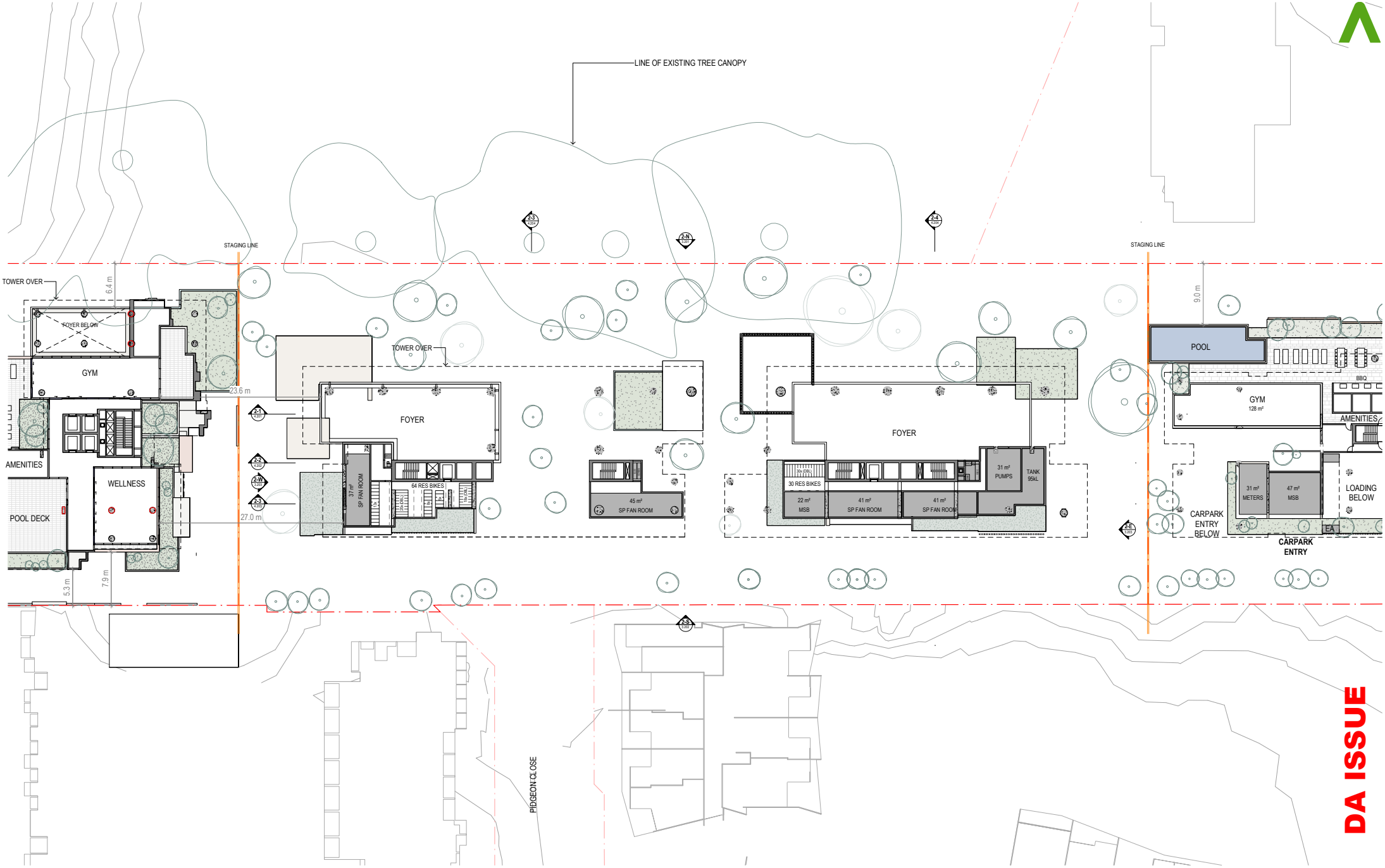
TOWER 2 - GROUND

bureau proberts

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7	CONSULTANT ISSUE	31.07.26
6	MECH-ELEC ISSUE	14.07.26
5	STRUCTURE ISSUE	14.07.26
4	STRUCTURE ISSUE	8.07.26
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ADDRESS: 20 PIDGEON CLOSE WEST END, QLD 4101

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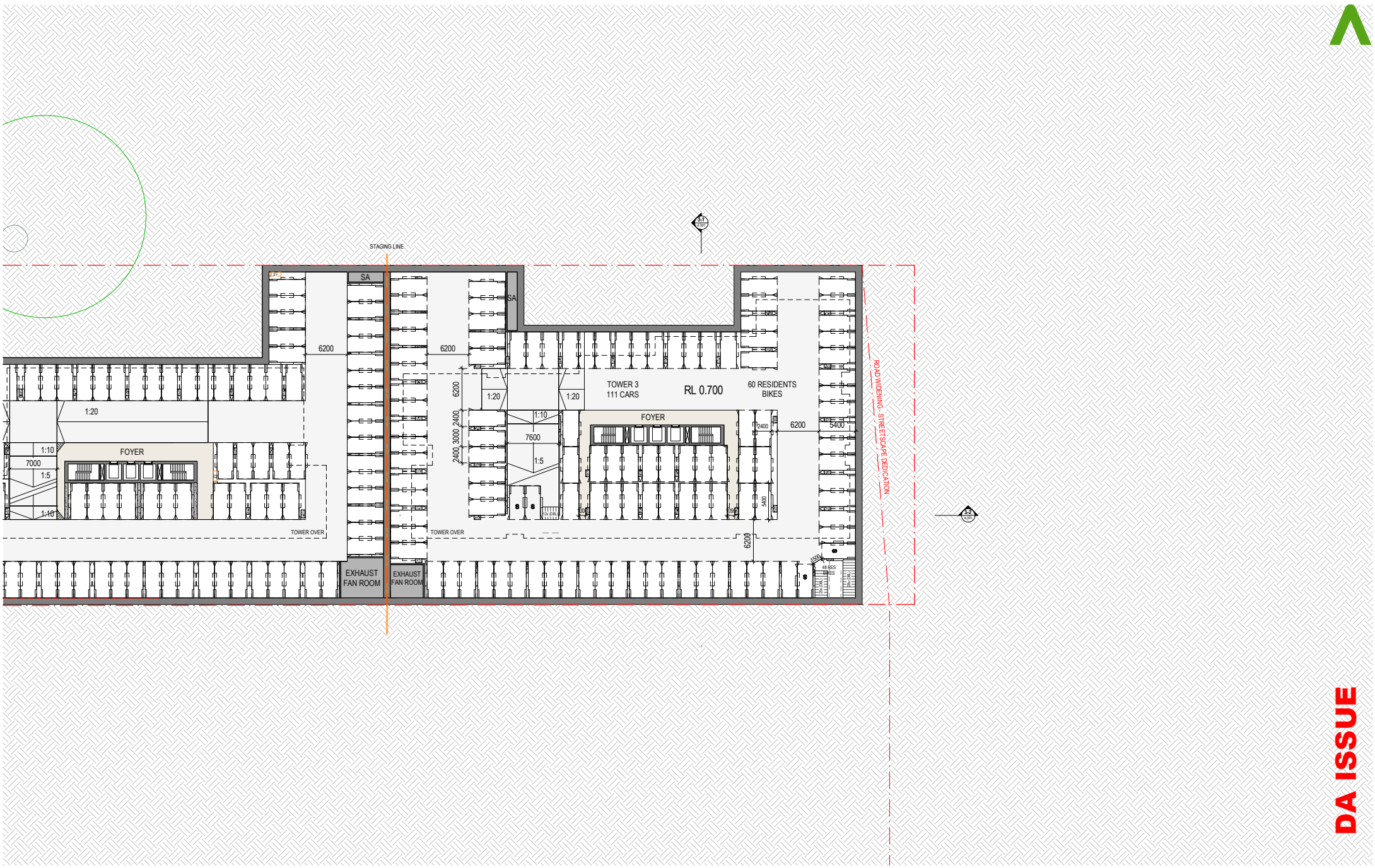
TOWER 2 - LEVEL 1

bureau proberts

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5	STRUCTURE ISSUE	14.07.26
4	STRUCTURE ISSUE	8.07.26

CLIENT: CORNERSTONE
PROJECT: PIDGEON CLOSE
ADDRESS: 20 PIDGEON CLOSE WEST END, QLD 4101

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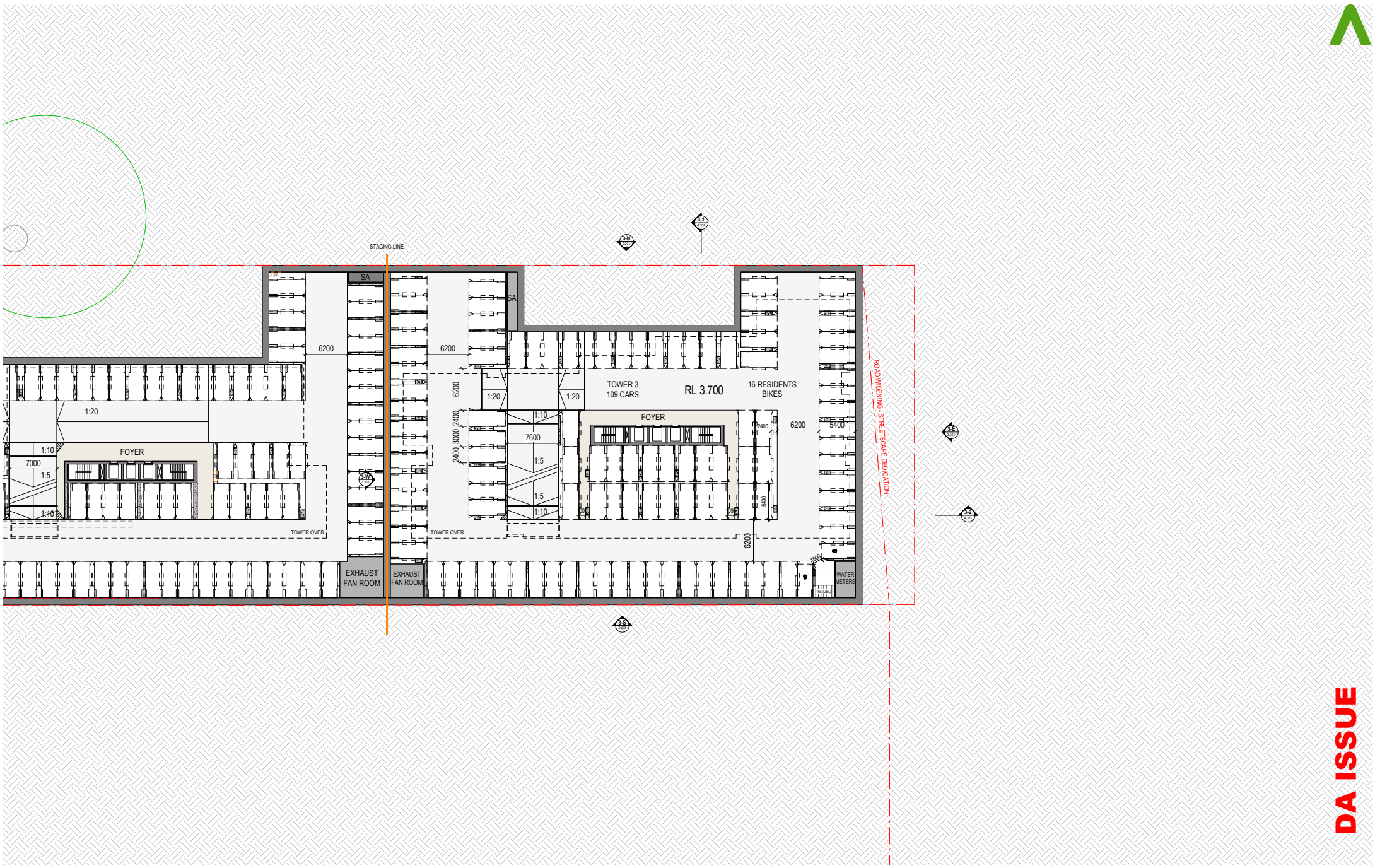
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bureau proberts

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6	MECH-ELEC ISSUE	14.07.26
5	STRUCTURE ISSUE	14.07.26
4	STRUCTURE ISSUE	8.07.26

CLIENT: CORNERSTONE
PROJECT: PIDGEON CLOSE
ADDRESS: 20 PIDGEON CLOSE WEST END, QLD 4101

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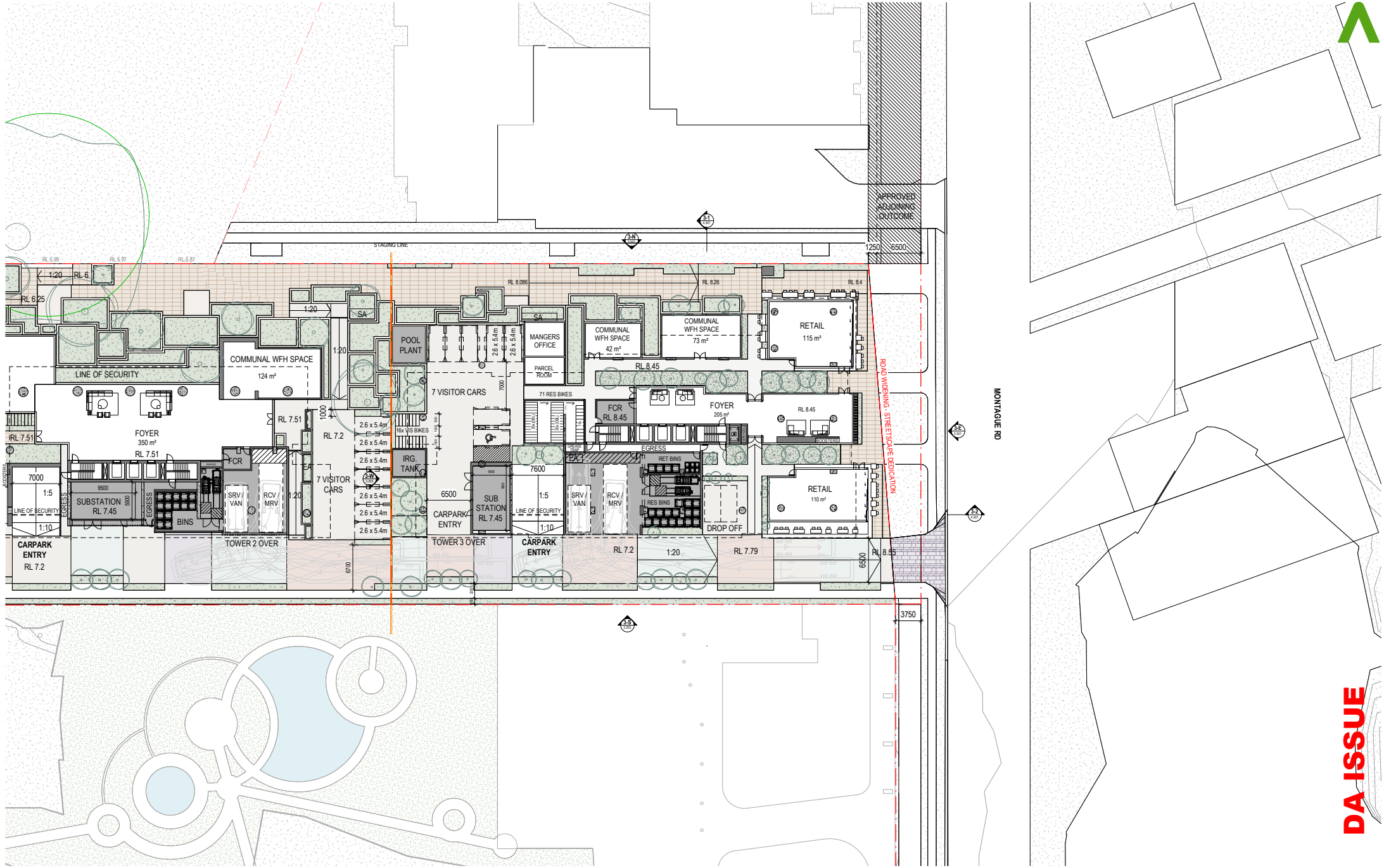
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bureau proberts

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7	CONSULTANT ISSUE	31.07.26
6	MECH-ELEC ISSUE	14.07.26
5	STRUCTURE ISSUE	14.07.26
4	STRUCTURE ISSUE	8.07.26

CLIENT: CORNERSTONE
PROJECT: PIDGEON CLOSE
ADDRESS: 20 PIDGEON CLOSE WEST END, QLD 4101

SCALE: 1 : 250 [A1]
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TOWER 3 - GROUND

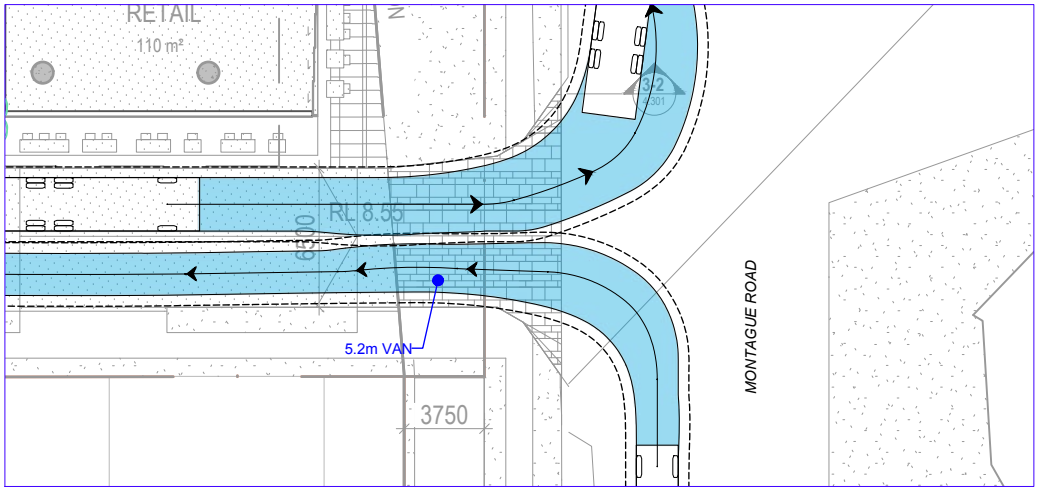
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9	DRAFT DA	11.09.26
8	CONSULTANT ISSUE	31.07.26
7	T3 GROUND TO PLANNER/TRAFFIC	31.07.26
6	MECH-ELEC ISSUE	14.07.26

bureau proberts

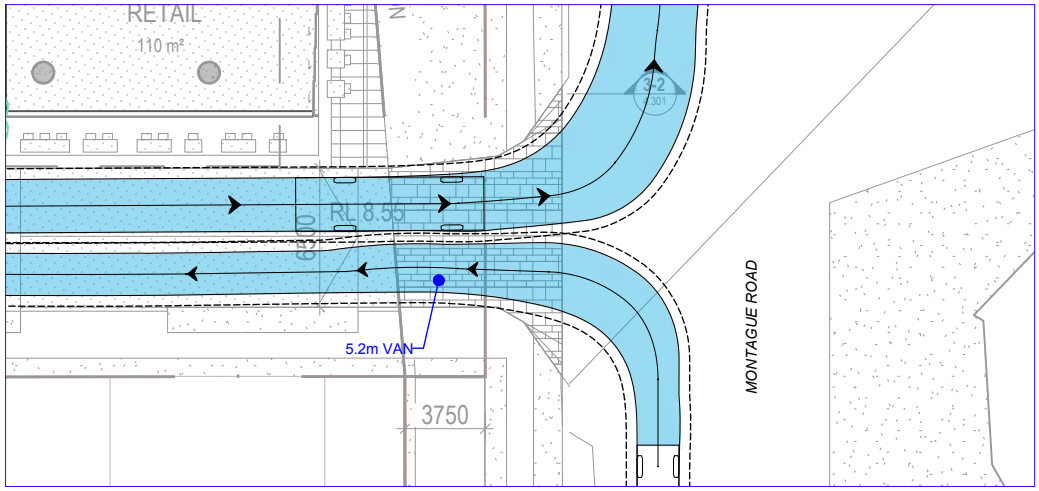
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PROJECT: PIDGEON CLOSE
ADDRESS: 20 PIDGEON CLOSE WEST END, QLD 4101

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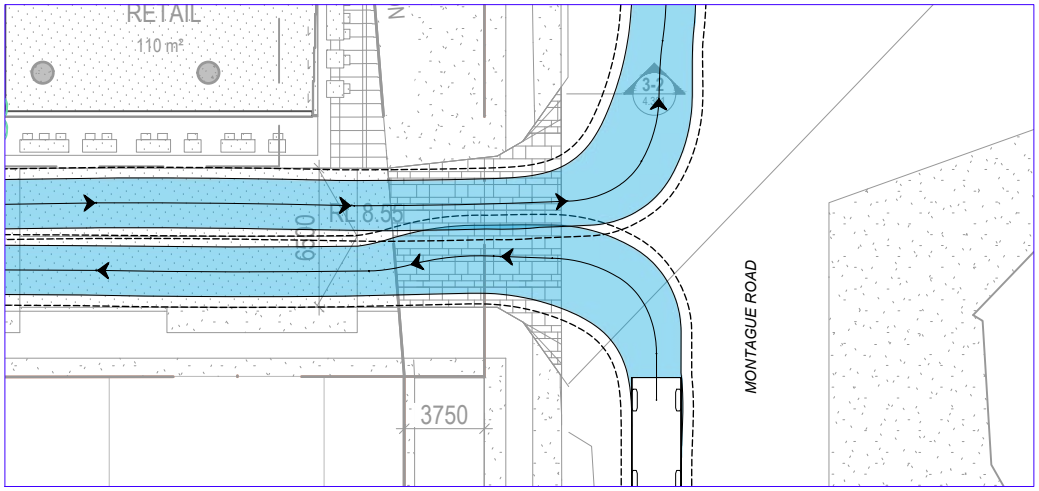
Appendix B Swept Paths



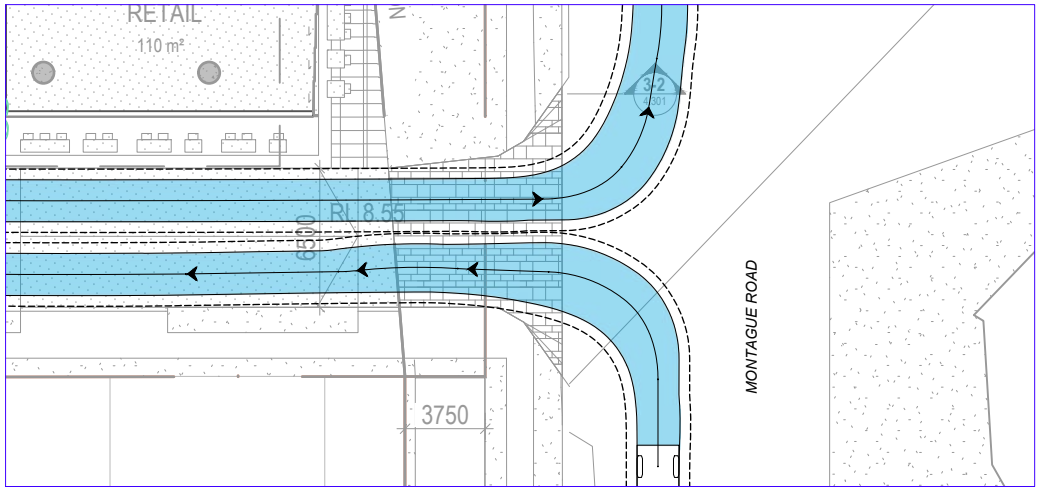
10.24m REAR LOADING REFUSE COLLECTION VEHICLE



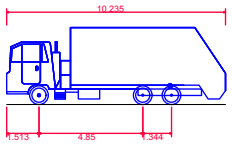
8.8m MEDIUM RIGID VEHICLE



6.4m SMALL RIGID VEHICLE

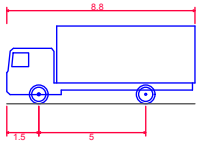


5.2m VAN



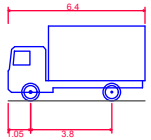
IVECO ACCO 6x4 (BCC - Rear Loader)

Overall Length	10.235m
Overall Width	2.500m
Overall Body Height	3.600m
Min Body Ground Clearance	0.260m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	9.757m
Design Speed Forward	5.00km/h
Clearance Envelope	0.500m



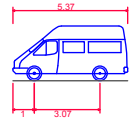
MRV - Medium Rigid Vehicle

Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	3.633m
Min Body Ground Clearance	0.428m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	10.000m
Design Speed Forward	5.00km/h
Clearance Envelope	0.500m



SRV - Small Rigid Vehicle

Overall Length	6.400m
Overall Width	2.330m
Overall Body Height	3.500m
Min Body Ground Clearance	0.398m
Track Width	2.330m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	7.100m
Design Speed Forward	5.00km/h
Clearance Envelope	0.500m



VAN BCC

Overall Length	5.370m
Overall Width	1.960m
Overall Body Height	2.560m
Min Body Ground Clearance	0.333m
Track Width	1.960m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	7.000m
Design Speed Forward	5.00km/h
Clearance Envelope	0.500m

PRELIMINARY ADVICE ONLY

28 October 2026

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
A	28-10-26	ORIGINAL ISSUE	DSF	RW	RW

SCALE 0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

NORTH

CLIENT: CORNERSTONE

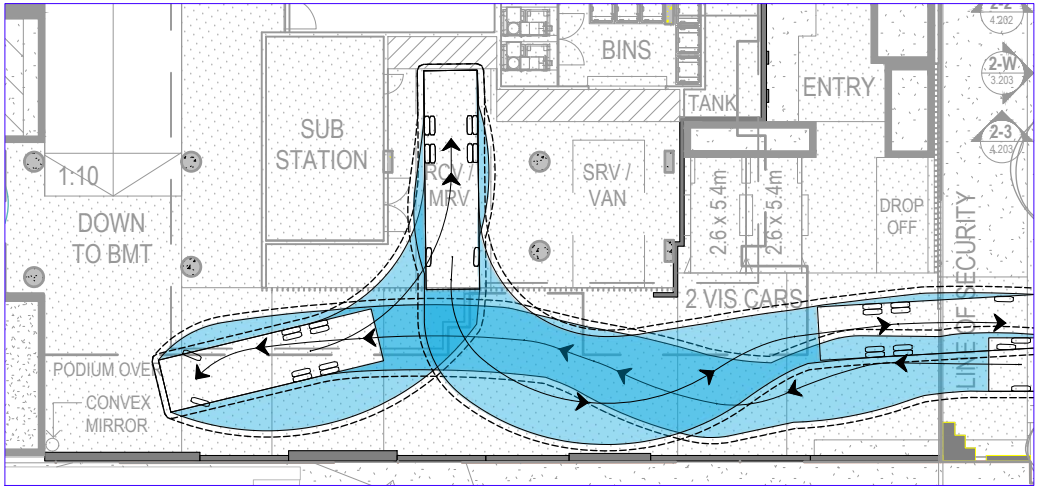
Colliers International Engineering & Design (TTMC) Pty Ltd
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
P.O. BOX 12015, BRISBANE QLD 4003
T: (07) 3352 1300
E: aus.tt.edbris@colliers.com W: www.colliers.com.au

PROJECT: **PIDGEON CLOSE - 20 PIDGEON CLOSE, WEST END**

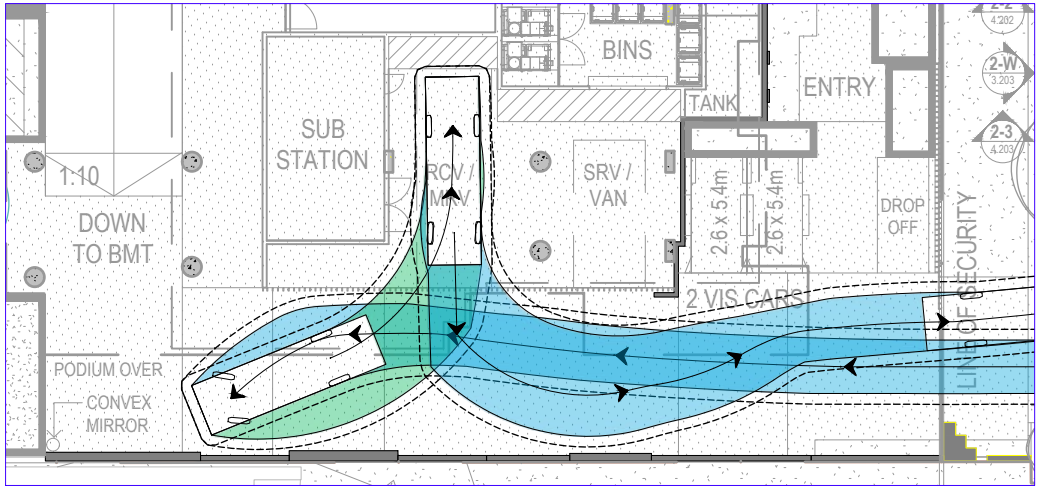
DRAWING TITLE: **SWEPT PATH ANALYSIS - MONTAGUE ROAD ACCESS**
10.24 RCV, 8.8m MRV, 6.4m SRV AND 5.37m VAN

PROJECT NUMBER	25BRT0495
ORIGINAL SIZE	A3
DRAWING NUMBER	25BRT0495-01.01
REVISION	A
DATE	28 Oct 2026
SHEET	1 OF 1

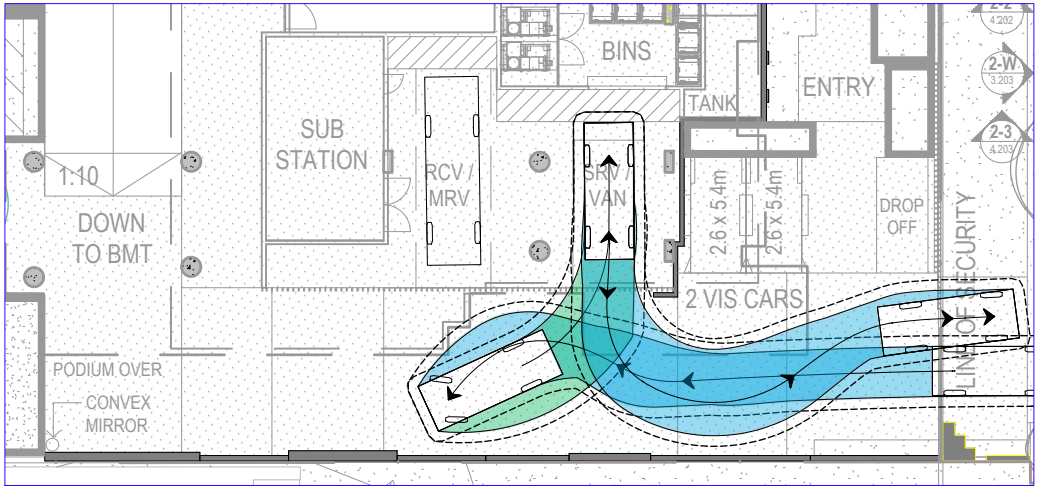
25BRT0495-F04 V00 SERVICE VEHICLE ACCESS.DWG



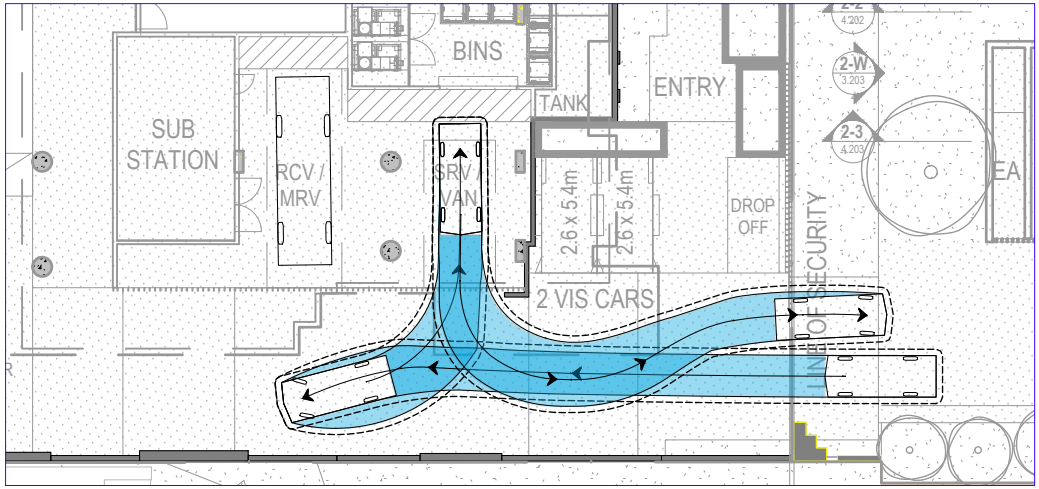
10.24m REAR LOADING REFUSE COLLECTION VEHICLE



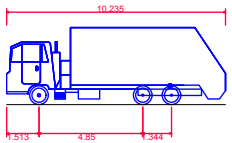
8.8m MEDIUM RIGID VEHICLE



6.4m SMALL RIGID VEHICLE

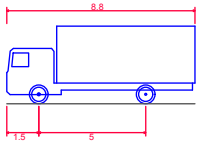


5.2m VAN



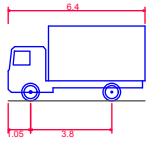
IVECO ACCO 6x4 (BCC - Rear Loader)

Overall Length	10.235m
Overall Width	2.500m
Overall Body Height	3.600m
Min Body Ground Clearance	0.260m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	9.757m
Design Speed Forward	5.00km/h
Clearance Envelope	0.500m



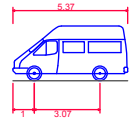
MRV - Medium Rigid Vehicle

Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	3.633m
Min Body Ground Clearance	0.428m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	10.000m
Design Speed Forward	5.00km/h
Clearance Envelope	0.500m



SRV - Small Rigid Vehicle

Overall Length	6.400m
Overall Width	2.330m
Overall Body Height	3.500m
Min Body Ground Clearance	0.398m
Track Width	2.330m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	7.100m
Design Speed Forward	5.00km/h
Clearance Envelope	0.500m



VAN BCC

Overall Length	5.370m
Overall Width	1.960m
Overall Body Height	2.560m
Min Body Ground Clearance	0.333m
Track Width	1.960m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	7.000m
Design Speed Forward	5.00km/h
Clearance Envelope	0.500m

PRELIMINARY ADVICE ONLY

28 October 2026

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
A	28-10-26	ORIGINAL ISSUE	DSF	RW	RW

SCALE 0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

NORTH

CLIENT: CORNERSTONE

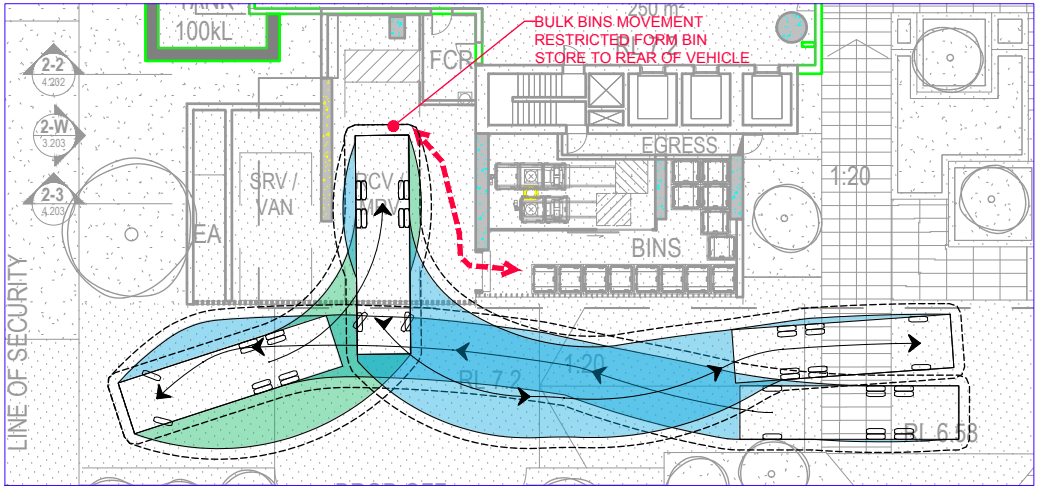
Colliers International Engineering & Design (TTMC) Pty Ltd
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
P.O. BOX 12015, BRISBANE QLD 4003
T: (07) 3352 1300
E: aus.tt.edbris@colliers.com W: www.colliers.com.au

PROJECT: **PIDGEON CLOSE - 20 PIDGEON CLOSE, WEST END**

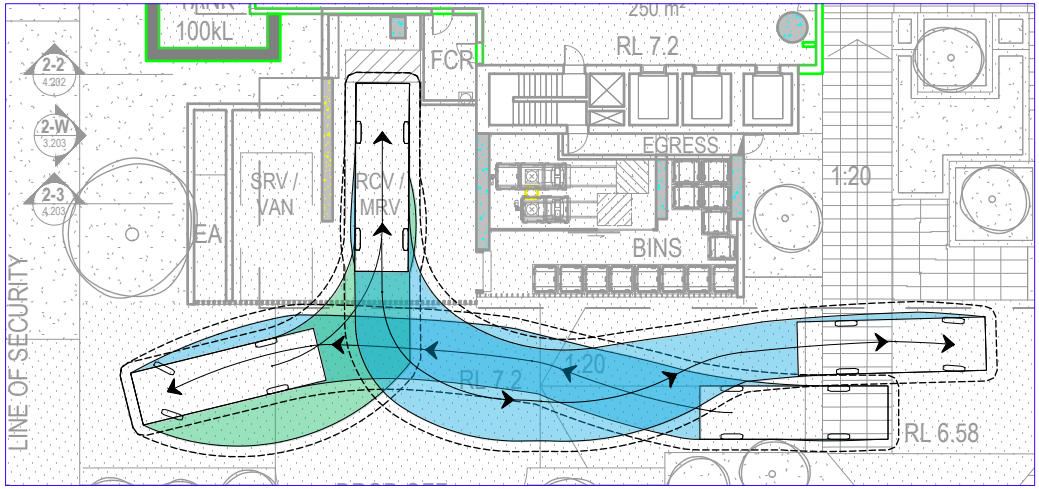
DRAWING TITLE: **SWEPT PATH ANALYSIS - TOWER 1 LOADING AREA**
10.24 RCV, 8.8m MRV, 6.4m SRV AND 5.37m VAN

PROJECT NUMBER	25BRT0495
ORIGINAL SIZE	A3
DRAWING NUMBER	25BRT0495-01.02
REVISION	A
DATE	28 Oct 2026
SHEET	1 OF 1

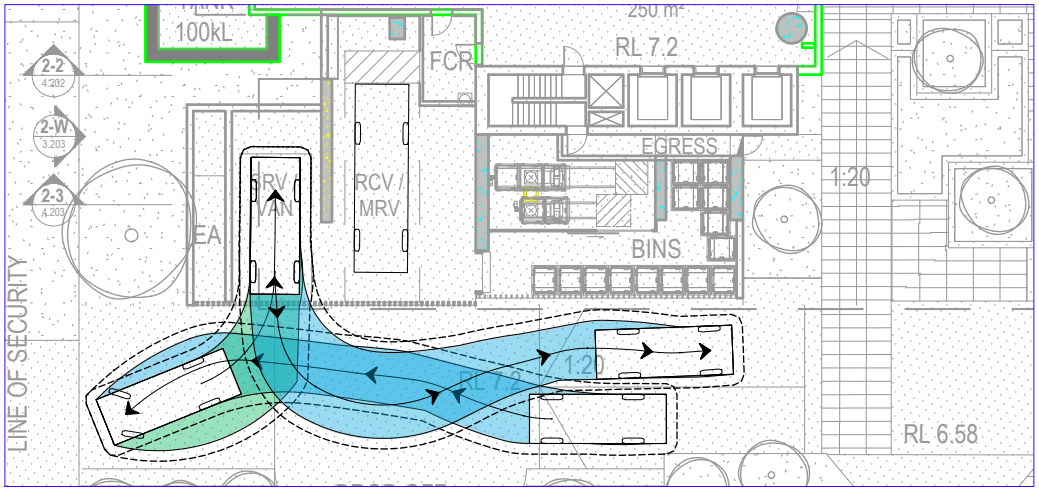
25BRT0495-F04 V00 SERVICE VEHICLE ACCESS.DWG



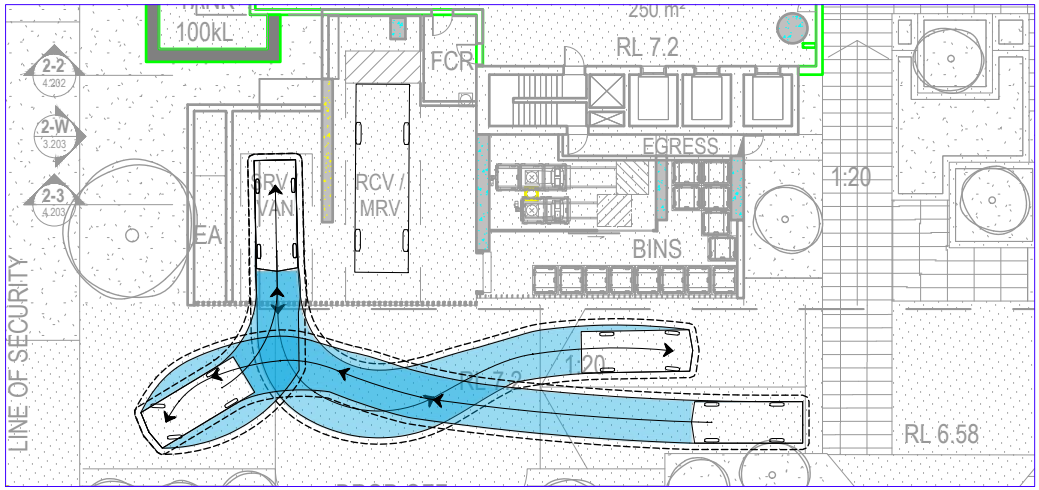
10.24m REAR LOADING REFUSE COLLECTION VEHICLE



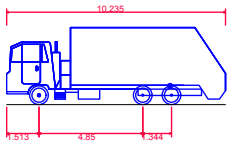
8.8m MEDIUM RIGID VEHICLE



6.4m SMALL RIGID VEHICLE

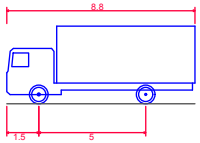


5.2m VAN



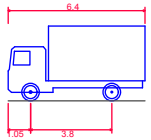
IVECO ACCO 6x4 (BCC - Rear Loader)

Overall Length	10.235m
Overall Width	2.500m
Overall Body Height	3.600m
Min Body Ground Clearance	0.260m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	9.757m
Design Speed Forward	5.00km/h
Clearance Envelope	0.500m



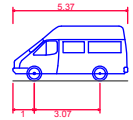
MRV - Medium Rigid Vehicle

Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	3.633m
Min Body Ground Clearance	0.428m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	10.000m
Design Speed Forward	5.00km/h
Clearance Envelope	0.500m



SRV - Small Rigid Vehicle

Overall Length	6.400m
Overall Width	2.330m
Overall Body Height	3.500m
Min Body Ground Clearance	0.398m
Track Width	2.330m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	7.100m
Design Speed Forward	5.00km/h
Clearance Envelope	0.500m



VAN BCC

Overall Length	5.370m
Overall Width	1.960m
Overall Body Height	2.560m
Min Body Ground Clearance	0.333m
Track Width	1.960m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	7.000m
Design Speed Forward	5.00km/h
Clearance Envelope	0.500m

PRELIMINARY ADVICE ONLY
28 October 2026

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
A	28-10-26	ORIGINAL ISSUE	DSF	RW	RW

SCALE 0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

NORTH

CLIENT: CORNERSTONE

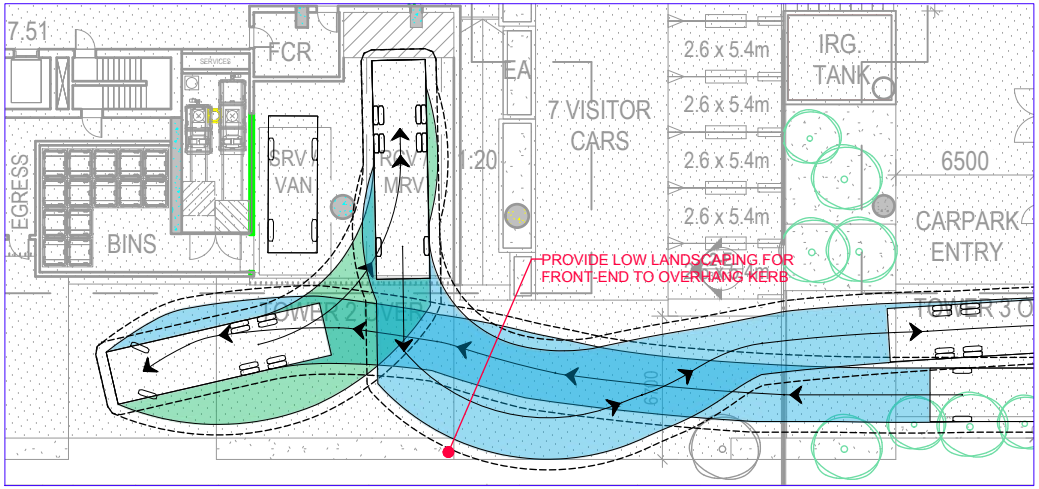
Colliers International Engineering & Design (TTMC) Pty Ltd
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
P.O. BOX 12015, BRISBANE QLD 4003
T: (07) 3352 1300
E: aus.tt.edbris@colliers.com W: www.colliers.com.au

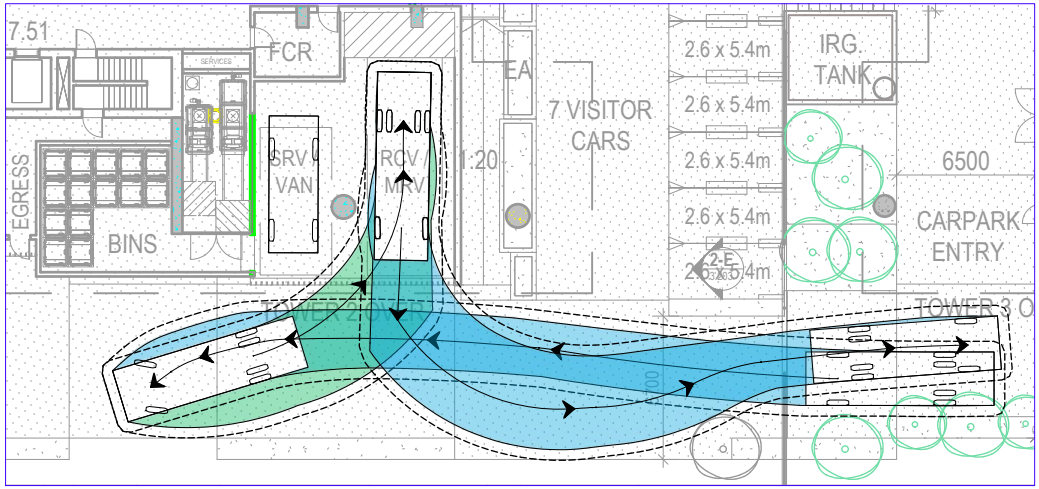
PROJECT: **PIDGEON CLOSE - 20 PIDGEON CLOSE, WEST END**

DRAWING TITLE: **SWEPT PATH ANALYSIS - TOWER 2 (WEST) LOADING AREA**
10.24 RCV, 8.8m MRV, 6.4m SRV AND 5.37m VAN

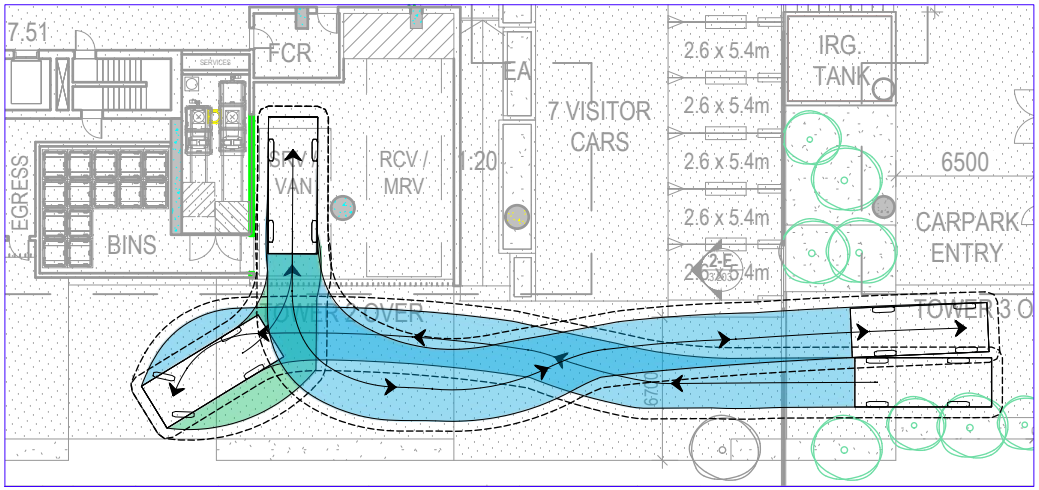
PROJECT NUMBER	25BRT0495
ORIGINAL SIZE	A3
DRAWING NUMBER	25BRT0495-01.03
REVISION	A
DATE	28 Oct 2026
SHEET	1 OF 1

25BRT0495-F04 V00 SERVICE VEHICLE ACCESS.DWG

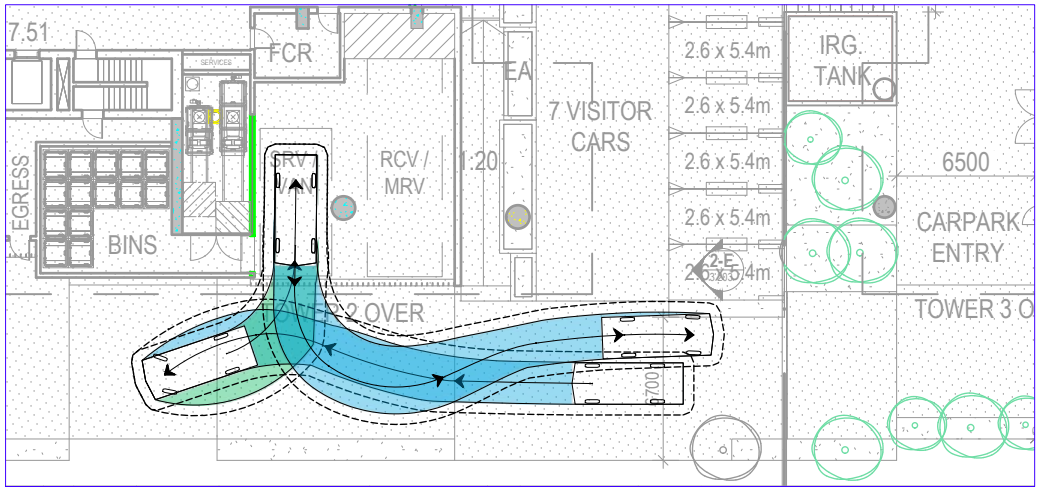




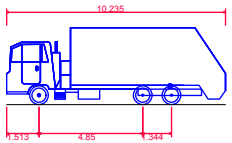
8.8m MEDIUM RIGID VEHICLE



6.4m SMALL RIGID VEHICLE

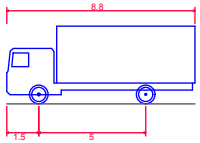


5.2m VAN



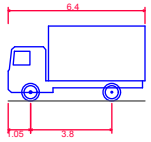
IVECO ACCO 6x4 (BCC - Rear Loader)

Overall Length	10.235m
Overall Width	2.500m
Overall Body Height	3.600m
Min Body Ground Clearance	0.260m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	9.757m
Design Speed Forward	5.00km/h
Clearance Envelope	0.500m



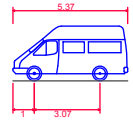
MRV - Medium Rigid Vehicle

Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	3.633m
Min Body Ground Clearance	0.428m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	10.000m
Design Speed Forward	5.00km/h
Clearance Envelope	0.500m



SRV - Small Rigid Vehicle

Overall Length	6.400m
Overall Width	2.330m
Overall Body Height	3.500m
Min Body Ground Clearance	0.398m
Track Width	2.330m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	7.100m
Design Speed Forward	5.00km/h
Clearance Envelope	0.500m



VAN BCC

Overall Length	5.370m
Overall Width	1.960m
Overall Body Height	2.560m
Min Body Ground Clearance	0.333m
Track Width	1.960m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	7.000m
Design Speed Forward	5.00km/h
Clearance Envelope	0.500m

PRELIMINARY ADVICE ONLY

28 September 2025

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
A	28-10-26	ORIGINAL ISSUE	DSF	RW	RW

SCALE 0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

NORTH

CLIENT: CORNERSTONE

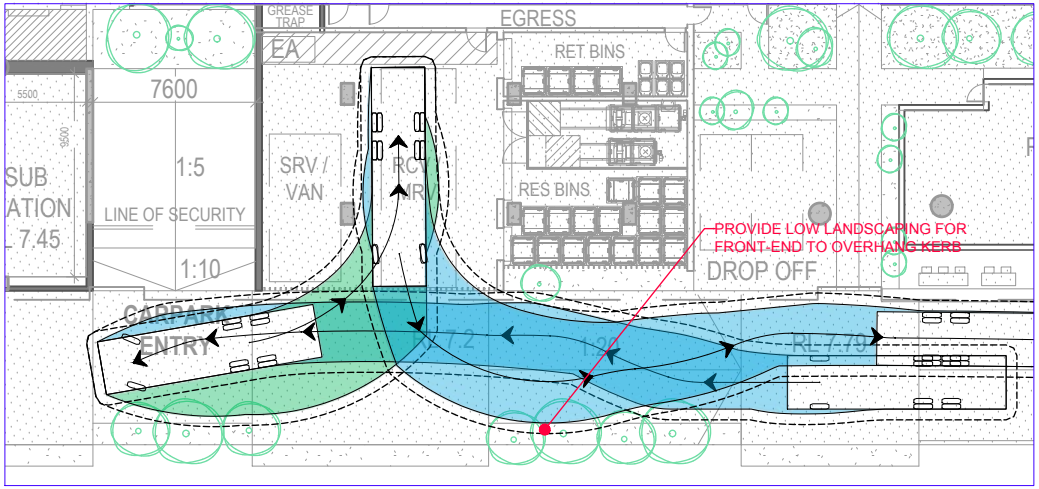
Colliers International Engineering & Design (TTMC) Pty Ltd
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T: (07) 3352 1300
E: aus.tt.edbris@colliers.com W: www.colliers.com.au

PROJECT: **PIDGEON CLOSE - 20 PIDGEON CLOSE, WEST END**

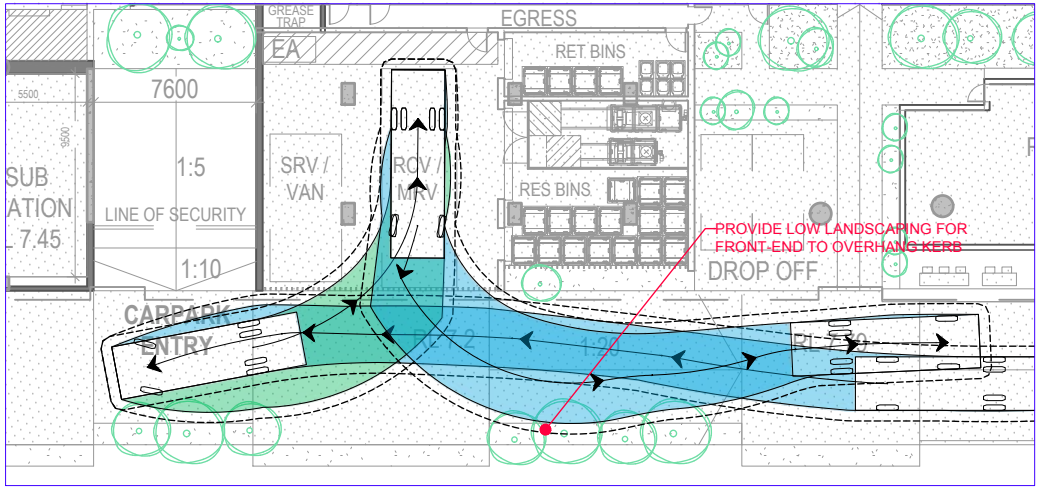
DRAWING TITLE: **SWEPT PATH ANALYSIS - TOWER 2 (EAST) LOADING AREA**
10.24 RCV, 8.8m MRV, 6.4m SRV AND 5.37m VAN

PROJECT NUMBER	25BRT0495
ORIGINAL SIZE	A3
DRAWING NUMBER	25BRT0495-01.04
REVISION	A
DATE	28 Oct 2026
SHEET	1 OF 1

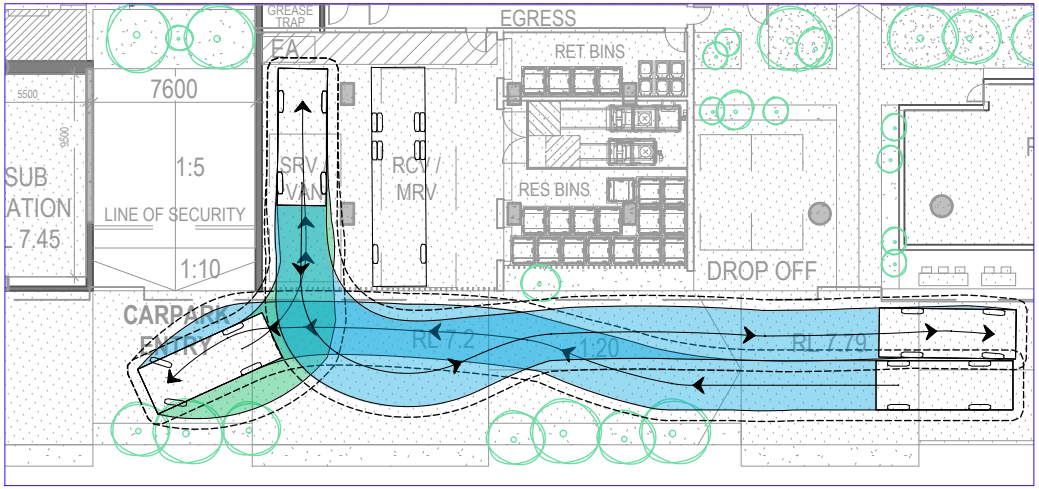
25BRT0495-F04 V00 SERVICE VEHICLE ACCESS.DWG



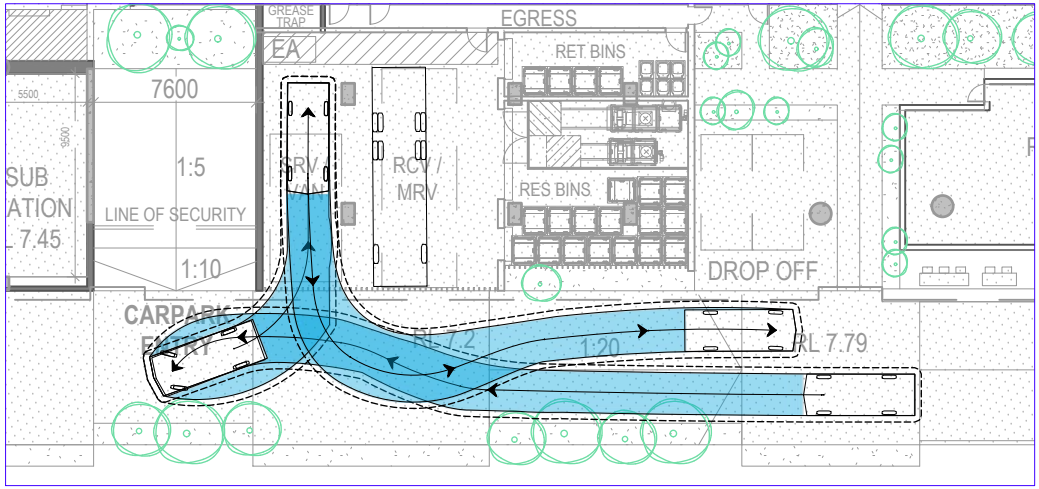
10.24m REAR LOADING REFUSE COLLECTION VEHICLE



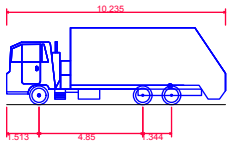
8.8m MEDIUM RIGID VEHICLE



6.4m SMALL RIGID VEHICLE

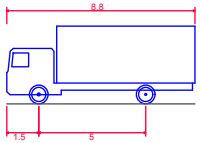


5.2m VAN



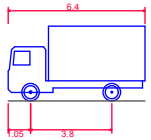
IVECO ACCO 6x4 (BCC - Rear Loader)

Overall Length	10.235m
Overall Width	2.500m
Overall Body Height	3.600m
Min Body Ground Clearance	0.260m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	9.757m
Design Speed Forward	5.00km/h
Clearance Envelope	0.500m



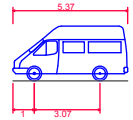
MRV - Medium Rigid Vehicle

Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	3.633m
Min Body Ground Clearance	0.428m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	10.000m
Design Speed Forward	5.00km/h
Clearance Envelope	0.500m



SRV - Small Rigid Vehicle

Overall Length	6.400m
Overall Width	2.330m
Overall Body Height	3.500m
Min Body Ground Clearance	0.398m
Track Width	2.330m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	7.100m
Design Speed Forward	5.00km/h
Clearance Envelope	0.500m



VAN BCC

Overall Length	5.370m
Overall Width	1.960m
Overall Body Height	2.560m
Min Body Ground Clearance	0.333m
Track Width	1.960m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	7.000m
Design Speed Forward	5.00km/h
Clearance Envelope	0.500m

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28 October 2026

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
A	28-10-26	ORIGINAL ISSUE	DSF	RW	RW

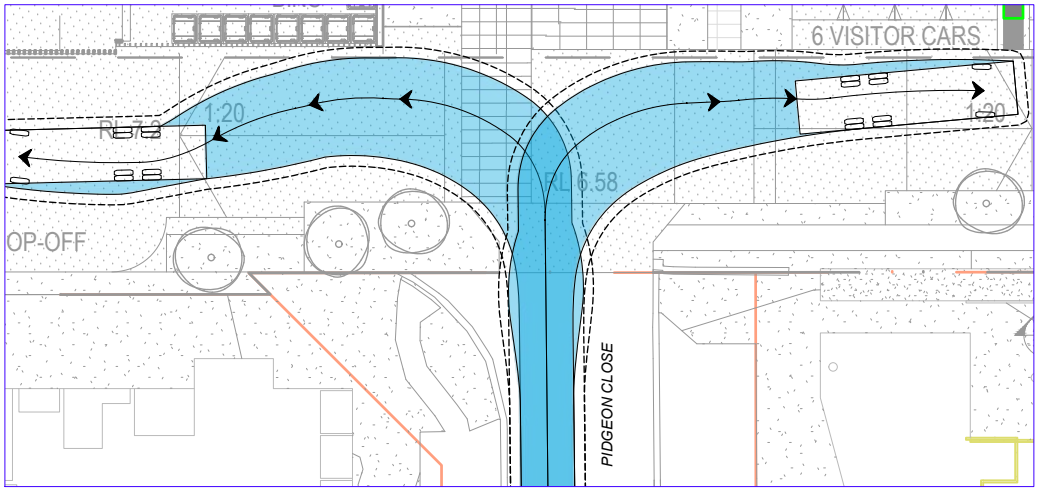
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SCALE 1:250 AT ORIGINAL SIZE
NORTH
CLIENT: CORNERSTONE

Colliers International Engineering & Design (TTMC) Pty Ltd
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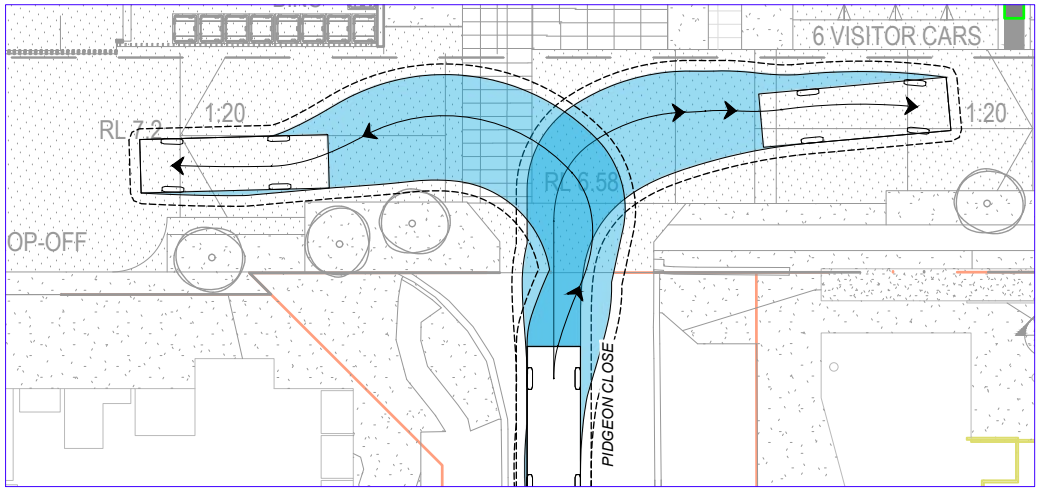
PROJECT: **PIDGEON CLOSE - 20 PIDGEON CLOSE, WEST END**
DRAWING TITLE: **SWEPT PATH ANALYSIS - TOWER 3 LOADING AREA**
10.24 RCV, 8.8m MRV, 6.4m SRV AND 5.37m VAN

PROJECT NUMBER	25BRT0495
ORIGINAL SIZE	A3
DRAWING NUMBER	25BRT0495-01.05
REVISION	A
DATE	28 Oct 2026
SHEET	1 OF 1

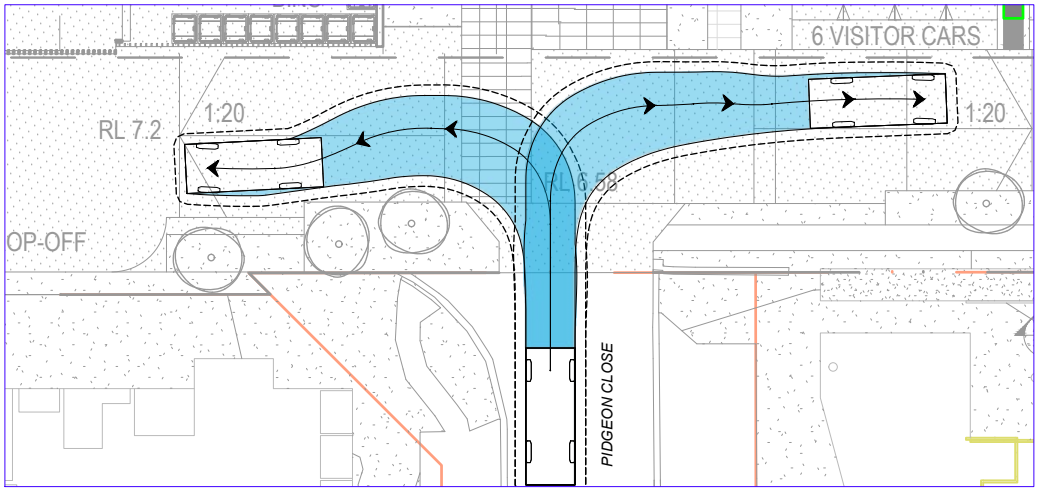
25BRT0495-F04 V00 SERVICE VEHICLE ACCESS.DWG



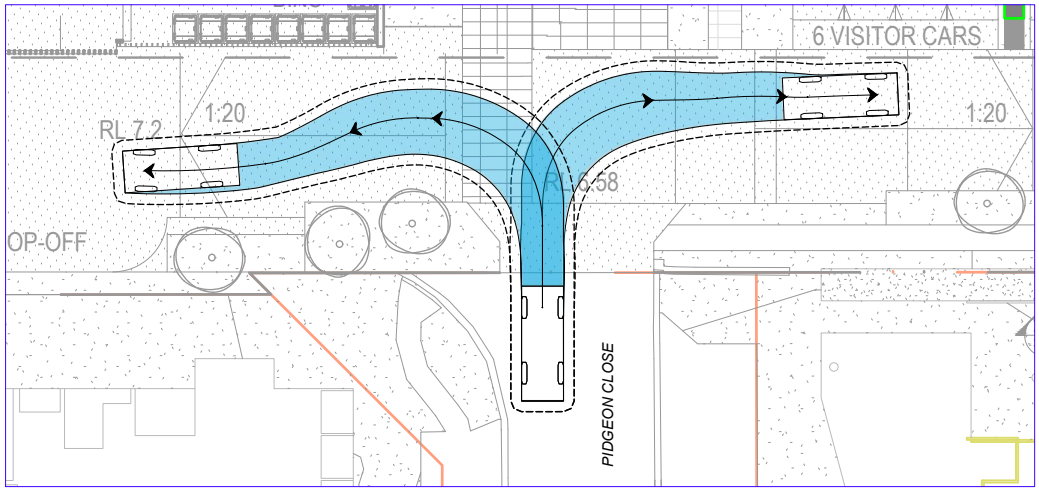
10.24m REAR LOADING REFUSE COLLECTION VEHICLE



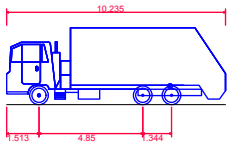
8.8m MEDIUM RIGID VEHICLE



6.4m SMALL RIGID VEHICLE

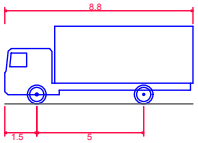


5.2m VAN



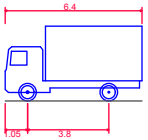
IVECO ACCO 6x4 (BCC - Rear Loader)

Overall Length	10.235m
Overall Width	2.500m
Overall Body Height	3.600m
Min Body Ground Clearance	0.260m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	9.757m
Design Speed Forward	5.00km/h
Clearance Envelope	0.500m



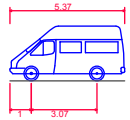
MRV - Medium Rigid Vehicle

Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	3.633m
Min Body Ground Clearance	0.428m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	10.000m
Design Speed Forward	5.00km/h
Clearance Envelope	0.500m



SRV - Small Rigid Vehicle

Overall Length	6.400m
Overall Width	2.330m
Overall Body Height	3.500m
Min Body Ground Clearance	0.398m
Track Width	2.330m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	7.100m
Design Speed Forward	5.00km/h
Clearance Envelope	0.500m



VAN BCC

Overall Length	5.370m
Overall Width	1.960m
Overall Body Height	2.560m
Min Body Ground Clearance	0.333m
Track Width	1.960m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	7.000m
Design Speed Forward	5.00km/h
Clearance Envelope	0.500m

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28 October 2026

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
A	28-10-26	ORIGINAL ISSUE	DSF	RW	RW

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SCALE 1:250 AT ORIGINAL SIZE

NORTH

CLIENT: CORNERSTONE

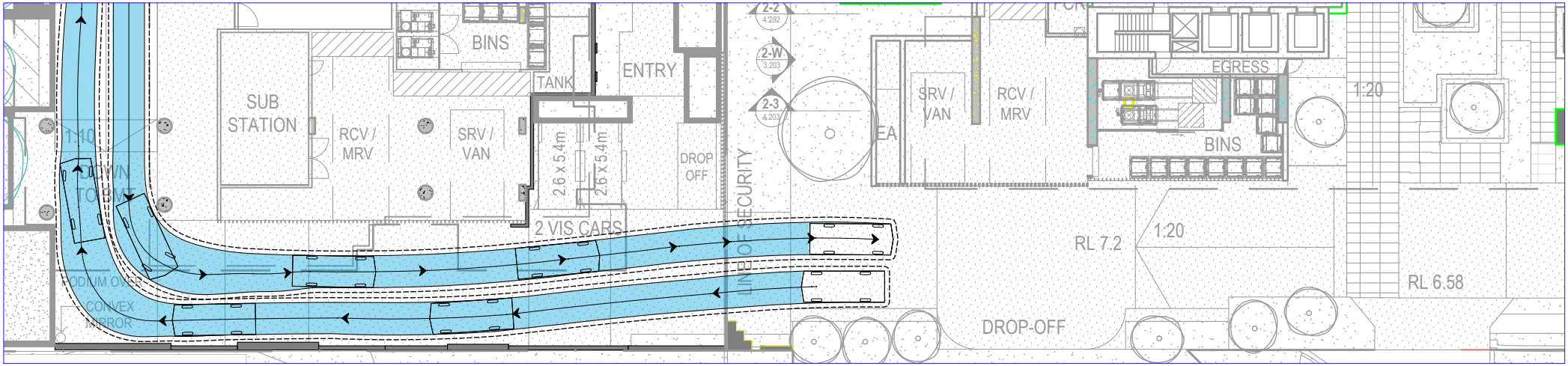
Colliers International Engineering & Design (TTMC) Pty Ltd
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PROJECT: **PIDGEON CLOSE - 20 PIDGEON CLOSE, WEST END**

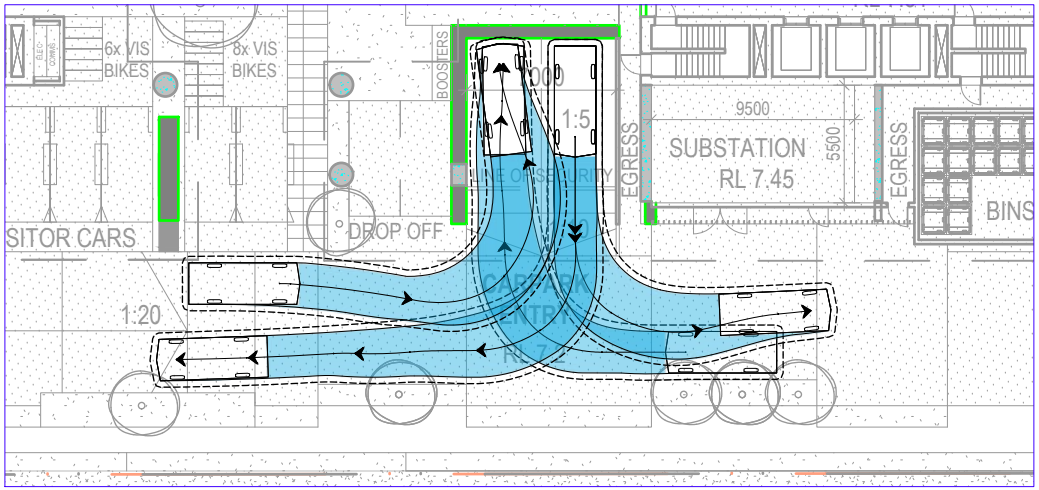
DRAWING TITLE: **SWEPT PATH ANALYSIS - PIDGEON CLOSE ACCESS**
10.24 RCV, 8.8m MRV, 6.4m SRV AND 5.37m VAN

PROJECT NUMBER	25BRT0495
ORIGINAL SIZE	A3
DRAWING NUMBER	25BRT0495-01.06
REVISION	A
DATE	28 Oct 2026
SHEET	1 OF 1

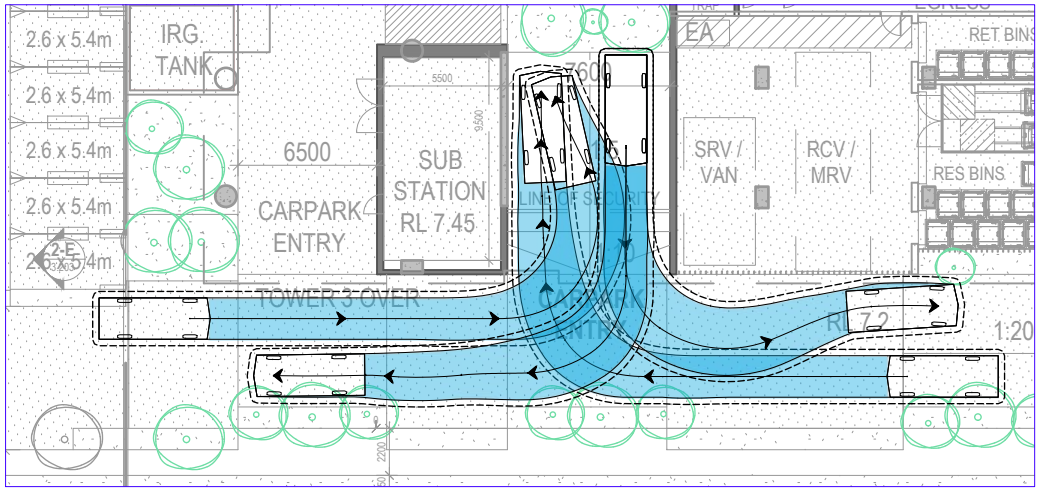
25BRT0495-F04 V00 SERVICE VEHICLE ACCESS.DWG



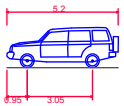
TOWER 1



TOWER 2



TOWER 3



B99 Vehicle (Realistic min radius) (2004)

Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.878m
Min Body Ground Clearance	0.272m
Track Width	1.840m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	6.250m
Design Speed Forward	5.00km/h
Clearance Envelope	0.300m

PRELIMINARY ADVICE ONLY
28 October 2026

25BRT0495-F04 V00 SERVICE VEHICLE ACCESS.DWG

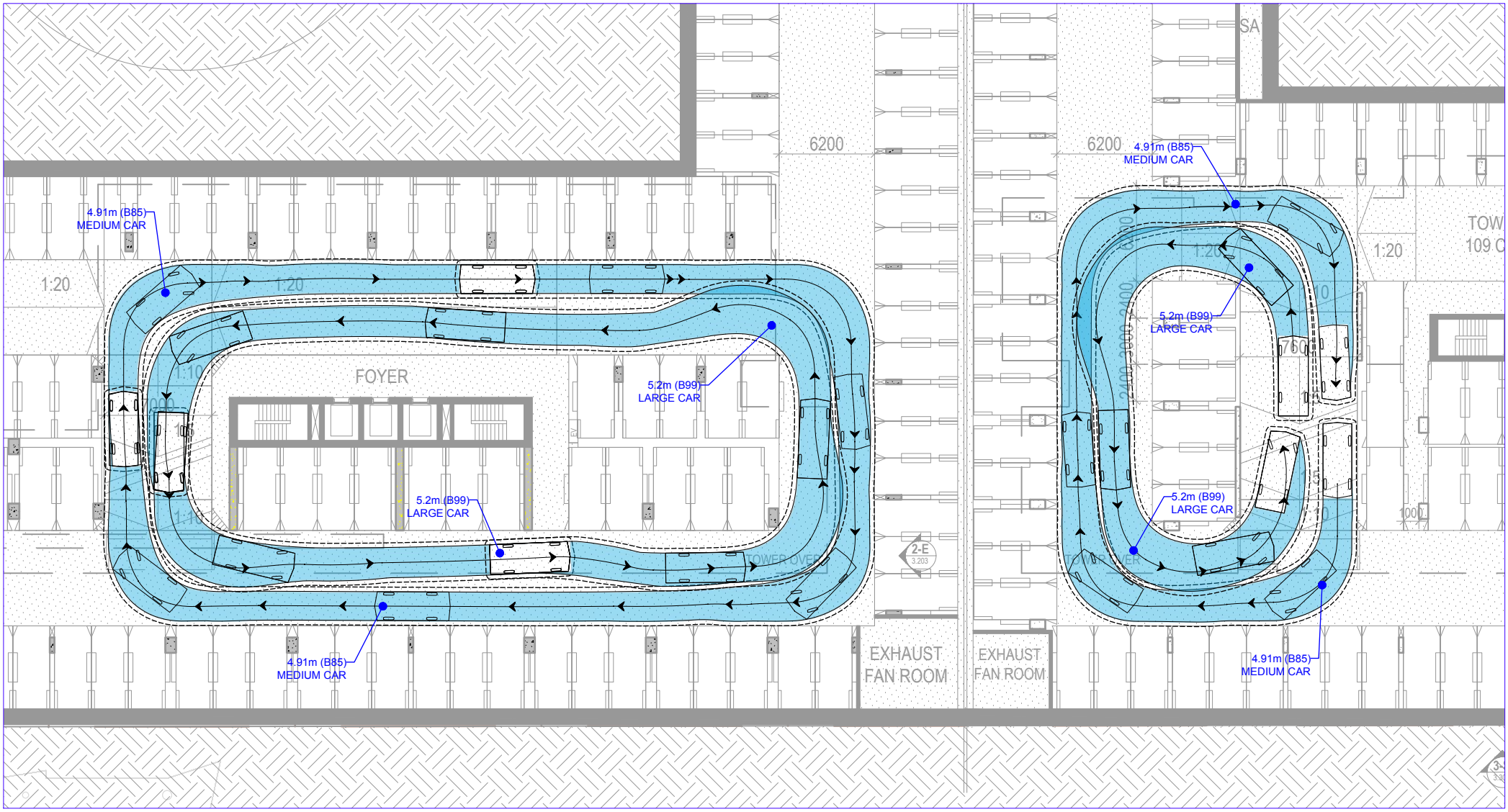
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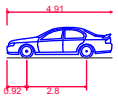
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SCALE 1:250 AT ORIGINAL SIZE
NORTH
CLIENT: CORNERSTONE

Colliers International Engineering & Design (TTMC) Pty Ltd
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PROJECT: **PIDGEON CLOSE - 20 PIDGEON CLOSE, WEST END**
DRAWING TITLE: **SWEPT PATH ANALYSIS - GROUND LEVEL**
5.2m (B99) LARGE CAR

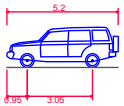
PROJECT NUMBER	25BRT0495
ORIGINAL SIZE	A3
DRAWING NUMBER	25BRT0495-01.07
REVISION	A
DATE	28 Oct 2026
SHEET	1 OF 1





B85 Vehicle (Realistic min radius) (2004)

Overall Length	4.910m
Overall Width	1.870m
Overall Body Height	1.421m
Min Body Ground Clearance	0.159m
Track Width	1.770m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	5.750m
Design Speed Forward	5.00km/h
Clearance Envelope	0.300m



B99 Vehicle (Realistic min radius) (2004)

Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.878m
Min Body Ground Clearance	0.272m
Track Width	1.840m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	6.250m
Design Speed Forward	5.00km/h
Clearance Envelope	0.300m

PRELIMINARY ADVICE ONLY
28 October 2026

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
A	28-10-26	ORIGINAL ISSUE	DSF	RW	RW

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SCALE 1:250 AT ORIGINAL SIZE

NORTH

CLIENT: CORNERSTONE

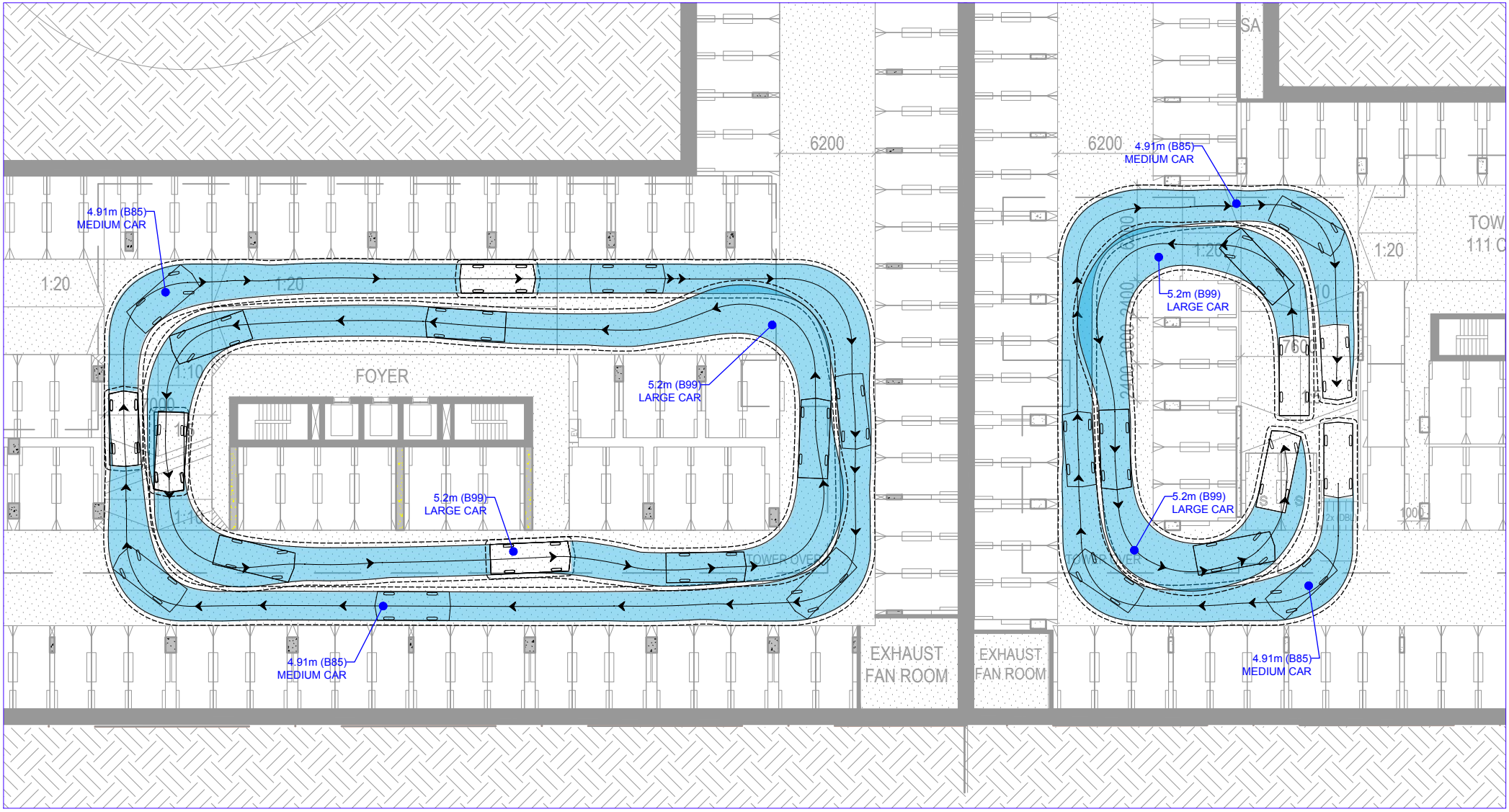
Colliers International Engineering & Design (TTMC) Pty Ltd
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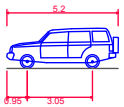
PROJECT: **PIDGEON CLOSE - 20 PIDGEON CLOSE, WEST END**

DRAWING TITLE: **SWEPT PATH ANALYSIS - BASEMENT LEVEL 1**
5.2m (B99) LARGE CAR (INSIDE) PASSING
4.91m (B85) MEDIUM CAR (OUTSIDE)

PROJECT NUMBER	25BRT0495
ORIGINAL SIZE	A3
DRAWING NUMBER	25BRT0495-01.08
REVISION	A
DATE	28 Oct 2026
SHEET	1 OF 1

25BRT0495-F04 V00 SERVICE VEHICLE ACCESS.DWG





B99 Vehicle (Realistic min radius) (2004)

Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.878m
Min Body Ground Clearance	0.272m
Track Width	1.840m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	6.250m
Design Speed Forward	5.00km/h
Clearance Envelope	0.300m

PRELIMINARY ADVICE ONLY
28 October 2026

25BRT0495-F04 V00 SERVICE VEHICLE ACCESS.DWG

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
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SCALE 1:250 AT ORIGINAL SIZE

NORTH

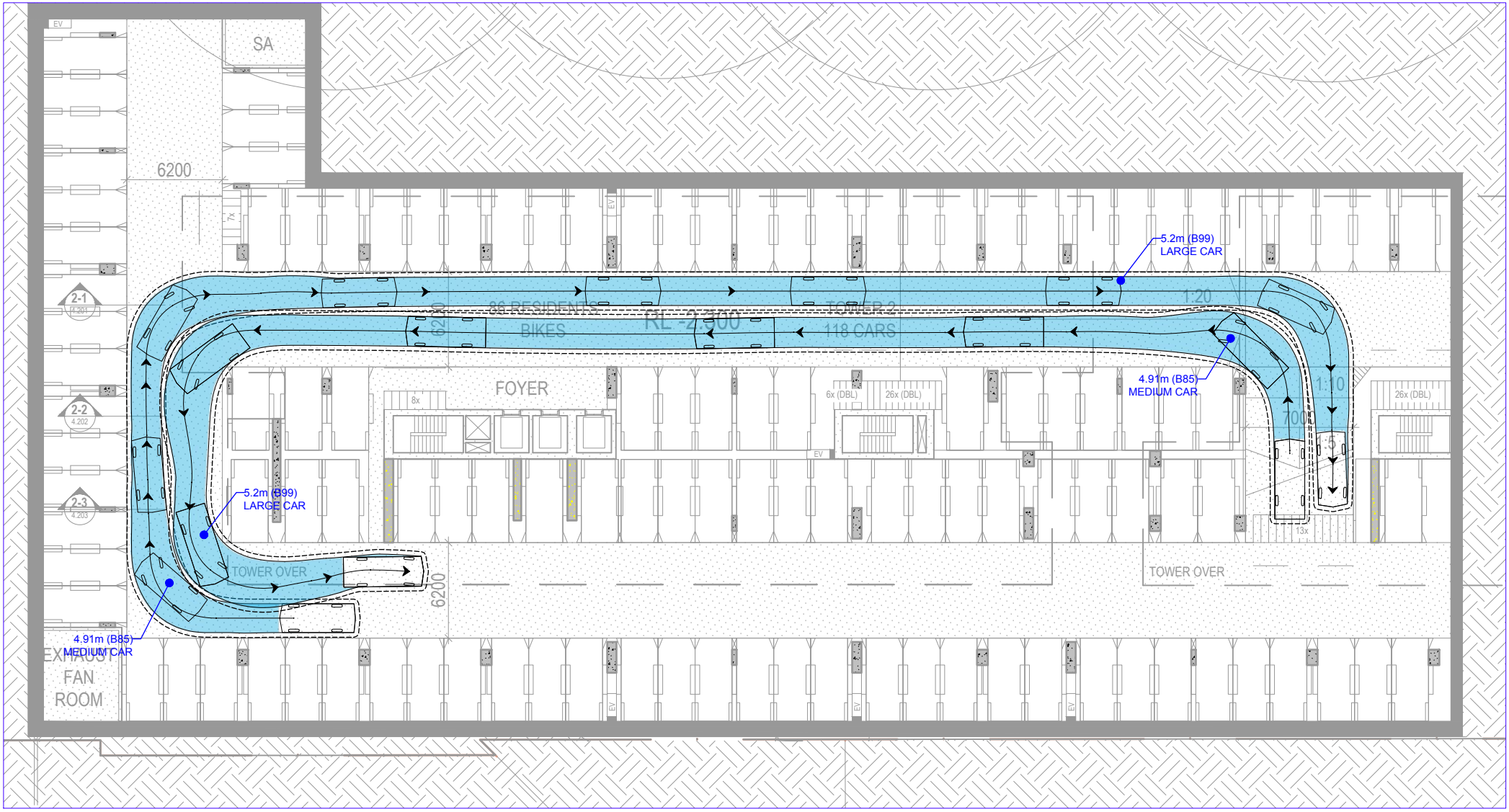
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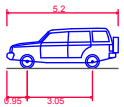
Colliers International Engineering & Design (TTMC) Pty Ltd
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PROJECT: **PIDGEON CLOSE - 20 PIDGEON CLOSE, WEST END**

DRAWING TITLE: **SWEPT PATH ANALYSIS - BASEMENT LEVEL 2**
5.2m (B99) LARGE CAR (INSIDE) PASSING
4.91m (B85) MEDIUM CAR (OUTSIDE)

PROJECT NUMBER	25BRT0495
ORIGINAL SIZE	A3
DRAWING NUMBER	25BRT0495-01.09
REVISION	A
DATE	28 Oct 2026
SHEET	1 OF 1





B99 Vehicle (Realistic min radius) (2004)

Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.878m
Min Body Ground Clearance	0.272m
Track Width	1.840m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	6.250m
Design Speed Forward	5.00km/h
Clearance Envelope	0.300m

PRELIMINARY ADVICE ONLY
28 October 2026

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
A	28-10-26	ORIGINAL ISSUE	DSF	RW	RW

SCALE 0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

NORTH

CLIENT: CORNERSTONE

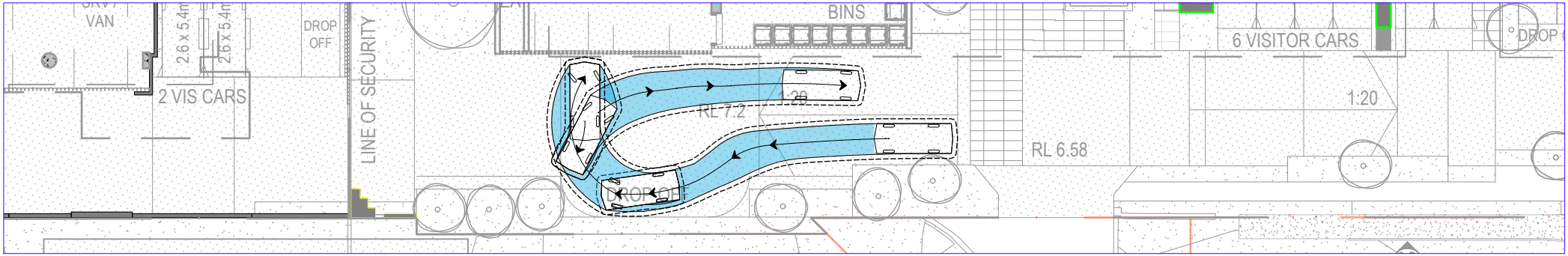
Colliers International Engineering & Design (TTMC) Pty Ltd
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P.O. BOX 12015, BRISBANE QLD 4003
T: (07) 3352 1300
E: aus.tt.edbris@colliers.com W: www.colliers.com.au

PROJECT: **PIDGEON CLOSE - 20 PIDGEON CLOSE, WEST END**

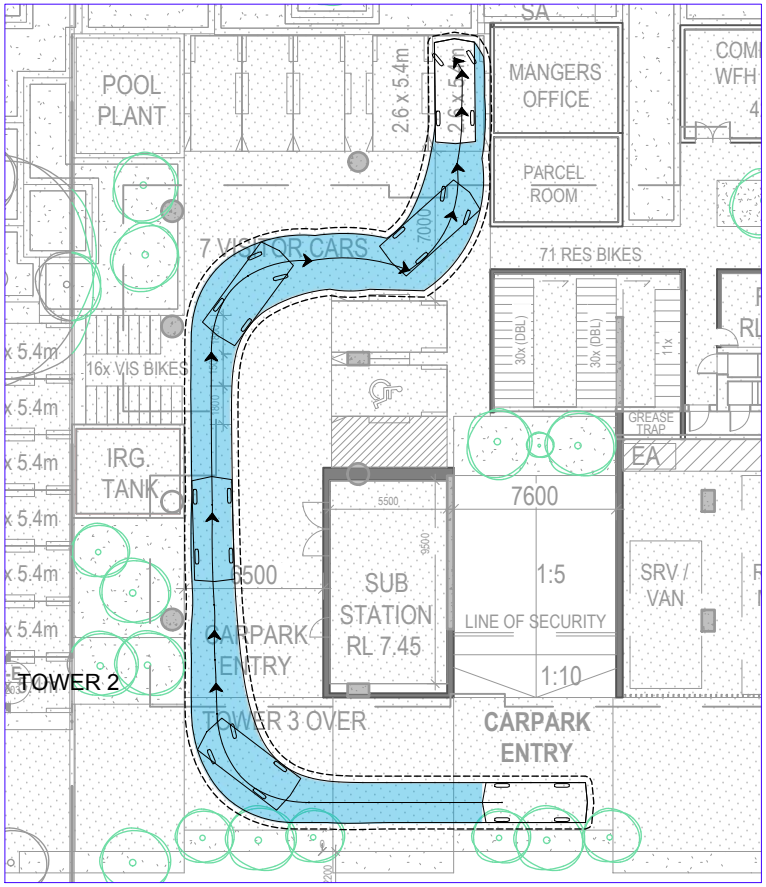
DRAWING TITLE: **SWEPT PATH ANALYSIS - BASEMENT LEVEL 3**
5.2m (B99) LARGE CAR (INSIDE) PASSING
4.91m (B85) MEDIUM CAR (OUTSIDE)

PROJECT NUMBER	25BRT0495
ORIGINAL SIZE	A3
DRAWING NUMBER	25BRT0495-01.10
REVISION	A
DATE	28 Oct 2026
SHEET	1 OF 1

25BRT0495-F04 V00 SERVICE VEHICLE ACCESS.DWG

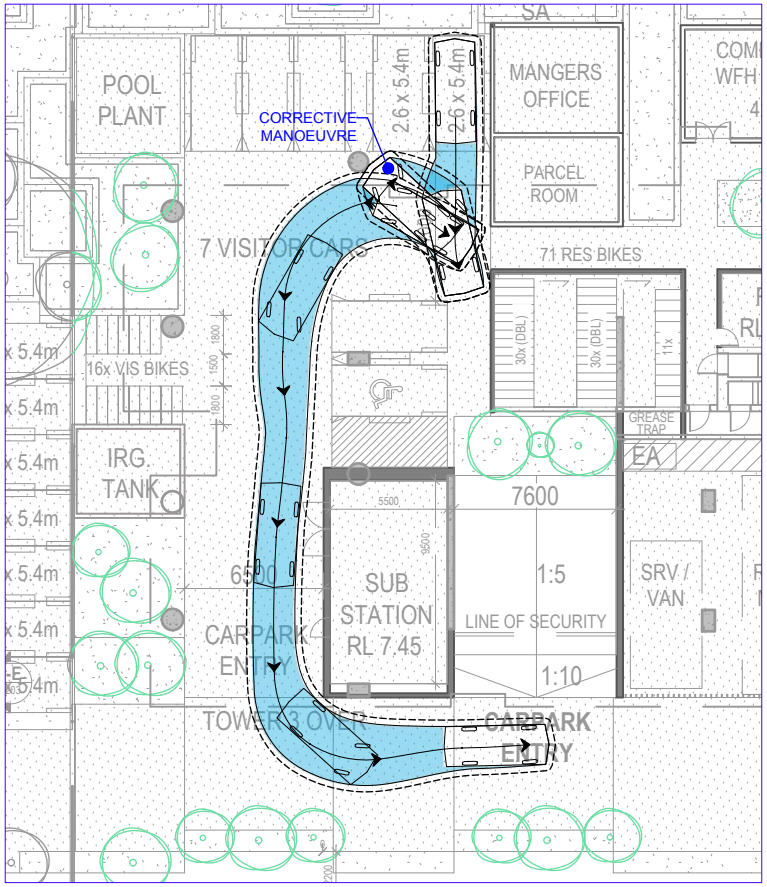


TOWER 2 DROP-OFF BAY



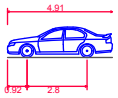
TOWER 2

INGRESS MANOEUVRE



EGRESS MANOEUVRE

TOWER 2 END OF AISLE CAR PARK ACCESS



B85 Vehicle (Realistic min radius) (2004)

Overall Length	4.910m
Overall Width	1.870m
Overall Body Height	1.421m
Min Body Ground Clearance	0.159m
Track Width	1.770m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	5.750m
Design Speed Forward	5.00km/h
Clearance Envelope	0.300m

PRELIMINARY ADVICE ONLY
28 October 2026

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
A	28-10-26	ORIGINAL ISSUE	DSF	RW	RW

SCALE 0 2.5 5 7.5 10 12.5m
SCALE 1:250 AT ORIGINAL SIZE

NORTH

CLIENT: CORNERSTONE

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PROJECT: **PIDGEON CLOSE - 20 PIDGEON CLOSE, WEST END**

DRAWING TITLE: **SWEPT PATH ANALYSIS - GROUND LEVEL**
4.91 (B85) MEDIUM CAR

PROJECT NUMBER	25BRT0495
ORIGINAL SIZE	A3
DRAWING NUMBER	25BRT0495-01.11
REVISION	A
DATE	28 Oct 2026
SHEET	1 OF 1

25BRT0495-F04 V00 SERVICE VEHICLE ACCESS.DWG

Appendix C TAPS Code Response Table

Performance Outcomes	Acceptable Outcomes	Response
PO1 Development is designed: (a) to include a technically competent and accurate response to the transport and traffic elements of the development; (b) in accordance with the standards in the Transport, access, parking and servicing planning scheme policy; (c) to ensure the efficient operation and safety of the development and its surrounds. Note—The acceptable outcome and performance outcome can be demonstrated through a development application that: is accompanied by sufficient information, including computer modelling input and output data, to allow the proposed development to be properly assessed against the requirements of this code and the standards and guidelines of the Transport, access, parking and servicing planning scheme policy; is certified by a Registered Professional Engineer Queensland that all plans, documents and dimensioned drawings comply with the requirements of this code and the standards and guidelines of the Transport, access, parking and servicing planning scheme policy; ensures that any computer modelling input and output data are accurate, reasonable and carried out in accordance with sound traffic engineering practices.	AO1 Development complies with the standards in the Transport, access, parking and servicing planning scheme policy.	**Complies with Acceptable Outcome** The proposed development generally complies with Council's TAPS PSP. However, where alternate solutions are required, further explanation is provided within the relevant sections of this Transport Engineering Report.
PO2 Development of a major size incorporates on-site provision for integration with the public transport network and the management of vehicles, public transport, pedestrians and cyclists, including providing appropriate pedestrian and cyclist linkages to adjoining uses, public areas and the transport network consistent with	AO2 No acceptable outcome is prescribed.	**Not Applicable** The proposed development is not considered to be of the scale necessary to require integration with the public transport network. It is however located in close proximity to the high frequency Blue City Glider, which connects to both the Citytrain and Citycat networks.

Performance Outcomes	Acceptable Outcomes	Response
the planning by the State Government and Council.		
PO3 Development provides vehicle access that is located and designed so as to have no significant impact on the safety, efficiency, function, convenience of use or capacity of the road network.	AO3.1 Development provides site access that is located and designed in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.	**Complies with Acceptable Outcome** The proposed development's two (2) accesses are provided on Montague Road and Pidgeon Close. The proposed accesses generally meet the requirements of Council's TAPS PSP. Further explanation is provided within Section 6 of this Transport Engineering Report.
	AO3.2 Development provides an easement for a vehicular access benefiting all adjoining landowners and the Council if the vehicular access services more than an individual development or premises.	**Not Applicable**
PO4 Development provides walking and cycle routes through the site which: (a) link to the external network and pedestrian and cyclist destinations such as schools, shopping centres, open space, public transport stations, shops and local activity centres along the safest, most direct and convenient routes; (b) encourage walking and cycling; (c) ensure pedestrian and cyclist safety; (d) provide a direct and legible network. Note—The Infrastructure design planning scheme policy provides additional guidance on how to comply with this performance outcome.	AO4.1 Development provides walking and cycle routes which are constructed on the carriageway or through the site to: (a) create a walking or cycle route along the full frontage of the site; (b) connect to public transport and existing cycle and walking routes at the frontage or boundary of the site.	**Complies with Acceptable Outcome** The proposed development provides pedestrian and cyclist access along the Montague Road site frontage, along the interface with Davies Park on the northern boundary, and through the site from Pidgeon Close to Davies Park. These provisions connect with existing public and active transport routes surrounding the subject site.
	AO4.2 Development provides walking and cycle routes that are constructed in compliance with the standards in the Transport, access, parking and servicing planning scheme policy and the Infrastructure design planning scheme policy.	**Complies with Acceptable Outcome** The proposed development provides on-site walking and cycle routes designed (not yet constructed) in accordance with Council's TAPS PSP and other recognised standards for equitable access.
	AO4.3 Development provides walking and cycle routes which do not include a potential entrapment area, blind corner or sudden change in level that restrict sightlines.	**Not addressed in this report** Refer to Town Planning Report and/or Architectural Plans/Report.
PO5 Development provides secure and convenient bicycle parking which: (a) for visitors is obvious and located close to the building's main entrance;	AO5.1 Development provides on-site bicycle parking spaces in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.	**Generally Complies with Acceptable Outcome** The resident parking supply complies with Council requirements, whereas the visitor supply represents an alternative performance solution, and is consistent with the recommendations of Austroads.

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(b) for employees is conveniently located to provide secure and convenient access between the bicycle storage area, end-of-trip facilities and the main area of the building; (c) is easily and safely accessible from outside the site; (d) does not impact adversely on visual amenity; (e) does not impede the movement of pedestrians or other vehicles; (f) is designed to comply with a recognised standard for the construction of bicycle facilities. Note—For a performance outcome relating to the number of bicycle parking spaces provided, the application must demonstrate how the needs of the intended users of the site differ from the standard rates in the Transport, access, parking and servicing planning scheme policy.		Both the vertically mounted, and single horizontally mounted racks are spaced at 500mm, and are thus compliant with AS2890.3:2015. The dual height horizontally mounted racks are a proprietary product and are designed specifically to operate with a 400mm spacing, and consequently are considered an appropriate alternative solution.
	AO5.2 Development provides bicycle parking spaces for employees which are co-located with end-of-trip facilities (shower cubicles and lockers) in compliance with the Transport, access, parking and servicing planning scheme policy and AS 2890.3-1993 Bicycle parking facilities.	**Not Applicable** The proposed development land uses and GFAs do not result in any requirements, according to Council's TAPS PSP.
	AO5.3 Development ensures that the location of visitor bicycle parking is discernible either by direct view or using signs from the street.	**Complies with Acceptable Outcome** All visitor bicycle parking will be located on the ground level, along with sufficient signage.
	AO5.4 Development provides visitor bicycle parking which does not impede pedestrian movement.	**Complies with Acceptable Outcome** The location and layout of visitor bicycle parking does not impede pedestrian movement.
	AO5.5 Development provides bicycle parking which is constructed in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.	**Generally Complies with Acceptable Outcome** See response to A05.1
PO6 Development provides shower cubicles and lockers in sufficient numbers to meet the needs and volume of predicted pedestrian and cyclist users. Note—For a performance outcome the application must demonstrate how the needs of the intended users of the site differ from the standard rates in the Transport, access, parking and servicing planning scheme policy.	AO6 Development provides shower cubicles and lockers for pedestrians and cyclists in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.	**Not Applicable** This is only required for some non-residential uses and normally only when greater than 1000sqm GFA, and consequently is not required for the proposed development.

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PO7 Development provides pedestrian and cyclist access to the site which is designed to provide safe movement and avoid unnecessary conflict between pedestrians, cyclists and motor vehicles.	AO7 Development provides pedestrian and cycle access that is designed and constructed in compliance with the site access design guidelines, pedestrian facilities standards and cyclist facilities standards in the Transport, access, parking and servicing planning scheme policy.	**Complies with Acceptable Outcome** The proposed development provides pedestrian and cycle access designed generally in accordance with Council's TAPS PSP. Resident cyclist access can be achieved via either the vehicular accesses and/or lifts, while visitor cyclist access is achieved directly from the Ground Level.
PO8 Development provides pedestrian and cyclist access to and from the site which is located to take advantage of safe crossing points of the adjacent road system, key destinations and public transport facilities.	AO8 No acceptable outcome is prescribed.	**Complies with Performance Outcome** The proposed development provides pedestrian and cyclist access along the Montague Road site frontage, along the interface with Davies Park on the northern boundary, and through the site from Pidgeon Close to Davies Park. These provisions connect with existing public and active transport routes surrounding the subject site
PO9 Development provides access driveways in the road area that are located, designed and controlled to: (a) minimise adverse impacts on the safety and operation of the transport network, including the movement of pedestrians and cyclists; (b) ensure the amenity of adjacent premises, from impacts such as noise and light.	AO9.1 No acceptable outcome for access is prescribed, for a major development (as described in the Transport, access, parking and servicing planning scheme policy).	**Complies with Performance Outcome** The proposed development's two (2) accesses are provided on Montague Road and Pidgeon Close. The proposed accesses generally meet the requirements of Council's TAPS PSP. Further explanation is provided within Section 6 of this Transport Engineering Report.
	AO9.2 Development which is not a major development (as described in the Transport, access, parking and servicing planning scheme policy) provides a single site access driveway in the road area to the lowest order road to which the site has frontage.	**Not Applicable** The proposed development would be classified as a major development, based on the 25 vph threshold specified by Council. The net increase in site traffic generation is minimal however.
	AO9.3 Development ensures that sight distances to and from all proposed access driveways in the road area and intersections are in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.	**Generally Complies with Acceptable Outcome** The proposed development's two (2) accesses are provided on Montague Road and Pidgeon Close. The proposed accesses generally meet the requirements of Council's TAPS PSP. Further explanation is provided within Section 6 of the Colliers Transport Engineering Report.
	AO9.4 Development provides access driveways in the road area which: (a) are located, designed and controlled in compliance with the standards in the Transport, access, parking and servicing planning scheme policy;	**Generally Complies with Acceptable Outcome** The proposed development's two (2) accesses are provided on Montague Road and Pidgeon Close. The proposed accesses generally meet the requirements of Council's TAPS PSP. Further explanation is provided within Section 6 of the Colliers Transport Engineering Report.

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	(b) are not provided through a bus stop, taxi rank or pedestrian crossing or refuge.	
	AO9.5 Development makes provision for shared access arrangements particularly where it is necessary to limit access points to a major road.	**Not Applicable**
PO10 Redevelopment provides for: (a) the closure of all access driveways in the road area that no longer comply with the standards in the Transport, access, parking and servicing planning scheme policy; (b) the reinstatement of adjacent footpaths.	AO10 No acceptable outcome is prescribed.	**Complies with Performance Outcome** All redundant access driveways will be removed and footpaths reinstated to Council standards.
PO11 Development provides that an internal approach to an access driveway in the road area is designed and located to provide for the safety of pedestrians and cyclists using paths adjacent to the frontage of the site, and motorists.	AO11.1 Development provides sight distances to and from all proposed access driveways in the road area and intersections which are in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.	**Complies with Acceptable Outcome** The proposed development's two (2) accesses are provided on Montague Road and Pidgeon Close. The proposed accesses generally meet the requirements of Council's TAPS PSP. Further explanation is provided within Section 6 of this Transport Engineering Report.
	AO11.2 Development ensures that convex mirrors are only used in a site: (a) as a secondary support at access driveways; (b) in addition to acceptable sight splays that comply with the sight distances standards in the Transport, access, parking and servicing planning scheme policy.	**Complies with Acceptable Outcome** Convex mirrors are not required, given acceptable sight splays are provided at the driveway. Further explanation is provided within Section 6 of this Transport Engineering Report.
PO12 Development in the City core and City frame as identified in Figure a provides car parking spaces at rates to discourage private car use and encourage walking, cycling and the use of public transport.	AO12 Development in the City core and City frame as identified in Figure a provides maximum car-parking rates in compliance with the standards in the Transport, access, parking and servicing planning scheme policy. Note—For self-assessable development including an existing premises, no reduction to existing car parking is required to comply with a maximum car-parking rate in the Transport, access, parking and servicing planning scheme policy.	**Complies with Performance Outcome** The proposed development provides a total of 812 car spaces on-site, including 790 resident spaces and 22 visitor spaces. Further explanation is provided within Section 5 of this Transport Engineering Report.

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PO13 Development outside of the City core and City frame as identified in Figure a provides on-site car parking spaces to accommodate the design peak parking demand without any overflow of car parking to an adjacent premises or adjacent street.	AO13 Development outside of the City core and City frame as identified in Figure a: (a) provides on-site car parking spaces in compliance with the standards in the Transport, access, parking and servicing planning scheme policy; or (b) for self-assessable development does not result in on-street car parking if no parking standard is identified in the Transport, access, parking and servicing planning scheme policy. Note—For self-assessable development including an existing premises, no reduction to existing car parking is required to comply with a maximum car-parking rate in the Transport, access, parking and servicing planning scheme policy.	**Not Applicable** The proposed development is located within the City Core.
PO14 Development ensures that the number of car parking spaces and design of the car parking area: (a) meet the combined design peak parking demand for residential, visitor and business parking; (b) allow for the temporal sharing of car-parking spaces for uses with different peak parking demands. Note—In order to demonstrate that adequate car parking is provided, a traffic impact assessment prepared in compliance with the Transport, access, parking and servicing planning scheme policy is to identify the appropriate number of car parking spaces to be provided.	AO14.1 Development provides a number of car parking spaces on site equalling the sum of the maximum design peak parking demand for the individual uses at any point in time.	**Complies with Acceptable Outcome** The proposed development provides resident and visitor car parking generally consistent with the anticipated peak parking demands. Further explanation is provided within Section 5 of this Transport Engineering Report.
	AO14.2 Development involving mixed use provides a non-residential car parking area with shared parking for all the businesses in the development.	**Complies with Acceptable Outcome** Given its location within the city core, Council does not require the prevision of any parking for the small retail tenancy, and none is proposed.
PO15 Development provides a car park layout which allows for on-site vehicle parking that: (a) is clearly defined, safe and easily accessible; (b) is designed to contain potential adverse impacts within the site; (c) does not detract from the aesthetics or amenity of an area; (d) discourages on-street parking if parking has an adverse traffic	AO15 Development provides parking bays, queue areas and manoeuvring areas which are designed for the design service vehicle to the standards in the Transport, access, parking and servicing planning scheme policy.	**Complies with Acceptable Outcome** The design of the proposed development's internal car park and circulation areas is generally in accordance with the requirements of Council's TAPS PSP. Further explanation is provided within Section 5 of this Transport Engineering Report.

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management safety or amenity impact; (e) is consistent with safe and convenient pedestrian and cyclist movement.		
PO16 Development creates a safe environment by incorporating the key elements of crime prevention through environmental design.	AO16 Development incorporates the key elements of crime prevention through environmental design in its layout, building and structure design and landscaping by: (a) facilitating casual surveillance opportunities and including good sightlines to publicly accessible areas such as car parks, pathways, public toilets and communal areas; (b) defining different uses and ownerships through design and restricting access from non-residential uses into private residential dwellings; (c) promoting safety and minimising opportunities for graffiti and vandalism through exterior building design and orientation of buildings and use of active frontages; (d) ensuring publicly accessible areas such as car parks, pathways, public toilets and communal areas are well lit; (e) including way-finding cues; (f) minimising predictable routes and entrapment locations near public spaces such as car parks, public toilets, ATMs and communal areas. Note—For guidance in achieving the key elements of crime prevention through environmental design, refer to the Crime prevention through environmental design planning scheme policy.	**Not addressed in this report** Refer to Town Planning Report and/or Architectural Plans/Report.
PO17 Development minimises the potential for graffiti and vandalism through access control, canvas reduction and easy maintenance selection.	AO17 Development incorporates graffiti and vandalism prevention techniques in its layout, building and structure design and landscaping, by: (a) denying access to potential canvas through access control techniques;	**Not addressed in this report** Refer to Town Planning Report and/or Architectural Plans/Report.

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	(b) reducing potential canvases through canvas reduction techniques; (c) ensuring graffiti can be readily and quickly removed through easy maintenance selection techniques. Note—For guidance on graffiti and vandalism prevention techniques, refer to the Graffiti prevention planning scheme policy.	
PO18 Development is serviced by an adequate number and size of service vehicles.	AO18 Development ensures that the number and size of design service vehicles selected for the site is in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.	**Generally Complies with Acceptable Outcome** The proposed loading bay provision generally complies with the requirements of Council's TAPS and Refuse PSPs. Further explanation is provided within Section 7 of this Transport Engineering Report.
PO19 Development layout provides for services which: (a) are wholly within the site; (b) are clearly defined, safe and easily accessible; (c) are designed to contain potential adverse impacts of servicing within the site; (d) do not detract from the aesthetics or amenity of the surrounding area.	AO19.1 Development ensures that a service bay provided on site: (a) is provided and designed to comply with the design vehicle table and service area design standards in the Transport, access, parking and servicing planning scheme policy; (b) is located away from street frontages and screened from adjoining premises.	**Generally Complies with Acceptable Outcome** The proposed loading bay provision generally complies with the requirements of Council's TAPS and Refuse PSPs. Further explanation is provided within Section 7 of this Transport Engineering Report.
	AO19.2 Development provides on-site servicing facilities and associated on-site vehicle manoeuvring areas which are designed in compliance with the service area design standards in the Transport, access, parking and servicing planning scheme policy.	**Generally Complies with Acceptable Outcome** The proposed loading bay provision generally complies with the requirements of Council's TAPS and Refuse PSPs. Further explanation is provided within Section 7 of this Transport Engineering Report.
	AO19.3 Development provides service areas for refuse collection in compliance with the standards in the Refuse planning scheme policy, Transport, access, parking and servicing planning scheme policy and the Infrastructure design planning scheme policy.	**Generally Complies with Acceptable Outcome** The proposed loading bay provision generally complies with the requirements of Council's TAPS and Refuse PSPs. Further explanation is provided within Section 7 of this Transport Engineering Report.

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PO20 Development provides service vehicle access routes to and from the site which minimise the impact on: (a) amenity and safety in residential areas; (b) streets not constructed to a standard that accommodate increased heavy vehicle movements.	AO20 Development ensures that service vehicles use the shortest and most direct route to the major road network in compliance with the heavy vehicle standards in the Transport, access, parking and servicing planning scheme policy.	**Complies with Acceptable Outcome** It is proposed that large service vehicles (ie >7m long) be prohibited from entering via the Montague Road driveway, but otherwise there are to be no limitations on service vehicle entry / exit movements. The requirement for large service vehicles to enter via Pidgeon Street has an insignificant impact on the directness of access.
If for development which is required to be serviced by a b-double (Austroad class 10 vehicle), multi-combination vehicle, over-dimensioned vehicle or any on vehicle identified by the Queensland Government as requiring a permit to operate on the road (freight-dependent development)		
PO21 Development which is freight-dependent development ensures that the traffic generated by the development does not impact on: (a) the operation of the transport network; (b) the safety and amenity of a residential area; (c) a road not constructed to accommodate a non-standard vehicle such as a road only constructed to accommodate a vehicle that has a legal right of access to all roads including Austroads vehicles classes 1–9.	AO21.1 Development which is freight-dependent development is located on a site which: (a) has frontage to or direct access to the freight network in the Road hierarchy overlay via roads in a zone in the Industry zones category; or (b) can be serviced by a route that can act as a primary freight access route and connect to an existing primary freight route without impacting on the safe operation of the road network in compliance with the heavy vehicle standards in the Transport, access, parking and servicing planning scheme policy.	**Not Applicable**
	AO21.2 Development which is freight-dependent development provides any necessary upgrade to a road used as an access route in compliance with the Infrastructure design planning scheme policy.	**Not Applicable**