Transport Engineering Report

Proposed Build-to-Rent,
19-25 Campbell Street, Bowen Hills

New Urban Villages

About TTM

For 30 years, we've been at the centre of the Australian development and infrastructure industry. Our unique combination of acoustics, data, traffic and waste services is fundamental to the success of any architectural or development project.

We have over 50 staff, with an unrivalled depth of experience. Our industry knowledge, technical expertise and commercial insight allow us to deliver an exceptional and reliable service.

T: (07) 3327 9500
F: (07) 3327 9501
E: ttmbris@ttmgroup.com.au

Revision Record

No.	Author	Reviewed/Approved	Description	Date
A	Ryan Bellamy		DA Report (DRAFT)	12/08/2024
1	Ryan Bellamy	Simon Crank RPEQ #18360	DA Report (FINAL)	23/08/2024

Level 8, 369 Ann Street, Brisbane. PO Box 12015 George Street Brisbane 4003

Contents

Table Index

Figure Index

1. Introduction

1.1. Purpose

TTM Consulting Pty Ltd (TTM) has been engaged by New Urban Villages to prepare a Transport Engineering Report (TER) for a proposed build-to-rent development to be located at 19-25 Campbell Street, Bowen Hills. It is understood this report will accompany a Development Application (DA) to be lodged with Economic Development Queensland (EDQ), with referral to Brisbane City Council ('Council') City Planning & Sustainability Development Services.

1.2. Background

Prior to the completion of this report, TTM Consulting has consulted with the development team to identify an efficient design for the site for traffic operations.

The current approval for the site (DEV2021/1193) was issued by EDQ on 20 December 2022.

1.3. Scope

The scope of the transport aspects investigated includes:

- Reviewing the prevailing traffic and transport conditions surrounding the site.
- Identifying 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.
- Identification of the likely traffic impacts of development on the surrounding road network.

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

- EDQ Bowen Hills Priority Development Area (PDA) Development Scheme.
- 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).

- Department of Transport and Main Roads 'Guide to Traffic Impact Assessment' (GTIA).

2. Site Location

The subject site is located at 19-25 Campbell Street, Bowen Hills, as shown in Figure 2.1.

The subject site has road frontage to Edgar Street (north), Hazelmount Street (west) and Campbell Street (south).

The property description is Lots 41 to 45 on RP9895, Lot 1 on RP144514, Lots 10 and 12 on RP144655 and Lot 1 on RP151932.

Figure 2.1: Site Location (Immediate Context)

Source: NearMap

The subject site currently contains several buildings, which are primarily occupied by commercial tenancies.

Typical cross-sections for the key roads surrounding the subject site are provided in Figure 2.2 overleaf.

Image 1 – Campbell Street (looking west – subject site on right)

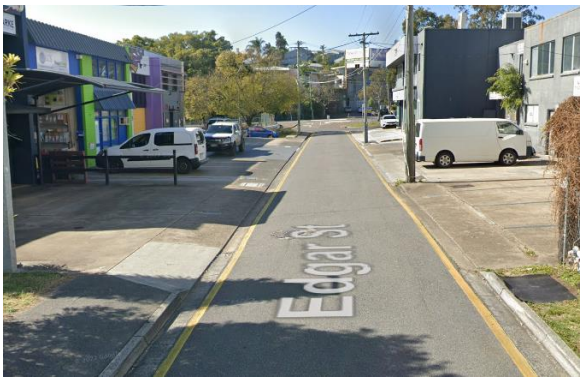


Image 2 – Edgar Street (looking east – subject site on right)

Image 3 – Hazelmount Street (looking south – subject site on left)

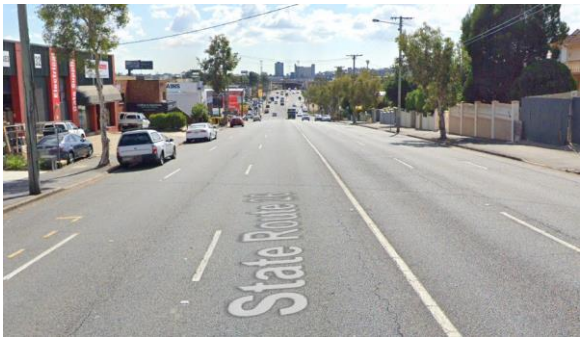


Image 4 – Abbotsford Road (looking north)

Figure 2.2: Carriageway Cross-Sections

Source: Google StreetView

3. Site Travel Environment

3.1. Public Transport Facilities and Services

3.1.1. Train Services

The subject site is located in close proximity to rail infrastructure, with the Bowen Hills railway station approximately 150m walking distance from the subject site, to the north. This station is serviced by all suburban and interurban lines within the network, with the exception of the Exhibition line, including the Airport, Beenleigh, Caboolture, Cleveland, Doomben, Ferny Grove, Gold Coast, Ipswich / Rosewood, Redcliffe Peninsula, Shorncliffe, Springfield and Sunshine Coast.

3.1.2. Bus Services

There are several bus services which operate in the Bowen Hills area, in the vicinity of the subject site.

Figure 3.1 identifies TransLink bus stops in the immediate vicinity of the subject site, located along Abbotsford Road, Hamilton Place and O'Connell Terrace.

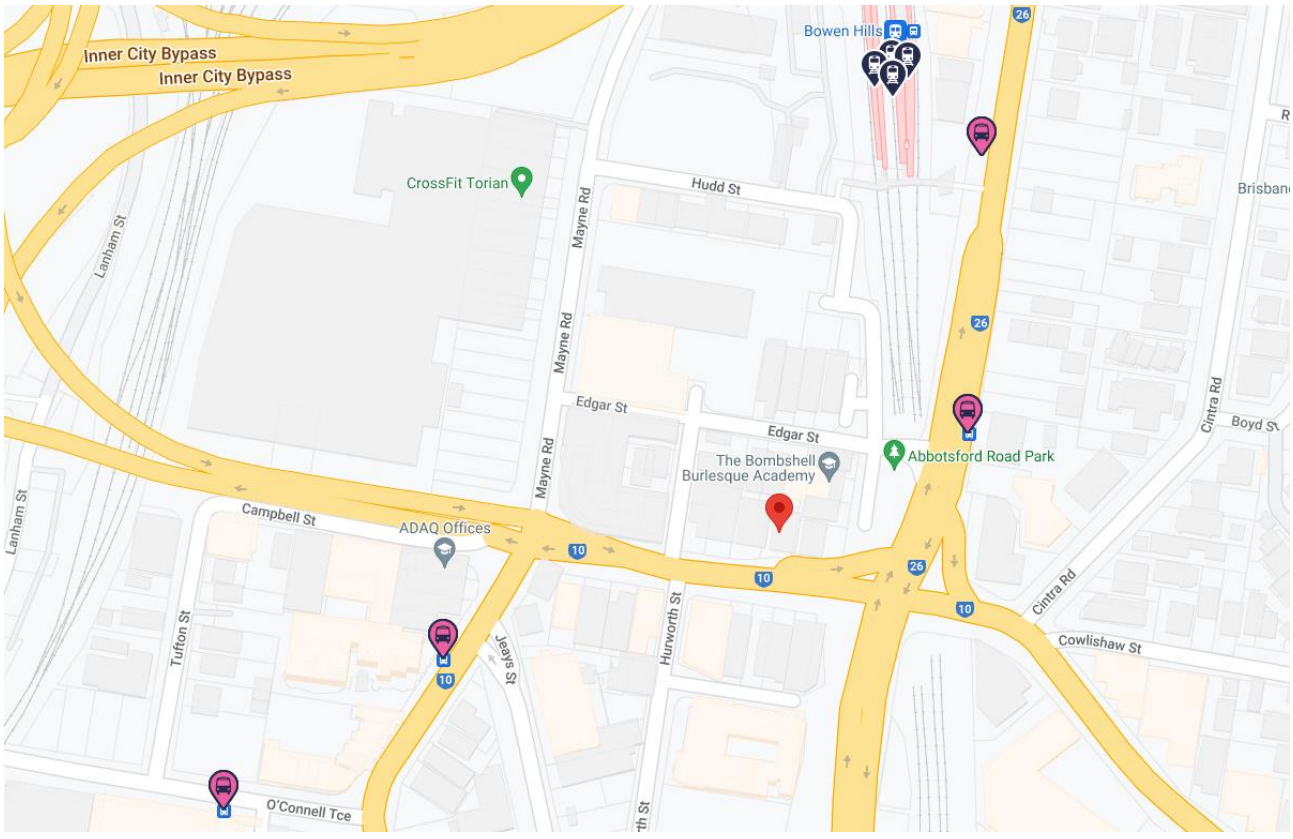


Figure 3.1: TransLink Bus Stops in the Vicinity of the Subject Site

Source: TransLink

Table 3.1 outlines the routes that service these nearby stops, detailing their respective weekday and weekend headways (peak and off-peak) as well as operating hours. It is noted that several other routes that utilise these stops are school services only (924 and 928 to 931).

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

Route	Description	Weekday	Saturday	Sunday + Public Holidays
301	Toombul to City	6:00am to 11:15pm Peaks ~ 30 min Off-peak ~ 60 min	7:30am to 11:15pm All-day ~ 45-60 min	8:30am to 8:15pm All-day ~ 60-90 min
320	Chermside to City	5:15am to 10:15pm Peaks ~ 15-20 min Off-peak ~ 30-45 min	7:00am to 6:45pm All-day ~ 90 min	10:00am to 6:00pm All-day ~ 80 min
393	Teneriffe ferry terminal to Kelvin Grove and RBWH (loop)	6:30am to 6:45pm Peaks ~ 15-20 min Off-peak ~ 60 min	N/A	N/A

In addition to these services, there are a significant number of other services which travel along Breakfast Creek Road and Wickham Terrace / Ann Street, approximately 500m walking distance to the east of the subject site.

3.1.3. Summary

The subject site is generally well serviced by public transport options, particularly train services, which is typical for development in 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, 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 between 1 and 100, with 1 being heavily car-dependent.

The site achieves a score of 85 out of 100, which is considered 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.

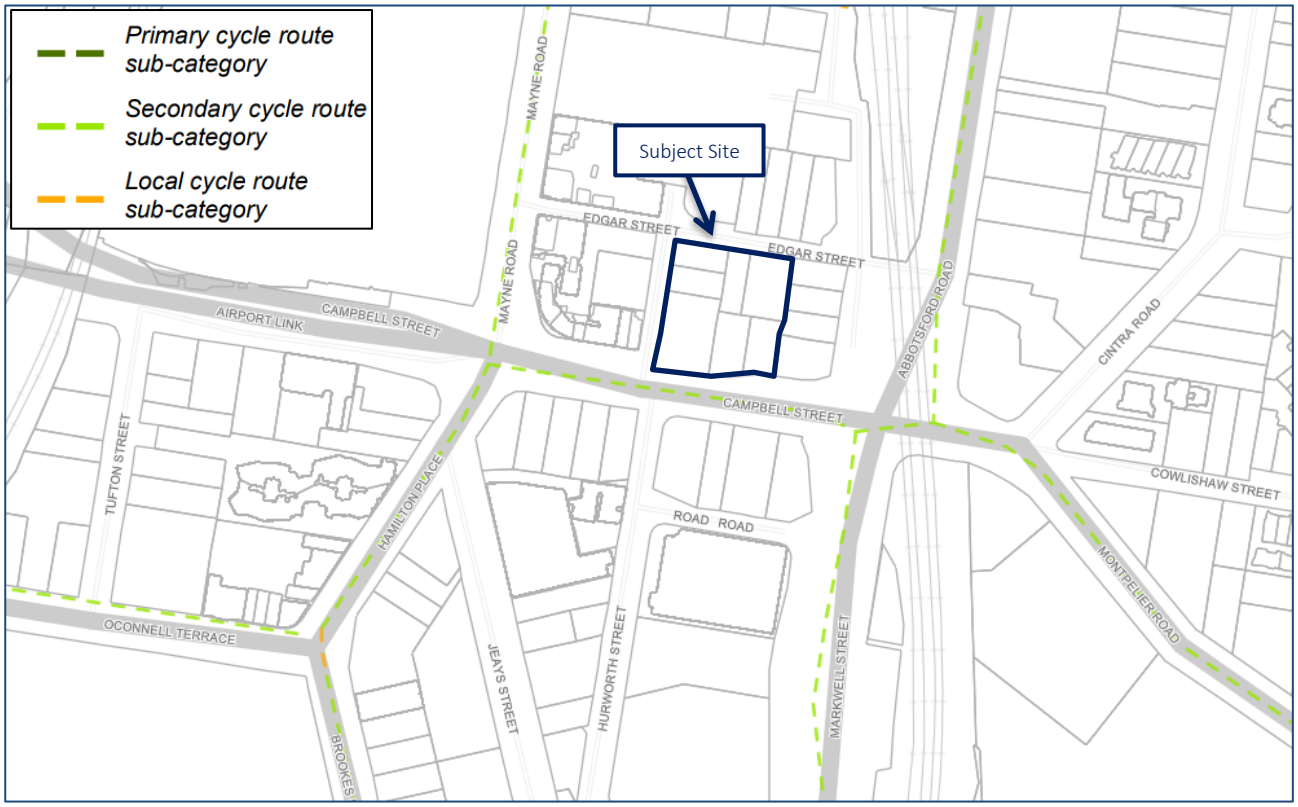


Figure 3.2: Bicycle Network Overlay in the Vicinity of the Subject Site

Source: Council's Interactive Mapping – Bicycle Network Overlay

This overlay identifies that most roads in the surrounding local network are classified as 'secondary cycle routes'.

Cycling accessibility for the subject site is satisfactory, with both on- and off-road cycling infrastructure / facilities surrounding the 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. Signalised crossings are provided at all major intersections, to facilitate movement across all major roads and access to these facilities.

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 85 out of 100, which is considered as “Very Walkable”, whereby “most errands can be accomplished on foot”.

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	
Campbell Street	60km/h	20.0m-27.0m	12.5m	Two-way, four-lane, undivided	Suburban
Edgar Street	50km/h[1]	8.0m-11.0m	4.0m	Two-way, one-lane, undivided	Neighbourhood
Hazelmount Street	50km/h[1]	9.0m	5.5m	Two-way, two-lane, undivided	Neighbourhood
Abbotsford Road	60km/h	25.0m	20.0m	Two-way, six-lane, undivided	Arterial

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

A summary of the various intersection treatments along Campbell Street, Montpelier Road, Abbotsford Road and Hamilton Place, surrounding the subject site, is shown in Figure 3.3.

Figure 3.3: Existing Intersection Treatments

Source: NearMap

3.4. Alternative Parking

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. The 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, for a two-hour parking limit.

There is also a small amount of off-street paid parking facilities in the vicinity of the subject site, including along Jeays Street and Montpelier Road.

3.5. Transport Planning

Council's Local Government Infrastructure Plan (LGIP) has been reviewed, indicating that there are no planned works in the vicinity of the subject site which will impact upon or be impacted by the proposed development.

3.6. Anticipated Travel Patterns

The proposed development is heavily public and active transport-centric, with its close proximity to major public and active transport infrastructure reflected by its location within the City Frame and subsequent maximum car parking requirements. The site is also in close proximity to the Brisbane CBD and other major attractors.

4. Proposed Development

4.1. Development Profile

The proposed build-to-rent development is comprised of a single building (33 levels). A total of 432 units are proposed, with a mix of one-, two- and three-bedroom unit configurations (as well as studios). A detailed breakdown of the unit yield is provided in Table 4.1.

Table 4.1: Proposed Development Yield

Unit Configuration	Units
Studio	62
One-Bedroom	215
Two-Bedroom	124
Three Bedroom	31
Total	**432**

In addition to the primary build-to-rent component of the development, there is also 225m^2 GFA of retail provided on the Ground Level, across two (2) tenancies.

Architectural plans for the proposed development, prepared by nettletontribe, are included in Appendix A.

4.2. Parking

The architectural plans include the following parking supply:

- 185 car spaces, including two (2) PWD spaces, located across three (3) car park levels – one (1) basement level and two (2) podium levels.
- This car parking is split between residents (134) and visitors (51).
- Seven (7) motorcycle spaces.
- 540 bicycle spaces, split between residents (432) and visitors (108).

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

4.3. Access

The architectural plans include the following access arrangements:

- Type B2 (6.2m) crossover at the eastern edge of the site's Edgar Street frontage, accommodating all car and service vehicle movements – all movements/turns permitted.
- Pedestrian access via the Campbell Street and Edgar Street frontages (residential) and Hazelmount Street frontage (retail).

- Cyclist access via the Campbell Street and Edgar Street frontages (Ground Level bicycle parking), with the lifts and car park ramps to be utilised for basement and podium level bicycle parking.

Further details regarding the proposed access arrangements are included in Section 6.

4.4. Servicing

The development plans allow for occasional access of vehicles up to the size of an 8.8m Medium Rigid Vehicle (MRV) for deliveries and regular access for vehicles up to the size of a 10.24m rear-lift Refuse Collection Vehicle (RCV).

A formal loading bay is also provided on the Ground Level, which is accessible via Edgar Street.

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 residential land use have been determined in line with Schedule 3 of the Bowen Hills PDA Development Scheme. Car parking rates for the multiple dwelling land use are specified, with all other land uses (including retail) to refer to Council's TAPS PSP.

Table 5.1 outlines the car parking requirements for the proposed development, including resident and visitor parking, and the proposed provisions.

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

User	Car Parking Requirement	Extent	Requirement	Provision
Resident	EDQ – 0.75 spaces per unit	432 units	324 spaces	134 spaces
Visitor	EDQ – 0.15 spaces per unit		65 spaces	51 spaces
Retail	Council – maximum 1 space per 100m² GFA	225m² GFA	3 spaces (max)	0 spaces
Total			**389 spaces**	**185 spaces**

As seen in Table 5.1, the development scheme proposes a total of 185 car parking spaces, including two (2) PWD bays, for a total provision rate of **0.43 spaces per unit**.

Resident parking is proposed at a rate of 0.31 spaces per unit. Further discussion regarding the suitability of this rate of provision is included in the following section (5.1.2), as well as a technical note included in Appendix C to this report.

A visitor car parking supply of 51 spaces is proposed, equivalent to 0.12 spaces per unit. While this is less than the EDQ minimum requirement of 0.15 spaces per unit, it is generally consistent with the approved visitor car parking supply (48 visitor spaces for 380 units = 0.125 visitor spaces per unit) and is therefore considered acceptable.

It is also noted that Council has endorsed a draft Planning Scheme amendment which revises the City Core and City Frame boundaries. Once this amendment has been incorporated, the subject site would be located within the City Core instead of the City Frame. This would have an associated decrease in the visitor car parking rate, from 0.15 spaces per unit to 0.05 spaces per unit.

5.1.2. Build to Rent (BtR) Parking Supply

TTM has prepared a technical note containing commentary regarding Build to Rent car parking and the anticipated characteristics for the proposed development.

This was prepared as part of the pre-lodgement process and is included as Appendix C. A pre-lodgement meeting was held on Monday 8 July 2024, in which one item identified related to the proposed car parking rate. The following is an excerpt from the pre-lodgement meeting minutes:

> *"A maximum reduced car parking rate of 0.50 is preferred, as opposed to the proposed amended car parking rate of 0.43 per unit. EDQ will however support a reduced car parking rate, where supported by a Traffic Impact Assessment (TIA) or traffic memo and where it can be demonstrated that adequate on-site parking is provided for residents and visitors."*

The commentary contained within this technical note indicates that the proposed car parking provision is considered acceptable, noting the following:

- 0.43 car spaces per unit, increasing to 0.74 car spaces per unit when accounting for car share equivalency.
- The site's proximity to major public transport infrastructure (Bowen Hills railway station) and employment/activity nodes.
- TTM research indicates that the target market for Build to Rent is quite different from traditional residential. Multiple Unit Dwellings have an average occupancy of 2.6 persons per dwelling, while Build to Rent have an average occupancy of 1.45 persons per dwelling. A lower population associated with the development translates to a reduction in the need for private vehicles.
- The proposed development scheme being comprised of mostly one-bedroom (50%) and studio (14%) apartments.
- The subject site is located within the Brisbane Central Traffic Area. A review of the kerbside inventory surrounding the site indicates that, within 500m walking distance, there are no parking options for extended periods. As such, it is impractical to live in the development as a car owner, without an on-site space.
- The building management is expected to separate parking spaces from dwellings and lease these separately. This identifies the full cost of car storage, further discouraging car ownership.
- It is anticipated that a Sustainable Green Transport Plan will be conditioned, which will include measures relating to car share, bicycle parking and e-mobility.

5.1.3. PWD Parking

Council's TAPS PSP identifies the following requirements for PWD parking:

- A provision rate of one (1) PWD space for every 50 'ordinary' spaces, with a minimum of one (1) space.
- A minimum of one (1) visitor PWD space for multiple dwelling land uses.
- PWD spaces are provided as close as possible to the main building entrance.

For the proposed development, the number of 'ordinary' parking spaces is considered to be 65, which is equal to the minimum 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 65 'ordinary' spaces, a minimum of two (2) PWD space is therefore required.

The proposed development includes an allowance for two (2) PWD spaces in the Basement Level car park, satisfying the requirements of Council's TAPS PSP and the BCA.

5.1.4. Motorcycle Parking

Council's TAPS PSP identifies that 2% of the parking provision shall be provided in the form of motorcycle spaces, in car parks with more than 50 spaces. This equates to a minimum requirement of four (4) motorcycle parking spaces in this instance. The proposed development includes an allowance for seven (7) motorcycle parking spaces, which exceeds Council's requirement.

5.1.5. Bicycle Parking

The Bowen Hills PDA Development Scheme refers to Council's TAPS PSP for the relevant bicycle parking rates. The bicycle parking supply requirements for the proposed development land use have therefore been determined in line with Table 21 of Council's TAPS PSP.

Table 5.2 outlines the bicycle parking requirements for the proposed development, including resident and visitor parking, and the proposed provisions.

Table 5.2: Council's TAPS PSP Bicycle Parking Requirements and Provisions

User	Development Scheme Requirement	Extent	Requirement	Provision
Resident	1 space per unit	432 units	432 spaces	432 spaces
Visitor	1 space per 4 units		108 spaces	108 spaces
Total		**432 units**	**540 spaces**	**540 spaces**

As displayed in Table 5.2, the proposed development scheme includes a total of 540 bicycle spaces, which matches the minimum TAPS PSP requirement.

This bicycle parking provision is proposed to be accommodated as follows:

- Resident spaces will be located across the Ground, Mezzanine and Podium levels. Approximately 98% of spaces would be provided across dedicated bike storage areas, with the remaining spaces provided in smaller groups across each level. Bike store spaces would take the form of wall racks, with additional spaces provided as ground racks.
- All visitor spaces would be provided across the Basement and Ground levels, in the form of both wall and ground racks.

Table 5.3 outlines the locations of bicycle parking by level, individually for residents and visitors, as well as totals.

Table 5.3: Bicycle Parking Provision Locations

Level	Resident	Visitor	Total
Basement	-	78	78
Ground	144	30	174
Mezzanine	107	-	107
Level 1	172	-	172
Level 2	9	-	9
Total	**432**	**108**	**540**

Overall, the bicycle parking supply for the proposed development is considered acceptable.

5.2. Parking Layout

The proposed development will provide car parking across both basement and podium levels.

Table 5.4 identifies the characteristics of the proposed parking layout, with respect to Council's TAPS PSP design provisions, as identified by the Bowen Hills PDA Development Scheme.

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

Design Aspect	TAPS PSP Requirement	Proposed Provision	Compliance
Parking space length:			
• Resident space (Class 3)	• 5.4m (min)	• 5.4m	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
• Tandem car space	• 10.8m (min)	• 10.8m	TAPS PSP compliant
• Share car space	• 5.4m (min)	• 5.4m	TAPS PSP compliant
• PWD space (Class 5)	• 5.4m (min)	• 5.4m	TAPS PSP compliant
Parking space width:			
• Resident space (Class 3)	• 2.6m (min)	• 2.4m	See Parking Design Aspect 1
• Visitor space (Class 3)	• 2.6m (min)	• 2.6m	TAPS PSP compliant
• Small car space	• 2.3m (min)	• 2.3m	TAPS PSP compliant
• Tandem car space	• 2.6m (min)	• 2.4-2.6m	See Parking Design Aspect 2
• Share car space	• 2.6m (min)	• 2.4-2.6m	See Parking Design Aspect 3
• PWD space (Class 5)	• 2.4m + 2.4m 'Shared Area'	• 2.4m + 2.4m 'Shared Area'	TAPS PSP compliant
Aisle width:			
• Parking aisle	• 6.2m (min)	• 6.2m	TAPS PSP compliant
• Circulation road/ramp (two-way, 25-100 vph)	• 6.2m (min) + clearance to walls	• 6.05m + clearance to walls	See Parking Design Aspect 4
• Circulation road/ramp (one-way, <20m)	• 3.0m (min) + clearance to walls	• 3.0m + clearance to walls	TAPS PSP compliant
Parking envelope clearance	Located as per Figure m of TAPS PSP	Located as per Figure 5.2 of AS2890.1:2004	See Parking Design Aspect 5
Maximum Gradient:			
• PWD parking	• 1:40 (2.5%)	• Flat	TAPS PSP compliant
• Parking aisle	• 1:20 (5.0%)	• Flat	TAPS PSP compliant
• Ramp	• 1:6 (16.7%)	• 1:5 (20.0%)	See Parking Design Aspect 6
Parking aisle extension	2.0m beyond the last bay or 8.0m aisle width	1.0m beyond the last bay	See Parking Design Aspect 7
Minimum height clearance:			
• General minimum	• 2.3m	• >2.3m	TAPS PSP compliant
• Over PWD space	• 2.5m	• >2.5m	TAPS PSP compliant

The proposed development's parking layout is generally consistent with the approved development scheme and 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.

Parking Design Aspect 1

The proposed 2.4m widths for resident car parking, in conjunction with a 6.2m wide parking aisle, would provide the equivalent of User Class 1/1A spaces, as defined by AS2890.1:2004. Therefore, the proposed bay and aisle widths are considered acceptable, noting that this meets the typical requirements under AS2890.1:2004 for residents.

Parking Design Aspect 2

The proposed 2.4m widths for tandem resident car parking, in conjunction with a 6.2m wide parking aisle, would provide the equivalent of User Class 1/1A spaces, as defined by AS2890.1:2004. Therefore, the proposed bay and aisle widths are considered acceptable, noting that this meets the typical requirements under AS2890.1:2004 for residents.

It is noted that the share car tandem parking is provided with a mix of 2.4m and 2.6m widths. Two bays in tandem configuration must both be assigned to the same unit.

Parking Design Aspect 3

Council's TAPS PSP does not prescribe a minimum width for share car parking. These spaces are provided with a mix of 2.4m and 2.6m widths. As these are to be utilised by residents, it is reasonable to classify these spaces as Council's User Class 3.

Similar to the resident parking (2.4m width), this parking width (in conjunction with a 6.2m wide parking aisle) is equivalent to AS2890.1:2004 User Class 1/1A, which is considered acceptable.

Parking Design Aspect 4

While the two-way circulation ramp to the basement car park is a reduced width of 6.05m (kerb-to-kerb), compared to Council's minimum requirement of 6.2m, this is an improvement over the existing approval (varying widths between 5.4m and 6.1m).

Parking Design Aspect 5

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, in line with the approved development scheme. 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 key considerations driving 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.

Parking Design Aspect 6

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 is specified for ramps that cater for both residents and visitor parking, for a maximum length of 20m.

The ramp connecting to the basement car park has a primary gradient of 1 in 5 and therefore meets the minimum requirement of AS2890.1:2004. The ramps connecting the podium level car parks have a primary gradient of 1 in 6 and therefore meet the minimum requirement of Council's TAPS PSP. These primary gradients are consistent with the approved development scheme.

Parking Design Aspect 7

Council's TAPS PSP requires that terminated aisles extend for at least 2m past the last car bay in an aisle, to provide sufficient manoeuvring area for the last bay. While the proposed aisle extensions of 1.0m are reduced from Council's minimum requirement, it does exceed the minimum requirement of AS2890.1:2004 (1.0m aisle extension, refer to Figure 2.3) and is therefore considered appropriate. It is noted that this is also consistent with the approved development scheme.

Overall, the proposed parking layout is generally designed in accordance with Council's TAPS PSP, apart from the identified performance solutions, which are deemed fit-for-purpose.

6. Access Arrangements

6.1. Vehicular Access – Edgar Street

The development plans include a single vehicular access to/from Edgar Street – a Type B2 (6.2m) crossover at the eastern edge of the site frontage, accommodating all car and service vehicle movements, with all movements/turns permitted.

The design provisions of the Edgar Street access and the respective provisions of Council's TAPS PSP are detailed in Table 6.1.

Table 6.1: Edgar Street Access Arrangements

Design Aspect	TAPS PSP Requirement	Proposed Provision	Compliance
Width / crossover type to accommodate: • Cars[1,2] • Service Vehicles[1,3]	 Type B2 Type B2 (7m)	 Type B2 (6.2m) Type B2 (6.2m)	 TAPS PSP compliant See Access Design Aspect 1
Distance from: • Minor intersection[1] • Adjacent driveway[1]	 10m (min) 3m (min)	 ~25m >3m	 TAPS PSP compliant TAPS PSP compliant
Sight distance[1,2]	90m (desirable) 70m (minimum)	Clear sight to the Hazelmount Street and Jamieson Street intersections	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	6 vehicle / 36m	1 vehicle / 6m	See Access Design Aspect 2
Maximum driveway grade	1:20 (5.0%) maximum within first 6m	1:16 (6.25%) section for portion of first 6m	See Access Design Aspect 3

[1] Based on Edgar Street being classified as a 'minor road' and 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.

The proposed Edgar Street 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.

Access Design Aspect 1

It is noted that the proposed access crossover is consistent with the existing approval, which remains suitable for the proposed development.

There is no change to the required crossover dimensions as a result of the proposed development, as:

- the proposed design service vehicles are identical to the existing approval.

- the proposed car parking supply is reduced from the existing approval, resulting in a change in the cars only crossover requirement, from Type C1 to Type B2.

Access Design Aspect 2

A queue storage of approximately 6m, sufficient for one (1) car length, is provided within the property boundary. While this is less than the applicable TAPS PSP requirement, this is considered an acceptable performance solution in line with the approved development scheme and based on the traffic volume expected to be generated by the overall development.

Access Design Aspect 3

While a section of the driveway (within the first 6m of the property boundary) is graded at 1 in 16 – exceeding the 1 in 20 maximum prescribed by Council – the existing approval is graded at 1 in 10. Therefore, the proposed driveway grade is considered acceptable and an improvement of the existing approval.

6.2. Active Transport Access

Pedestrian accesses for the residential use are provided along both the Campbell Street and Edgar Street frontages, connecting to the proposed development's lobby. The retail tenancy can be accessed via Hazelmount Street.

Cyclists will be able to use both of the residential pedestrian accesses identified above to access the primary Ground Level bicycle parking as well as the lifts. Additional secondary bicycle parking is provided within the basement and podium level car parks, which can be accessed via either the lifts or ramps connecting each level.

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 development 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	MRV	SRV
Multiple Dwelling	RCV	LRV	1[1]	-	
Retail	RCV	SRV	-	-	1
Proposed Provisions	**RCV**	**MRV**	**Shared use of bay**		

LRV = 10.7m Large Rigid Vehicle | MRV = 8.8m Medium Rigid Vehicle | SRV = 6.4m Small 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.

The provision of a single (shared) dedicated loading bay is considered acceptable, in line with the approved development scheme. It is also noted that the retail GFA proposed is significantly reduced from the approved development scheme, resulting in reduced servicing requirements for the retail land use.

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. Proposed Loading Provisions

7.2.1. Design Vehicles

The development scheme proposes to adopt an MRV as the occasional access service vehicle and a rear-lift RCV as the regular access service vehicle. This is consistent with the current approval over the site.

It is therefore considered appropriate that the largest design service vehicle will be an RCV (Council 10.24m length rear-lift) design vehicle, complimented by an MRV design vehicle for deliveries.

7.2.2. Loading Bay Provisions

The development scheme makes allowance for one (1) loading bay on the Ground Level. This would be shared between the anticipated RCV and MRV design service vehicles. Given the anticipated infrequent demand for service vehicles, this provision is considered acceptable.

7.2.3. 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. A permanent bin store would be located on the Ground Level, adjacent to the loading bay.

The rear-lift RCV – Council 10.24m design service vehicle – would enter the site in a forward gear to access the loading bay. Once refuse collection has been completed, the vehicle would exit the subject site in a forward gear.

7.3. Proposed Service Vehicle Design Provisions

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. Revised swept path analysis for the RCV and MRV design service vehicles to access the site and loading bay, before circulating and egress, are demonstrated by TTM Drawings within Appendix B.

Table 7.2 identifies the service vehicle design provisions, with respect to Council's TAPS PSP requirements.

Table 7.2: Council's TAPS PSP Service Vehicle Design Requirements and Provisions

Design Aspect	TAPS PSP Requirement	Proposed Provision	Compliance
Loading bay length: • MRV bay • RCV bay	 • 9.0m (min) • 10.5m (min) + 1.5m for operations = 12m total	 • ~13.2m • ~13.2m	 TAPS PSP compliant TAPS PSP compliant
Loading bay width: • MRV bay • RCV bay	 • 3.5m (min) • 3.5m (min)	 • ~5.0m • ~5.0m	 TAPS PSP compliant TAPS PSP compliant
Loading grades: • MRV standing • RCV standing	 • 1:25 (4.0% max) • 1:20 (5.0% max)	 • 1:25 (4.0%) • 1:25 (4.0%)	 TAPS PSP compliant TAPS PSP compliant
Height clearance: • MRV • RCV (rear-lift)	 • 4.5m (min) • 3.6m (min)	 • >4.5m • >4.5m	 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, while maintaining the minimum 0.3m manoeuvring clearance to all obstructions.	TAPS PSP compliant

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

8. External Road Network Impact

8.1. Proposed Development Traffic Generation

The proposed development scheme proposes a net increase of 52 units (380 to 432), compared to the approved development scheme. However, the proposed development scheme also proposes a reduction in car parking (67 spaces, from 252 to 185).

Previous transport engineering reporting[1] adopted peak hour traffic generation rates of 0.19 and 0.15 vehicles per hour (vph) per unit for the weekday AM and PM peak hour periods respectively. While it is acknowledged that these rates are typical for residential development within inner-city areas such as Bowen Hills, these would only be applicable where a car parking supply matching or exceeding the minimum EDQ or Council requirements is provided.

Compared to the minimum EDQ requirement calculated above (389 car spaces), the proposed development provides approximately 48% of this requirement (185 car spaces), increasing to approximately 83% when adopting the equivalent car parking total when accounting for car share (321 car spaces). By both measures, scaling of the above peak hour traffic generation rates by these percentages yields reduced peak hour traffic generations compared to the approved development scheme.

8.2. Warrants for Further Assessment

Per the above, the proposed development scheme would result in reduced peak hour traffic generations when compared to the approved development scheme.

The transport engineering reporting (Ref. 1) undertaken for the approved development scheme indicated that additional delays and/or queuing would typically be negligible, with some intersection approaches (Hazelmount Street, Hurworth Street, Hamilton Place and Montpelier Road) experiencing the most notable increases in delay and queuing (typically insignificant, <5% increase).

Based on the above information, TTM does not consider a revised detailed Traffic Impact Assessment (TIA) to be necessary and it is expected the proposed development will have no adverse impacts on the surrounding road network.

[1] *Residential Development, 19-25 Campbell Street, Bowen Hills – Transport Engineering Report*, MRCagney Pty Ltd (20 May 2021).

9. Summary of Findings

The following is a summary of the findings of the transportation engineering assessment for the proposed build-to-rent development, to be located at 19-25 Campbell Street, Bowen Hills.

9.1. Proposed Development

The proposed build-to-rent development is comprised of a single building (33 levels). A total of 432 units are proposed, with a mix of one-, two- and three-bedroom unit configurations (as well as studios).

Architectural plans for the proposed development, prepared by nettletontribe, are included in Appendix A.

9.2. Parking Arrangements

Car parking supply requirements for the proposed development – located in the City Frame – have been determined in accordance with the Bowen Hills PDA Development Scheme (residential) and Council's TAPS PSP (retail).

The proposed development includes an on-site car parking provision of 185 spaces, which is a shortfall when compared to the minimum EDQ requirement of 389 spaces.

The proposed visitor car parking supply is generally consistent with the approved visitor car parking supply rate.

The proposed resident car parking is considered suitable, with a supporting technical note (see Appendix C) including commentary regarding typical Build to Rent car parking characteristics and how this is applicable to the proposed development.

Two (2) PWD spaces is provided in the Basement Level car park, which meets the requirements of Council's TAPS PSP and the BCA.

Car parking is provided across basement and podium levels. The proposed car parking layout is generally compliant with the requirements of Council's TAPS PSP and AS2890.1:2004 (where applicable).

9.3. Access Arrangements

The proposed development includes provision of a Type B2 (6.2m) vehicular access to/from Edgar Street. This would be utilised by both service vehicles and cars.

The proposed vehicular access arrangements are generally consistent with Council's TAPS PSP and, where performance outcomes are proposed (queuing, driveway grade, etc), these are consistent with or an improvement on the existing approval.

Pedestrian and cyclist access points for the residential use are provided along the site's Campbell Street and Edgar Street frontages, while the retail use can be accessed via Hazelmount Street.

9.4. Service Vehicle Arrangements

Council's TAPS PSP identifies occasional and regular access for an LRV and RCV respectively.

The development scheme proposes to accommodate an 8.8m MRV and rear-lift RCV for occasional and regular access respectively. A loading bay is also provided on-site, between the respective ramps to the basement and podium car parking levels. These design vehicles and loading bay provision are consistent with the existing approval.

All service vehicles will be able to enter and exit the subject site in a forward gear.

Bulk bins are to be serviced by a rear-lift RCV, with a permanent bin store located on the Ground Level.

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

9.5. Traffic Impact Assessment

The proposed development scheme proposes a net increase of 52 units (380 to 432), compared to the approved development scheme. However, the proposed development scheme also proposes a reduction in car parking (67 spaces, from 252 to 185).

The peak hour traffic generation rates adopted for the approved development scheme would only be applicable where a car parking supply matching or exceeding the minimum EDQ or Council requirements is provided.

Compared to the minimum EDQ requirement calculated above (389 car spaces), the proposed development provides approximately 48% of this requirement (185 car spaces), increasing to approximately 83% when adopting the equivalent car parking total when accounting for car share (321 car spaces). By both measures, scaling of the above peak hour traffic generation rates by these percentages yields reduced peak hour traffic generations compared to the approved development scheme.

Therefore, TTM does not consider a revised detailed Traffic Impact Assessment (TIA) to be necessary and it is expected the proposed development will have no adverse impacts on the surrounding road network.

9.6. Conclusion

From the assessments undertaken and outlined in this report and provided that the recommendations identified are adopted, TTM does not see any transport engineering reason that would prohibit approval of the proposed development.

Appendix A Development Plans

04 Development Summary

Development Summary

19-25 Campbell Street — *updated:* ***16.08.202***

Original Site Area (m2):		**3,276**			
New Site Area (m2):		**2,792**			
Plot Ratio Allowed:	1:8	**26,208**	**31,686**	*provided*	*5,478*
Site Cover (above podium):		**60%**	**1,244**	*provided*	*38%*
Parking:	0.75 + 0.15	**393**	**185**	*provided*	*- 208*
3 Bedroom Apartments:	10% of GFA	**28**	**31**	*provided*	*11.0%*

Unit Types

	Unit Type	Beds	Internal Area *(approx)*	Balcony Area *(approx)*	Internal+ Balcony *(approx)*	Total Units	Total Beds	Total Cars Required	Visitor Cars Required
Studio	S-A	1	31.00	7.00	38.00	62	62	46.5	9.3
1B	1B-A	1	53.00	10.00	63.00	62	62	46.5	9.3
1B	1B-B	1	50.00	10.00	60.00	122	122	91.5	18.3
1B	1B-C	1	55.70	11.50	67.20	31	31	23.25	4.65
2B	2B-A	2	92.00	10.00	102.00	31	62	23.25	4.65
2B	2B-B	2	74.00	23.00	97.00	31	62	23.25	4.65
2B	2B-C	2	80.00	10.00	90.00	62	124	46.5	9.3
3B	3B-A	3	112.00	19.00	131.00	31	93	23.25	4.65
Retail	Retail		370.00						4
					Units:	**432**	**618**	**324**	**69.0**
								required cars:	**393**

Studio	1 Bed Units	2 Bed Units	3 Bed Units
62	0	0	0
0	62	0	0
0	122	0	0
0	31	0	0
0	0	31	0
0	0	31	0
0	0	62	0
0	0	0	31
62	**215**	**124**	**31**
14.4%	49.8%	28.7%	7.2%

*note areas are approximate only and are tbc by a surveyor

Unit Matrix

	Level	north wing	north wing	north wing	north wing	west wing	west wing	east wing	east wing	south wing	south wing	south wing	south wing	south wing	south wing	Unit Count
Terrace		plant	Common													
Level	33	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	32	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	31	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	30	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	29	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	28	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	27	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	26	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	25	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	24	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	23	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	22	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	21	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	20	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	19	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	18	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	17	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	16	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	15	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	14	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	13	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	12	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	11	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	10	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	9	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	8	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	7	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	6	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	5	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	4	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B	1B-B	1B-B	2B-C	S-A	1B-C	1B-A	S-A	2B-C	**14**
Level	3	2B-A	2B-B	1B-A	3B-A	1B-B	1B-B			2B-C	S-A	1B-C	1B-A	S-A	2B-C	**12**
Level	2	Parking														**0**
Level	1	Parking														**0**
Level	Ground	Entry														
Level	B1	Parking														
																units
TOTAL:																**432**

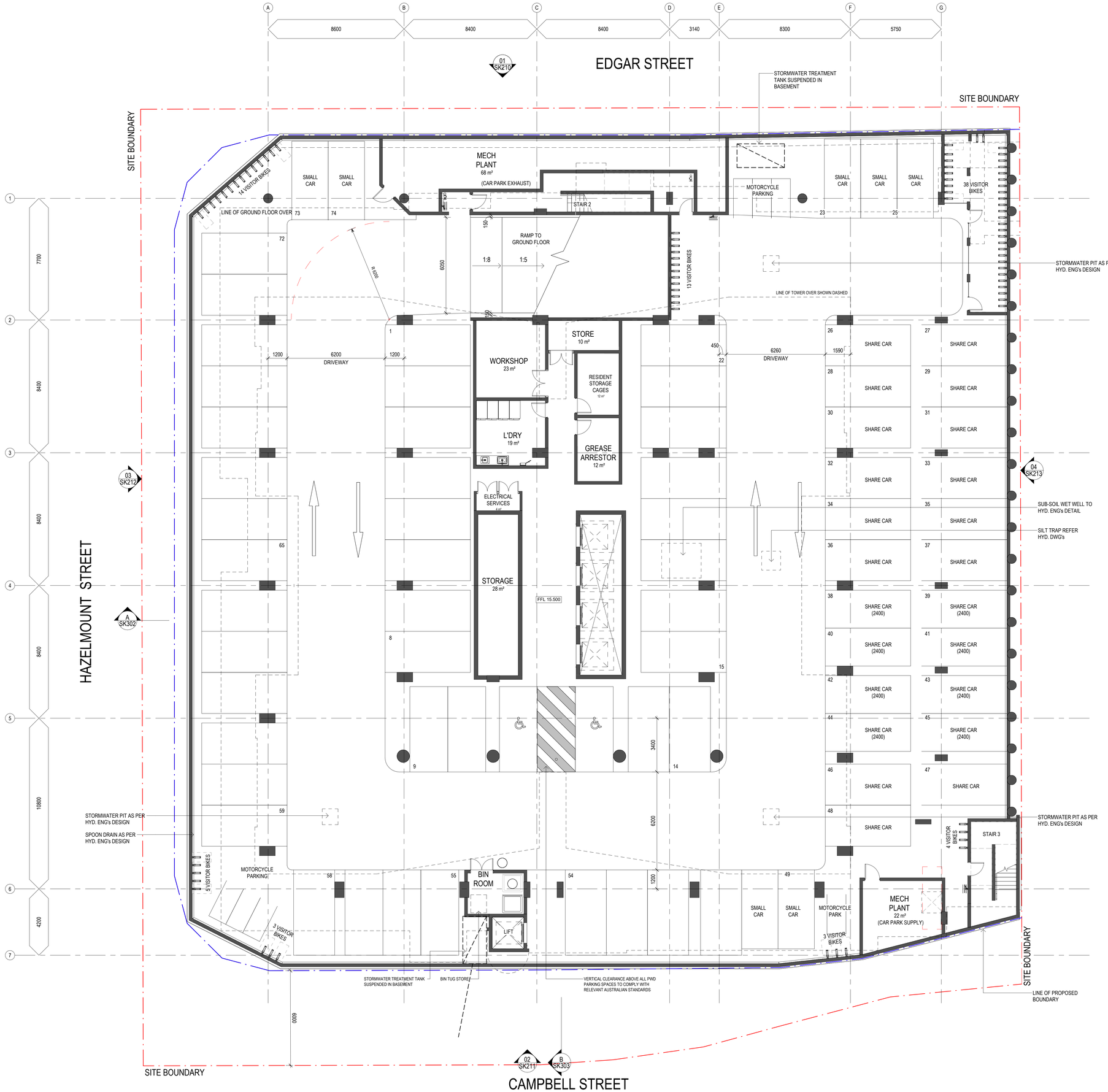
Parking

Cars	Motorcycles	Bicycles
64		**9**
47		**172**
0		**281**
74	**7**	**78**
cars	*m/cycles*	*bikes*
185	**7**	**540**

Key Plan

0 2000 5000

Issue	Description	Date
6	DA ISSUE	16.08.2024
5	ISSUE FOR PRICING	31.01.2022
4	ISSUE FOR INFORMATION	26.11.2021
3	FOR INFORMATION	18.11.2021
2	Preliminary Issue	13.10.2021
1	Preliminary issue for information	08.09.2021



BASEMENT BICYCLE PARKS	
Level	Count
BASEMENT 1	78

B1 PARKING SCHEDULE		
Carpark Type	Level	Count
Parking Space		
Parking Space	BASEMENT 1	42
PWD		
Parking Space	BASEMENT 1	2
SHARE CAR		
Parking Space	BASEMENT 1	23
SMALL CAR		
Parking Space	BASEMENT 1	7
TOTAL CARPARKS: 74		

B1 MOTORCYCLE PARKING SCHEDULE		
Carpark Type	Level	Count
Parking Space		
MOTORCYCLE		
Parking Space	BASEMENT 1	7

Client

dowse projects NEW URBAN VILLAGES

Builder

Project Name
BOWEN HILLS RESIDENTIAL

Project Address
19- 25 Campbell Street, Bowen Hills

Drawing Title
B01 GA PLAN

Author:	Checker:	Sheet Size:	Scale:
JF	MH	B1	1:100

Drawing Number: **11703_DD1102** Issue: **6**

nettleton tribe partnership pty ltd ABN 58 161 683 122
85 Bowen Street, Spring Hill, QLD 4000
t +61 7 3239 2444
e: brisbane@nettletontribe.com.au w: nettletontribe.com.au

Key Plan

0 2000 5000

Issue	Description	Date
6	DA ISSUE	16.08.2024
5	ISSUE FOR PRICING	31.01.2022
4	ISSUE FOR INFORMATION	26.11.2021
3	FOR INFORMATION	18.11.2021
2	Preliminary Issue	13.10.2021
1	Preliminary issue for information	08.09.2021

GROUND BICYCLE PARKS	
Level	Count
GROUND	174

Client

dowse projects NEW URBAN VILLAGES

Builder

Project Name
BOWEN HILLS RESIDENTIAL

Project Address
19- 25 Campbell Street, Bowen Hills

Drawing Title
L00 GA PLAN

Author:	Checker:	Sheet Size:	Scale:
JF	MH	B1	1:100

Drawing Number: **11703_DD1103** Issue: **6**

nettleton tribe

nettleton tribe partnership pty ltd ABN 58 161 683 122

85 Bowen Street, Spring Hill, QLD 4000
t +61 7 3239 2444
e: brisbane@nettletontribe.com.au w: nettletontribe.com.au

Key Plan

0 2000 5000

Issue	Description	Date
4	DA ISSUE	16.08.2024
3	ISSUE FOR PRICING	31.01.2022
2	ISSUE FOR INFORMATION	26.11.2021
1	FOR INFORMATION	18.11.2021

MEZZANINE BICYCLE PARKS	
Level	Count
MEZZANINE	107

EDGAR STREET

SITE BOUNDARY

LINE OF BUILDING OVER

SITE BOUNDARY

HAZELMOUNT STREET

01 SK210

03 SK212

A SK302

04 SK213

02 SK211

B SK303

8600 | 8400 | 8400 | 3140 | 8300 | 5750

7700 | 8400 | 8400 | 10800 | 4200

VOID

1099

STAIR 1A EGRESS

STAIR 1B EGRESS

1350 | 1499

2038

1604

ELECT.

STAIR 1

FFL 21.800

LIFT SHAFT

UP

BIKE STORE
114 m²
107 BIKES

LINE OF BUILDING OVER

LINE OF AWNING OVER

LINE OF AWNING OVER

LINE OF PROPOSED BOUNDARY

SITE BOUNDARY

CAMPBELL STREET

Client

dowse projects NEW URBAN VILLAGES

Builder

Project Name
BOWEN HILLS RESIDENTIAL

Project Address
19- 25 Campbell Street, Bowen Hills

Drawing Title
MEZZANINE STORE

Author:	Checker:	Sheet Size:	Scale:
AJ	GT	B1	1:100

Drawing Number: **11703_DD1103.1** Issue: **4**

nettleton tribe partnership pty ltd ABN 58 161 683 122

85 Bowen Street, Spring Hill, QLD 4000
t +61 7 3239 2444
e: brisbane@nettletontribe.com.au w: nettletontribe.com.au

L01 BICYCLE PARKS	
Level	Count
L 01	172

L1 PARKING SCHEDULE		
Carpark Type	Level	Count
Parking Space		
Parking Space	L 01	34
SHARE CAR		
Parking Space	L 01	11
SMALL CAR		
Parking Space	L 01	2
TOTAL CARPARKS: 47		

S	STORAGE

Key Plan

0 2000 5000

Issue	Description	Date
6	DA ISSUE	16.08.2024
5	ISSUE FOR PRICING	31.01.2022
4	ISSUE FOR INFORMATION	26.11.2021
3	FOR INFORMATION	18.11.2021
2	Preliminary Issue	13.10.2021
1	Preliminary issue for information	08.09.2021

Client

dowse projects NEW URBAN VILLAGES

Builder

Project Name
BOWEN HILLS RESIDENTIAL

Project Address
19- 25 Campbell Street, Bowen Hills

Drawing Title
L01 GA PLAN

Author:	Checker:	Sheet Size:	Scale:
JF	MH	B1	1:100

Drawing Number:	Issue:
11703_DD1104	6

nettletontribe

nettleton tribe partnership pty ltd ABN 58 161 683 122
85 Bowen Street, Spring Hill, QLD 4000
t +61 7 3239 2444
e: brisbane@nettletontribe.com.au w: nettletontribe.com.au

L02 BICYCLE PARKS	
Level	Count
L 02	9

L2 PARKING SCHEDULE		
Carpark Type	Level	Count
Parking Space		
Parking Space	L 02	61
SMALL CAR		
Parking Space	L 02	3
TOTAL CARPARKS: 64		

S STORAGE

Key Plan

0 2000 5000

Issue	Description	Date
6	DA ISSUE	16.08.2024
5	ISSUE FOR PRICING	31.01.2022
4	ISSUE FOR INFORMATION	26.11.2021
3	FOR INFORMATION	18.11.2021
2	Preliminary Issue	13.10.2021
1	Preliminary issue for information	08.09.2021

Client

dowse projects NEW URBAN VILLAGES

Builder

Project Name
BOWEN HILLS RESIDENTIAL

Project Address
19- 25 Campbell Street, Bowen Hills

Drawing Title
L02 GA PLAN

Author:	Checker:	Sheet Size:	Scale:
JF	MH	B1	1:100

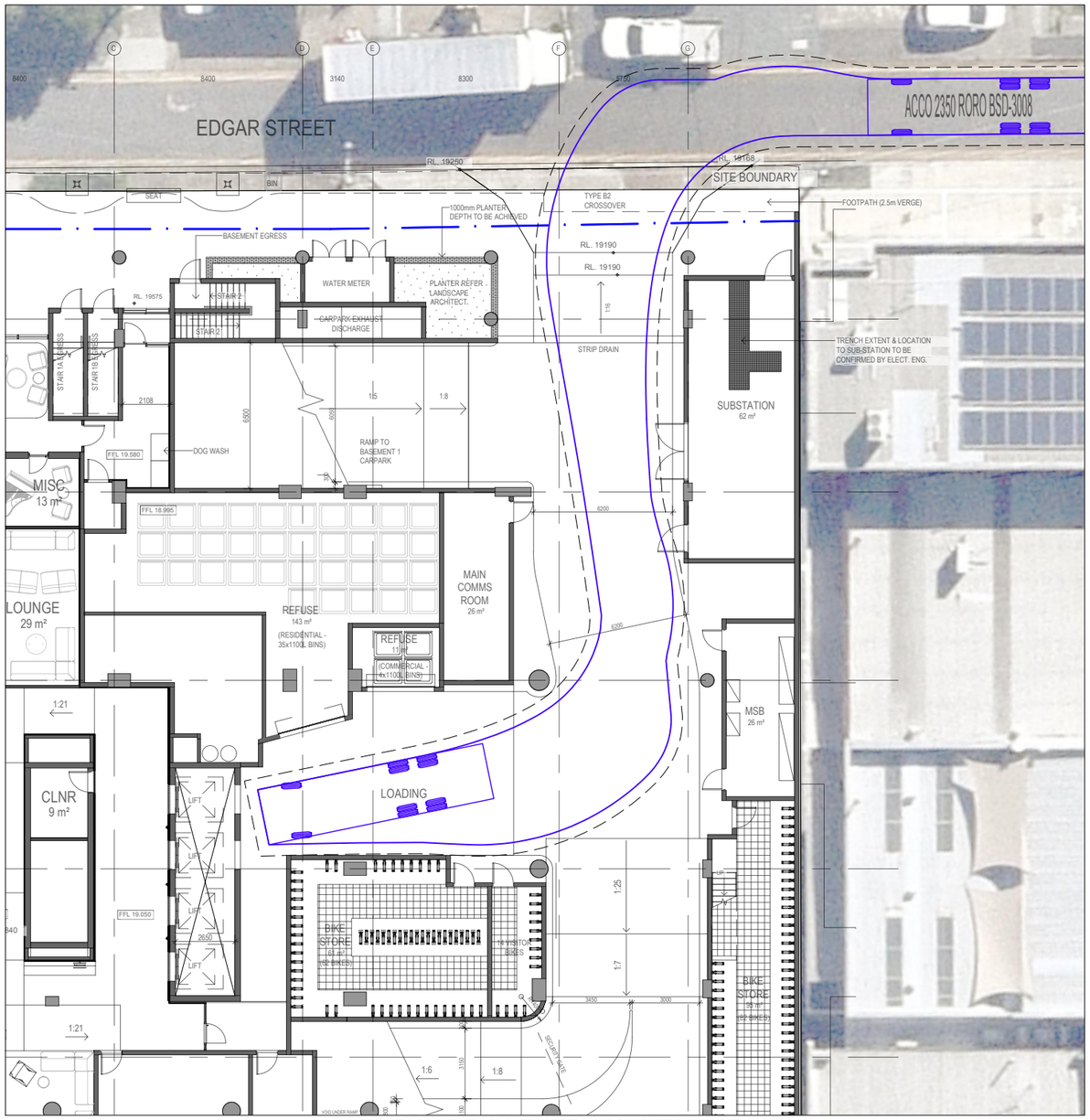
Drawing Number: **11703_DD1105** Issue: **6**

nettletontribe

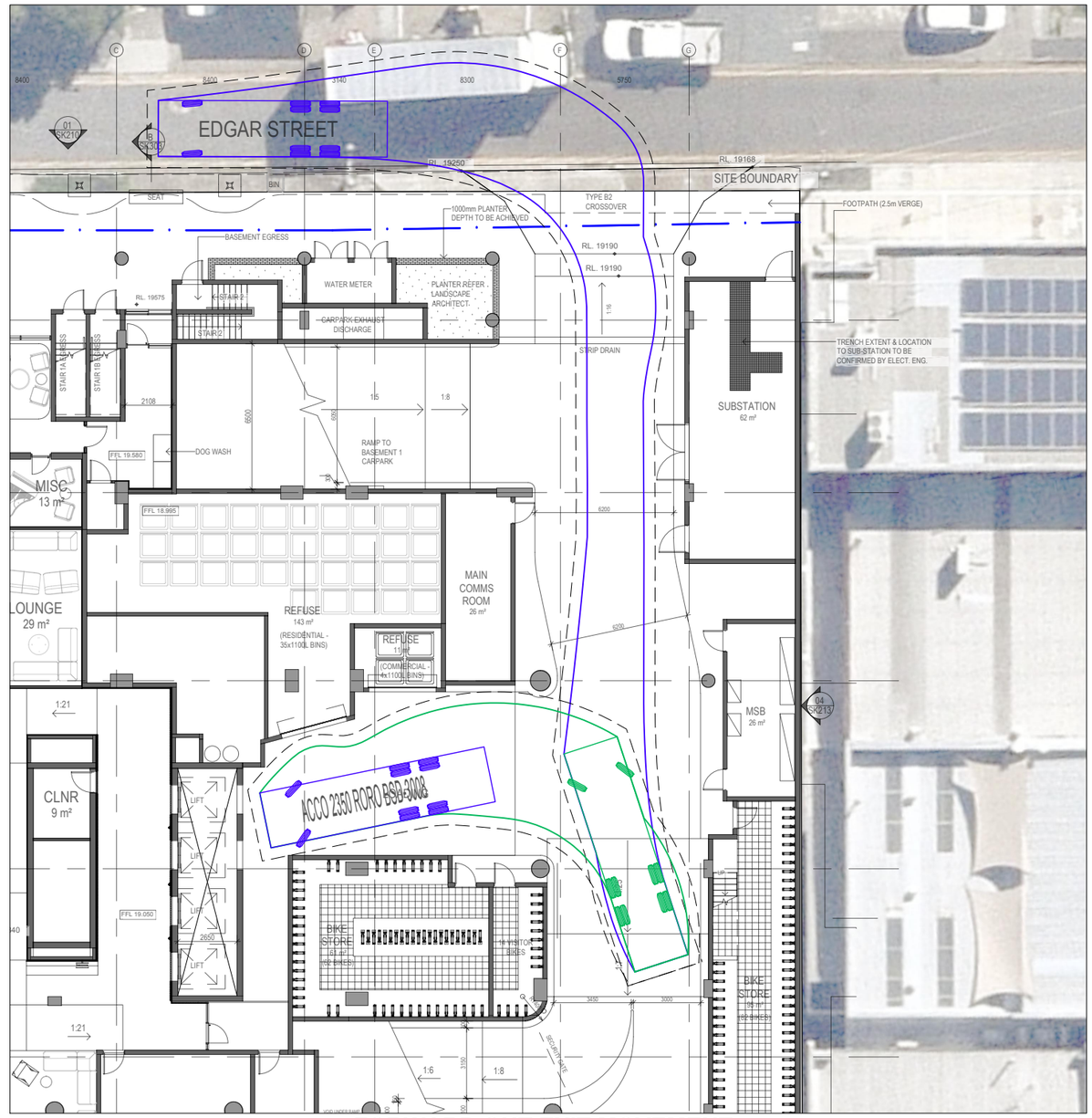
nettleton tribe partnership pty ltd ABN 58 161 683 122

85 Bowen Street, Spring Hill, QLD 4000
t: +61 7 3239 2444
e: brisbane@nettletontribe.com.au w: nettletontribe.com.au

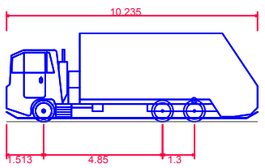
Appendix B TTM Drawings



FORWARD IN ENTRY MOVEMENT

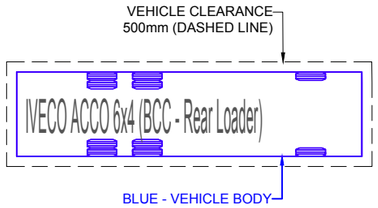


FORWARD OUT EXIT MOVEMENT



BCC Fleet 2020 (Rear Loader)

Overall Length	10.235m
Overall Width	2.500m
Overall Body Height	3.600m
Min Body Ground Clearance	0.150m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	9.757m
Design Speed Forward	5.0km/h
Clearance Envelope	0.500m



DIRECTOR

SIMON CRANK RPEQ 18360

APPROVED 19 Aug 2024

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
C	19.08.24	1 IN 25 RAMP TRANSITION ADDED	DSF	RBe	SC
B	08.08.24	1 IN 25 RAMP TRANSITION ADDED	DSF	RBe	SC
A	06.08.24	ORIGINAL ISSUE	BV	RBe	SC

SCALE 0 2.5 5 7.5 10 12.5m

SCALE 1:250 AT ORIGINAL SIZE

NORTH

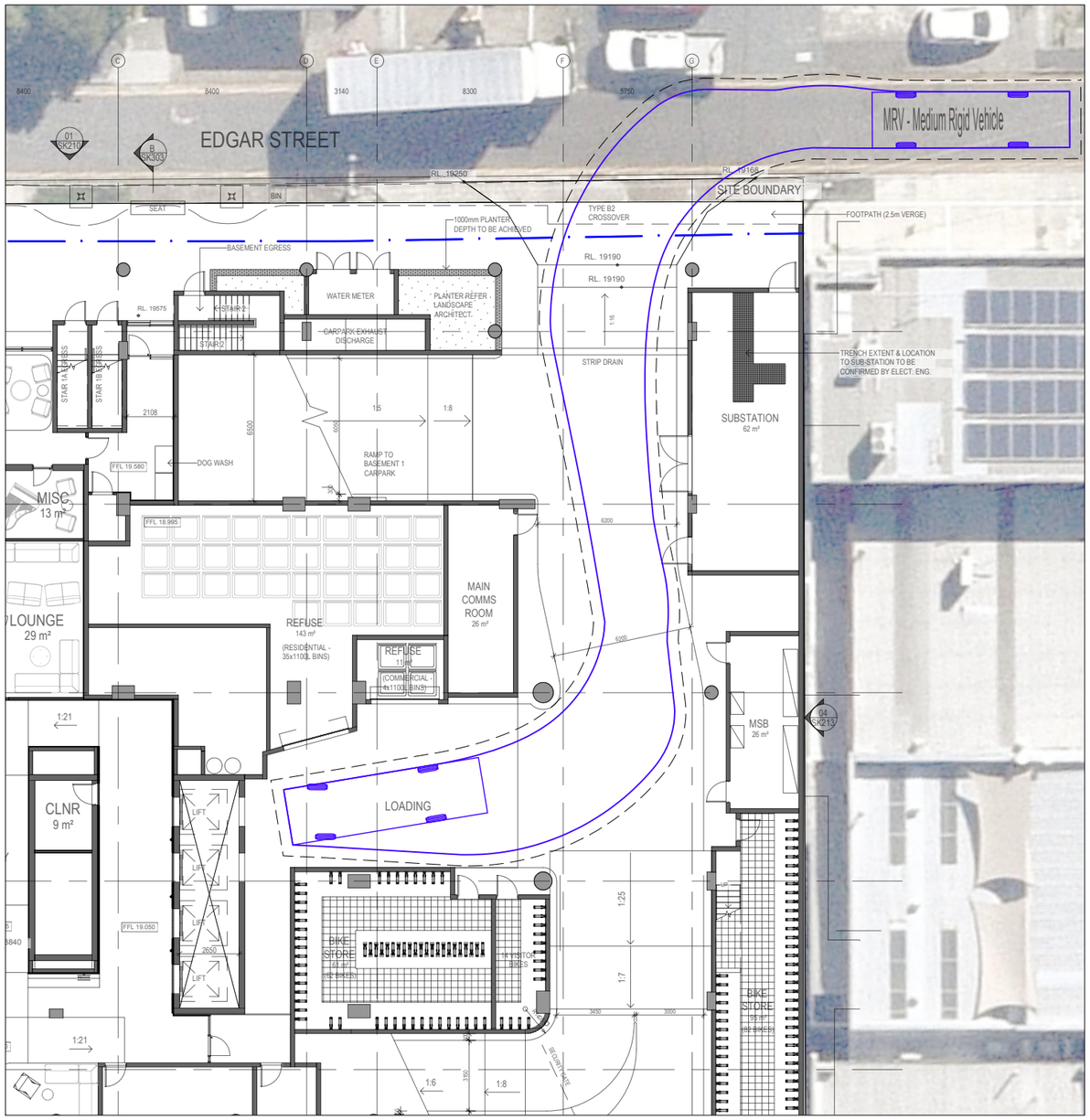
CLIENT: City Developments Limited

TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
P.O. BOX 12015, BRISBANE QLD 4003
T: (07) 3327 9500 F: (07) 3327 9501
E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au

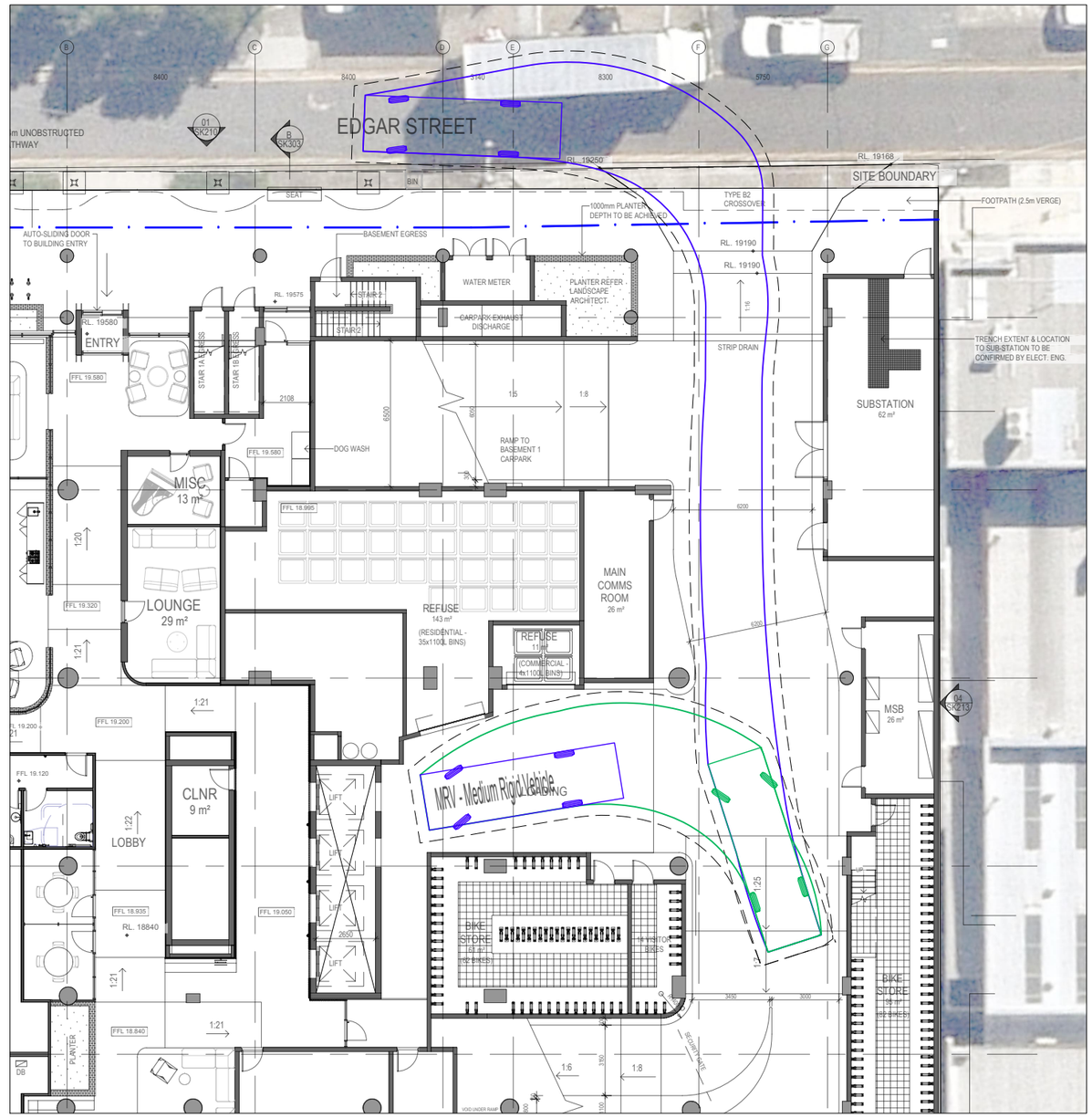
PROJECT: **19 Campbell Street, Bowen Hills**

DRAWING TITLE: **SWEPT PATH ANALYSIS**
10.235m Rear-loader RCV - DESIGN VEHICLE

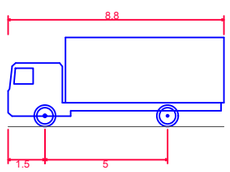
PROJECT NUMBER	23BRT0683
ORIGINAL SIZE	A3
DRAWING NUMBER	23BRT0683-01
REVISION	C
DATE	19 Aug 2024
SHEET	1 OF 1



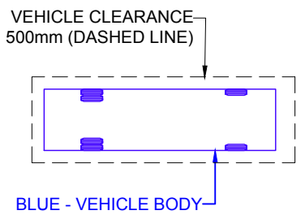
FORWARD IN ENTRY MOVEMENT



FORWARD OUT EXIT MOVEMENT



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	4.00s
Curb to Curb Turning Radius	10.000m
Design Speed Forward	5.0km/h
Clearance Envelope	0.500m



PRELIMINARY ADVICE ONLY

19 August 2024

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
C	19.08.24	REVISED ARCHITECTURAL BASE	DSF	RBe	SC
B	08.08.24	1 IN 25 RAMP TRANSITION ADDED	DSF	RBe	SC
A	06.08.24	ORIGINAL ISSUE	BV	RBe	SC

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

NORTH

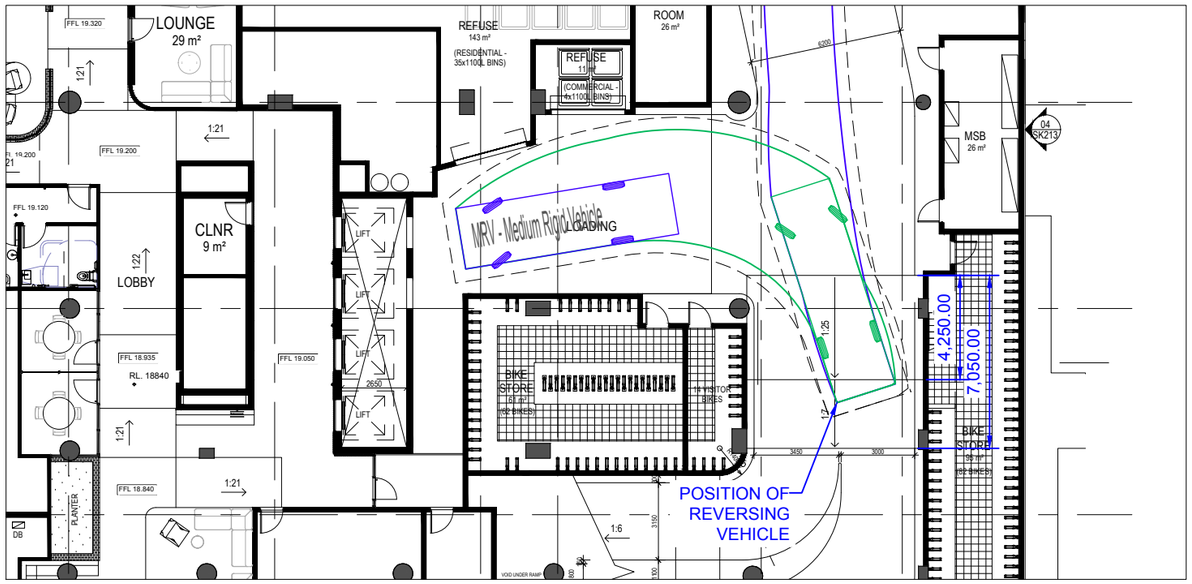
CLIENT: City Developments Limited

TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
P.O. BOX 12015, BRISBANE QLD 4003
T: (07) 3327 9500 F: (07) 3327 9501
E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au

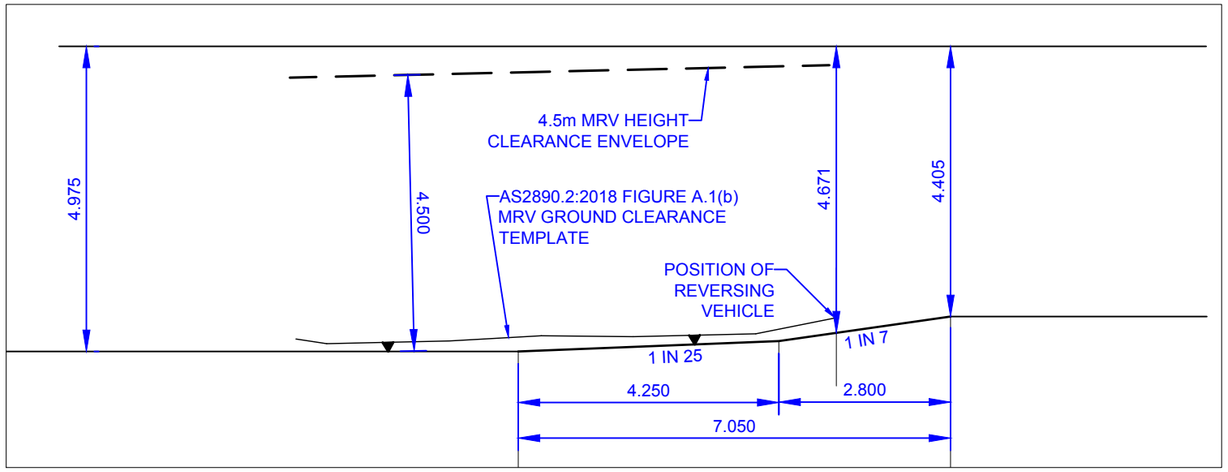
PROJECT: **19 Campbell Street, Bowen Hills**

DRAWING TITLE: **SWEPT PATH ANALYSIS**
8.8m MRV - DESIGN VEHICLE

PROJECT NUMBER	ORIGINAL SIZE
23BRT0683	A3
DRAWING NUMBER	REVISION
23BRT0683-02	C
DATE	SHEET
19 Aug 2024	1 OF 1



FORWARD OUT EXIT MOVEMENT



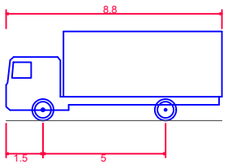
MRV GROUND AND HEIGHT CLEARANCE REVIEW

SCALE - 1 IN 100

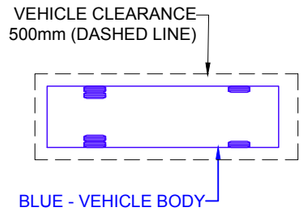
0 1 2 3 4 5m

SCALE 1:100 AT ORIGINAL SIZE

FORWARD IN ENTRY MOVEMENT



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	4.00s
Curb to Curb Turning Radius	10.000m
Design Speed Forward	5.0km/h
Clearance Envelope	0.500m



PRELIMINARY ADVICE ONLY

19 August 2024

REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
B	19.08.24	REVISED ARCHITECTURAL BASE	DSF	RBe	SC
A	08.08.24	ORIGINAL ISSUE	DSF	RBe	SC

SCALE 0 2,5 5 7,5 10 12.5m

SCALE 1:250 AT ORIGINAL SIZE

NORTH

CLIENT: City Developments Limited

TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE QLD 4000
P.O. BOX 12015, BRISBANE QLD 4003
T: (07) 3327 9500 F: (07) 3327 9501
E: ttmbris@ttmgroup.com.au W: www.ttmgroup.com.au

PROJECT: **19 Campbell Street, Bowen Hills**

DRAWING TITLE: **GROUND AND HEIGHT CLEARANCE REVIEW**
8.8m MRV - DESIGN VEHICLE

PROJECT NUMBER	ORIGINAL SIZE
23BRT0683	A3
DRAWING NUMBER	REVISION
23BRT0683-03	B
DATE	SHEET
19 Aug 2024	1 OF 1

Appendix C Build to Rent (BtR) Parking Supply Technical Note

23 August 2024
Our Ref: 23BRT0683

Attention: Tim Johnson

New Urban Villages
Science House – Level 4, 157 Gloucester Street
Sydney NSW 2000

Dear Tim,

RE: 19-25 Campbell Street, Bowen Hills
Build to Rent Development – Pre-lodgement Advice (Car Parking)

1. Introduction

TTM Consulting Pty Ltd (TTM) has been engaged by New Urban Villages to provide transport engineering advice for the proposed Build to Rent (BTR) development to be located at 19-25 Campbell Street, Bowen Hills.

A pre-lodgement meeting occurred on Monday 8 July 2024, with the proposed car parking rate identified as a "priority item". The following is an excerpt from the pre-lodgement meeting minutes:

> *"A maximum reduced car parking rate of 0.50 is preferred, as opposed to the proposed amended car parking rate of 0.43 per unit. EDQ will however support a reduced car parking rate, where supported by a Traffic Impact Assessment (TIA) or traffic memo and where it can be demonstrated that adequate on-site parking is provided for residents and visitors."*

This pre-lodgement advice provides further commentary regarding the car parking provisions of the proposed development scheme, comparing against the relevant requirements of either:

- The Economic Development Queensland (EDQ) Bowen Hills PDA Development Scheme; or
- The Brisbane City Council ('Council') Transport, Access, Parking and Servicing Planning Scheme Policy (TAPS PSP), where applicable.

2. Car Parking

The car parking supply requirements for the proposed residential land use have been determined in line with Schedule 3 of the Bowen Hills PDA Development Scheme. Car parking rates for the multiple dwelling land use are specified, with all other land uses (including retail) to refer to Council's TAPS PSP.

Table 1 provides a summary of the car parking supply requirements for the proposed development and the proposed provisions.

Table 1: EDQ Car Parking Supply Requirements

Land Use / Component	EDQ/BCC Requirement	Extent	Requirement	Provision
Multiple Dwellings (Residents)	EDQ – 0.75 spaces per unit	432 units	324 spaces	134 spaces
Multiple Dwelling (Visitors)	EDQ – 0.15 spaces per unit		65 spaces	51 spaces
Retail	BCC – 1 space per 100m^2 GFA (max)	136m^2 GFA	2 spaces (max)	0 spaces
Car Parking Total			**389 spaces**	**185 spaces**

As seen in Table 1, the development scheme proposes a total of 185 car parking spaces, which is below the required EDQ provision of 389 spaces. This results in on-site car parking at a rate of **0.43 spaces per unit**, including the visitor supply. Within the car parking supply, there is provision for 34 car spaces to operate as car share, with two (2) car spaces designated for persons with a disability (PWD) use.

Adopting a minimum equivalency rate of one (1) car share space for five (5) standard car spaces, the total car parking provision would be equivalent to 321 car parking spaces or **0.74 spaces per unit**.

The following sections discuss the role and suitability of car parking in a Build to Rent environment, to demonstrate the suitability of this proposal.

3. Build to Rent (BTR) Parking Supply

The City Plan does not currently have a definition / requirement for a BTR residential development and does not have a specific use code.

BTR developments typically have the physical build characteristics of multiple dwellings and, due to on-site management capabilities, the use and demand characteristics of rooming accommodation.

BTR projects have a range of characteristics that provide the ability to constrain parking supply and effectively manage the peak parking demands generated by residents. The proposed development includes key characteristics which relate to the ability to constrain parking supply, summarised as follows:

- Subject site location in close proximity to major, high-frequency public transport services, major active transport and activity nodes.

- Tailored management approach, including de-coupled parking and Sustainable Green Transport Plan, which includes a private car share scheme for residents.
- Internal active transport provisions, including ample cyclist parking facilities and accessibility for e-mobility devices.
- Target market, which typically relates to smaller household size (2.6 occupants per dwelling for build to sell multiple dwellings, compared to 1.45 occupants per dwelling for BTR developments) and the target demographic.
- Restricted on-street parking surrounding the site.

The above characteristics are discussed in more detail in the following sections.

4. Key Characteristics

Proximity to Public and Active Transport Infrastructure

The subject site is extremely well situated, with respect to access to extensive public transport options as well as active transport corridors. Residents within the proposed development will have the ability to travel via public transport at any time of the day to a significant proportion of greater Brisbane.

The Bowen Hills railway station is approximately 150m walking distance to the north and is serviced by high-quality and high-frequency services

Furthermore, the subject site is within walking/cycle distance of major employment nodes, including Fortitude Valley and the Brisbane CBD.

This level of accessibility to alternative modes of transport significantly reduces the reliance on private vehicle ownership and provides the ability, in combination with the other key characteristics, to provide a lowered parking supply when compared to a standard multiple unit dwelling (MUD) development.

Tailored Management

De-coupled Parking

The applicant/operator will have ongoing control over both the leasing of apartments and the allocation of parking spaces, which provides opportunity to more effectively manage parking demands, particularly given the target market.

A key aspect of this holistic management of apartments and the car park is that parking spaces will be de-coupled from the apartments and leased to tenants on an as-needs basis. This arrangement ensures that all spaces are effectively utilised, unlike traditional residential developments with allocated parking. It is not uncommon for residential developments with allocated parking that a portion of the residents do not own cars, yet have an allocated parking space – which then sits vacant.

With the applicant/operator controlling the leasing, it also provides the ability to be selective in leasing apartments to potential tenants based on car ownership. If all the parking spaces are leased, the selection process for new tenants can be filtered in a manner that only attracts tenants without cars.

Additionally, separately leasing spaces presents the real cost of car ownership and storage to residents, which discourages car ownership further, where efficient and cost-effective alternatives (including car share) are readily available.

Sustainable Green Transport Plan (SGTP)

The core element of the parking strategy for 19-25 Campbell Street, Bowen Hills, is the intention to implement a SGTP. The SGTP provides a mechanism to ensure that the overall objectives of the parking strategy are fulfilled and maintained.

The implementation of a SGTP instils a culture within the community, primarily that encourages travel by sustainable travel modes of transport. This is consistent with the key objectives of Council's *Transport Plan for Brisbane – Strategic Directions*.

The key objectives of the SGTP are:

- Actively promote alternative modes of travel, such as public transport, cycling, walking, e-scooters and car sharing for residents.
- Reducing the dependency on travel by private cars, which subsequently reduces greenhouse gas emissions and congestion within the surrounding road network.
- Manage car parking supply, to ensure parking demand does not exceed supply.
- Improve opportunities for those without access to a car.

The SGTP to be prepared for the proposed development will consist of a package of measures to be considered as a dynamic document, monitored on an ongoing basis. The measures which will be considered for the subject site will include:

- Car Share:
  - Provide 34 dedicated car share bays managed internally – anecdotal evidence is that one (1) car share space could equate to at least five (5) standard spaces, up to ten (10) standard spaces.
  - This car share provision would therefore be equivalent to an additional 136 to 306 standard spaces.
  - Provide information regarding the location of external car share pods, in the vicinity of the subject site.
- E-mobility Centre:

- Provide an on-site bicycle maintenance service.
- E-bicycle and scooter charging, provided for the exclusive use of residents.

- Welcome pack for residents, in order to encourage sustainable travel from the outset. The welcome pack will include:
  - Public transport information (including maps), explaining what buses and trains operate in the vicinity of the subject site.
  - Walking and cycling maps showing local walking and cycling routes.
  - Information about the SGTP and any other measures (including share cars and hire bicycles/scooters) provided to support sustainable travel.
- Appoint a Travel Plan Co-ordinator. The co-ordinator should oversee the day-to-day running and management of the plan. The duties of the Travel Plan Co-ordinator will include:
  - Acting as the SGTP contact point for residents.
  - Championing the measures outlined within the SGTP.
  - Co-ordinating and maintaining the proposed measures.
  - Monitoring the progress of the SGTP.
  - Managing use of parking spaces, share cars and hire bicycles/scooters.
  - Maintaining communication with residents (potentially via a community App).
  - Maintaining external communications, including liaising with local authorities and other interested parties, such as Translink and rideshare operators.
  - Providing up-to-date travel information and making this information available as, and when, changes occur.
- Public Transport Accessibility:
  - Public transport information (including maps), explaining what buses and trains operate in the vicinity of the site, will be provided in the welcome pack.
  - Real-time timetabling information (including service updates) for public transport services operating in the vicinity of the subject site will be provided in the building lobby.
- Active Transport:
  - Secure bicycle stores and end-of-trip facilities provided for residents.

- List/map of all the key nodes within a reasonable walking distance of the site and cycling routes in the vicinity of the subject site will be provided in the welcome pack.

It is TTM's expectation that EDQ will condition the preparation of a detailed SGTP, as part of the sought approvals.

5. Target Market

There is limited flexibility in Council's parking policy for residential development, with respect to "target market".

The market for BTR projects is specifically targeted at a demographic that are sensitive to affordability and sustainability. That is, residents that generally do not want to pay for a parking space and/or are attracted to using alternative modes of transport from either a cost saving or sustainability perspective.

TTM have undertaken research into currently operating BTR developments, noting the size and use differs from a standard Multiple Unit Dwelling (MUD). Survey data indicates that the average occupancy for a MUD is 2.6 persons per dwelling, as compared to a BTR dwelling of 1.45 persons per dwelling.

This indicates a lower population associated with this style of dwelling, thus reducing the need for private vehicles. In particular, the proposed development includes 14% studio apartments and a further 50% single bedroom apartments, the vast majority of which would be expected to have a single tenant only.

This is a clear differentiation from the traditional residential market. While traditional residential developments can vary their price point, there is little control over rental versus owner occupier. Furthermore, there is also little control over the demographic that live within a traditional residential development.

6. On-street Parking Restrictions

A key characteristic of the strategy to reduce the resident parking supply for a BTR project is to ensure that there is limited ability for residents to create overflow parking on the streets surrounding the site. In this instance, there is limited availability of on-street parking for residents to utilise.

The subject site is located within the Brisbane Central Traffic Area (refer to Figure 1 overleaf). 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 maximum two-hour parking limit.

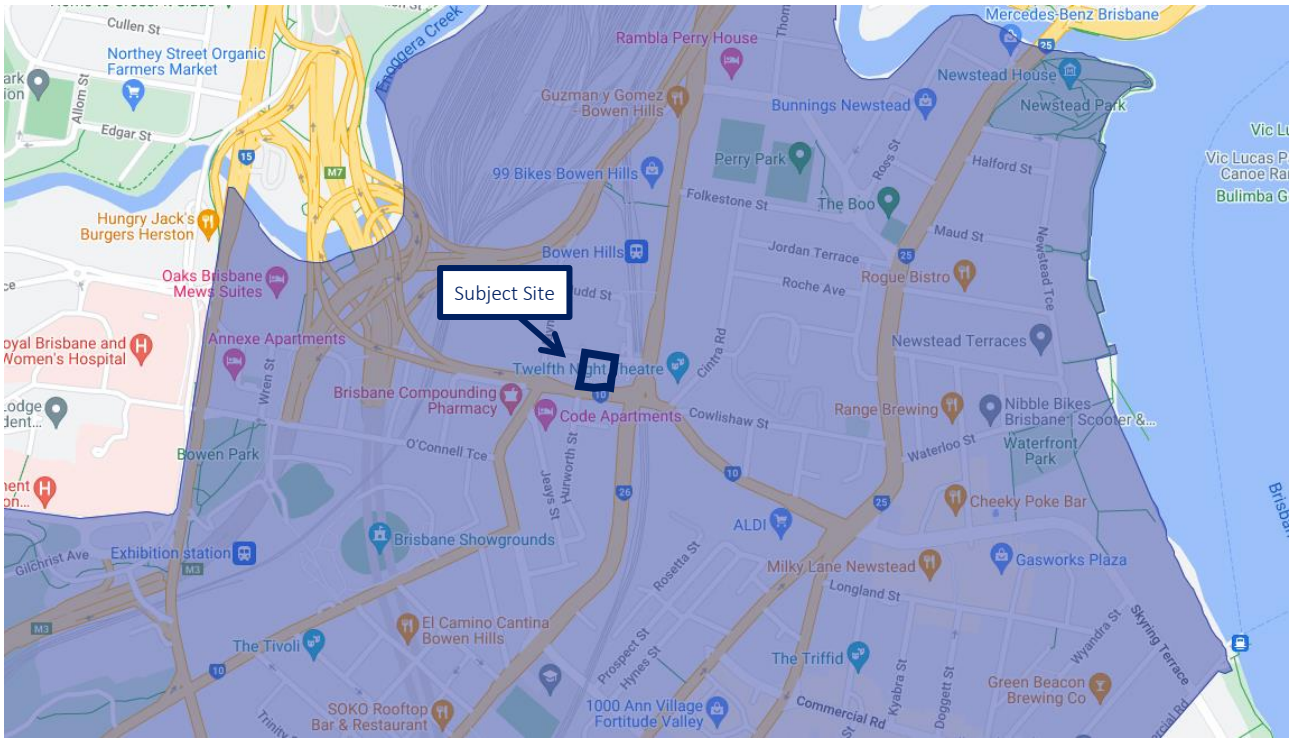


Figure 1: Brisbane Central Traffic Area

Source: Brisbane City Council

Figure 2 overleaf identifies the kerbside allocation of parking in the vicinity of the subject site. This is the typical allocation during daytime hours. It is noted that some loading zones and metered parking areas revert to uncontrolled parking areas overnight and on Sundays.

This indicates that there are no parking spaces in the vicinity of the subject site that are signed as unrestricted. There are several spaces alongside one side of Cintra Road that are unsigned. However, these are still subject to the restrictions of the Brisbane Central Traffic Area.

There is limited metered parking within 200m of the subject site (mostly along Mayne Road). Additional metered parking is located further away (along Jeays Street and east of Abbotsford Road / Markwell Street). However, there is no parking spaces within 500m of the subject site that would allow for private vehicles to be legally parked for extended periods.

Figure 2: Weekday Kerbside Allocation

It is understood that typically the primary concern with respect to insufficient on-site parking being provided is that any excess demand may overflow to the local street system. However, as shown above, the site is located well within the Brisbane Central Traffic Area and there is no opportunity for middle- to long-term parking on any public street within 500m of the subject site. This effectively restricts potential tenants to those who either have no car or those who can lease a car space on-site. There is no practical alternative for residents to park on-street.

7. Conclusions

The proposed development includes a car parking solution which adopts the following planning approach:

- The proposed development scheme includes a total on-site car parking provision of 185 spaces. This results in car parking at a rate of **0.43 spaces per unit**, including the visitor supply. Within the car parking supply, there is provision for 34 car spaces to operate as car share.

- Adopting a minimum equivalency rate of one (1) car share space for five (5) standard car spaces, the total car parking provision would be equivalent to 321 car parking spaces or **0.74 spaces per unit**.
- Proximity of major public transport infrastructure (Bowen Hills railway station) and employment/activity nodes.
- De-coupling of car spaces, with the leasing of car parking and units separated.
- TTM research indicates that the target market for Build to Rent has lower occupants per dwelling (1.45), when compared to Build to Sell (2.6).
- The proposed development is comprised of mostly studio (14%) and one-bedroom (50%) apartments, which are anticipated to have a single tenant only.
- The subject site is located within the Brisbane Central Traffic Area, with no potential for middle- to long-term parking in the surrounding road network.
- Preparation of a Sustainable Green Transport Plan, including consideration of the following measures:
  - Provision of an internal car share scheme.
  - Provision of secure resident bicycle parking and end-of-trip facilities.
  - Provision of an e-mobility centre (maintenance, charging).

If you have any queries relating to the information provided herein, please contact Ryan Bellamy on (07) 3327 9500.

Yours sincerely,

Ryan Bellamy
Project Consultant – Traffic
TTM Consulting Pty Ltd